## 2022-2024 UNDERGRADUATE STUDIES BULLETIN

FLORHAM CAMPUS • Madison, New Jersey METROPOLITAN CAMPUS • Teaneck, New Jersey VANCOUVER CAMPUS • British Columbia, Canada WROXTON COLLEGE • Wroxton, England


## Undergraduate Studies Bulletin 20222024

## Volume LXX October 2022

Fairleigh Dickinson University
1000 River Road
Teaneck, NJ 07666

## Locations

## Florham Campus (Madison, NJ)

Metropolitan Campus (Teaneck, NJ)
Vancouver Campus (British Columbia, Canada)
Wroxton College (Wroxton, England)
All fees, tuition and charges are subject to change at any time at the discretion of the Board of Trustees. The University reserves the right to change, without prior notice, the contents of its Bulletins and to modify its academic calendar and programs of instruction; academic and disciplinary requirements, policies and procedures, rules and regulations; its tuition, fees and charges, and the terms of financial aid. Changes shall be effective upon publication or when the University otherwise determines, and any such change may apply to prospective students and to those who already are enrolled at the University.

The University reserves the right to deny admission and matriculation to any applicant who, in the judgment of the University, is not qualified, may not benefit from the University's educational programs or whose presence or conduct may impact negatively on its program(s). Students applying for admission to the University agree to abide by all the rules and regulations now or hereafter promulgated by the University. Any student failing to comply with such rules and regulations is subject to their application being rejected, offer of acceptance being rescinded, enrollment being canceled or other appropriate
disciplinary actions. Submission of false information, in this application or otherwise, is deemed a violation of University rules and regulations.

Fairleigh Dickinson University is committed to providing equal opportunity to all qualified persons and does not discriminate on the basis of race, religion, color, creed, ancestry or national origin, handicap/disability, age, gender, sexual orientation, marital status, pregnancy status or veteran status with regard to recruitment, admission or matriculation.

## The Student Right-to-Know and Campus Security Act

The Student Right-to-Know and Campus Security Act was signed into law in 1990 and amended with the Higher Education Technical Amendment of 1991. The first disclosure date for graduation/ completion rates required by the Student Right-toKnow and Campus Security Act was July 1, 1993. In compliance with this act, Fairleigh Dickinson University makes this information available to current and prospective students through the Office of Enrollment Management.

## Notice of Non-Discrimination

Fairleigh Dickinson University does not discriminate on the basis of sex, race, color, creed, handicap, genetic information, pregnancy status, religion, national origin or ancestry, gender, disability, age, marital status, sexual orientation, gender identity, gender expression, and veteran status, and provides equal access to its programs, services and activities, whether they are offered in-person or online. The following are a list of person(s) who may be contacted with concerns of discrimination.
For inquiries regarding the accessibility of the University's website:
William Kennedy
Director, Web Operations
Fairleigh Dickinson University
1000 River Road, H-DH2-14
Teaneck, New Jersey 07666
Email: WAS@fdu.edu
Phone: (201) 692-7275
Fax: (201) 692-7019
For inquiries by students (and prospective students) regarding the accessibility of the University's programs, services and activities:
Darshan Shah
University Director of Academic Support Center and Disability Support Services, Office of Disability

Support Services
Fairleigh Dickinson University
285 Madison Avenue, M-MO1-01
Madison, New Jersey 07940
Location: Room 206, Monninger Center
Email: DSS@fdu.edu
Phone: (973) 443-8079
Fax: (973) 443-8080
Craig Mourton
Assistant Vice President for Student Affairs
Fairleigh Dickinson University
1000 River Road, T-RH2-09
Teaneck, New Jersey 07666
Location: Room 35, Robison Hall
Email: DSS@fdu.edu
Phone: (201) 692-2477
Fax: (201) 692-2469
For inquiries by employees, prospective employees, students, prospective students and other members of the University community under the University's non-discrimination policies:
Rose D'Ambrosio
Vice President, Human Resources
Fairleigh Dickinson University
1000 River Road, H-DH3-05
Teaneck, New Jersey 07666
Location: Room 3321, Dickinson Hall
Email: EAS@fdu.edu
Phone: (201) 692-2706
Fax: (201) 692-2717
In addition to the University's internal procedures, an individual has the right to file a complaint with federal and state agencies that investigate allegations of discrimination. The agency should be consulted concerning their deadlines for filing. The following are a list of external agencies that may consider such complaints.
For violations of the U.S. Civil Rights Act, including Section 504 of the Rehabilitation Act of 1973, or Title I of the Americans with Disabilities Act of 1990:
New York Office
Office for Civil Rights
U.S. Department of Education

32 Old Slip, 26th Floor
New York, NY 10005-2500
Email: OCR.NewYork@ed.gov
Phone: (646) 428-3900
TTY: (800) 877-8339
Fax (646) 428-3843
For violations of the New Jersey Law against Discrimination:
New Jersey Division of Civil Rights
Northern Regional Office

Visit:
31 Clinton Street
Newark, New Jersey 07102
Mailing:
PO Box46001
Newark, NJ 07102
Phone: (973) 648-2700
TTY: (973) 648-4678
Fax: (973) 648-4405

## Legal Issues Regarding FDU Website

Reasonable efforts are taken to ensure the accuracy and integrity of information and related materials provided by Fairleigh Dickinson University ("University") on World Wide Web sites within any domain owned by the University ("Websites"), but the University is not responsible for misprints, out-of-date information, technical inaccuracies, typographical or other errors appearing on these websites, or any other website containing information about the University. Information and related materials are subject to change without notice. These websites and all information and related materials it contains are provided "as is". By using these websites, you assume the risk that the information and materials on these websites may be incomplete, inaccurate, out of date, or may not meet your needs and requirements.
Websites include www.fdu.edu, fduknights.com, fdudevils.com, globaleducation.edu, fillfdu.wix.com/fill, writingfdu.org, theliteraryreview.org and all subdomains within the Top Level Domain fdu.edu, or any of the other preceding domains.

## Subject to Change

The University reserves the right to change, without prior notice, the contents of its websites, including any posted bulletins, academic calendars, programs of instruction, academic and disciplinary requirements, policies and procedures, rules and regulations, tuition, fees and charges, and the terms of financial aid. Changes shall be effective upon publication or as otherwise determined by the University, Such changes may apply to current and/or prospective students and current or prospective employees.
The University reserves the right to photograph members of the University community, including but not limited to, its students, guests, employees and contractors, in situations appropriate to the image of an academic institution, and to publish likenesses in University publications, videos or other recruitment or promotional materials. However, the University will, to the extent feasible, honor written requests received from community members who do not wish their images published.

## Acceptable Use

The websites are included among the computing and electronic communications resources of Fairleigh Dickinson University, which support the instructional, research, and administrative activities of the University. Users of these facilities are bound by the University'sAcceptable Use Policy for Computer Usage. That policy applies to all users of computing and electronic communications resources, and computing equipment owned, leased or rented by Fairleigh Dickinson University. This includes all students, faculty, visiting faculty, staff, guests, and external individuals or organizations. Computing equipment includes, but is not limited to, mobile phones, tablets, terminals and computers, whether public machines located in labs or machines assigned for individual use, file servers, and networking equipment used to link these components together and to the Internet.

Fairleigh Dickinson University is not responsible for the content of any material the user prepares, receives or transmits. Thus, as a condition of using the University's computer system, the user represents that his/her use is in compliance with all federal, state and international copyright and other intellectual property laws and agreements and other federal and state laws, nor in his/her use of the system will the user violate any federal or state civil or criminal laws. Furthermore, the user will indemnify, exonerate and save the University (and its representatives) harmless from any claim, damage or cost related to the user's use, including any legal fees the University decides it is necessary to incur to defend itself.

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## Colleges and Schools

- Maxwell Becton College of Arts and Sciences
- Silberman College of Business
- Lee Gildart and Oswald Haase School of Computer Sciences and Engineering
- Peter Sammartino School of Education
- International School of Hospitality, Sports, and Tourism Management
- Henry P. Becton School of Nursing and Allied Health
- School of Pharmacy and Health Sciences
- School of Psychology and Counseling
- School of Public and Global Affairs


## Special Programs (Maxwell Becton College of Arts and Sciences)

- Hispanic Center
- Programs in Language, Culture and Professional Advancement


## Undergraduate Studies

- Academic Regulations
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## Majors, Minors, and Certificates (A-Z Listings)

## Degrees including Combined Degrees

- Accounting BS
- Accounting BS, Accounting MS Combined Degree
- Allied Health Technologies (Health Science Concentration) BSAHT (With Associate Degree): completion degree
- Allied Health Technologies (Health Science Concentration) BSAHT (No Associate Degree): completion degree
- Allied Health Technology BSAHT (Radiologic Technology Concentration)
- Art BA
- Biochemistry BS
- Biochemistry BS (Prepharmacy concentration)
- Biochemistry BA, Chemistry MS (Pharmaceutical Chemistry concentration) Combined Degree
- Biochemistry BS, Cosmetic Science MS Combined Degree
- Biochemistry BS, Pharmacy PharmD Combined Degree
- Biology BS
- Biology BS, Biology MS (Biotechnology Concentration) Combined Degree
- Biology BS, Biology MS Combined Degree
- Biology BS, Chiropractic DC Combined Degree
- Biology BS, Dental Medicine DMD Combined Degree (Florham)
- Biology BS, Dental Medicine DMD Combined Degree (Metro)
- Biology BS, Medicine MD Combined Degree
- Biology BS, Osteopathic Medicine DO Combined Degree
- Biology BS, Pharmacy PharmD Combined Degree
- Biology BS, Physical Therapy DPT Combined Degree
- Biology BS, Veterinary Medicine DVM Combined Degree
- Biology BS: Prepharmacy
- Business Administration BS (Florham and Metro)
- Business Administration BS (Vancouver)
- Business Administration BS, Finance MBA Combined Degree
- Business Administration BS, Management MBA Combined Degree
- Business Administration BS, Marketing MBA Combined Degree
- Business Administration BS, Supply Chain Management MBA Combined Degree
- Chemistry BS
- Chemistry BS, Chemistry MS (Pharmaceutical Chemistry concentration) Combined Degree
- Chemistry BS, Cosmetic Science MS Combined Degree
- Chemistry BS, Pharmacy PharmD Combined Degree
- Civil Engineering BSCE
- Civil Engineering Technology BSCivET
- Clinical Laboratory Sciences BSCLS
- Communication BA
- Communication BA, Communication MA Combined Degree
- Computer Science BS (Florham)
- Computer Science BS (Metro)
- Computer Science BS, Computer Science MS Combined Degree (Florham)
- Computer Science BS, Computer Science MS Combined Degree (Metro)
- Computer Science BS, Cybersecurity and Information Assurance MS Combined Degree
- Computer Science BS, Management Information Systems MS Combined Degree
- Construction Engineering Technology BSConET
- Creative Writing BA
- Creative Writing BA, Creative Writing MFA Combined Degree
- Criminal Justice BA
- Criminal Justice BA, Criminal Justice MA Combined Degree
- Criminology BA
- Degree Completion BA
- Degree Completion BA: Yeshiva and Seminary
- Electrical Engineering BSEE
- Electrical Engineering BSEE, Computer Engineering MS Combined Degree
- Electrical Engineering BSEE, Electrical Engineering MSEE Combined Degree
- Electrical Engineering Technology BSEET
- Entrepreneurship BS
- Film and Animation BA (Animation Concentrations)
- Film and Animation BA (Film Concentrations)
- Film and Animation BA, Animation MA Combined Degree
- Film and Animation BA, Animation MFA Combined Degree
- Finance BS
- Fine Arts: Studio Arts BA
- Government and Politics BA
- Government and Politics BA, Criminal Justice MA Combined Degree
- Government and Politics BA, Political Science MA Combined Degree
- Graphic Design BA
- Health Information Management BSHIM
- Health Studies BSHS
- History BA
- Hospitality and Tourism Management BA
- Hospitality and Tourism Management BA, Hospitality Management Studies MS Combined Degree
- Humanities BA
- Individualized Studies BA
- Individualized Studies BA, Cyber and Homeland Security Administration MS Combined Degree Program
- Individualized Studies BA (Hospitality and Tourism Management Specialization, Vancouver Campus)
- Individualized Studies BA, Master of Administrative Science (MAS) Combined Degree Program
- Individualized Studies BA, Master of Public Administration (MPA) Combined Degree Program
- Information Technology BS (Metro)
- Information Technology BS (Vancouver)
- Information Technology BS, Applied Computer Science MS (Vancouver)
- Information Technology BS, Computer Engineering MS Combined Degree (Metro)
- Information Technology BS, Computer Science MS Combined Degree (Metro)
- Information Technology BS, Cybersecurity and Information Assurance MS Combined Degree (Metro)
- Liberal Arts AA
- Liberal Arts AA: HACER
- Liberal Arts AA: Latino Promise
- Liberal Arts AA: Puerta Al Futuro
- Liberal Arts BAIS: Puerta Al Futuro
- Literature BA
- Management BS
- Marine Biology BS
- Marketing BS
- Mathematics BA (Florham)
- Mathematics BA (Metro)
- Mathematics BA, Computer Science MS Combined Degree (Metro)
- Mathematics BA, Cybersecurity and Information Assurance MS Combined Degree (Metro)
- Mathematics BS
- Mathematics BS, Computer Science MS Combined Degree (Metro)
- Mathematics BS, Cybersecurity and Information Assurance MS Combined Degree (Metro)
- Mechanical Engineering BSME
- Mechanical Engineering Technology BSMET
- Medical Imaging Science BSMIS
- Medical Technology BS
- Nursing Accelerated ABSN
- Nursing BSN
- Nursing RN to BSN (with Associate Degree)
- Nursing RN to BSN (without Associate Degree)
- Philosophy BA
- Psychology BA
- Psychology BA, Psychology MA Combined Degree
- Psychology Postbaccalaureate Respecialization Program
- QUEST BA/BS, Early Childhood Education P-3 MAT Combined Degree
- QUEST BA/BS, Elementary Education K-6 MAT Combined Degree
- QUEST BA/BS, English as a Second Language (ESL) MAT Combined Degree
- QUEST BA/BS, Secondary Education K-12 MAT Combined Degree
- Radiography AS
- Radiologic Technology BS
- Science BS
- Sociology BA
- Sport Management BA
- Sport Management BA, Sport Management MSM Combined Degree
- Teaching BA/BS, Teaching MAT (QUEST) Combined Degree
- Theater Arts BA


## Minors

- 3D Video Game Animation Minor
- Accounting Minor
- Acting Minor
- Advertising Minor (Florham)
- Advertising Minor (Metro)
- African-American Studies Minor
- Animation Minor
- Anthropology Minor
- Art History Minor
- Biology Minor
- British Studies Minor
- Broadcasting Minor
- Business Administration Minor
- Chemistry Minor
- Children's Studies Minor
- Cinema Studies Minor
- Clinical Social Work Minor
- Communication Minor
- Computer Animation Art Minor
- Computer Forensics Minor
- Computer Graphics Art Minor
- Computer Science K-12 Minor
- Computer Science Minor (for students in BSEE-MSEE combined degree program)
- Computer Science Minor (Florham)
- Computer Science Minor (Metro)
- Convergent Journalism Minor
- Creative Writing Minor
- Criminal Justice Minor
- Criminology Minor
- Dance Studies Minor
- Data Science (Business) Minor
- Data Science Minor
- Design and Technical Theater Minor
- Digital Marketing Minor
- Digital Media for Advertising Art Minor
- Digital Tools for Social Media Art Minor
- Dramatic Literature and Performance Minor
- Economics Minor
- Education Minor
- Electrical Engineering Minor
- Electrical Engineering Technology Minor
- Entrepreneurship Minor
- Entertainment Business and Management Minor
- Environmental Science Minor
- Environmental Studies Minor
- Esports Minor
- Event Planning Minor
- Film Production Minor
- Finance Minor
- Financial Planning and Wealth Management Minor
- Fine Art Techniques Art Minor
- Forensic Psychology Minor
- Forensics Minor
- French Minor
- Gender and Sexuality Studies Minor
- Gender Studies Minor
- Generalist Art Minor
- Geography Minor
- German Minor
- Global Studies Minor
- Government and Law Minor
- Graphic Design Minor
- History Minor
- Hotel and Restaurant Franchising Minor
- Human Resources Management Minor
- Humanities Minor
- Information Technology Minor
- International Studies Minor
- Italian Minor
- Italian Studies Minor
- Japanese Studies Minor
- Journalism Minor
- Latin American Studies Minor
- Leadership Minor
- Legal Studies Minor
- Literature Minor
- Marketing Minor
- Marine Biology Minor
- Mathematical Statistics Minor
- Mathematics for Cybersecurity Minor
- Mathematics for the Business World Minor
- Mathematics Minor (Florham)
- Mathematics Minor (Metro)
- Mechanical Engineering Technology Minor
- Music Minor
- Musical Theater Minor
- Philosophy Minor
- Physics Minor
- Playwriting Minor
- Political Communication Minor
- Political Science Minor
- Prelaw Minor
- Printmaking Art Minor
- Professional Selling and Sales Management Minor
- Psychology Minor
- Public Relations Minor
- Restaurant Entrepreneurship Minor
- Science Minor
- Screenwriting and Dramatic Writing Minor
- Social Justice Advocacy Minor
- Sociology Minor
- Spanish Minor (Florham)
- Spanish Minor (Metro)
- Speech Minor
- Sport Management Minor
- Studio Arts Minor
- Sustainability Management Minor
- Television Production Minor
- Theater Arts Minor (Florham)
- Theater Arts Minor (Metro)
- Web Design Minor
- Website Design and Development Minor


## Undergraduate Certificates

- Computer Programming Undergraduate Certificate
- Construction Management Technology Undergraduate Certificate
- Esports Undergraduate Certificate
- Event Planning Undergraduate Certificate
- Game Development Undergraduate Certificate
- Hotel and Restaurant Franchising Certificate
- Information Technology Undergraduate Certificate
- Mechanical Engineering Technology Undergraduate Certificate
- Network and System Administration Undergraduate Certificate
- Pharmaceutical Biostatistics Undergraduate Certificate
- Restaurant Entrepreneurship Certificate
- Sport Management Undergraduate Certificate
- Website Design and Development Undergraduate Certificate


## Courses and Course Descriptions

- Courses and Course Descriptions


## Faculty \& Administration

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## Academic Calendars

## Academic Year 2021-2022, New Jersey Campuses

## Fall Semester 2021

Registration/Academic Counseling and Advising
August 9 to 20
Classes Begin, 8:00 AM (Monday)
August 23
Labor Day Holiday (Monday)
September 6
Last Day for New Registrations and Final Drop/Add Changes (Tuesday)
September 7
Midterm Progress Reporting Opens (Monday)
September 27
Fall Recess (Monday/Tuesday)
October 11 to 12
Midterm Progress Reporting Closes (Tuesday)
October 19

Last Day for Student Withdrawal from Classes (Friday)
October 29
Priority Registration for Spring Semester 2022
November 1 to 16
Thanksgiving Recess (Wednesday to Friday)
November 24 to 26
Last Day of Fall Classes, Fall Semester (Monday)
December 6
Reading/Snow Make-up Days (Tuesday and Wednesday)
December 7 to 8
Final Examinations (Thursday to Wednesday)
December 9 to 15
Grades due no later than 5:00 PM on the 3rd day after exam is administered.
Fall Semester Ends, 11:00 PM (Wednesday)
December 15

## Winter Session 2022

Classes Begin, 8:00 AM (Monday)
January 3
Martin Luther King Jr. Holiday (Monday)
January 17
Classes End, 11:00 PM (Wednesday)
January 19

## Spring Semester 2022

Registration/Academic Counseling and Advising January 3 to 21
Classes Begin, 8:00 AM (Monday)
January 24
Last Day for New Registrations and Final Drop/Add Changes (Monday)
February 7
Midterm Progress Reporting Opens (Monday)
February 28
Spring Recess
March 14 to 18
Online Registration for Summer 2022 Sessions Opens (Tuesday)
March 15
Midterm Progress Reporting Closes (Saturday)
March 26
Last Day for Student Withdrawal from Classes (Friday)
April 8
Priority Registration for Fall Semester 2022
April 11 to 22

Last Day of Spring Classes (Saturday)
May 7
Reading/Snow Make-up Days (Monday/Tuesday)
May 9 to 10
Final Examinations (Wednesday-Tuesday)
May 11 to 17
Grades due no later than 5:00 PM on the 3rd day after exam is administered.
Spring Semester Ends, 11:00 PM (Tuesday)
May 17
University Commencement (Wednesday)
May 18

## Summer Session I 2022

Classes Begin, 8:00 AM (Monday)
May 23
Memorial Day Holiday (Monday)
May 30
Memorial Day Holiday Makeup (Friday)
June 3
Classes End, 11:00 PM (Saturday)
July 2

## Summer Session II 2022

Classes Begin, 8:00 AM (Monday)
June 13
Independence Day Holiday (Monday)
July 4
Independence Day Holiday Makeup (Friday)
July 8
Classes End, 11:00 PM (Saturday)
July 23

## Summer Session III 2022

Independence Day Holiday (Monday)
July 4
Classes Begin, 8:00 AM (Tuesday)
July 5
Independence Day Holiday Makeup (Friday)
July 8
Classes End, 11:00 PM (Saturday)
August 13

## Academic Year 2022-2023, New Jersey Campuses

## Fall Semester 2022

Registration/Academic Counseling and Advising
August 15 to 26
Classes Begin, 8:00 AM (Monday)
August 29
Labor Day Holiday (Monday)
September 5
Last Day for New Registrations and Final Drop/Add Changes (Monday)
September 12
Midterm Progress Reporting Opens (Monday)
October 3
Fall Recess (Monday/Tuesday)
October 17 to 18
Midterm Progress Reporting Closes (Tuesday)
October 25
Last Day for Student Withdrawal from Classes (Friday)
November 4
Priority Registration for Spring Semester 2023
November 7 to 22
Thanksgiving Recess (Wednesday to Friday)
November 23 to 25
Last Day of Fall Classes, Fall Semester (Monday)
December 12
Reading/Snow Make-up Days (Tuesday and Wednesday)
December 13 to 14
Final Examinations (Thursday to Wednesday)
December 15 to 21
Grades due no later than 5:00 PM on the 3rd day after exam is administered.
Fall Semester Ends, 11:00 PM (Wednesday)
December 21

## Winter Session 2023

Classes Begin, 8:00 AM (Tuesday)
January 3
Martin Luther King Jr. Holiday (Monday)
January 16
Classes End, 11:00 PM (Thursday)
January 19

## Spring Semester 2023

Registration/Academic Counseling and Advising January 3 to 20
Classes Begin, 8:00 AM (Monday)
January 23

Last Day for New Registrations and Final Drop/Add Changes (Monday)
February 6
Midterm Progress Reporting Opens (Monday)
February 27
Spring Recess
March 13 to 17
Online Registration for Summer 2023 Sessions Opens (Wednesday)
March 15
Midterm Progress Reporting Closes (Saturday)
March 25
Last Day for Student Withdrawal from Classes (Friday)
April 7
Priority Registration for Fall Semester 2023
April 10 to 21
Last Day of Spring Classes (Saturday)
May 6
Reading/Snow Make-up Days (Monday/Tuesday)
May 8 to 9
Final Examinations (Wednesday-Tuesday)
May 10 to 16
Grades due no later than 5:00 PM on the 3rd day after exam is administered.
Spring Semester Ends, 11:00 PM (Tuesday)
May 16
University Commencement (Wednesday)
May 17

## Summer Session I 2023

## Classes Begin, 8:00 AM (Monday)

May 22
Memorial Day Holiday (Monday)
May 29
Memorial Day Holiday Makeup (Friday)
June 2
Classes End, 11:00 PM (Saturday)
July 1

## Summer Session II 2023

Classes Begin, 8:00 AM (Monday)
June 12
Independence Day Holiday (Tuesday)
July 4
Independence Day Holiday Makeup (Friday)
July 7

Classes End, 11:00 PM (Saturday)
July 22

## Summer Session III 2023

Classes Begin, 8:00 AM (Monday)
July 3
Independence Day Holiday (Tuesday)
July 4
Independence Day Holiday Makeup (Friday)
July 7
Classes End, 11:00 PM (Saturday)
August 12

## Academic Year 2023-2024, New Jersey Campuses

## Fall Semester 2023

Registration/Academic Counseling and Advising
August 14 to 25
Classes Begin, 8:00 AM (Monday)
August 28
Labor Day Holiday (Monday)
September 4
Last Day for New Registrations and Final Drop/Add Changes (Monday)
September 11
Midterm Progress Reporting Opens (Monday)
October 2
Fall Recess (Monday/Tuesday)
October 16 to 17
Midterm Progress Reporting Closes (Tuesday)
October 24
Last Day for Student Withdrawal from Classes (Friday)
November 3
Priority Registration for Spring Semester 2024
November 6 to 21
Thanksgiving Recess (Wednesday to Friday)
November 22 to 24
Last Day of Fall Classes, Fall Semester (Monday)
December 11
Reading/Snow Make-up Days (Tuesday and Wednesday)
December 12 to 13

Final Examinations (Thursday to Wednesday)
December 14 to 20
Grades due no later than 5:00 PM on the 3rd day after exam is administered.
Fall Semester Ends, 11:00 PM (Wednesday)
December 20
Winter Session 2024
Classes Begin, 8:00 AM (Tuesday)
January 2
Martin Luther King Jr. Holiday (Monday)
January 15
Classes End, 11:00 PM (Thursday)
January 18

## Spring Semester 2024

Registration/Academic Counseling and Advising
January 2 to 19
Classes Begin, 8:00 AM (Monday)
January 22
Last Day for New Registrations and Final Drop/Add Changes (Monday)
February 5
Midterm Progress Reporting Opens (Monday)
February 26
Spring Recess
March 11 to 15
Online Registration for Summer 2024 Sessions Opens (Friday)
March 15
Midterm Progress Reporting Closes (Saturday)
March 23
Last Day for Student Withdrawal from Classes (Friday)
April 5
Priority Registration for Fall Semester 2024
April 8 to 19
Last Day of Spring Classes (Saturday)
May 4
Reading/Snow Make-up Days (Monday/Tuesday)
May 6 to 7
Final Examinations (Wednesday-Tuesday)
May 8 to 14
Grades due no later than 5:00 PM on the 3rd day after exam is administered.
Spring Semester Ends, 11:00 PM (Tuesday)
May 14
University Commencement
TBD

## Summer Session I 2024

Classes Begin, 8:00 AM (Monday)
May 20
Memorial Day Holiday (Monday)
May 27
Memorial Day Holiday Makeup (Friday)
May 31
Classes End, 11:00 PM (Saturday)
June 28

## Summer Session II 2024

Classes Begin, 8:00 AM (Monday)
June 10
Independence Day Holiday (Thursday)
July 4
Independence Day Holiday Makeup (Friday)
July 5
Classes End, 11:00 PM (Saturday)
July 20

## Summer Session III 2024

Classes Begin, 8:00 AM (Monday)
July 1
Independence Day Holiday (Thursday)
July 4
Independence Day Holiday Makeup (Friday)
July 5
Classes End, 11:00 PM (Saturday)
August 10

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## Accreditations

Fairleigh Dickinson University is licensed by the State of New Jersey and is authorized to offer degree programs at the associate's, bachelor's, master's and doctoral level.
Fairleigh Dickinson University is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104, 267-284-5000. In addition to the accreditation held by all programs for academic purposes, specialized curricula have applied for and been granted approval by the following recognized professional agencies:

## Chemistry

American Chemical Society. This accreditation applies only to the Bachelor of Science program offered by the Maxwell Becton College of Arts and Sciences at the Florham Campus, Madison, New Jersey)

## Civil Engineering Technology

Engineering Technology Accreditation Commission of ABET (ETAC/ABET) (https://www.abet.org)

## Clinical Mental Health Counseling

The Clinical Mental Health Counseling (CMHC) program is fully accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

## Clinical Psychology

The Clinical Psychology PhD program is fully accredited by the American Psychological Association (APA).

## Computer Science

Computing Accreditation Commission of ABET (CAC/ABET) (https://www.abet.org). This accreditation applies only to the Bachelor of Science in computer science program offered by the Gildart Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Construction Engineering Technology

Engineering Technology Accreditation Commission of ABET (ETAC/ABET) (https://www.abet.org)

## Dyslexia Studies

Orton Gillingham Teacher Certification Program accredited by the International Multisensory Structured Language Education Council (IMSLEC) and recognized as meeting knowledge and practice standards by the International Dyslexia Association (IDA)

## Education

Council for the Accreditation of Educator Preparation (CAEP); NJDOE approval to offer teacher certification programs.

## Electrical Engineering

Engineering Accreditation Commission of ABET (EAC/ABET) (https://www.abet.org)

## Electrical Engineering Technology

Engineering Technology Accreditation Commission of ABET (ETAC/ABET) (https://www.abet.org)

## Hospitality

Accreditation Commission for Programs in Hospitality Administration (ACPHA) Hotel Schools of Distinction (HSD)
The accreditations apply to the Hospitality and Tourism Management (BA HTM) degree.

## Information Technology

Computing Accreditation Commission of ABET (CAC/ABET) (https://www.abet.org). This accreditation applies only to the Bachelor of Science in information technology program offered by the Gildart Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Mechanical Engineering Technology

Engineering Technology Accreditation Commission of ABET (ETAC/ABET) (https://www.abet.org)

## Nursing

The (baccalaureate degree program in nursing/master's degree program in nursing/Doctor of Nursing Practice program and/or post-graduate APRN certificate program) at Fairleigh Dickinson University is accredited by the Commission on Collegiate Nursing Education (https://www.aacnnursing.org/CCNE). Approval and accreditation from the New Jersey State Board of Nursing.

## Pharmacy

Fairleigh Dickinson University School of Pharmacy's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60503, 312-664-3575; Fax 312-664-4652.

## Physical Therapy

Physical therapist assistant - Committee on Accreditation in Physical Therapy Education

## Physician Assistant (PA) Studies

The ARC-PA has granted Accreditation-Provisional status to the Fairleigh Dickinson University Physician Assistant Program sponsored byFairleigh Dickinson University.

Accreditation-Provisional is an accreditation status granted when the plans and resource allocation, if fully implemented as planned, of a proposed program that has not yet enrolled students appear to demonstrate the program's ability to meet the ARC-PA Standards or when a program holding Accreditation-Provisional status appears to demonstrate continued progress in complying with the Standards as it prepares for the graduation of the first class (cohort) of students.

Accreditation-Provisional does not ensure any subsequent accreditation status. It is limited to no more than five years from matriculation of the first class.
The program's accreditation history can be viewed on the ARC-PA website at https://www.arc-pa.org/accreditation-history-fairleigh-dickinson-university/.

## Radiography

Joint Review Committee on Education in Radiologic Technology

## School Psychology

The Master's + Certification program has full approval from the National Association of School Psychologists (NASP) through 2025, as well as participating in the recent Council for the Accreditation of Educator Preparation (CAEP) accreditation process with the Peter Sammartino School of Education.

## Silberman College of Business

The business programs offered by Fairleigh Dickinson University through the Silberman College of Business have also received the prestigious Business Accreditation from AACSB International. The following degree programs are included in this accreditation:

- Bachelor of Science (include majors in Accounting, Business Administration, Entrepreneurship, Finance, Management and Marketing)
- Master of Business Administration
- Master of Science - Accounting
- Master of Science - Supply Chain Management
- Master of Science - Taxation
- Master of Science - Digital Marketing

The College's Finance curriculum in Wealth Management and Financial Planning has been approved by the Certified Financial Planner Board of Standards (CFP).
Silberman College's human resource management curriculum has been approved by the Society for Human Resource Management (SHRM).
Additionally, its undergraduate Accountancy programs have earned the endorsement by the Institute of Management Accountants (IMA).
Silberman College's finance programs also meet the standards and have applied for affiliated designation with the Chartered Financial Analyst (CFA) Institute.

## Accreditation State Authorizations

The US Department of Education requires all higher education institutions, other than federal institutions and tribal institutions, to comply with the laws and regulations of the states in which they operate. Higher education institutions also are required to provide contact information for the government agency in each state responsible for addressing student complaints.

## State Authorization Status for Distance Learning Programs

FDU distance learning programs are authorized through the National Council for State Authorization Reciprocity Agreements (NC-SARA) for all states with the exception of California. However, students from California may enroll in any FDU distance learning program. Under current law, Fairleigh Dickinson University is not required to seek formal approval to offer fully online distance learning programs, including those that include internships or practicums.

## Online Student Complaints

Fairleigh Dickinson University students enrolled in online programs should first attempt to resolve complaints with the appropriate FDU administrative or academic office. Students who have exhausted internal complaint procedures and remain unsatisfied may contact the New Jersey Office of the Secretary of Higher Education, which is the authorizing agency for Fairleigh Dickinson University's participation in NC-SARA or, for jurisdictions that do not participate in NC-SARA, the State Authorizing Agency of their state of residence.

## Grade Appeal Procedure

While it is recognized that faculty hold the right and responsibility to grant a grade, a student who receives a grade that he or she believes to be unwarranted may appeal that grade by engaging in the following process:

1. Within the first three weeks* of the start of the following full semester (fall or spring) in which the grade is received, the student shall have informally appealed the grade to the instructor. If no resolution of the matter results to the student's satisfaction, the student may initiate the following formal appeal process.
2. The student shall request in writing a meeting with the respective department chairperson or school director concerning the grade in question.
3. The chair or director shall report to the student on the resolution of the appeal within two weeks of that meeting.
4. If the issue is not resolved to the student's satisfaction, the student has one week to appeal in writing to the dean of the college in which the course is taught.
5. The dean shall review the entire matter with the student, the faculty member and/or the chairperson/school director involved.
6. If the dean feels there is no basis for a grade change, that determination is final and should be conveyed to the student in writing within two weeks of receipt of the student's appeal.
7. If the dean believes that an erroneous grade exists, the dean shall attempt to resolve the issue with the instructor. If, however, resolution is not achieved, the dean shall refer the case to the College Ad Hoc Grade Appeal Committee.
8. The committee is expected to convene within two weeks after receipt of the dean's referral.
9. Each College Ad Hoc Grade Appeal Committee shall consist of three faculty and one alternate selected by the college dean, and a professional staff person selected by the dean of students. Whenever possible, two of the faculty shall belong to the department or discipline of the instructor whose grading is in question.
10. The committee shall have the authority to recommend an appropriate course of action to the dean who shall have the authority to implement the recommendation. The recommendation shall be conveyed to all parties involved, in writing.
*In the case of a student who is being kept from either graduating or registering because of the grade in question, the process should begin immediately upon receipt of the grade report. If either the instructor or department chair/school director is unavailable, the student may proceed directly to the dean.

## Complaints Concerning Discrimination, Harassment and Related Misconduct

The University's Policy on Prohibited Discrimination, Harassment and Related Misconduct applies to the conduct of, and protection of, University faculty, staff, administrators, supervisors, employees, students,
volunteers, guests, patrons, independent contractors, or clients and visitors of the University. This Policy provides for the prompt and equitable resolution of reports of Prohibited Conduct.
The University has designated the Associate Vice President of Human Resources to serve as the University's Title IX Coordinator. The Title IX Coordinator has primary responsibility for administering its Policy on Prohibited Discrimination, Harassment and Related Misconduct and assuring the University's compliance with Title IX, VAWA, and their state counterparts.
University Title IX Coordinator:
Rose D'Ambrosio, Vice President for Human Resources
dambrosi@fdu.edu
(201) 692-2706

Dickinson Hall, Mail Code: H-DH3-05
1000 River Road
Teaneck, NJ 07666
For Concerns or Complaints Other than Grade Appeals or Discrimination, Harassment and Related Misconduct:

Please contact the Office of the University Provost and Senior Vice President for Academic Affairs:
Dickinson Hall, Mail Code H-DH1-01
1000 River Road
Teaneck, NJ 07666

## Contact Information for Student Complaints by Jurisdiction

Fairleigh Dickinson University students should first attempt to resolve complaints with the appropriate FDU administrative or academic office. Students who have exhausted internal complaint procedures and remain dissatisfied may contact the New Jersey Office of the Secretary of Higher Education, which is the authorizing agency for Fairleigh Dickinson University's participation in NC-SARA or, for jurisdictions that do not participate in NC-SARA, the State Authorizing Agency of their state of residence.

## New Jersey

Office of the Secretary of Higher Education
20 West State Street
4th floor, PO Box 542
Trenton, NJ 08625-0542
609-292-4310 or 609-292-8052
https://www.state.nj.us/highereducation/SARA.shtml

## California

Bureau for Private Postsecondary Education
P.O. Box98081

West Sacramento, CA 95798-0818
916-431-6959 or bppe@dca.ca.gov

## Colleges and Schools

## Maxwell Becton College of Arts and Sciences

Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and Vancouver Campus, Vancouver, British Columbia, Canada<br>\section*{Benjamin Rifkin, Dean}

The Maxwell Becton College of Arts and Sciences deepens students' understanding of their chosen fields, while teaching them to communicate and reason clearly and effectively. The College is committed to helping students advance their careers or continue studies for higher degrees.
In addition to the programs of study and departments listed, the college houses the Hispanic Center and Programs in Language, Culture and Professional Advancement.

## Undergraduate Programs of Study

- Art (BA) (Metropolitan Campus only)
- Concentrations: computer art and design, graphic art and design
- Biochemistry (BS)
- Concentration: prepharmacy (Florham Campus only)
- Biology (BS)
- Florham Campus Concentrations: anatomy and physiology, cellular and molecular biology, ecology and environmental biology
- Metropolitan Campus Concentrations: anatomy and physiology, biotechnology, cellular and molecular biology, ecology and environmental biology
- Chemistry (BS) (Metropolitan and Florham campuses only)
- Communication (BA)
- Concentrations: human communication, multimedia journalism, public relations
- Computer Science (BS) (Florham Campus only)
- Concentrations: cybersecurity, data science, game development
- Creative Writing (BA) (Florham Campus only)
- Criminal Justice (BA) (Metropolitan Campus only)
- Criminology (BA) (Florham Campus only)
- Film and Animation (Animation) (BA) (Florham Campus only)
- Concentrations: 3D animation, 2D animation, video game animation
- Film and Animation (Film) (BA) (Florham Campus only)
- Concentrations: cinematography, directing, postproduction, producing
- Fine Arts/Studio Arts (BA) (Florham Campus only)
- Government and Politics (BA)
- Concentrations: global politics (Florham Campus only), international affairs (Metropolitan Campus only), legal studies (Florham Campus only)
- Graphic Design (BA) (Florham Campus only)
- Concentrations: illustration, print design, web design
- History (BA) (Florham Campus only)
- Humanities (BA) (Metropolitan and Florham campuses only)
- Individualized Studies (BA) (Metropolitan and Vancouver campuses)
- Liberal Arts (AA) (online only)
- Liberal Arts (AA) (Hispanic Center)
- Literature (BA) (Metropolitan and Florham campuses only)
- Marine Biology (BS) (Metropolitan Campus only)
- Mathematics (BA) (Florham Campus only)
- Concentrations: actuarial science, computer science, financial mathematics
- Philosophy (BA) (Florham Campus only)
- Science (BS) (Metropolitan Campus only)
- Sociology (BA) (Florham Campus only)
- Theater Arts (BA) (Florham Campus only)
- Concentrations: acting, design and technical theater, directing, musical theater, theater studies


## Graduate Programs of Study

- Animation (MA) (Florham Campus only)
- Animation (MFA) (Florham Campus only)
- Biology (MS) (Metropolitan Campus only)
- Concentrations: biotechnology, business
- Chemistry (MS) (Florham Campus only)
- Chemistry with Pharmaceutical Science Concentration (MS) (Metropolitan Campus only)
- Communication (MA) (Florham Campus only)
- Cosmetic Science (MS) (Metropolitan Campus only)
- Creative Writing (MFA) (Florham Campus only)
- Creative Writing and Literature for Educators (MA) (Florham Campus only)
- Criminal Justice (MA) (Metropolitan Campus only)
- Film (MFA) (Florham Campus only)
- Political Science (MA) (Metropolitan Campus only)


## Special Programs

- Hispanic Center
- Programs in Language, Culture and Professional Advancement


## Faculty \& Staff

## Administration

B. Rifkin, Dean
J. Boyd, Associate Dean

## Department of Biological Sciences

M. McClary, Chair; J. Salierno, Deputy Chair; J. Agugliaro, M. Akinyemi, A. Benzecry, M. El-Sherbeini, M. Ingala, I. Isquith, R. LoPinto, P. Melloy, E. Morton, E. Myers-Arnold, H. Parzer, N. Philips, J. Stout, A. Wallace, H. Winters

## Department of Chemistry, Biochemistry and Physics

J. Dougherty, Chair; M. Elshaer, Deputy Chair; G. Anderle, R. Barrows, S. Bashkova, J. Bogart, G. Dorata, B. Knorr, I. Kumar, M. Leonida, G. Nandikotkur, A. Teslja, C. Traba, G. Zhu

## Department of Communication

G. Radford, Chair; C. Caldiero, Deputy Chair, K. Dunsmore, C. Foster, K. Haspel, S. Latson, J. Lehr, T. LoPonte

## Department of Criminology and Criminal Justice

A. Shlosberg, Chair; E. Panuccio, Deputy Chair; D. Evans, J. Jones, J. Nowotny, M. Saad, M. Sacks

## Department of Literature, Languages, Writing and Humanities

M. Boyd, Chair; O. Avendano, P. Bazán, S. Belén-Ramos, P. Benson, J. Boyd, L. Corces, M. Cotto, K. Douglas, P.K. Durso, N. Ghosh, J. Gifford, O. Makridis, E. Oliveros, M. Oujo, G. Pastorino, A. Patrick, F. Pinto, B. Rabinowitz, E. Reid, K. Sammond, J. Scorza, C. Shanafelt, T. Swanzey, A. Velasquez, J. Wagner, G.S. Weinman, L. Winters

## Department of Mathematics and Computer Science

L. Khreisat, Chair; W.A. Antoine, N. Carrillo, I. Darwish, Y. Kazhdan, R. Mayans, J. Namazi, P. Penrice, R. Selig, K. Sharma, G. Singh. N. Sinha, M. Slaby, D.R. Tracy

## Department of Social Sciences and History

G. Darden, Chair; C. Rasmussen, Deputy Chair; F. Alonso, P. Burkholder, D. Cassino, F. Degiuli, M. Ferrans, R. Houle, L. Huertas, K. Kattelman, R. Nasser, R. Nisa, B. Peabody, S. Raphalides, W. Roberts, D. Rosen, J. Schiemann, L. Ultan

## School of the Arts

T. Rosen, Director; H. Libov, Chair and Director, MFA in Film; R. Barkley, Director, Animation and Video Game Animation Programs; R. Chace, Director, MA in Creative Writing and Literature for Educators; G. Cochrane, Codirector, Fine Arts/Studio Arts Program; S. Lents, Director of Theater Program; J. Moonelis, Codirector, Fine Arts/Studio Arts Program; J. O’Neil, Director of Graphic Design; R. Steinke, Director, MFA in Creative Writing; Y. Aronson; J. Cinco; A. Cohen; D. Daniel; D. Grand; N. Hennelly; E. Hoffman; D. Landau; C. Loewus; M. Proctor; M. Roberts; J. Shaw

## Silberman College of Business

Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and Vancouver Campus, British Columbia, Canada

## Pierre A. Balthazard, Dean

The Silberman College of Business is accredited by AACSB International - The Association to Advance Collegiate Schools of Business. AACSB is the premier business school accrediting body.
Silberman College is a tricampus college of the University, offering undergraduate and graduate programs at the Florham Campus, Madison, New Jersey; on the Metropolitan Campus, Teaneck, New Jersey; and the Vancouver Campus, British Columbia, Canada.
Silberman College seeks to instill in its students a superior level of knowledge and competence in business-related disciplines, inspiring them to exercise ethical leadership to strengthen and enrich sustainable organizations and communities. The College's faculty, staff, administration and alumni are committed to helping maximize students' preparation for professional success and mobility in a dynamic global business environment.
The College aims at achieving recognition as a leading provider of high-quality, innovative education in business and as a leader in the enhancement of the practice of business management through the applied research and professional activities of the faculty.
The College achieves its mission through:

- Undergraduate and graduate degrees offering a variety of relevant and in-demand specializations,
- Curricula focused on the educational growth of students and responsive to the needs of the business community,
- Teaching excellence in all its programs,
- Experiential and collaborative learning in small, interactive classes,
- Research capabilities that advance the theory and practice of business,
- Strong cocurricular programming focused on professional development and
- Close ties with alumni and the business community that facilitate securing internships and placement for students.


## Distinguishing Features of Silberman College

Distinguishing features of Silberman College's undergraduate academic programs include:

- Option to pursue a minor or a dual major,
- Outstanding academics,
- State-of-the-art finance/Bloomberg labs,
- Preparation for industry certifications,
- Unique study-abroad opportunities,
- Dual-degree option,
- Professional Development Program (PDP),
- Personalized academic advising,
- Relevant internship opportunities,
- $4+1$ option (students can earn both an undergraduate and a graduate degree in five years) and
- Cocurricular activities such as business-focused student organizations and student trips to business firms and institutions.

The College's Rothman Institute of Innovation and Entrepreneurship supports undergraduate and graduate business education, providing students with cross-disciplinary opportunities to explore the meaning and process of capitalism and free enterprise in the nation's economy.

## Undergraduate Programs of Study

- Accounting (BS)
- Business Administration (BS)

Optional concentrations: information systems, international business, professional selling and sales management

- Entrepreneurship (BS) (Florham Campus only)
- Finance (BS)

Optional concentration: financial planning and wealth management

- Management (BS)

Concentrations: human resource management, leadership

- Marketing (BS)

Optional concentration: digital marketing

## Graduate Programs of Study

- Master of Business Administration (MBA) Specializations
- Accounting
- Business Administration
- Finance
- International Business
- Management
- Marketing
- Pharmaceutical Management Studies (Florham Campus only)
- Supply Chain Management
- Master of Business Administration (MBA) for Executives (Florham Campus only)
- General Management
- Master of Science (MS) - Accounting
- Master of Science (MS) - Digital Marketing (online only)
- Master of Science (MS) - Supply Chain Management
- Master of Science (MS) - Taxation (online only)
- Saturday MBA

In addition to the above programs, the College offers a post-MBA graduate certificate. Students with an MBA may receive certification in a second major upon completion of an additional 12 required and elective credits for that major.

## Faculty \& Staff

## Administration

- P.A. Balthazard, Dean
- J.G. Almeida, Associate Dean for Graduate Programs
- JD Wischnevsky, Associate Dean for Undergraduate Programs
- M. Sakin, Executive Director, Placement, Outreach and Alumni Relations
- R. West, Director, Tax Program; Director, CFP® Registered Program


## Department of Accounting, Taxation and Law

R. West, Chair; D. Collier, L. Mandel, S. McGregor, H. Rozen, V. Sampath, J. Schiff, Y. Yan

## Department of Economics, Finance and International Business

K. Denning, Chair; P. Anastasopoulos, K. Betz, J. Bulsiewicz, P. Cozza, F. Englander, R. Kjetsaa, H. Li, M. Montasser, Z. Nie, S. Tuluca, L. Wang, X. Yang

## Department of Management and Entrepreneurship

G.E. Jones, Chair; J.G. Almeida, S. Behson, D. Celentano, G. Farias, T. Hansbrough, J. Harmon, E.J. Ko, I. Krysa, I. Mercer, O. Nwachukwu, D. Scotti, JD Wischnevsky

## Department of Marketing, Information Systems and Decision Sciences

L. Qin, Chair; A. Bazargan, G. Bronson, I. Cane, R. Chandrashekaran, Y. Demotta, O. Groth, J. Hsu, M. Kieff, Y. Kim, W. Kuang, J. Reid, X. Tan, O. Topaloglu, Z. Wang, K.P. Yoon, W. Zhang

## Rothman Institute of Innovation and Entrepreneurship

D.G. Caldwell, Executive Director

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# Lee Gildart and Oswald Haase School of Computer Sciences and Engineering 

Metropolitan Campus, Teaneck, New Jersey; Florham Campus, Madison, New Jersey; and Vancouver Campus, British Columbia, Canada

## Alfredo Tan, Director

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers 11 bachelor's and seven master's degree programs in the various high-paying and high-demand fields of computer science, cybersecurity, engineering, engineering technology, electronic commerce, information technology, management information systems and mathematics. Seven of the bachelor's degree programs offered at the Metropolitan Campus are accredited by various commissions of the Accreditation Board for Engineering and Technology, Inc. (ABET). In particular, the BS in computer science and the BS in information technology programs are accredited by the Computing Accreditation Commission (CAC) of ABET; the BS in Electrical Engineering program by the Engineering Accreditation Commission (EAC) of ABET; and the B.S in Civil Engineering Technology, the BS in Construction Engineering Technology, the BS in Electrical Engineering Technology and the BS in Mechanical Engineering Technology programs by the Engineering Technology Accreditation Commission (ETAC) of ABET (https://www.abet.org). In addition, GHSCSE's BS in Civil Engineering program was reviewed by an EAC-ABET team in October 2021, regarding its application for inaugural accreditation, and the result will be announced by the EAC-ABET in August 2022. Likewise, GHSCSE has applied for inaugural accreditation of its BS in Mechanical Engineering program with EAC-ABET, and the accreditation review visit of the program will be conducted in October 2022. ABET accreditations, when applicable, apply only to the programs offered on the Metropolitan Campus by Gildart Haase School of Computer Sciences and Engineering (GHSCSE) and not on any other campuses of Fairleigh Dickinson University (FDU), including the Florham Campus and the Vancouver Campus.
In addition, students completing either the BS in computer science program with a concentration in cybersecurity and information assurance or the BS in information technology program with a concentration in security and forensics are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from the Center for Cybersecurity and Information Assurance (CCIA) at Fairleigh Dickinson University (FDU). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education. GHSCSE also offers 13 accelerated and combined-degree (undergraduate/graduate) programs, enabling students to save time and money, expanding their career opportunities and giving them a competitive edge in the job market.
GHSCSE is based on the Metropolitan Campus, in Teaneck, New Jersey, which is near New York City. New Jersey and New York are home to many high-tech companies and businesses, which employ hundreds of thousands of computer professionals, engineers, technologists and mathematicians. GHSCSE offers 17 programs at the FDU Metropolitan Campus as listed below. It also offers the MS in computer science program at the Florham Campus in Madison, New Jersey, in collaboration with the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences; and the BS in information technology and the MS in applied computer science programs at the Vancouver Campus in Vancouver, British Columbia, Canada.
GHSCSE prepares students for professional careers of global interest and importance. It produces highly skilled graduates to work in the high-tech industry in various professions with diverse roles that rank
among the top earners. These professions have ample career opportunities, very good average starting salary, excellent median long-term salary, robust job growth and great career fulfillment. The demand for these professions will further increase when the $\$ 1$-trillion Infrastructure Investment and Jobs Act is implemented over the next eight years.
The programs in the school enable students to learn and seek creative solutions to global issues and societal problems in technical coursework, emphasizing professional practice, ethics and responsibility. The computer and engineering laboratory experience is fully integrated with coursework. Students work in many cutting-edge laboratories. They also participate in field trips and competitions, work on interdisciplinary and real-world projects, intern at various companies and attend seminars on current trends in computer science, engineering and technology.
The state-of-the-art laboratories include the computer networking and system administration lab, the cyber defense and digital forensics lab, the apps development lab, green energy lab, industrial automation and robotics lab, CNC manufacturing lab, 3D printing lab, advanced mechatronics lab, materials testing and mechanical training lab, electromechanical systems lab, HVAC and fluids lab, electronics and communications lab, computer interfacing lab, soils mechanics lab, construction materials lab and several computer labs. GHSCSE is a member of the Cisco Networking Academy.
The school has received wide recognition from alumni, industry and professional associations. It has also received many grants from various organizations and state and federal agencies, including $\$ 2$ million from the state of New Jersey; $\$ 1.3$ million from the National Security Agency; $\$ 700,000$ from the Mechanical Contractors Association of New Jersey; and \$400,000 from the National Science Foundation, among others. GHSCSE is named through a $\$ 5$-million gift by Dr. Gregory Olsen, an FDU alumnus, trustee and benefactor, in honor of his two former FDU professors, Dr. Lee Gildart and Dr. Oswald Haase. More recently, Dr. Olsen donated another $\$ 5$ million as seed money to establish the Olsen Campus Center at the Metropolitan Campus.

## Undergraduate Programs of Study

- Civil Engineering (BSCE) (Metropolitan Campus)
- Civil Engineering Technology (BSCivET) (Metropolitan Campus)
- Computer Science (BS) (Metropolitan Campus)
- Concentrations: big data and analytics, cybersecurity and information assurance, game and mobile application development
- Construction Engineering Technology (BSConET) (Metropolitan Campus)
- Electrical Engineering (BSEE) Metropolitan Campus)
- Electrical Engineering Technology (BSEET) (Metropolitan Campus)
- Information Technology (BS) (Metropolitan Campus)
- Concentrations: network and system administration, security and forensics, webdevelopment technology
- Information Technology (BS) (Vancouver Campus)
- Minor: business
- Mathematics (BA) (Metropolitan Campus)
- Mathematics (BS) (Metropolitan Campus)
- Concentrations: applied mathematics, pharmaceutical biostatistics, pure mathematics
- Mechanical Engineering (BSME) (Metropolitan Campus)
- Mechanical Engineering Technology (BSMET) (Metropolitan Campus)


## Graduate Programs of Study

- Applied Computer Science (MS) (Vancouver Campus)
- Computer Engineering (MS) (Metropolitan Campus)
- Computer Science (MS) (Florham Campus and Metropolitan Campus)
- Cybersecurity and Information Assurance (MS) (Metropolitan Campus and Online)
- Electrical Engineering (MSEE) (Metropolitan Campus)
- Electronic Commerce (MS) (Metropolitan Campus)
- Management Information Systems (MS) (Metropolitan Campus)

In addition, the school offers 12 combined-degree programs at the Metropolitan Campus and one at the Vancouver Campus.
They are: BA in mathematics/MS in computer science, BA in mathematics/MS in cybersecurity and information assurance, BS in computer science/MS in computer science, BS in computer science/MS in cybersecurity and information assurance, BS in computer science/MS in management information systems, BS in Electrical Engineering (BSEE)/MS in computer engineering; BS in Electrical Engineering (BSEE)/MS in Electrical Engineering (MSEE), BS in information technology/MS in applied computer science (Vancouver Campus), BS in information technology/MS in computer engineering, BS in information technology/MS in computer science, BS in information technology/MS in cybersecurity and information assurance, BS in mathematics/MS in computer science and BS in mathematics/MS in cybersecurity and information assurance.

## Faculty \& Staff

## Administration

A. Tan, Director
H. Silver, Deputy Director of Engineering, Engineering Technology and Information Technology
M. Lewis, Associate Director of Engineering, Engineering Technology and Information Technology
Y. Tang, Associate Director of Computer Science, Management Information Systems and Mathematics

## Faculty

S. Abdelazim, V. Alizadeh, M. Azarderakhsh, M. Bouguerra, A. Casti, Z. Chen, W. Choi, W. Dai, M. Farag, S. Huddy, V. Janarthanan, F. Jnaid, Y. Kim, E. Kose, M. Lewis, Y. Liu, Z. Mao, K. Mondal, S. Mukherjee, A.R. Rao, H. Silver, C. Stubbs, A. Tan, Y. Tang, A. Vatsa, S. Verma, H. Zhao

## Peter Sammartino School of Education

## Metropolitan Campus, Teaneck, New Jersey; and Florham Campus, Madison, New Jersey Kathryn Spence, Interim Director

The Peter Sammartino School of Education offers accredited graduate programs for teacher certification in early childhood, and elementary and secondary education. Offerings include Master of Arts in Teaching (MAT) first certification programs, Master of Arts for certified teachers with a wide variety of specializations including English as a Second Language (ESL and bilingual), teacher of students with disabilities (TSD), reading/literacy specialist (LRS), Orton-Gillingham Dyslexia specialist and educational leadership (MA) (including supervisor and principal certification).
In fall 2020, a new program was launched: an EdD in higher education for those who wish to pursue a leadership position at a higher-education Institution.

The School of Education is located on the Metropolitan Campus in Teaneck, New Jersey; on the Florham Campus in Madison, New Jersey; and on selected community-college campuses throughout the state of New Jersey. It is nationally accredited by Council for the Accreditation of Educator Preparation (CAEP) providing value and national recognition as a school of quality when our students pursue careers in teaching, administration and leadership.

## Graduate Programs of Study

- Education for Certified Teachers (MA)
- Bilingual/Bicultural Education Specialist (New Jersey Certificate)
- Early Childhood Specialist P-3 (Second New Jersey Certificate)
- English as a Second Language
- English as a Second Language and Bilingual Certification (New Jersey Certificate
- Instructional Technology Certificate
- Literacy/Reading Specialist (New Jersey Certificate)
- Math Education Specialist
- Professional Studies in Education (PROST, FDU Certificate)
- Teacher of Students with Disabilities
- Educational Leadership (MA) (Principal/Supervisor Certification)
- Higher Education (EdD)
- Learning Disabilities (MA) (Metropolitan Campus only)
- Teaching (MAT) (New Jersey Certification)
- Early Childhood (P-3)
- Elementary Education K-6
- English as a Second Language
- Secondary Education K-12 (Biology, Chemistry, Physical Science, Earth Science, Math, English, Social Studies, Art, World Languages)
- Teaching English as a Second/Foreign Language (TESL/TEFL) (MA) (for international students; does not lead to a New Jersey teaching certificate)


## Faculty \& Administration

Administration

- K. Spence, Interim Director
- M. Singer, Deputy Director
- L. Ray, Director of EdD in Higher Education


## Faculty

J. Bornstein, A. Cardace, V. Cohen, S. Desai, J. Farrow, N. Hansen, K. Joshi, L. Ray, M. Singer, K. Spence, S. Suh, R. Westbrook, J. Wright-Kim

# International School of Hospitality, Sports, and Tourism Management 

Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and Vancouver Campus, British Columbia, Canada

## John Niser, Director

The International School of Hospitality, Sports, and Tourism Management offers a selection of programs in person, online and in "immersion studies" format that meet the varied needs of students' learning styles, career focus and academic-achievement ambitions.
The common thread of all these programs is that they offer a choice of lifestyle to students during and after their time in school that will define where they work, who they work with and what they work for.
The school emphasizes the connection between practicality and innovation in industries that value talent tuned into the future needs of its clients and businesses.
The school prides itself on high-level connections to industry leaders who guide and support the vision of creating future-oriented global trailblazers in the hospitality, sports and tourism sectors.
Recognizing that professionals in the hospitality, sports and tourism sectors are working in timeconstrained leadership roles, fully online options are available to students in some programs as well as in the school's innovative "immersion studies" which conjugates work and study simultaneously within prestigious brands.
It is a core philosophy of the school to offer groundbreaking curricula designed and taught by thought leaders and working professionals in the hospitality, sports and tourism sectors. The school steps out of the ordinary to serve the extraordinary potential of its students.

## Undergraduate Programs of Study

- Hospitality and Tourism Management (BA)
- On-campus Track
- Immersion Studies Track
- Individualized Studies (with Hospitality and Tourism Management Specialization) (BA) (Vancouver Campus)
- Sport Management (BA)


## Graduate Programs of Study

- Hospitality Management Studies (MHMS) (online or on campus)
- Sport Management (MSM) (online or on campus)
- Concentrations: coaching theory and strategy, high school athletic director (only available to New Jersey certified teachers), sports administration


## Faculty \& Staff

## Administration

- J. Niser, Director (All Campus Locations)
- J. Bachman, Associate Director, Vancouver Campus
- D. Hoover, Associate Director for Enrollment
- I. Gersh, Program Director, Hospitality Management
- J.C. Kim, Program Director, Sport Management (Metropolitan Campus)
- R. Lubisco, Program Director, Sport Management (Florham Campus)
- K. Pappas, Assistant to the Director
- L. Dry, Administrative Coordinator


## Faculty

J. Bachman, M. Barto, I. Gersh, M. Hawzen, R. Hladyk, D. Hoover, J.C. Kim, M. Lever, R. Lubisco, K. Pappas, H. Roy, M. Shakona

# Henry P. Becton School of Nursing and Allied Health 

Florham Campus, Madison, New Jersey; and Metropolitan Campus, Teaneck, New Jersey Annie Rohan, Dean

The Henry P. Becton School of Nursing and Allied Health includes the disciplines of nursing and allied health professions. Both disciplines offer undergraduate and graduate programs in the Metropolitan and Florham campuses and in some cases online. The Doctor of Nursing Practice is offered only on the Metropolitan Campus.
The graduate program in nursing offers a Master of Science in Nursing degree (MSN) with clinical and nonclinical tracks. The MSN program clinical track prepares BSN nurses as primary-care nurse
practitioners in adult gerontology, family and family psychiatric/mental health. The nonclinical tracks offered are administration, education, forensics and information-systems specialists.
The Bachelor of Science in Nursing program prepares professional nurses to provide comprehensive nursing care to persons and families in all environments where health care is required. Graduates of the program are eligible and prepared to take the NCLEX-RN for licensure as a registered nurse (NCLEXRN passing rates are 90 to 95 percent in the last three years).
Since 2007, the Henry P. Becton School of Nursing and Allied Health has offered a Doctor of Nursing Practice degree. The 33-credits curriculum consists of didactic, residency and a capstone project focusing on changing practices in nursing practice and education.
The baccalaureate degree program in nursing/master's degree program in nursing/Doctor of Nursing Practice program and/or post-graduate APRN certificate program at Fairleigh Dickinson University are accredited by the Commission on Collegiate Nursing Education.
The allied health professions include undergraduate, graduate and doctoral programs. The graduate program offers a master's degree in medical technology. The Doctor of Physical Therapy Program is a joint offering with Rutgers University. In this program, students will receive a joint degree from Fairleigh Dickinson University and Rutgers University.

## Undergraduate Programs of Study

- Allied Health Technologies (BSAHT)

Concentrations: health science (Metropolitan Campus only), radiologic technology (Florham Campus only)

- Clinical Laboratory Sciences (BS)
- Health Information Management (BS)
- Health Studies (BS)
- Medical Imaging Science (BS) Concentrations: cardiovascular sonography, diagnostic medical sonography
- Medical Technology (BS)
- Nursing (BSN)
- Radiography (AS) (Metropolitan Campus only)
- Radiologic Technology (BS) (Metropolitan Campus only)
- RN to BSN (with and without associate degree) (Metropolitan Campus only)
- RN to BSN to MSN (Metropolitan Campus only)


## Graduate Programs of Study

- Medical Technology (MS)
- Nursing (MSN) (Metropolitan Campus only)
- Nursing Education (MSN) (online only)
- Family Nurse Practitioner (MSN) (online only)
- Nursing (RN-MSN) (online only)
- Nursing Practice (DNP) (Metropolitan Campus only)
- Physical Therapy (DPT)
- Post Master's Certificate (Metropolitan Campus only)
- Post Baccalaureate (MSN-DNP) (Metropolitan Campus only)


## Faculty \& Staff

Administration

- A. Rohan, Dean
- S. Colon Cabassa, Associate Director, Metropolitan Campus Undergraduate Nursing Programs
- M. Rossignol, Associate Director, Florham Campus Nursing Programs
- M. Rubin, Associate Director, Allied Health Professions
- B. Yu, Associate Director, Graduate Programs
- M. Vargas, Coordinator, DNP Program
- F. Millman, Coordinator, Online Program with Wiley


## Faculty

J. Couper, L. Gabriele, E. Graulich, M.S. Guttman, C. Jasko, L. Kelly, F. Millman, M. Molloy, P. Nimoh, A. Owes, O. Oyedele, S. Palmer, M. Phillips, J. Regan-Livingston, M. Sperling, P. Ukaigwe, C. Werther

## School of Pharmacy and Health Sciences

Florham Campus, Madison, New Jersey (230 Park Avenue, Florham Park, New Jersey)

Anastasia Rivkin, Dean
The School of Pharmacy and Health Sciences offers an innovative Doctor of Pharmacy program along with newly created programs - public health, social work, physician assistant studies and occupational therapy.
The school's PharmD program is now approaching its 10th year of enrollment and has produced a diverse group of graduates who are leading the way into the future of pharmacy. This dynamic program of study integrates the very best practices in pharmacy education today. Students will:

- Have the option to specialize in a concentrated area of study and earn a master's-level degree concurrently with the PharmD degree.
- Participate in new partnerships with pharmacy leaders in industry, retail, government and hospitals who will provide mentoring, guidance and resources.
- Benefit from the strengths of a small college environment, yet learn from top-tier faculty in new facilities specifically designed for the School of Pharmacy and Health Sciences.

The fully online, accelerated Master of Public Health program offers students the opportunity to participate in an interactive, online classroom, where they begin their program with a selection of core courses followed by a curriculum specific to several professional tracks. The program features flexible schedule options, and throughout each semester, students gain hands-on experience working with public health tools through group interactions involving case studies and integrated care groups that focus on interprofessional education.

The Master of Social Work is a fully online program that provides a competency-based education, preparing students to work as an advanced social-work practitioner capable of leading developmental efforts in both public and private social service arenas. It includes extensive field practicum experience.
FDU has applied for Accreditation - Provisional from the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA). FDU anticipates matriculating its first class in January 2022, pending achieving Accreditation - Provisional status at the September 2021 ARC-PA meeting. Accreditation - Provisional is an accreditation status granted when the plans and resource allocation, if fully implemented as planned, of a proposed program that has not yet enrolled students appear to demonstrate the program's ability to meet the ARC-PA Standards or when a program holding accreditation-provisional status appears to demonstrate continued progress in complying with the Standards as it prepares for the graduation of the first class (cohort) of students. In the event that Accreditation - Provisional status is not achieved, the program will not start in January 2022.

The PA program developed a two-and-a-half-year curriculum leading to a Master of Science (MS) in PA studies. The curriculum encompasses a 12 -month Didactic Phase that includes classroom and laboratory instruction in the medical sciences, clinical medicine, clinical and procedural skills, professional topics and medical research.

The entry-level occupational therapy doctoral degree program has applied for accreditation by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929, with telephone number (301) 652-2682. Its web address is https://www.acoteonline.org.

The program must be granted Candidacy Status, have a preaccreditation review, complete an on-site evaluation and be granted Accreditation Status before its graduates will be eligible to sit for thenational certification examination for the occupational therapist administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, theindividual will be an Occupational Therapist, Registered (OTR). In addition, all states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOTCertification Examination. Note that a felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

The occupational therapy doctorate is offered as both a first-professional and post-professional program. The first-professional degree is intended for students completing their bachelor's degree and seeking a first career in occupational therapy at the doctoral level.

The online post-professional doctorate in occupational therapy program is for existing occupational therapy professionals and can be completed within 14 months in a fully online classroom. The interdisciplinary curriculum features evidence-based courses guided by a faculty of experienced educators with professional backgrounds in the field. Their personalized attention along with flexible online course options will allow students to learn at their preferred pace while balancing their education with their fulltime personal and professional responsibilities.

## Graduate Programs of Study

- Health Sciences (MHS)
- Occupational Therapy (First-professional Doctorate)
- Occupational Therapy (Post-professional Doctorate) (online only)
- Pharmacy (PharmD)
- Physician Assistant (MS)
- Public Health (MPH) (online only)
- Social Work (MSW) (online only)


## Faculty \& Staff

## Administration

- A. Rivkin, Dean
- B. Rossi, Associate Dean for Strategic Initiatives and Community Partnerships
- L. Rozaklis, Assistant Dean for Assessment, Accreditation and Strategic Planning
- C. Sandifer, Associate Dean for Student Affairs and Administrative Operations
- J. Shtaynberg, Assistant Dean for Experiential Education
- T. Templin, Executive Director for Admissions and Enrollment Operations
- Y. Guo, Chair of Department of Pharmaceutical Science
- J. Kalabalik-Hoganson, Chair of Department of Pharmacy Practice
- B. Berić-Stojšić, Director of Master of Public Health Program
- J. Bucchio, Director of Master of Social Work Program
- I. Lazzarini, Director of Occupational Therapy Doctorate Program
- N. Lowy, Director of Physician Assistant Program


## Faculty

B. Berić-Stojšić, J. Bucchio, N. Campbell, A. Carbone, H. Cho, Z. Clay, A. Cole, C. Deocera, E. Dikun, A. Dushenkov, S. Falbaum, K. Frey, A. Gallipani, Y. Guo, J. Han, C. Inteso, O. Iwuchukwu, P. Jungsuwadee, J. Kalabalik-Hoganson, E. Kaiser, E. Kida, D. Kim, E. Kwon, D. Lau, I. Lazzarini, M. Leibfried, N. Lowy, A. Mehta, C. Merckx, C. Mueller, A. Nogid, A.E. Özdener-Poyraz, K. Patel, S. Patel, N. Pirozzi, A. Rivkin, M. Rota, N. Ryba, M. Slugocki, C. Stanford, J. Sullivan, G. Vaidean, L. Westrich, A. Zelinski, N. Zmuda

## School of Psychology and Counseling

Metropolitan Campus, Teaneck, New Jersey; and Florham Campus, Madison, New Jersey
Benjamin D. Freer, Director

The School of Psychology and Counseling offers undergraduate and graduate programs at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey. The undergraduate program emphasizes a broad understanding of the key fields within psychology while offering opportunities for career-oriented programs. The school stresses experiential and field-based learning through internships, student-directed research, faculty-directed research and community service that supplement academic instruction. The school is committed to helping students to advance their careers or continue studies of advanced degrees. The graduate programs develop professional psychologists and counselors who will be prepared for a successful career in diverse settings such as mental health, hospital/medical, research, governmental and business.

## Undergraduate Program of Study

- Psychology (BA)

Optional Tracks: behavioral neuroscience, consumer psychology, forensic psychology, mental health

## Graduate Programs of Study

- Clinical Mental Health Counseling (MA) - Accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP)
- Clinical Psychology (PhD) - Accredited by the American Psychological Association (APA)
- Clinical Psychopharmacology (postdoctoral MS)
- Forensic Psychology (MA)
- General/Theoretical Psychology (MA)
- Industrial/Organizational Psychology (MA)
- Postbaccalaureate Respecialization Track in Psychology
- School Psychology (PsyD)
- Advanced PsyD
- Traditional PsyD
- School Psychology (MA)


## Faculty \& Staff

## Administration

- B.D. Freer, Director
- A. Tasso, Deputy Director


## Faculty

S. Armeli, G. Bartoszek, C.A. Capuano, T. Conklin, D. DeNigris, A. Eisen, R. Griffo, N. Hamsho, E. Harrington, B. Johnson, J. Lachenmeyer, E. McGlinchey, R. McGrath, E. Oak, D. Pogge, R. Prentky, L. Raffaele Mendez, J. Romei, R. Santer, A. Tasso, G. Tortoriello, K. Viezel, V. Vitiello, A. Wagener, G. Winters, M. Yun, J. Zibulsky

## School of Public and Global Affairs

Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and Vancouver Campus, British Columbia, Canada

## Peter J. Woolley, Founding Director

The School of Public and Global Affairs is distinguished by project-based learning in multinational classes led by accomplished practitioners focusing on issues of both local and global importance. The school also includes the nationally recognized FDU Poll.
Its master's programs prepare students to make an immediate impact in the workplace and excel within their industry. All courses are taught by expert faculty who hold advanced degrees and readily share their professional knowledge and networks. Students may be eligible for advanced standing due to prior learning experiences, helping them earn their degree even more quickly and affordably.

## Graduate Programs of Study

- Administrative Science (MAS)
- Cyber and Homeland Security Administration (MS)

Concentrations: leadership, terrorism and security studies

- Global Affairs (MA)
- Higher Education Administration (MA)

Concentrations: institutional risk administration, intercollegiate sports administration, on-campus student administration

- Public Administration (MPA)

Specializations: global affairs, global transportation management, health care management, public management, public policy

The school also offers graduate certificates that are designed to meet the continuing educational and professional-development needs of practitioners and students. Certificates are offered on-campus, online and at off-site locations. They can be completed as an individual credential or incorporated into a related master's degree for those meeting the program admission requirements. Certificates are six courses (18 credits). Students in any of the master's programs are permitted to apply their courses toward one degree and also toward graduate certificate(s). Students are encouraged to incorporate a graduate certificate in their master's study plan.

## Faculty \& Staff

## Administration

- P.J. Woolley, Founding Director
- A. Garg, Associate Director for Vancouver Campus
- L. Nienstedt, Associate Director
- D. Cassino, Executive Director, FDU Poll
- R. Higginson, Director of Market Research, FDU Poll
- A.C. Innes, Assistant to the Director
- D. Sadowski, Senior Coordinator for Off-campus Programs


## Faculty

A. Adrignolo, B. Assadi, J. Buenahora, C. Bygrave, A. Garg, A. Javadi, E. Kovacs, P. Laubsch, C. Ozurumba, L. Rahal, R. Rosada, W. Schuber, T. Singdeo, W. Toms

## Special Programs (Maxwell Becton College of Arts and Sciences)

## Hispanic Center

Irene Oujo, Executive Director
The Hispanic Center under the Maxwell Becton College of Arts and Sciences offers programs that are designed to help Latino students achieve their college goals.

## Academic Programs

- Puerta Al Futuro ${ }^{\circledR}$ (Gateway to the Future ${ }^{\circledR}$ )

The program enables Spanish-speaking adults to learn English through free ESL courses and to earn an associate's and/or bachelor's degree through progressive all-Spanish to all-English coursework. Students can transfer in up to 64 credits from accredited, international universities (and possible additional credits from domestic institutions). Classes are offered in person at FDU's Metropolitan Campus in Teaneck, New Jersey, and online.

- Latino Promise Program®

The program is designed for Latino students who are fluent in English to receive a personalized approach to higher education. Students pursue a two-year, 60-credit Associate in Arts or Associate in Science degree. Graduates can go on to earn a baccalaureate degree through FDU's Bachelor of Arts Degree Completion Program or by transferring into a major program in an FDU college or school. This program is offered at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey

- HACER (Hispanics Achieving College Education Recognition)

The program provides a personalized approach to offer native Spanish-speaking, high-school students the opportunity to learn English through free ESL courses while earning an associate's degree on FDU's Metropolitan Campus, in Teaneck, New Jersey. Graduates can go on to earn a baccalaureate degree through FDU's Puerta Al Futuro® program or by transferring into a major program in an FDU college or school.

The Hispanic Center's programs are led by a highly talented and motivated group of people who are passionate about ensuring Latino students have the opportunity to reach their full potential at the university level.

## Administration

- I. Oujo, Executive Director
- T. Llallire, Director of Academic Programs
- R. Diaz, Associate Director of Puerta Al Futuro® Program
- H. Rivera, Associate Director of Latino Promise® and HACER (Hispanics Achieving College Education Recognition) Programs
- L.H. Flores, Coordinator for Avanza and Puerta Al Futuro® Programs
- I. Delgado, Recruitment and Retention Specialist
- R. Soto, Administrative Assistant


## Faculty

Faculty members are part of Maxwell Becton College of Arts and Sciences

## Programs in Language, Culture and Professional Advancement

Mutiara Mohamad, Director

Programs in Language, Culture and Professional Advancement (PLCPA) offers courses in English for Specific Purposes (ESP) for international students and culture classes, which are open to interested domestic students as well. The English for Professional Success (EPS) courses for international students took the place of English as a Second Language (ESL) courses starting in fall 2006. The EPS courses have a dual purpose: to ensure the academic as well as professional success of the international students. Students will be exposed to the different genres of academic and professional discourse in their different fields of study. The program is housed in Maxwell Becton College of Arts and Sciences.

## Placement Testing

While students may have achieved the TOEFL (Test of English as a Foreign Language) score or other proof of English-proficiency score required for admission, further development in English proficiency may be necessary to support academic achievement and to ensure effective progress in the student's chosen academic program. All incoming international students, unless exempt from testing, must be tested for placement during the orientation session. New international students should not assume that they are exempt from this English test, even if they have had many years of English education in their home countries or abroad. Students will be placed into or exempted from taking an EPS course based on the result of their placement test.

## Pre-University and Intermediate PreUniversity Program

Effective spring 2013, the FDU Pre-University Program (PUP) provides opportunities for international students with intermediate English skills who meet the University's academic admission standards but require additional support in academic English to take highly specialized English-language support courses in the first semester while they study and earn academic credit toward their bachelor's degree. Effective fall 2021, the FDU Intermediate Pre-University Program (iPUP) provides opportunities for international students with lower than intermediate English skills to take up to two semesters of intensive EPS courses before transitioning to taking courses in their specific major. While the bulk of courses for Pre-University students are EPS courses, students may earn up to 11 credits toward their undergraduate degree. Matriculated undergraduate students may be placed into this PUP EPS course based on their placement test.

## Matriculated Program

Undergraduate students who are placed into an EPS course must take the class and corequisite lab and will be charged tuition upon registration.

## EPS Courses

Students will take an EPS course that is relevant to their condition of admission.

- EPS0099 Academic Writing Skills (4.5 credits) (for Vancouver Campus only)
- EPS1004 Practical English I (4.5 credits) (for Metropolitan Campus only)
- EPS1005 Practical English II ( 4.5 credits) (for Metropolitan Campus only)
- EPS1006 Practical English III (4.5 credits) (for Metropolitan Campus only)
- EPS1007 Practical English IV (4.5 credits) (for Metropolitan Campus only)
- EPS1008 Academic Writing Skills (3 credits) (for Metropolitan Campus only)
- EPS1109 English for Occupational Purposes (3 credits)
- EPS1201 English for Professional Success: Global Exchange - New York City as a Classroom (3 credits)
- EPS1209 Advanced English for Occupational Purposes (3 credits) (for Metropolitan Campus only)
- EPS1219 Advanced English for Academic Purposes (1 credit) (for Metropolitan Campus only)
- EPS2202 NYC: One City, Many Cultures (3 credits) (for Metropolitan Campus only)

Each EPS course, except for EPS1201 English for Professional Success: Global Exchange - New York City as a Classroom, EPS1209 Advanced English for Occupational Purposes, EPS1219 Advanced English for Academic Purposes and EPS2202 NYC: One City, Many Cultures, has a corequisite lab. Students will only take one EPS course (unless placed into two sets of EPS courses). To exit the program, a student must meet the learning objectives set by the curriculum. Students who fail to meet the minimum standards required to pass the course will have to repeat the course. Upon exiting the program, undergraduate students will take the course WRIT1002 Composition I: Rhetoric and Inquiry.

## Application of Credits for EPS Courses

International undergraduate students can fulfill a free elective credit (upon approval of individual academic departments) or partially fulfill the Language and Culture Liberal Arts requirement upon the successful completion of the EPS course:

- Silberman College of Business: 3 credits may be applied as free elective.
- Other Metropolitan Campus programs: 3 credits may be applied to meet foreign-language requirements.


## For Information

Mutiara Mohamad, Director, Programs in Language, Culture and Professional Advancement Maxwell Becton College of Arts and Sciences

mutiara_mohamad@fdu.edu
201-692-2833

## Undergraduate Studies

## Academic Regulations

## Academic Integrity Policy

Students enrolled at Fairleigh Dickinson University are expected to maintain the highest standards of academic honesty. Students have the responsibility to each other to make known the existence of academic dishonesty to their course instructor and then, if necessary, the department chair, school director or the academic dean of their college. Course instructors have the added responsibility to state in advance in their syllabi any special policies and procedures concerning examinations and other academic exercises specific to their courses. Students should request this information if not distributed by the instructor.
Academic dishonesty includes, but is not necessarily limited to, the following:

1. Cheating - Giving or receiving unauthorized assistance in any academic exercise or examination. Using or attempting to use any unauthorized materials, information or study aids in an examination or academic exercise.
2. Plagiarism - Representing the ideas or language of others as one's own. A more complete description is listed below in the section titled "Plagiarism Described."
3. Falsification - Falsifying or inventing any information, data or citation in an academic exercise.
4. Multiple Submission - Submitting substantial portions of any academic exercise more than once for credit without the prior authorization and approval of the current instructor.
5. Complicity - Facilitating any of the above actions or performing work that another student then presents as his or her assignments.
6. Interference - Interfering with the ability of a fellow student to perform his or her assignments.

## Plagiarism Described

(Adapted from the Kirkwood Community College plagiarism policy distributed at "Critical Challenges in Distance Education: Cheating and Plagiarism Using the Internet" workshop - April 3, 2003).
As defined by the Council of Writing Program Administrators, plagiarism "occurs when a writer deliberately uses someone else's language, ideas or other original (not common-knowledge) material without acknowledging its source." ("Defining and Avoiding Plagiarism: The WPA Statement on Best Practices." https://www.wpacouncil.org/positions/WPAplagiarism.pdf)
Plagiarism can occur in the following ways: (From the Newark Academy Plagiarism Statement.)

- Using text from another source (e.g. websites, books, journals, newspapers, etc.) without documenting the source;
- Using direct quotation from a text without quotation marks, even if the source has been cited correctly;
- Paraphrasing or summarizing the ideas or text of another work without documenting the source;
- Substituting a word or phrase for the original while maintaining the original sentence structure or intent of the passage;
- Using graphics, visual imagery, video or audio without permission of the author or acknowledgment of the source;
- Translating text from one language to another without citing the original work;
- Obtaining packaged information, foreign language translation or a completed paper from an online source and submitting it as one's own work without acknowledgment of the source; and
- Presenting the work of another student as one's own.

Fairleigh Dickinson students are responsible for authenticating any assignment submitted to an instructor should the instructor request it. Students must be able to produce proof that the assignment they submit is actually their own work. Therefore, students must engage in a verifiable work process on all assignments:

- Keeping copies of all drafts of work;
- Making photocopies of research materials (including downloads from websites);
- Writing summaries of research materials;
- Keeping Writing Center receipts;
- Keeping logs or journals of their work on assignments and papers; and
- Saving drafts or versions of assignments under individual file names on a computer, external drive or other source.

In addition to requiring students to authenticate their work, Fairleigh Dickinson University instructors may employ various other means of ascertaining authenticity - such as using search engines to detect plagiarism, using external plagiarism-detection services, creating quizzes based on student work and requiring students to explain their work and/or process orally. The inability to authenticate work is sufficient grounds for a charge of plagiarism.
If subsequent evidence of plagiarism should be found after a grade has already been assigned, instructors have the right to lower the grade and/or apply one of the sanctions listed below.

## Sanctions

Any student violating academic integrity will, for the first offense, receive one or a combination of the following penalties imposed by the faculty member:

- No Credit (0) or Failure for the academic exercise.
- Reduced grade for the course.
- Failure in the course.
- Recommendation for Academic Probation to the dean of the college or director of the school in which the student is registered.

The instructor shall file a notice of the penalty in the student's file maintained in the campus Office of Enrollment Services.
In cases of interference and complicity, whether or not the student is registered in the affected course, the incident and penalty shall be recorded in the student's file maintained in the campus Office of Enrollment Services.

For a subsequent violation of academic integrity, a student will be subject to any combination of the above sanctions, and, after due review by the academic dean according to the procedure below, one of the following:

1. Suspension from the University for one year. Readmission will be contingent upon the approval of the academic dean.
2. Dismissal from the University.
3. Dismissal from University identified on the student's academic transcript as a result of a violation of the Academic Integrity Policy.

## Procedure

The faculty member should submit an electronic violation report to facilitate the reporting of violations of the Academic Integrity Policy, which faculty should complete if they find a student in violation of the policy and choose to impose a sanction. When a faculty member believes that a student has violated the Academic Integrity Policy, the faculty member shall discuss the incident with the student as soon as possible. If after the conference, the faculty member determines that an act of academic dishonesty has occurred, the faculty member may impose the appropriate sanctions. Within five days of the faculty member's action, the faculty member shall notify his or her department chair/school director in writing of the circumstances of the violation and the imposed sanctions. Within five days the academic department/school shall notify the student via certified mail/return receipt of the sanctions and the appeals' procedures. Copies of the notice shall be sent to the chair of the department or director of the school of the student's major, the dean of the college in which the course is offered and the campus Office
of Enrollment Services. The student may appeal the instructor's decision as outlined below. Upon completion of the appeals process, the dean shall notify the student of the final disposition of the matter and the sanctions to be imposed, if any, via certified mail with copies to the faculty member, the department chair/school director and the campus director of enrollment services.

## Appeals Process

A student who is charged with violating the Academic Integrity Policy by an instructor may appeal in writing to the chair of the department or the director of the school or the dean of the college in which the alleged incident took place. The letter must state the specific grounds for the appeal. The student must submit a written appeal to the department chair or school director within 14 days of the receipt of the notification of the imposed sanctions. Failure to make an appeal within this 14 -day period shall constitute a waiver of the appeal right. Within 10 working days of receipt of the student's appeal, the chair/director will review the circumstances of the alleged violation with the student and the instructor and recommend upholding, modifying or dismissing the sanctions imposed by the instructor. The chair/director, within five working days, shall notify the student in writing via certified mail of the outcome, with copies to the instructor, the chair/director of the student's major, the academic dean of the college or academic director of the school in which the course is taught and the campus director of enrollment services. If it is determined that a violation of academic integrity did not occur, the student's final grade in the course cannot be based on the assumption of such violation. If the differences between the instructor and the student are not resolved by this review, the student may appeal the outcome to the dean of the college in which the course is offered.
Within 10 working days of the department chair/school director/college dean's notification, the student may submit a written appeal to the dean of the college in which the alleged dishonesty took place. The letter must state the specific grounds for the appeal. Upon receipt of the student's appeal, the dean shall provide the faculty member and his or her chair/director with a copy of the student's appeal. Within 10 working days the dean shall convene a five-person hearing committee consisting of a faculty member at large from the college in which the course is offered, the dean or school director or his or her designee, the vice president for student affairs or his or her designee, a faculty member from the department or school of the student's major and a student, selected by the vice president for student affairs, from the college in which the alleged dishonesty took place. The hearing will be chaired by the college dean or school director his or her designee. The role of the appeals committee is to review the record of the matter and determine whether a finding of academic dishonesty is founded and whether a sanction is consistent with the terms of this policy. The committee shall base its decision upon a review of the record but may meet with the student and the faculty member to secure additional information to help it in making a determination about the merits of the appeal. The committee can uphold, modify or dismiss the sanction imposed by the instructor. The college dean/school director shall notify the student of the committee's decision within five working days of the hearing. For a second offense of academic dishonesty, the academic dean can suspend or dismiss the student as indicated above.
For a sanction of suspension or dismissal imposed by the academic dean, the student may file a written appeal to the University provost/senior vice president for academic affairs within 10 working days of receiving the notification of the dean's decision. The University provost, or his or her designee, shall review the case within 10 working days of the receipt of the appeal. The University provost shall make the final decision, using any appropriate resource to assist in deciding the appeal. The University provost shall then notify all parties in writing of his or her final decision within five working days of his or her decision.

## Attendance

Students are required to attend class, arrive on time and participate in all courses for which they are enrolled. Class attendance and participation are essential to academic progress. At the beginning of each semester, instructors will express the specific attendance requirements for each course according to the policies of their academic departments and colleges. The policy will clearly delineate the number of permissible absences and the sanctions to be applied for excessive absences or tardiness. Each instructor will include the attendance policy on each syllabus to prevent any misunderstanding of the requirements for the course.

## Student Status

Student status shall be determined by the number of credits per fall or spring semester. A full-time student is one who registers for 12 or more credits, and a part-time student is one who registers for less than 12 credits. Half-time status is applied to students who register for a minimum of 6 credits but less than 12 credits. The only exception to this regulation will be those students in the final semester before graduation who need fewer than 12 credits to graduate and who normally have carried 12 or more credits per fall or spring semester while attending Fairleigh Dickinson University. These people will be considered full-time students.

## Class Standing

The designation of a student's class standing shall be determined by the number of credits completed. The divisions are as follows:

- 0-30 credits - Freshman
- 31-60 credits - Sophomore
- 61-90 credits or an earned associate degree and fewer than 96 credits - Junior
- 91 and beyond - Senior


## Residence Requirement

The University requires that each candidate for the baccalaureate degree complete a minimum of 25 percent of the credits required for the degree including at least 50 percent of the credits required for a major to be taken in the department offering the major. In the Silberman College of Business, a majority of required business core, restricted business core courses and a majority of courses in the major must be completed from the Silberman College of Business. The credits making the 50 percent are listed under the business core, restricted business core and major (discipline) headings.
The University requires that each candidate for the associate degree complete a minimum of 30 credits in residence including 50 percent of the credits required for the core coursework.

## Semester Credits and Normal Load

The normal credit load for an undergraduate student is 16 credits each semester. A credit is defined as one lecture hour or recitation a week, or two or three hours of laboratory a week for the duration of the semester. Additional credits may be taken according to the conditions described under "Acceleration" in this section.

## Credit Hour Definition

The University's calculation of credit hours for all credit-bearing courses and degree programs follow rules established by the New Jersey Secretary of Higher Education, which are consistent with the U.S. Department of Education's definition of a credit hour.

Section 9A:1-1.2 of the New Jersey Administrative Code provides that "Semester credit hour" means 50 minutes of face-to-face class activity each week for 15 weeks (or the equivalent attained by scheduling more minutes of face-to-face class activity per week for fewer weeks in the semester) in one semester complemented by at least 100 minutes each week of laboratory or outside assignments (or the equivalent thereof for semesters of different length).

## Maintenance of Satisfactory Achievement

It is the responsibility of students to be sure that they meet academic standards and that they remove any academic deficiency as quickly as possible. Students who encounter difficulty must confer with the course instructor and with their adviser without delay.

## Grades and Grade Points

A system of grade points is used to determine a student's general average. Weighted letters (see Cumulative Grade Point Ratio) for each credit hour are assigned grade points as follows:

- $\mathrm{A}=4.00$
- $\mathrm{A}-=3.67$
- $\mathrm{B}+=3.33$
- $\mathrm{B}=3.00$
- $\mathrm{B}-=2.67$
- $\mathrm{C}+=2.33$
- $\mathrm{C}=2.00$
- $\mathrm{C}-=1.67$
- $\mathrm{D}=1.00$
- $\mathrm{F}=0.00$

The grade point ratio of a student is equal to the total number of grade points divided by the total number of credits attempted.

- The value of other letter grades is as follows:
- $\mathrm{P}=$ Pass
- $\mathrm{NC}=$ No Credit
- $\mathrm{W}=$ Withdrawal
- I = Incomplete
- $\mathrm{AU}=\mathrm{Audit}$


## Regulations governing letter grades:

P-Pass - to be counted toward baccalaureate requirements but not averaged into student's cumulative grade point ratio (CGPR).
NC-No credit - not to be credited toward the baccalaureate requirements nor averaged into the CGPR.
W-Withdrawal - not to be credited toward the baccalaureate requirements nor averaged into the CGPR. A student may withdraw from a course through the ninth week of a semester (through the fourth week of a six-week summer session). After the ninth week (fourth week in a six-week summer session), withdrawal may be permitted for serious, documented, medical reasons or other unusual extenuating
circumstances. Students requesting late withdrawal should present evidence of unusual circumstances and/or medical documentation to the dean of the College.
I-Incomplete - this designation is not a substitute for a letter grade. It merely describes a student's temporary status in a course. It is to be given only in exceptional or emergency circumstances at the discretion of, and after consultation with, the instructor. Students have a responsibility for completing all work in a course on time. They have the added responsibility of notifying the instructor of circumstances preventing them from completing the requirements on time. Students will have up to the third week of the next full semester (excluding summer sessions) to complete the requirements. If the requirements have not been met within the prescribed period, the I automatically will become an F . The F is a letter grade and will count in the student's CGPR. See "Cumulative Grade Point Ratio."

## Pass/No Credit

Fully matriculated students are eligible to take courses for Pass/No Credit (P/NC) only if they have completed a minimum of 64 credits in residence and are in good academic standing, except for students enrolled in courses that use only such grading. Courses at Wroxton College may not be taken P/NC. Forms for this process are available in the Office of Enrollment Services and must be completed within the first three weeks of the semester (within the first week for summer sessions). A maximum of 12 credits of Pass/No Credit coursework may be applied toward the degree, with no more than 3 credits or one course (which ever is greater) taken in one semester. Such coursework can be taken in free elective courses only, not in major coursework or to satisfy curriculum requirements. Interpretations of curriculum requirements and elective courses are made by the dean's office of the student's college or director of the school. Courses for which a P grade is earned will count toward the credit requirement for the baccalaureate degree requirements. In neither case will the semester or cumulative grade point ratio (CGPR) be affected by a P or an NC grade. A weighted letter grade (See "Grades and Grade Points") will not be provided after the $\mathrm{P} / \mathrm{NC}$ option has been declared.
The student is counseled to apprise himself or herself of the professional and/or graduate school requirements prior to making a decision to elect a P or NC grade. Departmental and counseling service personnel are available to assist the student in making this decision.

## Repeated Courses

If a student repeats a course, both the first and second (third, etc.) grades will remain on the transcript, but only the last earned grade will be computed in the cumulative grade point ratio (CGPR). (Note: weighted NC, W, I and AU are not considered earned grades.) Any repeated course taken to remove the credits attempted and any grade points earned from a lesser previous grade must originally have been taken at Fairleigh Dickinson University and must also be repeated at Fairleigh Dickinson University.
If a student has been found guilty of academic dishonesty, the F grade for this course is not to be removed from the student's transcript or from the cumulative grade point ratio calculation when the course is repeated.
Also see Repeating Courses

## Cumulative Grade Point Ratio

The cumulative grade point ratio (CGPR) is computed by dividing the total number of grade points earned by the total number of credit hours attempted. This is one of the principal criteria for determining a student's academic performance.

## Evaluation Procedures

Instructors notify their students at the beginning of each semester or session as to the procedure used to evaluate student performance.

## Grade Appeal Procedure

While it is recognized that faculty hold the right and responsibility to grant a grade, a student who receives a grade that he or she believes to be unwarranted may appeal that grade by engaging in the following process:

1. Within the first three weeks of the start of the following full semester (fall or spring) in which the grade is received, the student shall have informally appealed the grade to the instructor. In the case of a student who is being kept from either graduating or registering because of the grade in question, the process should begin immediately upon receipt of the grade report. If either the instructor or department chair or school director is unavailable, the student may proceed directly to the dean. If no resolution of the matter results to the student's satisfaction, the student may initiate the following formal appeal process.
2. The student shall request in writing a meeting with the respective department chairperson or school director concerning the grade in question. For University Core appeals, the director of University Core on each campus will replace a department chair or school director at this level of appeal.
3. The chair or school director shall report to the student on the resolution of the appeal within two weeks of that meeting.
4. If the issue is not resolved to the student's satisfaction, the student has one week to appeal in writing to the dean of the College in which the course is taught. For University Core appeals, the University provost's designee will replace the dean at this level of appeal.
5. The dean/director shall review the entire matter with the student, the faculty member and/or the chairperson or school director involved.
6. If the dean/director feels there is no basis for a grade change, that determination is final and should be conveyed to the student in writing within two weeks of receipt of the student's appeal.
7. If the dean/director believes that an erroneous grade exists, the dean shall attempt to resolve the issue with the instructor. If, however, resolution is not achieved, the dean shall refer the case to the College Ad Hoc Grade Appeal Committee.
8. The committee is expected to convene within two weeks after receipt of the dean's referral.
9. Each College Ad Hoc Grade Appeal Committee shall consist of three faculty and one alternate selected by the college dean and school director and a professional staff person selected by the vice president for student affairs. Whenever possible, two of the faculty shall belong to the department or discipline of the instructor whose grading is in question.
10. The committee shall have the authority to recommend an appropriate course of action to the dean who shall have the authority to implement the recommendation. The recommendation shall be conveyed to all parties involved, in writing.

## Grade Reports

At the end of each semester the Office of Enrollment Services will mail to each student his or her grades for all courses taken during that semester. Students may also access grades online via WebAdvisor. Students must have a "NetID" (formerly Webmail) account in order to access WebAdvisor. For assistance
in obtaining a NetID (formerly Webmail) account call computing services at (201) 692-7111. If a student needs technical assistance once he/she has access to WebAdvisor, email webadvisoradmin@fdu.edu.

## Transcripts of Records

Transcripts of records are made available via an online ordering service at Transcript Ordering for a modest fee.

## Academic Standards

The University expects its students to make normal progress toward a degree. For most students, this means the attainment of at least a 2.00 grade point ratio for each semester. Students whose grade point ratio falls below 2.00 should immediately check with their advisers regarding their status. Maxwell Becton College of Arts and Sciences requires a 2.00 cumulative grade point ratio (CGPR) in major courses and an overall CGPR of 2.00 for graduation. Students at the Florham Campus who joined the University before fall 2021 must still adhere to the 2.33 major GPR requirement. The Henry P. Becton School of Nursing and Allied Health requires that students earn a grade point ratio of 3.00 for progression in the nursing courses.

## Scholastic Eligibility for Student Activities

Cumulative grade point ratios (CGPRs) for eligibility have been established for participation in student activities and athletics. All students should meet the following standards: a minimum overall CGPR of 2.00 for athletics and general membership in activities or organizations, a minimum overall CGPR of 2.15 to hold a major office, a minimum overall CGPR GPR of 2.50 and 12 FDU credits or more for membership in a Greek organization and a minimum CGPR of 2.50 to be a member of student government. In addition, athletes must meet eligibility standards as set by the National Collegiate Athletic Association (NCAA). Students who have knowledge of information that may affect their eligibility are required to disclose that information prior to participation. The Peter Sammartino School of Education requires a minimum 3.00 cumulative grade point ratio for participation in the QUEST program.

## Review of Student Records

The faculty of each College and School will review the records of full-time students at the end of the fall and spring semesters. The records of all part-time students will be reviewed after they complete blocks of 12 credits. Students showing 9 credits or more of W designates within 32 attempted credits will be subject to academic review. Such a pattern may indicate that a student is not making satisfactory progress toward the completion of undergraduate degree requirements.

## Probation and Academic Disqualification

A cumulative grade point ratio (CGPR) of at least 2.00 is required for graduation. A student will be placed on probation if the semester or CGPR falls below 2.00. A student will be continued on probation for one semester if the semester grade point ratio is 2.00 or higher, but the CGPR is below 2.00 . Thereafter, the student must maintain a semester grade point ratio of at least 2.20 until the CGPR reaches 2.00 to continue with a full academic load.

A student will be removed from probation if both the cumulative and semester ratios are 2.00 or higher.
A student on probation who does not fulfill the above requirements may:

1. Be continued in a full-time program with a reduced load of 12 credits for one semester. In such a case, it shall be the responsibility of the appropriate department chairperson, school director or college dean to assign a faculty adviser to that student to prescribe a remedial program of directed guidance suited to the student's need.
2. Be reduced to a part-time credit load with a probation credit load of not more than 9 credits per semester. The student must maintain a semester average of 2.20 or higher. Such a student may appeal to the appropriate office for transfer back to a full-time program for full credit only when the semester average is 2.20 or higher and his or her CGPR is 2.00 or higher.
3. Be suspended from the University. Students who are suspended from the University may apply for readmission under special conditions as described in "Readmission."
4. Be dismissed from the University. A student who is dismissed may not apply for readmission. The student is dropped from the University, both full-time and part-time programs.

## Credits Taken at Other Academic Institutions

Matriculated students may earn up to 15 credits at other institutions as long as these courses are taken during the summer or winter sessions and are equivalent in content and level to the courses they replace and/or are appropriate to the student's curriculum. Students enrolled for coursework at Fairleigh Dickinson University during summer or winter session may not enroll simultaneously for coursework at another institution. The maximum additional credits that may be earned at other institutions is limited by the number of transfer credits already accepted by FDU (Table 1). This limit shall not apply to programs of study formally approved by FDU in association with other institutions of higher learning. Students cannot repeat an FDU course at another institution.
Table 1

| Credits Initially Transferred into <br> FDU | Maximum Possible Additional Credits After FDU <br> Matriculation |
| :--- | :--- |
| $0-14$ | 15 |
| $15-29$ | 12 |
| $30-44$ | 9 |
| $45-59$ | 6 |
| $60-74$ | 3 |
| $75+$ | 0 |

Authorization to take courses offered by another institution must be requested by completing the appropriate form prior to the summer or winter session in which the course will be taken. The student must have a minimum cumulative grade point ratio (CGPR) of 2.00 to be eligible. This authorization may be granted for elective courses and courses not available at the University in time to meet graduation requirements, but normally not for core or required major courses.
For a course at an institution with which the University does not maintain an articulation agreement, the authorization for all students requires two signatures - one by the chair or program coordinator of the student's major department and a second one by the college dean or school director.

A course substituting for a lower-level course at Fairleigh Dickinson University may be taken at either an accredited two-year or four-year institution, but a course substituting for an upper-level course at Fairleigh Dickinson University must be taken at an accredited four-year institution.
$A$ minimum grade of C must be earned in any course taken in the above manner in order to be counted toward graduation at Fairleigh Dickinson University. Students matriculated at Fairleigh Dickinson University and granted permission to take course(s) at another academic institution will have courses transferred in without the grades calculated into the grade point ratio (GPR).
Students may obtain additional information regarding the approval process from their college dean or school director. Exceptions to these policies must be approved by the college dean or school director.

## Inter-Institutional Articulation Agreements

Authorization to take courses offered by another institution with which the University maintains an articulation agreement must be requested by completing the appropriate form and granted prior to the semester or session in which the course will be taken. Students enrolled for coursework at Fairleigh Dickinson University in any one semester may not enroll simultaneously for coursework at another institution.

The student must have a minimum cumulative grade point ratio (CGPR) of 2.00 to be eligible. The authorization requires two signatures - one by the chair or program coordinator of the student's major department and a second by the college dean or school director. Students matriculated at Fairleigh Dickinson University granted permission to take course(s) at another academic institution that has a professional inter-institutional agreement with FDU will have the courses transferred with the grades calculated into the grade point ratio (GPR).

## Change of Majors

Information on the procedures to change a major may be obtained in the campus Office of Enrollment Services.
When students find it necessary to change their curriculum, they may be relieved of grades of F and, at their discretion, grades of $D$ in subjects not required by the new curriculum, for the purpose of recalculating the grade point ratio only.
This privilege is extended only once for a student in his or her college career at Fairleigh Dickinson University and must be exercised not later than the close of the student's fourth semester. If granted, it is limited to a student who is matriculated with at least 16, but not more than 64 credits. It may not be used to circumvent prior faculty action. This process may be implemented under the following circumstances: 1) required by a faculty evaluation, or appeals committee or by the faculty of the students' major; or 2) recognition by the student, with the endorsement of one or more faculty members, including his or her adviser, department chairperson, school director or college dean, that the student has made a wrong choice and cannot hope to succeed in his or her present curriculum. This procedure is selective and not automatic.

## Application for Graduation

Students are required to notify the Office of Enrollment Services of their intention to graduate no less than eight months prior to graduation.
The link for the application to graduate is located in the student system WebAdvisor under Academic Profile. Click on the link: Application for Graduation.
Students are billed the Graduation Fee at the time of application.
Prior to filing for graduation, students should carefully review their degree requirements with their advisers and be prepared to fulfill any deficiencies. No student needing more than 6 credits to earn a
degree will be permitted to walk at graduation. Degrees are awarded September 1, February 1 and the day of commencement in May.

## Double Major

Students who intend to satisfy requirements for more than one major must declare the second major to the campus Office of Enrollment Services. Both majors will be recorded on the transcript.

## Policy on Earning a Second Undergraduate Degree

## Current Students Who Wish to Pursue a Second Baccalaureate Degree

The University shall recognize the completion of degree and major program requirements according to college or school. Since different degrees, such as the BA and the BS, have distinct curricular requirements and are substantially different, a student may elect to earn both degrees concurrently, in accordance with the following guidelines:

1. If a student has fully completed two major programs, and both programs are within the same type of bachelor's degree framework (BA or BS), then only one bachelor's degree shall be awarded with a double major recorded. In cases where the diploma specifies a major or program, two degrees shall be awarded.
2. If all General Education Requirements are met for one degree, they will be applied to both degrees, except for any additional requirements or prerequisites in the second major. If the General Education Requirements have not been met, any course satisfying the General Education Requirement for both degrees will be counted toward both.
3. Students interested in pursuing a double major or second undergraduate degree should consult with their adviser.
4. A student who wishes to pursue a second undergraduate degree must be in good academic standing.
5. A course from one major in a degree may not be substituted for a course in the major of the second degree without the permission of the college dean or director of the second major.
6. If at some point the student decides not to complete a second degree and all requirements have been met for one degree, the student shall earn the degree completed.

## FDU Alumni or Graduates from Another Institution Who Wish to Pursue a Second Baccalaureate Degree

Students who seek a second baccalaureate degree must:

1. Possess a baccalaureate degree from FDU or another regionally accredited institution.
2. Complete a minimum of 30 credits at FDU toward completion of the second degree if coming from another institution.
3. Complete a minimum of 18 additional credits at FDU toward completion of the second degree if they completed their first degree at FDU.
4. Complete all requirements for the second degree according to the college or school and major program involved. (Note: Equivalent general education and elective credits earned in the first baccalaureate degree will be evaluated in accordance with the FDU Transfer Policy, and they will be applied to the second degree if they were completed within seven years.)

## Secondary Areas of Concentration/Minors

A minimum of 15 to 18 credits as specified by the appropriate department or school must be completed successfully to satisfy the requirement for a secondary area of concentration/minor. Courses used to satisfy core and/or curricular requirements may be used to fulfill the requirements for a secondary area of concentration/minor.
For minors in the Silberman College of Business, see specific requirements at Business Minors.

## Honors and Dean's Lists

The Honors List and Dean's List are issued each semester and contain the names of students who have achieved a grade point ratio of 3.50 and 3.20 respectively. To be eligible, full-time students must complete a minimum of 12 credits during a semester. Weighted letter grades must be earned for all courses except for one that may be taken on a P/NC basis and may be included provided that a P grade is earned. Exceptions to the 12 -credit minimum are as follows: 1) full-time students who are in special programs of study such as the clinical internship for allied health majors; 2) students beyond 95 credits who can complete degree requirements with a reduced load. In these special instances, all courses must be taken on a weighted letter grade basis. Part-time students may qualify for the Honors List or Dean's List if they carry 6 or more credits each semester and achieve a grade point ratio of 3.50 and 3.20, respectively, for a minimum of 12 consecutive credits. Weighted letter grades must be earned for all courses except for one that may be taken on a $\mathrm{P} / \mathrm{NC}$ basis and may be included provided that a P grade is earned.

## Graduation Honors

A student whose cumulative grade point ratio (CGPR) for four years is 3.85 will receive his or her degree summa cum laude; if the CGPR is 3.67 , magna cum laude; if the CGPR is 3.33 , cum laude. Only weighted grades will be included in computing honors. Credits taken at Fairleigh Dickinson University and approved credits taken at other academic institutions after a student matriculates, with a minimum of 54 credits, will be used in this evaluation. Associate degree honors are awarded to students who achieve a 3.67 CGPR in two-year programs at Fairleigh Dickinson University.

## Acceleration

The normal time periods required for completion of the associate and baccalaureate degrees are two and four years, respectively. However, students may accelerate their programs and complete degree requirements in a shorter period by taking additional coursework, as available, during the summer and winter sessions and by taking more than the normal semester course load, subject to approval of an appropriate adviser. Additionally, students may receive credits by examination.

## Remediation

The University recognizes that some of its students require developmental coursework in areas such as writing and mathematics. These courses do not carry college credit toward the degree. The load involved in a remedial course shall be counted, to the extent permitted by applicable laws and regulations, as part
of a student's academic load for the purpose of determining fulltime status and other eligibilities that are based upon academic load. Placement in these courses may be determined by formal testing.

## Credits by Examinations

A student accepted by the University as a matriculant or prematriculant, and who has permission of a department chairperson or school director, may earn academic credit through:

1. College-Level Examination Program (CLEP). See Credit for Prior Learning.
2. The New York College Proficiency Examination Program. Information on the examinations offered and applications to take the examinations must be obtained from the New York College Proficiency Examination Program, the University of the State of New York, Education Department, Albany, New York 12210.
3. Other proficiency examinations approved in advance by the University. Forms to be used in requesting approval for credit by examination are available for matriculated students in the campus Office of Enrollment Services and for newly accepted students in the Admissions Office. Forms must be completed and submitted prior to examination registration.

A maximum of 60 credits may be earned through college proficiency examinations. Of the 60 credits, the total credits for general subject area shall not exceed 30 credits.
A New York College Proficiency Examination may be repeated once if the first grade is D or F. An examination in which a grade of C or B is received may not be repeated for a higher grade.

Credits earned through college proficiency examinations will be treated as transfer credits and labeled "credits by examination" on transcripts and are not used to calculate the CGPR. A student may not use an examination to pass a course that he or she has failed, nor may a student who is on probation or who is suspended take an examination.
The student will pay any fees required by the examining agency and in addition will pay a transfer fee to the University for each posting.
Credits toward teacher certification may be earned through College Proficiency Examination both in New York and New Jersey to satisfy requirements in general education in the teaching field and in professional education. No examination, however, is contemplated to replace the practice teaching requirements.

## Academic Leave of Absence

An academic leave of absence that permits a student to return without academic penalty may be granted only to a matriculated student with a CGPR of 2.00 or higher. A leave may cover only one semester with the privilege of renewal for one more consecutive regular semester.
A leave of absence may be granted for 1) medical, 2) financial, 3) employment and 4) military reasons. Verification in writing must be furnished where applicable by the physician, employer or other authority.
Authority to grant a leave of absence resides with the vice president for student affairs. To request a renewal, a student must submit an appeal in writing to the vice president for student affairs.

## Withdrawal

A student must notify the Dean of Students office of his/her intention to withdraw from study. The penalties for withdrawing on the first day of the semester, and after, are in the Withdrawal and Refund Schedule in the online catalog, on the reverse side of the registration and program change forms and in general information on Student Self Service.

Students who wish to return at a later date must reapply through the Admissions Office.

## Military Duty

When a currently enrolled student is called into military service during the first 12 weeks of a semester, he or she will receive a prorated return of fully paid tuition on courses carried at the time of withdrawal.

A student who has attended 12 or more weeks of a semester and who is called into military service will be granted the privilege of early examinations in his or her courses. Full credit and earned grades will be recorded if these courses are passed satisfactorily. Tuition will not be refunded if this option is exercised.

## Readmission

Those suspended from the University may apply for readmission after a lapse of at least one semester exclusive of the summer session. In these cases substantial evidence of readiness to resume college-level work must be submitted.
The request for readmission should be filed with the Admissions Office prior to August 1 for the fall semester and December 1 for the spring semester.
When a student returns to FDU after an absence of seven years or more, credit will not be recognized for courses in the student's major in which the student had previously received a grade of less than C (2.00). In addition, a student upon returning after a seven-year absence may opt, in writing, not to receive credit for any nonmajor courses in which the student had earned a grade less than $\mathrm{C}(2.00)$.
In that event, such courses will not be counted in the computation of the grade point ratio. The grades for the courses in question will remain on the student's transcript even though they will not be figured in the computation of the GPR.

## Honor Societies

Students admitted to Fairleigh Dickinson University with advanced standing may be eligible for admission to the University's Honor Societies, namely Phi Zeta Kappa and Phi Omega Epsilon, when they qualify according to the standards set by the societies. The credits taken at Fairleigh Dickinson University may include credits taken off campus with prior University approval as outlined under "Credits Taken at Other Academic Institutions."
Honor societies include:
Alpha Eta Society (Florham Campus only): Allied Health Professions National Honor Society. Eligibility for membership:

- Associate - those undergraduate allied health students working toward an associate degree who have complied with the following conditions:

1. They shall be enrolled in an allied health curriculum leading to an associate degree and shall be in their last semester of enrollment.
2. They shall have maintained an overall scholarship average of 3.50 or better (out of 4.00 ) while enrolled in the allied health program.
3. ot more than 10 percent of the graduating class of a specified program shall be invited to membership or, in those programs with fewer than 10 students, no more than one student will be invited to membership.
4. They shall have shown capacity for leadership and achievement in their chosen allied health field.
5. They shall have been recommended by members and approved by the deans of the allied health unit or their equivalents.

- Baccalaureate - Those undergraduate students working toward a baccalaureate degree who have complied with the following conditions:

1. They shall be enrolled in an allied health program leading to a baccalaureate degree and will be enrolled in their last semester.
2. They shall have maintained an overall scholarship average of 3.50 or better (out of 4.00 ) while enrolled in the allied health program.
3. Not more than 10 percent of the graduating class of a specified program shall be invited to membership or, in those programs with fewer than 10 students, no more than one student will be invited to membership.
4. They shall have shown capacity for leadership and achievement in their chosen allied health field.
5. They shall have been recommended by members and approved by the deans of the allied health unit or their equivalents.

Alpha Epsilon Rho (Florham Campus only): National broadcasting society. The National Broadcasting Society - Alpha Epsilon Rho, is a student and professional society of more than 85 chapters on college, university, community college and high school campuses. Through the years, the society has had as its purpose the goal of encouraging and rewarding scholarship and accomplishment among students of film and broadcasting, to establish meaningful communication between student and professionals and to foster integrity in the use of the powerful instruments of radio, television, film, cable and its many associated businesses and industries.

Alpha Kappa Delta: National honor society for sociology students. The society was founded in 1920 for the purposes of stimulating scholarship and promoting the scientific study of society. The organization was established to provide a forum for student and faculty interchange and paved the way for what has become an international organization dedicated to promoting, facilitating and recognizing academic scholarship. To date, more than 80,000 scholars have been initiated into the society, including those in the United States, Canada, China, Finland, the Philippines, Taiwan and Singapore.
Beta Beta Beta, Chapter of Omega Iota: National biological honor society. The society seeks to encourage scholarly achievement for undergraduate students who achieve superior academic records and who have an interest in the life sciences. The society emphasizes the stimulation of scholarship, dissemination of scientific knowledge and promotion of biological research. To be eligible for regular membership, students must major in biological science, complete at least one term of the second year of a four-year curriculum, complete at least three courses in biological science and have a grade point ratio of 3.20 or higher in those biology courses. In addition, the student must be in good academic standing with the University.
Beta Gamma Sigma (BGS): The only business honor society recognized by AACSB International - The Association to Advance Collegiate Schools of Business. BGS was founded as a national organization in 1913. The mission of BGS is to encourage and honor academic achievement and personal excellence in the study and practice of business. Membership in BGS is the highest recognition a student can receive in an undergraduate or master's business program accredited by AACSB International. To be eligible for membership, a student must rank in the upper 10 percent of the junior class, upper 10 percent of the senior class or upper 20 percent of the graduating master's class.
Epsilon Rho, Chapter of Sigma Theta Tau: International honor society in nursing. Baccalaureate nursing students 1) who have completed one-half of the required curriculum, 2) who have demonstrated
ability in nursing, 3) who have at least a 3.00 CGPR and 4) whose numbers do not exceed one-third of the total number expected to graduate in that class are eligible for membership.
Eta Kappa Nu (Metropolitan Campus only): The only electrical engineering honor society. The society speaks for electrical engineering scholars throughout the world. There are 152 college chapters in major institutions, including several in Europe and in South America. The top quarter of the junior class and top third of the senior class are invited each year to become members of the Theta Gamma Chapter at Fairleigh Dickinson University. To qualify, students must have a CGPR no lower than 3.20 and must have earned at least 45 credits at this University. Graduate students may join on recommendation of the electrical engineering school director and the faculty adviser.
Eta Sigma Delta: International hospitality management honor society. Eta Sigma Delta was originated in 1978 at the University of New Hampshire and currently has more than 90 active chapters worldwide. The Fairleigh Dickinson University, International School of Hospitality and Tourism Management Chapter was founded in 1981. Eta Sigma Delta (ESD) Honor Society has developed an important role within the Council on Hotel, Restaurant and Institutional Education (CHRIE) organization, which is the ESD parent organization. To be eligible for membership, FDU chapter students are required to have a grade point ratio of at least 3.00 and to take an active leadership role in the school and hospitality-related community service. Members are inducted in a ceremony held annually in November. At that time, they commit to performing acts of community service and outreach, as they demonstrate proactive leadership. For honorary members to be eligible, they must be hospitality/tourism professionals, faculty, administrators or other distinguished individuals who have made significant contributions to the field.
Omicron Delta Epsilon: International economics honor society. Eligibility for membership is based on a 3.00 grade point ratio or better with at least 12 credits in economics and a grade point ratio better than 3.00. Omicron Delta Epsilon is one of the largest international honor societies. Each New Jersey campus of Fairleigh Dickinson University has a chapter.
Omicron Lambda, Chapter of Lambda Pi Eta: Communication studies honor society. The goals of Lambda Pi Eta are to recognize, foster and reward outstanding scholastic achievement; to stimulate interest in the field of communication; to promote and encourage professional development among communication majors; to provide an opportunity to discuss and exchange ideas about the field; to establish and maintain close relationships and understanding between faculty and students; and to explore options for further graduate studies. To be eligible for membership, students must have completed 60 undergraduate credits, have a cumulative grade point ratio of at least 3.00 , have completed the equivalent of four communication courses, have a grade point ratio of at least 3.25 in these courses and currently be enrolled as a full-time student in good standing with the department, the college and the University.
Phi Alpha Theta: International honor society in history. Phi Alpha Theta is the highest-rated departmental honor society. Students with an average of 3.10 or better in history courses and an average of 3.00 in two-thirds of the remainder of their work are eligible for membership. Eligibility for honor societies for transfer students will be based on all work done at other accredited institutions and a grade point ratio at Fairleigh Dickinson University that meets the grade point ratio requirement for membership in the honor society.
Phi Omega Epsilon: Eligibility for membership in the University's senior honor society is established by completing at least 90 earned credits toward an undergraduate degree with a CGPR of 3.50. Of these 90 credits, the last 58 must have been taken at the University, and a CGPR of 3.20 must have been maintained for all of them. All the preceding requirements must have been fulfilled prior to the accumulation of 112 credits. Transfer students who are unable to fulfill the prerequisite 58 -credit requirement will be able to establish eligibility if they have taken at least 32 credits prior to the accumulation of 112 credits and if they have maintained a CGPR of 3.50 during their entire career at Fairleigh Dickinson.

Phi Zeta Kappa: Eligibility for membership in the University's junior honor society is established by completing at least the first 60 credits toward an undergraduate degree. Of these, 44 must have been earned at Fairleigh Dickinson and a CGPR of 3.20 must have been maintained for all of them. All the preceding requirements must have been fulfilled prior to the accumulation of 80 credits toward the undergraduate degree.
Pi Mu Epsilon: National honor society in mathematics. Students with an average of 3.20 or better in mathematics and an overall average of at least 3.00 are eligible for membership.
Pi Sigma Alpha: The Kappa Omicron Chapter of Pi Sigma Alpha. It receives into membership students of government, political science, public administration and international relations, when such students attain high standards of scholarship and academic distinction both in political science and in the sum of their academic work. Its chapters are established in colleges and universities of accredited and recognized standing that offer at least the prescribed minimum of work in political science.
Psi Chi: National honor society in psychology. Psychology majors who have attained a CGPR equivalent to or greater than 3.20 and a grade point ratio of 3.50 in psychology courses, and who have demonstrated high standards of personal behavior, are eligible for induction. Each psychology department also requires completion of a minimum number of psychology credits to be eligible. Information on the minimum credits for each department is available through the department chairperson or school director on each campus.
Sigma Tau Delta: International English honor society. The goals of Sigma Tau Delta are to confer distinction for high achievement in the study of literature in undergraduate, graduate and professional studies; provide, through its local chapters cultural stimulation on college campuses and promote interest in literature and the English language in surrounding communities; foster all aspects of the discipline of English, including literature, language and writing; promote exemplary character and good fellowship among its members; exhibit high standards of academic excellence; and serve society by fostering literacy. Candidates for undergraduate membership must have a minimum of two college courses in literature. The candidate must have a minimum of a B or equivalent average in literature and in general scholarship, must rank at least in the highest 35 percent of his/her class and must have completed at least three semesters or five quarters of college coursework.

Sigma Xi: The Scientific Research Society is an international scientific honor society, the aim of which is to encourage scientific research. Graduate and undergraduate students who have completed research projects are eligible for associate membership in the Fairleigh Dickinson University Club of the society. The club is authorized to elect associate members, which is by invitation and restricted to those who are actively engaged in research. The activities of the club include the sponsorship of lectures, discussions of scientific topics and the sponsorship of competition for the best student science papers. All activities of the society are free and open to the public. The society publishes the American Scientist, a magazine that is sent to all members.

## University Core Curriculum

Fairleigh Dickinson University requires a common University Core curriculum consisting of four integrated courses.

## ROTC (Reserve Officers' Training Corps)

Some students may wish to enroll in an ROTC program as part of their college experience.

## Major Religious Holy Days

The University respects the observance of major religious holy days by members of the campus community. Officers of administration and of instruction responsible for scheduling of required academic activities or essential services are expected to avoid conflict with such holy days as much as possible.

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## Financial Aid

(Material in this section is subject to change. Contact one of the campus Financial Aid Offices for the most current information.)

## General

Fairleigh Dickinson University administers academic and need-based funding from federal, state and University sources. Financial aid is available to qualified full-time and part-time matriculated students. New and returning students are encouraged to file the Free Application for Federal Student Aid (FAFSA) no later than February 15. The FAFSA must be filed EVERY year for which financial aid is requested.
Financial aid is processed annually and awards are based on continued financial need, enrollment status, availability of funds and demonstrated satisfactory academic progress. In addition, a student may not be in default and/or may not owe a refund on any Title IV and/or HEA loans or grants.
International students are eligible only for academic scholarships as well as athletic funding (as provided by the National Collegiate Athletic Association [NCAA] guidelines). International students are not eligible for federal, state or University need-based financial aid.
Students enrolled with Fairleigh Dickinson University at the Community College Partnership locations should reference the Community College Partnership Booklet designed to relay the unique financial aid information and processes particular to those academic programs. The booklet on University Partnerships is available from the Admissions Office at (201) 692-7310.
All available sources and types of academic and need-based funding are detailed throughout the "Financial Aid and Scholarships" section.

## University Funded Programs

## University Scholarships

Fairleigh Dickinson University funds an academic-based scholarship program.
The University offers a variety of academic scholarships, and all undergraduate applicants are automatically reviewed for scholarship along with their application for admission.

## Merit Scholarships

Merit scholarships range from $\$ 2,000.00$ to $\$ 25,000.00$ and are awarded for a maximum of four years. Students must maintain the appropriate grade point ratio in order to retain their merit scholarship.

## Phi Theta Kappa Scholarship

Any transfer students admitted to the University who are members of the Phi Theta Kappa Honor Society may be eligible for Phi Theta Kappa Scholarships. An applicant must submit a copy of the Phi Theta Kappa Membership Certificate to the Office of Admissions at the time of application. A minimum 3.00 grade point ratio must be maintained to renew eligibility for the Phi Theta Kappa Scholarship. A student must have completed his/her associate degree to be eligible. For more information about the Phi Theta Scholarship contact the Office of Admissions at (800) 338-8803.

## Transfer Scholarship

All transfer students admitted to the University who have completed or are in the process of completing a minimum of 24 college credits are automatically evaluated for Transfer Scholarships. For more information about the Transfer Scholarships contact the Office of Admissions at (800) 338-8803.

## Combined Degree Advantage Program

Students who are admitted or subsequently admitted to a $4+1$ combined degree program can earn their bachelor's plus master's degrees in five years. For a list of eligible programs and for more information, contact the Office of Admissions at (800) 338-8803.

## Athletic Scholarship

Athletic scholarships are available for male and female athletes at the University's Metropolitan Campus. All scholarship recipients are required to file the FAFSA application annually and are subject to the Division I rules and regulations of the National Collegiate Athletic Association (NCAA). For further information, contact the Metropolitan Campus Office of Athletics at (201) 692-2208.

## University Need-based Aid

Fairleigh Dickinson University offers need-based funding in addition to its extensive scholarship and grant program. Students wishing to apply for need-based University funding must file the FAFSA (Free Application for Federal Student Aid). To renew need-based funding, students must file the FAFSA no later than February 15, maintain satisfactory academic progress, maintain full-time enrollment and submit all requested documentation to the Office of Financial Aid.

## Fairleigh Dickinson University Grant

The University offers an FDU Grant for full-time students valued up to $\$ 25,000.00$ per academic year (traditional fall and spring terms only) for a maximum of four years. Eligibility is determined through filing the FAFSA. Renewal of the grant is subject to academic progress, full-time enrollment and relative financial need.

## Other University Grants

## Child of Alumni Grant

An annual grant of $\$ 1,500.00$ is available to undergraduate sons and daughters of Fairleigh Dickinson University alumni. This grant is based upon full-time enrollment only. The student must indicate on the University Admissions application that either parent is a Fairleigh Dickinson University graduate.

## Federally Funded Programs

There are a number of federally funded financial aid programs; for example, Pell and SEOG grants, Federal Direct Loans, as well as Work Study Programs. For a student to be eligible for any of these programs, he/she must be matriculated, maintain satisfactory academic progress and finally, he/she must file the FAFSA (Free Application for Federal Student Aid) by February 15 every year. Each of the federal programs available at the University are detailed as follows:

## Federal Grant Programs

## Federal Pell Grant

Undergraduate students enrolled for a minimum of three credits per semester may be eligible for a Federal Pell Grant. Eligibility is determined upon data received from the FAFSA application.
Federal Supplemental Education Opportunity Grant (FSEOG)
Undergraduate students must be eligible for a Pell grant to receive an FSEOG award. In addition, a student must be registered full time.

## Federal Work Programs

## Federal Work Study

Eligibility for Federal Work Study is determined by the information supplied on the FAFSA; a student must demonstrate financial need to be eligible for Federal Work Study funding.
Students awarded funds under the Federal Work Study Program (FWS) may apply for positions either on campus or off campus at cooperating nonprofit community service agencies. Annual awards usually range from $\$ 500.00$ to $\$ 2,000.00$ per academic year.
Federal Work Study positions are coordinated and processed by the Office of Career Development on each campus. A Federal Work Study student may not work more then 20 hours per week and no more than seven hours in one day. Students are paid biweekly.

## Federal Veterans' Educational Assistance Programs

## Veterans' Educational Benefits

VA (Veterans' Affairs) educational benefits are available to eligible veterans for attendance at institutions of higher education (e.g. four-year university, community colleges, etc.), for undergraduate, graduate and online programs and other degree- and nondegree-granting courses. Benefits are based on the VA Program/Chapter for which students are eligible (defined by the type and length of military service) and the number of classes for which they are enrolled during a given semester (e.g., full-time, part-time, etc.). Payments are made by the U.S. Department of Veterans Affairs either directly to the student/veteran or, in the case of the Post $9 / 11$ GI Bill, directly to the school. It is important to note that cost of tuition and fees to the University remains the responsibility of the student/veteran. It is recommended that students consult with the director, Office of Veterans Services, at Fairleigh Dickinson University for more detailed information on any of these programs on the website For Veterans.

## Post 9/11 GI Bill

The Post 9/11 GI Bill - also commonly known as Chapter 33 - is a VA-administered program for individuals with at least 90 days of aggregate active-duty service after September 10, 2001, and are still on active duty, or if they are an honorably discharged veteran or were discharged with a serviceconnected disability after 30 days. Purple Heart recipients, regardless of length of service, are qualified for Post $9 / 11$ benefits at the 100 -percent level. This benefit provides up to 36 months of educational benefits. If the students' release from active duty was before January 1, 2013, there is a 15 -year time limitation for use of benefits. For individuals whose last discharge date is on or after January 1, 2013, the time limitation has been removed. It is important to note that Fairleigh Dickinson University has agreed to participate in the Yellow Ribbon Program, that is a provision of the Post-9/11 Veterans Educational Assistance Act of 2008. Under this program, FDU has agreed to fund tuition expenses for eligible veterans that exceed the highest public instate undergraduate tuition rate by matching a VA contribution of 50 percent with an FDU contribution for the same amount.

This program will provide the following benefits for eligible individuals:

- Tuition and fees paid directly to the school are not to exceed the annual state cap. The cost of private university tuition and fees may be fully covered for those veterans eligible for the Yellow Ribbon Program.
- A monthly housing allowance based on the Basic Allowance for Housing for an E-5 with dependents at the location of the school where the student physically attends the majority of classes.
- A yearly books-and-supplies stipend of $\$ 1,000.00$ paid proportionately based on enrollment.

If students are enrolled exclusively in online training, they will receive a reduced monthly Basic Allowance for Housing. If students are on active duty, they will not receive the housing allowance. If students are enrolled half time or less, they will not receive the Basic Allowance for Housing.
In Accordance with Title 38 US Code 3679 subsection(e) of the Veterans Benefits and Transition Act of 2018, students who utilize Post 9/11 GI Bill (GI Bill ${ }^{\circledR}$ is a registered trademark of the U.S. Department of Veterans Affairs [VA]. More information about education benefits offered by VA is available at the official U.S. government web site at https://www.benefits.va.gov/gibill.), Chapter 33 and Veteran Readiness and Employment, Chapter 31 will not have an Enrollment Hold placed on their account or registration pending disbursement of funding for tuition and fees by the Veterans Administration. Their account will not have penalty fees applied because of late tuition payment by the Department of Veterans Affairs (VA). Students will not be required to secure alternative or additional funding because of late payment by the VA. For charges incurred for campus housing and meals, the student may be liable for payment if these charges are not covered by the VA benefit. To qualify for this provision, students will need to supply their Certificate of Eligibility (COE) and Semester Enrollment Form to the School Certifying Official by the first day of class; and/or provide additional information needed to properly certify the enrollment.

## The Montgomery GI Bill (MGIB)

As provided under the Montgomery GI Bill (MGIB) - also commonly known as Chapter 30 - students who entered the military after June 30, 1985, are eligible for educational benefits if they elected to reduce their monthly salary by $\$ 100.00$ for the first 12 months while on active duty. The MGIB program provides a maximum of 36 months of educational benefits. However, additional entitlements may be available. Consult with the director, Office of Veterans Services, at Fairleigh Dickinson University. This benefit may be used for degree and certificate programs, flight training, apprenticeship/on-the-job training and correspondence courses. Remedial, deficiency and refresher courses may be approved under certain circumstances. Generally, benefits are payable for 10 years following release from active duty. For more information go to The Montgomery Bill - Active Duty.

## Survivors' and Dependents' Educational Assistance Program (DEA Chapter 35)

Dependents' Educational Assistance (DEA - Chapter 35) provides education and training opportunities to eligible dependents of certain veterans. The program offers up to 45 months of educational benefits. These benefits may be used for degree and certificate programs, apprenticeship and on-the-job training. A spouse may take a correspondence course. Remedial, deficiency and refresher courses may be approved under certain circumstances.

## Federal Tuition Assistance

Military Tuition Assistance is a benefit paid to eligible members of the Army, Navy, Marines, Air Force and Coast Guard. Congress has given each service the ability to pay up to $\$ 250.00$ per credit for the
tuition expenses of its members. A member is eligible for up to $\$ 4,500.00$ a fiscal year in Federal Tuition Assistance benefits.
Each service has its own criteria for eligibility, obligated service, application process and restrictions. This money is usually paid directly to the institution by the individual services.

## The Montgomery GI Bill-Selected Reserve (MGIB-SR)

The Montgomery GI Bill-Selected Reserve (MGIB-SR) program - commonly known as Chapter 1606 - may also be available if the student is a member of the Selected Reserve, which includes the Army Reserve, Navy Reserve, Air Force Reserve, Marine Corps Reserve, Coast Guard Reserve, Army National Guard and the Air National Guard. Students may be entitled to receive up to 36 months of education benefits.
Period of eligibility: (a) If the students' eligibility to this program began on or after October 1, 1992, the period of eligibility ends 14 years from their beginning date of eligibility or on the day they leave the Selected Reserve. (b) If the students' eligibility to this program began prior to October 1, 1992, their period of eligibility ends 10 years from their beginning date of eligibility or on the day they leave the Selected Reserve.
For more information go to The Montgomery GI Bill-Selected Reserve.

## Veteran Readiness and Employment (VR\&E)

A veteran who is eligible for an evaluation under Chapter 31 must complete an application and meet with a VA Veteran Readiness and Employment Counselor (VR\&EC). If the VR\&EC determines that a handicap exists as a result of a service-connected disability, the veteran is found entitled to services. Entitlement to services is established if the veteran is within his or her 12-year basic period of eligibility and has a 20 percent or greater service-connected disability rating. The VA Veteran Readiness and Employment Bill, under Chapter 31, pays the cost of tuition, fees, books, equipment and supplies. The veteran also receives a monthly subsistence allowance. Eligible veterans must apply online at the Veteran Readiness and Employment website. Veterans may be entitled to receive up to 36 months of educational benefits.

## Other Veterans' Administration Educational Benefits

There are additional veterans' educational benefits available for the dependents and widows of veterans who died of service-related causes.
Individuals in the Selected Reserve (Chapter 106) and those who contributed to the Veterans Education Assistance Program (VEAP-Chapter 32) also may be eligible for VA educational benefits.
For additional information regarding veterans' educational benefits, contact the Office of Veterans Services at Fairleigh Dickinson University at and/or the State of New Jersey Department of Military and Veterans Affairs State Approving Agency, PO Box 340, Eggert Crossing Road, Trenton, New Jersey 08625.

## Federal Loan Programs

## Federal Direct Loans

Eligible students may borrow from the Federal Direct Loan Program. There are two types of Federal Direct Loans.
The Federal Direct Subsidized Loan is available to eligible undergraduate students with financial need. While in school at least half-time ( 6 credits), interest is paid by the U.S. Department of Education.

The Federal Direct Unsubsidized Loan does not require that a student demonstrate financial need. Interest on the loan begins to accrue upon disbursement. Borrowers may choose not to pay interest while in school and during grace periods, periods of deferment or forbearance, but interest will accrue and be added to the principal amount of the loan.
Both the Direct Subsidized and Direct Unsubsidized Loan programs offer a six-month grace period after a student graduates or drops below half-time enrollment. For new Direct Subsidized Loans made from July 1,2012 , to June 30 , 2014, interest will accrue during the grace period and will be capitalized if unpaid by the borrower.
The interest rate is tied to financial markets and is determined each June for new loans made for the upcoming award year (July 1 to the following June 30). Each loan will have a fixed interest rate for the life of the loan and therefore students borrowing over multiple years may have loans at varying interest rates. There is a loan fee paid by borrowers at the time of disbursement.
The annual and aggregate limits for the loan programs are as follows:

## First Year Undergraduate Annual Loan

- Dependent Students - \$5,500; no more than \$3,500 in Direct Subsidized Loans
- Independent Students and Dependent Students whose parents are unable to obtain PLUS loans $\$ 9,500$; no more than $\$ 3,500$ in Direct Subsidized Loans


## Second Year Undergraduate Annual Loan

- Dependent Students - $\$ 7,500$; no more than $\$ 4,500$ in Direct Subsidized Loans
- Independent Students and Dependent Students whose parents are unable to obtain PLUS loans $\$ 10,500$; no more than $\$ 4,500$ in Direct Subsidized Loans


## Third Year and Beyond Undergraduate Annual Loan

- Dependent Students — \$7,500; no more than \$5,500 in Direct Subsidized Loans
- Independent Students and Dependent Students whose parents are unable to obtain PLUS loans $\$ 12,500$; no more than $\$ 5,500$ in Direct Subsidized Loans


## Subsidized and Unsubsidized Aggregate Loan Limit

- Dependent Students - $\$ 31,000$; no more than $\$ 23,000$ in Direct Subsidized Loans
- Independent Students and Dependent Students whose parents are unable to obtain PLUS loans $\$ 57,500$; no more than $\$ 23,000$ in Direct Subsidized Loans


## Federal Nursing Loan Program

Students enrolled as matriculated nursing students with "exceptional financial need" as determined by the information supplied on the FAFSA may apply for a Federal Nursing Loan. The student must maintain minimally half-time enrollment. Annual awards range from $\$ 500.00$ to $\$ 4,000.00$ per academic year. Contact the Fairleigh Dickinson University Office of Student Loan and Repayment (201-692-2575) for further details regarding repayment and deferment of Federal Nursing Loans.

## Federal Direct PLUS Loan Program

The Federal Direct PLUS Loan is a credit-based loan program for the parent or guardian of the undergraduate student. Parents of matriculated students enrolled at least half-time may borrow up to the cost of education less any other financial aid received by the student per academic year. Repayment of the PLUS loan begins 60 days after disbursement of the funds to the University. Parents have up to 10 years
to repay the loan with a minimum payment of $\$ 50.00$ per month. To be eligible for a PLUS loan, the student must file the FAFSA, and the parent (as well as the student) may not be in default on his/her federal loans. The interest rate is tied to financial markets and is determined each June for new loans made for the upcoming award year (July 1 to the following June 30). Each loan has a fixed interest rate for the life of the loan and therefore students borrowing over multiple years may have loans at varying interest rates. There is a loan fee paid by borrowers at the time of disbursement.

## New Jersey State-funded Programs

There are a variety of New Jersey state-funded financial aid programs; including, academic scholarships, need-based grants and loans. For students to be eligible for any of these programs, he/she must be matriculated, maintain satisfactory academic progress and be a New Jersey resident. To establish eligibility for any need-based funding, a student must also file the FAFSA (Free Application for Federal Student Aid) and meet established state deadlines. Each of the New Jersey state programs available at the University are detailed as follows:

## New Jersey State (NJS) Scholarship Programs

## Governor's Urban Scholarship Program

The Governor's Urban Scholarship Program provides a merit award to high-achieving students who reside in New Jersey's 14 designated high-need communities. Annual awards of up to $\$ 1,000$ are available for qualified students. Students must rank within the top five percent of their class and have a minimum 3.00 grade point average at the end of their junior year of high school and meet other basic eligibility and renewal criteria.

## NJ Student Tuition Assistance Reward Scholarship II (NJ STARS II)

The NJ STARS II program allows successful NJ STARS scholars to transfer to a New Jersey four-year college or university and earn a bachelor's degree. The NJ STARS II Scholarship is valued at \$1,250.00 per semester ( $\$ 2,500.00$ per academic year - traditional fall and spring semesters only). Students must be NJ STARS recipients or non-funded during the semester of county college graduation and graduate with an associate's degree and grade point ratio of 3.25 or higher. While there is no consideration of financial need, the maximum family income (taxable and untaxable) must be less than $\$ 250,000.00$. In addition, the student must be enrolled full-time, apply for all forms of state and federal need-based grants and merit scholarships and begin NJ STARS II program participation no later than the second semester immediately following county college graduation.

## Need-based New Jersey State (NJS) Grant Programs

## NJS TAG Award

To establish eligibility for a Tuition Aid Grant (TAG), a student must be a resident of New Jersey for a minimum of 12 months prior to receipt of the TAG grant. In addition, he/she must be enrolled full-time at a four-year New Jersey college or university. The TAG award is determined upon the need of the student as supplied by the information on the FAFSA. The TAG award is valued up to $\$ 13,196.00$ for the 20212022 award year per academic year (traditional fall and spring terms only).

## NJS Educational Opportunity Fund (EOF) Grant

The NJS Educational Opportunity Fund (EOF) provides financial assistance and academic support services to economically and educationally disadvantaged students. To be eligible, students must meet state-established income guidelines and be New Jersey state residents for at least 12 consecutive months prior to application. Only first-time, full-time matriculated freshmen are eligible to be admitted to the

EOF program. Transfer students who were EOF program participants at their previous school are also eligible, but are not guaranteed to receive an EOF grant at the time of transfer.
EOF grant awards are valued up to $\$ 2,700.00$ per academic year (traditional fall and spring semesters only). All incoming EOF program participants must attend and successfully complete a residential prefreshman EOF Summer Program. EOF students remain a part of the EOF program as long as they continue to meet the program and income guidelines.
Prospective students should contact the Office of Admissions for further information.

## NJCLASS Loan Program

The NJCLASS loan program is a credit-based loan program for either the student or the parent. Applicants may borrow up to the cost of education less any other financial aid. To apply and for additional information regarding repayment and deferment of NJCLASS loans contact the New Jersey Higher Education Student Assistance Authority.

## Privately Funded Scholarship

## Sammartino Scholarship

The Peter Sammartino Endowment and the Sylvia Sammartino Endowment are scholarship funds that were created through the bequests left by the University's founder and first president, Peter Sammartino, and his spouse, Sylvia Sammartino. Scholarships are available to students in the QUEST program in the Peter Sammartino School of Education. A demonstration of the desire to teach is one of the criteria. Scholarships up to one-half of tuition are awarded.

## Additional Pertinent Aid Information

## Terms and Conditions of Financial Aid Awards

There are a number of terms and conditions for financial aid from federal, state and institutional sources. Terms and conditions are provided at the time a financial-aid award notice is sent. The terms and conditions are:

Financial-aid offers are based on attendance as a full-time student and anticipated housing plans as reported. Students are required to inform the Office of Financial Aid in writing immediately of any changes in enrollment or housing plans as financial aid may be re-evaluated accordingly.
If selected for verification by the U.S. Department of Education, additional documentation will be required and may lead to revisions in the financial-aid awards offered. The Office of Financial Aid reserves the right to request verification of any data submitted by the student and/or parent(s) that was considered in the financial-aid award offer. Financial-aid award offers are subject to the receipt and processing of information/documentation requested by the Office of Financial Aid.
Financial-aid award offers are contingent upon maintaining satisfactory academic progress (SAP) toward completion of the degree. The Office of Financial Aid reviews SAP for each financial-aid recipient at the conclusion of each term. Failure to maintain satisfactory academic progress will result in the loss of financial-aid funding. A student must be matriculated and enrolled in course work leading to a degree.
A New Jersey Tuition Aid Grant (TAG), if listed on the award notice, is estimated until the Higher Education Student Assistance Authority (HESAA) of New Jersey makes an actual award. HESAA will send a Student Eligibility Notice (SEN) to students that detail actual award amounts and may also request additional documentation for final award determination. It is the responsibility of the student to submit all
requested documentation to HESAA in a timely fashion to meet state grant deadlines and satisfy all requirements for eligibility to ensure payment of a TAG award.
The University awards grants and scholarships from University operating funds and reserves the right to substitute funding received from private or endowed sources. In such an event, a revised Financial Aid Notice of Award will be sent to the students detailing the substitution.
Receipt of financial assistance from any sources may affect eligibility for financial aid as detailed on the financial-aid award notification. Students are required to notify the Office of Financial Aid of receipt of additional awards.

Federal and state awards are based on estimated funding levels. The Office of Financial Aid reserves the right to make adjustments as a result of changes in federal and/or state funding levels

The awards detailed on the award notification apply only to the academic year indicated on the notification. Students must apply each year and maintain satisfactory academic progress (as required by both the U.S. Department of Education and Fairleigh Dickinson University) for consideration of renewed eligibility.

## Renewal of Financial Aid

A student must maintain the minimum requirements for the renewal of any scholarship funding (as was outlined previously and in the original scholarship notification letter).
Students who receive need-based financial aid from any source are eligible to apply for a renewal of this aid. To be eligible for a renewed, need-based financial-aid package, students must be sure to complete the following:

1. File the FAFSA application no later than February 15 (including the correct Federal School Code: 002607 for the Metropolitan Campus (Teaneck, New Jersey) and 004738 for the Florham Campus (Madison, New Jersey);
2. Complete the verification process (if selected by the U.S. Department of Education - students will be notified by the Office of Financial Aid of the required documents);
3. Maintain Satisfactory Academic Progress as mandated by the U.S. Department of Education.

## Satisfactory Academic Progress

The U.S. Department of Education requires all students who receive financial aid maintain "Satisfactory Academic Progress (SAP)" to establish continued eligibility for financial-aid funding.
As required, the Office of Financial Aid reviews all financial-aid recipients for the appropriate academic progress to determine renewal eligibility at the end of each semester. Failure to maintain academic progress will result in a warning. Subsequent failure (the following semester) will result in the loss of financial-aid funding until eligibility is re-established by completing the appropriate coursework and/or achieving the appropriate grade point ratio (GPR). A notification will be sent to the student after the review is completed if they are not achieving satisfactory academic progress.
Undergraduate students must achieve an overall cumulative GPR of 2.00 and successfully complete at least 66.66 percent of the credits attempted. All credits, including developmental, transfer and collegelevel courses will be counted to determine credit hours. Withdrawals and incompletes will be included in the calculation of attempted credits. Undergraduate students are required to complete a minimum of 120 credits to obtain their degrees but may not receive federal aid for more than 190 credits ( 150 percent).

Students who fail to achieve SAP may appeal for reinstatement. They will be required to devise an academic plan that will put them back on course for making SAP. Students may submit their Academic

Plan to the Office of Financial Aid for review in order to be eligible to receive funding. Students who do not meet all SAP requirements or fail to meet the conditions of their Academic Plans in the following semester will not qualify for financial aid. Students who lose eligibility due to SAP will regain eligibility when SAP requirements are met.

## Repeated Courses

The U.S. Department of Education has regulations which impact students who repeat courses. These regulations are part of a series called Program Integrity Rules and are effective July 1, 2012.
Beginning July 1, 2012, students may only receive federal funding aid for one repetition of a previously passed course. Students taking a required repeat of a course should work with the Office of Financial Aid to ensure those credits are counted appropriately for financial-aid eligibility. Please note that the student may need to provide documentation from his/her adviser regarding the requirement to repeat.

## Tuition Payment Options

Fairleigh Dickinson University makes every attempt to meet a student's full financial need. However, it is possible that the financial-aid package may not cover all college expenses. The University does not guarantee the ability to meet a student's full financial aid. As a result, there may be an amount left between the federal, state and family contributions, the amount of aid offered by the University and the total cost of education.
If this is the case, consider the following options:

## Installment Plan

Fairleigh Dickinson University offers a University-administered semester payment plan. A family can make four regularly scheduled monthly payments during an academic semester without interest. An enrollment form and semester fee of $\$ 45.00$ are required.

## Refunds and Return of Title IV Calculations

Full or partial withdrawal from the University while a semester is in progress will result in the recalculation of the existing comprehensive financial-aid package. A student must "earn" financial-aid eligibility during a semester via attendance during that same semester.
To earn the full value of the existing comprehensive financial-aid package, the student must attend minimally 60.01 percent of the semester in question. A student who withdraws or adjusts his/her enrollment status will have his/her financial-aid package adjusted per the federal, state and University guidelines.
Specifically, the value of the existing awards will be adjusted according to the value of aid actually earned by the student's attendance for the respective semester. This calculation is applied to all components of the financial-aid package.

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## Core Curriculum

Fairleigh Dickinson University believes the goal of a college education is preparation for lifelong learning and a lifetime of thoughtful living. The interdisciplinary University Core Curriculum is the cornerstone of a thoughtful and reflective education. The program has received national recognition for its innovative approach to general education. The American Association of Colleges and Universities honored the FDU Core by making it one of nine programs in the United States to serve as a model for other educational institutions, and individual University Core courses have received prestigious national awards. More recently, the University Core program has been awarded grants by the U.S. Department of State and the 100,000 Strong in the Americas Foundation to support study abroad options for Core courses.
The four-course Core program strongly emphasizes global learning and personal/professional developmentlearning outcomes and objectives. Students typically complete it during the first and second years at FDU to provide a foundation for more advanced studies. The Core program helps students explore their intellectual and creative strengths in order to draw on these while preparing for a fulfilling professional and personal life. It also assumes that when students need clarity to set goals or guidance to achieve them, the faculty and professional staff at FDU are collectively able to support students with knowledge pathways and intellectual skills early in their college careers.
The University Core courses are:

- UNIV1001 Transitioning to University LifeFirst Semester.UNIV1001 syllabus.
- UNIV1002 Preparing for Professional LifeSecond Semester.UNIV1002 syllabus.
- UNIV2001 Cross Cultural PerspectivesThird or Fourth Semester.UNIV2001 syllabus.
- UNIV2002 Global IssuesFourth or Fifth Semester.UNIV2002 syllabus.

The Core courses express the University's global learning mission: To prepare students for responsible citizenship in the global community and for professional success in the global economy.

In addition to promoting general academic and professional skills such as critical thinking and information literacy, the small class size and seminar-style setting of the University Core courses facilitate identity exploration and development, which are fundamental to being a college student. They foster growth from an identity as a college student to an identity as a professional as well as cultural identity and identity as a global citizen.
The University Core program is designed to achieve three aims:

1. To foster international and intercultural perspectives that offer students critical ways of looking at the world as well as at their own countries and communities.
2. To promote understanding of individual, societal, and global perspectives.
3. To inculcate an appreciation for the interrelationships among bodies of knowledge generated in individual disciplines.

## Academic Regulations and Prerequisites

No more than one Core course may be taken in any one semester without special permission from a University Core director. All students should consult with an academic adviser before preparing their schedules in order to make certain that they are scheduled for the appropriate University Core course, or approved substitutes and alternatives, and that they have satisfied all prerequisites.

- Students must complete UNIV1001 Transitioning to University Life before taking UNIV1002 Preparing for Professional Life.
- Students must take UNIV1001 Transitioning to University Life and UNIV1002 Preparing for Professional Life, as well as WRIT1002, before taking either UNIV2001 Cross-Cultural Perspectives or UNIV2002 Global Issues.
- UNIV2001 and UNIV2002 may be taken in either order although it is recommended that UNIV2001 be taken prior to UNIV2002.


## Substitutions and Alternatives

There is no substitute for UNIV1001 Transitioning to University Life.
Some majors integrate the learning goals of UNIV1002 Preparing for Professional Life into other coursework. These courses serve as substitutes for UNIV1002 Preparing for Professional Life. Every semester in the course offerings on Self-Service, courses that have been authorized as substitutes for UNIV1002 Preparing for Professional Life will be listed, indicating which major(s) they are associated with. All other students, including undeclared majors, should take UNIV1002 Preparing for Professional Life.
Students entering FDU in Fall 2021 may fulfill General Education requirements for Knowledge of Global Issues and Cross-Cultural Understanding either with UNIV2001 Cross-Cultural Perspectives and UNIV2002 Global Issues or with other courses explicitly identified in Self-Service as approved alternatives. For more information, see General Education.

## Exceptions for Adult Learners and Transfer Students

Adult learners are exempt from taking UNIV1001 Transitioning to University Life and UNIV1002 Preparing for Professional Life although they may choose to take one or both of these courses as electives.
Transfer students entering the University with 30 or more credits are exempt from taking Transitioning to University Life (UNIV1001).
Transfer students entering the University with 45 or more credits are exempt from taking Preparing for Professional Life (UNIV1002).
Transfer students entering the University with an associate of arts or associate of science degree earned from a New Jersey or New York community college are exempt from all FDU general education requirements, including Cross-Cultural Perspectives and Knowledge of Global Issues. For more information, see General Education.

## Withdrawals and Closed Sections

Withdrawals from a section of the Core require the permission of a Core director. Permission to join a closed section also requires the permission of a Core director. Each campus has a Core director who administers the program for that campus.

## Student Grade Appeals/Procedure

While it is recognized that faculty hold the right and responsibility to grant a grade, a student who receives a grade that he or she believes to be unwarranted may appeal that grade by engaging in the following process:

1. Within the first three weeks of the start of the following full semester (fall or spring) in which the grade is received, the student shall have informally appealed the grade to the instructor. If no resolution of the matter results to the student's satisfaction, the student may initiate the following formal appeal process. In the case of a student who is being kept from either graduating or registering because of the grade in question, the process should begin immediately upon receipt of the grade report. If either the instructor or department chair is unavailable, the student may proceed directly to the Core director.
2. The student shall request in writing a meeting with the respective Core director concerning the grade in question.
3. The Core director shall report to the student on the resolution of the appeal within two weeks of that meeting.
4. If the issue is not resolved to the student's satisfaction, the student has one week to appeal in writing to the vice provost of international affairs.
5. The vice provost shall review the entire matter with the student, the faculty member and/or the Core director involved.
6. If the vice provost feels there is no basis for a grade change, that determination is final and should be conveyed to the student in writing within two weeks of receipt of the student's appeal.
7. If the vice provost believes that an erroneous grade exists, the vice provost shall attempt to resolve the issue with the instructor.
8. If, however, a resolution is not achieved, the vice provost's decision is final and shall be conveyed to all parties involved, in writing.

## Core Abroad

Students can complete UNIV2001 and/or UNIV2002 while studying in China, England, or Canada.Download the Core Abroad brochureto learn more.

## Contact Information

Each campus has a University Coredirector who administers the program for that campus. Online and offcampus programs are also administered by a University Coredirector. These directors are responsible for enforcing Academic Regulations for the University Core program. The Coredirectors report, as a group, to theviceprovost foracademic andinternationalaffairs.

- Florham Campus: Kiron Sharma, Professor, Mathematics and Computer Science
- Vancouver Campus: James Gifford, Professor of English, Director of the University Core, Vancouver Campus
- Metropolitan Campus, Online and Off-campus: Michele Barto, Senior Lecturer, School of Hospitality, Sports, and Tourism Management
- Jason Scorza, Vice Provost for International Affairs, Global Learning


## Honors at FDU

Opportunities for honors are available on both New Jersey campuses through Fairleigh Dickinson University's Honors Academy, University Honors Program and Global Scholars. Additionally, various colleges, schools and majors have developed living-learning communities. Students may participate in any combination of honors and living-learning programs at the same time.
Students in all three honors programs are eligible for special housing. They participate in special extracurricular activities and short-term study-abroad opportunities, and they share their work through regional and national honors conferences and publications.

## Honors Academy

Students in the FDU Honors Academy join an exclusive cohort of motivated students from a wide variety of disciplines. Together, they work closely to explore and address common problems and critical global issues such as sustainability, human rights and the impact of technology on modern life.
Students in the Honors Academy are required to complete a series of eight honors courses over their four years. Students must graduate from FDU with at least a 3.75 cumulative grade point ratio.
The curriculum of the Honors Academy features specialized versions of courses that count toward General Education and University Core requirements and is finished with a senior thesis or capstone in the student's major and prepared under the guidance of a faculty mentor.
Courses include:

## Freshman Year

- HON1001 Honors Academy Transitioning to University Life (substitute for UNIV1001 Transitioning to University Life)
- HON1002 Honors Academy Composition II: Research and Argument (substitute for WRIT1003 Composition II: Research and Argument)


## Sophomore Year

- HON2001 Honors Academy Cross Cultural Perspectives (substitute for UNIV2001 Cross Cultural Perspectives)
- HON2002 Honors Academy Global Issues (substitute for UNIV2002 Global Issues)


## Junior Year

- HON3001 Honors Academy Junior Seminar
- HON3302 Honors Thesis Prospectus


## Senior Year

- HON4402 Senior Honors Research
- HON4403 Senior Honors Thesis

Admission for incoming freshmen is test-blind and incorporates at least 14 factors, including shortanswer questions on the honors application, recommendation from high-school teachers, participation in honors admissions interviews and high-school cumulative grade point average.

For detailed information about the Honors Academy, please contact fduhonors@fdu.edu.

## University Honors Program

The University Honors Program offers gifted and motivated students the opportunity to pursue a course of college study that combines a broad liberal education with intensive, guided study in a particular major field of interest. The Honors Program encourages experiential learning outside of the classroom.
Students in the University Honors Program are required to complete at least eight honors courses over their four years, including the four required courses (HON3302, HON4402, HON4403 and WRIT1003). Additionally, students have requirements around experiential learning (four over four years) and community involvement (eight over four years). Students must graduate from FDU with at least a 3.50 cumulative grade point ratio.
The curriculum of the University Honors Program features honors sections of General Education and University Core courses and is finished with a senior thesis or capstone in the student's major and prepared under the guidance of a faculty mentor.

Courses include:

## Freshman Year

- UNIV1001 Honors Transitioning to University Life
- WRIT1002 Honors Composition I, Rhetoric and Inquiry
- WRIT1003 Honors Composition II: Research and Argument (required)
- Other general education courses offered


## Sophomore Year

- UNIV2001 Honors Cross Cultural Perspectives
- UNIV2002 Honors Global Issues
- Other general education courses offered


## Junior Year

- HON3302 Honors Thesis Prospectus (required)
- Other general education courses offered


## Senior Year

- HON4402 Senior Honors Research (required)
- HON4403 Senior Honors Thesis (required)

Admission for incoming freshmen is test-blind and incorporates at least seven factors, including shortanswer questions on the honors application, participation in honors admissions interviews and highschool cumulative grade point average.
Any qualified transfer student can enroll in their first semester at FDU. Any currently enrolled student may apply for membership in the University Honors Program following the fall or spring of their freshman year.
For detailed information about the University Honors Program, please contact fduhonors@fdu.edu.

## Global Scholars Program (Metropolitan Campus only)

The Global Scholars Program at the Metropolitan Campus is a four-year selective program for entering full-time freshman resident students of any major. The program is a logical outcome of Fairleigh Dickinson University's mission as an institution developing a global perspective for tomorrow's leaders. It offers an organized and integrated course of study that combines intensive-academic-multidisciplinarylearning environments with a cross spectrum of cultural living experiences on- and off-campus.
Global Scholars attend a minimum of seven experiential-learning programs per semester on- and offcampus. These include visits to the United Nations with opportunities for private briefings and internships, lectures by and receptions with ambassadors and international scholars, participation in a variety of cultural and artistic events and visits to museums. Scholars are required to participate in winter session cocurricular-field experiences abroad in both their freshman and senior years. A study-abroad semester is also required. These cultural immersion experiences are intended to enrich the academic quality of a global education of all participants in this distinctive program.
All Global Scholars take designated sections of UNIV1001 Transitioning to University Life, Global Scholars Seminar in Political Studies (cultural experience abroad) and a capstone winter session (cultural experience abroad).
Because this selective program accepts a limited number of applicants, entering or transfer freshmen are encouraged to apply as early as possible. Admission for incoming freshmen is test-blind and incorporates at least nine factors, including short-answer questions on the honors application, recommendation from a high-school teacher, participation in honors admissions interviews and high-school cumulative grade point average.
For detailed information about the Global Scholars Program, please contact Samuel Raphalides, professor of political science and history and director, Global Scholars Program, at sjraph@fdu.edu.

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## Majors, Minors, and Certificates (A-Z Listings)

## Degrees including Combined Degrees

## Accounting BS

The BS in accounting is offered on the Florham and Metropolitan campuses by the Silberman College of Business' department of accounting, taxation and law. The college is accredited by AACSB International.
Most accounting majors receive job offers one year before they graduate. The accounting program has earned endorsement by the IMA (Institute of Management Accountants) for meeting high educational standards, enabling students to pursue the Certified Management Accountant (CMA) credential.
The New Jersey Society of Certified Public Accountants (NJSCPA), the Public Company Accounting Oversight Board (PCAOB), Silberman College of Business and others regularly award scholarships to FDU accounting students. Read about available scholarships for accounting undergraduate students.

## Degree Plan

BS in accounting degree requirements include seven required courses for the major, fulfillment of theUniversity and Business Core Curriculum and a minimum of 120 total credits.

## Freshman Year: Introductory

In the freshman year, students will take introductory courses in business, management information systems and mathematics along with the core curriculum and courses in the humanities and social sciences.

## Sophomore Year: Introductory

In the sophomore year, students will take introductory accounting courses and business courses in various disciplines. Heavy concentration in accounting major courses begins in the students' third year.

## Business Core Curriculum

Silberman College's Business Core Curriculum features coursework in all business disciplines accounting, economics, entrepreneurship, finance, information systems and decisions sciences, international business, business law, management, marketing and taxation, to provide students with essential business knowledge.

## Silberman College of Business BS students must complete a minimum of $\mathbf{1 2 0}$ credits, distributed as follows:

- Business Core (38 credits)
- Restricted Business Core (3 credits)
- Business Major Courses (21 credits)
- University Core (7 credits)
- General Education Requirements (36 credits)
- Free Electives ( 15 credits)


## TOTAL CREDITS - 120 credits

## Business Core (38 Credits)

All courses are 3 credits except where indicated otherwise.

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CARR3000 Career Strategies (2 credits)
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Accounting Major Courses (21 credits)

- ACCT3241 Intermediate Financial Accounting I
- ACCT3242 Intermediate Financial Accounting II
- ACCT3243 Cost Accounting: Measurement and Control
- ACCT3390 Accounting Information Systems
- ACCT4261 Advanced Accounting
- ACCT4263 Auditing Concepts
- ACCT4267 Fundamentals of Federal Taxation


## Restricted Business Core (3 Credits)

- FIN3310 Intermediate Financial Analysis


## General Education Requirements (36 Credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward scientific analysis or free elective credits.
See adviser for help in selection of courses.
Students with specific questions about the degree requirements should contact their adviser on their home campus.

## Combined BS/MS in Accounting Degree Option

Students in the 4 Plus 1 Combined Degree Program can graduate with a BS and an MS degree in five years. Students intending to pursue a master's degree in accounting should consider the five-year option.

## For Information

Prospective students who would like information regarding Silberman College majors, courses or careers paths, should contact an adviser.
Prospective students who would like information about applying to Fairleigh Dickinson University, should contact the Office of Admissions at 973-443-8900 for the Florham Campus or 201-692-7308 for the Metropolitan Campus or email.

## Accounting BS, Accounting MS Combined Degree

The BS/MS in accounting combined-degree program is open to any accounting major at Fairleigh Dickinson University. It features state-of-the-art studies in accounting, taxation and law designed to prepare students for employment in either the public or private accounting sector. Students in the 4 Plus 1 program can graduate with a BS and MS degree in five years.
The program is offered by the department of accounting, taxation and law, Silberman College of Business, at the Florham Campus, Madison, New Jersey, and Metropolitan Campus, Teaneck, New Jersey. The college is accredited by AACSB International.

## Admission Requirements

In order to participate in the 4 Plus 1 program, all students must be current undergraduate students at Fairleigh Dickinson University.

To advance into the MS or MBA portion of the program, all applicants must meet the following requirements:

1. Students must formally apply with the Graduate Advising Office and be accepted into the graduate portion of the program.
2. The $4+1$ applicant will be reviewed based on 12 accounting credits, which may include business core classes ACCT2021 Introductory Financial Accounting and ACCT2022 Introductory Managerial Accounting; and continue to be monitored for eligibility based on the remaining upper-level ACCT courses. Applicants will need to achieve a grade point ratio of 3.00 (B average) across these 12 credits of accounting courses. The GMAT/GRE is waived for Silberman College of Business students who have a cumulative grade point ratio (GPR) of 3.20 or higher upon completion of the first semester of their junior year (and 3.50 for other FDU students). Other applicants are required to submit a GMAT/GRE score taken within the last five years.

Acceptance into the program takes place during the sixth semester of the undergraduate program (or three semesters prior to the students' anticipated undergraduate graduation date). Accepted students will take graduate-level coursework during their last two semesters as undergraduate students. Accepted students must complete their undergraduate degrees before undertaking full-time graduate study during their Plus 1 year.

## BS/MS in Accounting Curriculum

In addition to completing the undergraduate business and University Core classes, students must complete the curriculum requirements listed below. Beginning with the seventh semester, students will also complete LAW6657 Applied Business Law (fall) and ACCT6606 Federal Tax II: Business Entities (spring) in their senior year. The remaining graduate courses are to be completed during the fifth year. Internships and work programs during the graduate portion of the program also are available.

The structure of the BS/MS in accounting allows students the ability to continue their study of accounting, earning a Master Science in accounting, while also preparing for the CPA examination. Students looking to meet the CPA credit requirement will find that FDU's 4 Plus 1 BS/MS in accounting degree allows them to do so while attaining a deeper understanding of accounting theory, concepts and practices.

## Degree Plan

## Major Courses

Note: Students must earn a grade of "C" or better in these courses for graduation requirements.

- ACCT3241 Intermediate Financial Accounting I
- ACCT3242 Intermediate Financial Accounting II
- ACCT3243 Cost Accounting: Measurement and Control
- ACCT3390 Accounting Information Systems
- ACCT4261 Advanced Accounting
- ACCT4263 Auditing Concepts
- ACCT4267 Fundamentals of Federal Taxation


## Graduate Courses

For students who are accepted in the 4 Plus 1 accounting program

- ACCT6606 Federal Tax II: Business Entities
- ACCT6680 Selected Accounting Topics
- ACCT6682 Advanced Auditing
- ACCT6690 Seminar: Accounting and Audit Case Studies
- LAW6657 Applied Business Law
- Three Graduate Accounting Electives (9 credits)
- Two Graduate Business Electives (6 credits)


## Business Core Curriculum

Silberman College's Business Core Curriculum features coursework in all business disciplines accounting, economics, entrepreneurship, finance, information systems and decisions sciences, international business, business law, management, marketing and taxation, to provide students with essential business knowledge.
Silberman College of Business BS students must complete a minimum of 120 credits, distributed as follows:

- Business Core and Restricted Business Core (41 credits)
- Business Major Courses (21 credits)
- University Core (7 credits)
- General Education Requirements (36 credits)
- Free Electives ( 15 credits)
- TOTAL CREDITS - 120 credits


## Business Core (38 credits)

All courses are 3 credits except where indicated otherwise.

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CARR3000 Career Strategies (2 credits)
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Restricted Business Core (3 credits)

- FIN3310 Intermediate Financial Analysis (required for finance and accounting majors)


## University Core (7 credits)

- UNIV1001 Transitioning to University Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## General Education Requirements ( 36 credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward Scientific Analysis or free elective credits.
See adviser for help in selection of courses.

## Free Electives (15 Credits)

Can be used toward a minor, a second major or a concentration.

## For Information

Sophia Li Ferry<br>Advising Counselor for Graduate Programs, Silberman College of Business<br>sliferry@fdu.edu<br>973-443-8459

## Allied Health Technologies (Health Science Concentration) BSAHT (With

## Associate Degree): completion degree

The Henry P. Becton School of Nursing and Allied health offers a Bachelor of Science in Allied Health Technologies with a concentration in health science at the Metropolitan Campus, Teaneck, New Jersey. The School of Nursing and Allied Health also offers the following programs:

- BS in Allied Health Technologies with a concentration in health science (with no associate's degree) at the Metropolitan Campus
- BS in Allied Health Technologies with a concentration in radiologic technology at the Florham Campus


## Degree Plan

Upon completion of an associate degree and passing a licensure/credentialing exam as an allied health practitioner, Fairleigh Dickinson University will award a minimum of 60 credits toward a Bachelor of Science in Allied Health Technologies with a concentration in health science. These transfer credits will satisfy the lower-division requirements of Fairleigh Dickinson University. The remaining courses needed to complete the degree requirements are outlined below.

## General Education (22 credits)

- COMM2101 Professional Communication
- CSCL1105 Survey of Computers and Computer Software
- MATH1107 Precalculus
- PSYC1201 General Psychology
- PSYC2210 Psychological Statistics
- SPAN1111 Spanish for Health Personnel I
- ENGL English Literature Elective
- HIST $\qquad$ History Elective


## University Requirements (6 credits)

- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Major Requirements (33 credits)

- MEDT1130 Bioethics
- MEDT4301 American Health Care
- MEDT4302 Health Care Law and Policy
- MEDT4305 Current Topics in Health Science I
- MEDT4306 Current Topics in Health Science II
- MEDT4308 Management Principles for Healthcare Professionals
- MGMT2600 Organizational Behavior
- MGMT3700 Human Resource Management
- NURS2210 Pathophysiology
- NURS3208 Introduction to Health Care Economics
- NURS4430 Critique/Use of Research


## For Information

Marilyn Rubin, Associate Director of Allied Health Professions, Henry P. Becton School of Nursing and Allied
Lecturer of Allied Health
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201-692-2847

## Allied Health Technologies (Health Science Concentration) BSAHT (No Associate Degree): completion degree

The Henry P. Becton School of Nursing and Allied Health offers a Bachelor of Science in Allied Health Technologies with a concentration in health science at the Metropolitan Campus, Teaneck, New Jersey. The School of Nursing and Allied Health also offers the following programs:

- BS in Allied Health Technologies with a concentration in health science (with an associate's degree) at the Metropolitan Campus
- BS in Allied Health Technologies with a concentration in radiologic technology at the Florham Campus


## Degree Plan

Upon completion of a hospital-based program and passing a licensure/credentialing exam as an allied health practitioner, Fairleigh Dickinson University will award a minimum of 30 credits toward a Bachelor of Science in Allied Health Technologies with a concentration in health science. These transfer credits will satisfy the lower-division requirements of Fairleigh Dickinson University. The remaining courses needed to complete the degree requirements are outlined below.

## General Education and Core Requirements ( 60 credits)

- BIOL2203/BIOL2223 Human Anatomy and Physiology I
- BIOL2204/BIOL2224 Human Anatomy and Physiology II
- BIOL2125/BIOL2126 Microbiology for Health Science
- CSCI1105 Survey of Computers and Computer Software
- EGTG2210 Technical Communications
- MATH1107 Precalculus
- MEDT1130 Bioethics
- PSYC1201 General Psychology
- PSYC2210 Psychological Statistics
- SPAN1111 Spanish for Health Personnel I
- SPCH1155 Public Speaking
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- ART $\qquad$ Fine Arts Elective
- ENGL $\qquad$ English Literature Elective
- HIST $\qquad$ History Elective


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Major Requirements (30 credits)

- MEDT4301 American Health Care
- MEDT4302 Health Care Law and Policy
- MEDT4305 Current Topics in Health Science I
- MEDT4306 Current Topics in Health Science II
- MEDT4308 Management Principles for Healthcare Professionals
- MGMT2600 Organizational Behavior
- MGMT3700 Human Resource Management
- NURS2210 Pathophysiology
- NURS3208 Introduction to Health Care Economics
- NURS4430 Critique/Use of Research


## For Information

Marilyn Rubin, Associate Director of Allied Health Professions, Henry P. Becton School of Nursing and Allied Health
Lecturer of Allied Health
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201-692-2847

## Allied Health Technology BSAHT (Radiologic Technology Concentration)

The Henry P. Becton School of Nursing and Allied health offers a Bachelor of Science in Allied Health Technologies with a concentration in radiologic technology at the Florham Campus, Madison, New Jersey.
Radiologic technologists are the medical personnel who perform diagnostic imaging examinations. At the completion of the radiologic technologies clinical training program, students will be prepared for a career as an X-ray technologist. Students who are interested, can pursue additional training opportunities to specialize in a specific area of radiologic technology, such as computed tomography, mammography, magnetic resonance imaging, medical dosimetry, nuclear medicine or diagnostic radiography.
Radiologic technologists perform a variety of diagnostic and therapeutic services within the health care industry and may find employment in hospitals, clinics and imaging centers. All programs prepare students to perform traditional X-rays, and some may also prepare students to perform bone densitometry and inject contrast media. Additional post-certificate training is required for more advanced imaging technologies such as magnetic resonance imaging (MRI) or computed tomography (CT) scans.
A bachelor of science in allied health technologies with a concentration in radiologic technology requires students to complete 96 credits at Fairleigh Dickinson University prior to enrollment and successful completion of an accredited JRCERT (Joint Review Committee in Education in Radiologic Technology) hospital certificate program. These programs are independent of Fairleigh Dickinson University, and there is no automatic or guaranteed acceptance
Students in this program are required to maintain a 2.33 Grade Point Ratio (GPR) in all the major classes.
Upon acceptance into the clinical training program, students will be required to arrange transportation and housing for the clinical site, in addition to tuition. Financial aid is not available through FDU for students at clinical training locations. Radiologic technology clinical training, including a large proportion of hands-on training, is a two-year commitment. Students may refer to the JRCERT program of their choice for more information.

The School of Nursing and Allied Health also offers the following programs at the Metropolitan Campus, Teaneck, New Jersey:

- BS in Allied Health Technologies with a concentration in health science (with an associate's degree),
- BS in Allied Health Technologies with a concentration in health science (without an associate's degree) and a
- BS in radiologic technology.


## Degree Plan

## Biology Requirements

- BIOL1110 Medical and Pathological Terminology
- BIOL1205 Anatomy and Physiology I BIOL1207 Lab: Anatomy and Physiology I
- BIOL1206 Anatomy and Physiology II BIOL1208 Lab: Anatomy and Physiology II
- BIOL1221 Biological Diversity

BIOL1222 Biological Diversity Lab

- BIOL1233 Molecules, Cells and Genes BIOL1234 Lab: Molecules, Cells and Genes
- BIOL3050 Molecular Cell Biology BIOL3051 Lab: Molecular Cell Biology

Students are also required to take one additional 4-credit biology elective.

## Chemistry Requirements

- CHEM1201 General Chemistry I

CHEM1203 Lab: General Chemistry I

- CHEM1202 General Chemistry II

CHEM1204 Lab: General Chemistry II

## For Information

Marilyn Rubin, Associate Director of Allied Health Professions, Henry P. Becton School of Nursing and Allied Health
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## Art BA

The School of the Arts offers a BA in art with concentrations available in computer art and design and graphic art and design.
The program is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences at the Metropolitan Campus, Teaneck, New Jersey.

The school also offers a BA in fine arts/studio arts at the Florham Campus, Madison, New Jersey.

## Degree Plan

Students majoring in art must complete 42 credits of coursework in art, 52 credits of requirements in General Education and a 15 -credit concentration. Each of the separate concentrations has groups of required courses in its areas of specialization. Guidance by the students' individual advisers is essential in guiding them through each specialization.
The required courses in art are designed to provide students interested in the visual arts with a strong foundation program of 24 credits in drawing, design, color and art history. Additionally, in the senior year, a 6 -credit senior project and seminar are required for the degree.
The remaining 15 credits (for a total of 42) may be taken in a variety of art electives, applying toward the art major, as well as required courses for the concentrations in computer art and design and graphic art and design.

## Outline of Program

Except for the freshman foundation courses (which must be scheduled in the first and second semesters as indicated below), the semester assignment of courses in this outline is only suggested. Students have the option of distributing the electives, with the approval of a faculty adviser, among the semesters as they deem appropriate.

## Required Courses

## Freshman Foundation Required Art Courses

## First Semester

- ART1151 General Drawing I or ARTH1205 Art History: Prehistoric Through Medieval


## Second Semester

- ART1153 General Life Drawing I or ARTH1206 History: Renaissance Through Today


## General Requirements

## Third Semester

- ART1231 2-Dimensional Design
- ART2236 Introduction to Color


## Remainder

- ART3237 Junior Portfolio Preparation I
- ART4371 Senior Portfolio Preparation
- ARTH1120 Modern Art to Mid-century


## Concentrations

## Computer Art and Design Concentration

The computer art and design concentration focuses on the interactive world of broadcast, 3D, gaming and animation. Students learn principles of 3D modeling, animation and interactivity including texture, lighting and camera action.

## Major Requirements (18 credits)

- ART1151 General Drawing I or ART1161 General Painting I
- ART1231 2-Dimensional Design or ART1142 Three-dimensional Design
- ART2236 Introduction to Color
- ARTH1205 Art History: Prehistoric Through Medieval
- ARTH1206 Art History: Renaissance Through Today
- CGD4500 Portfolio Preparation


## Major Electives (15 credits)

Choose five from the following courses:

- ANIM1750 Motion Graphics with After Effects
- ANIM1800 Vector Animation Using Animate CC
- ANIM1850 3D Computer Modeling
- ANIM2500 3D Computer Animation
- CGD1177 Introduction to Digital Media
- CGD1178 Multimedia on the Internet
- CGD1192 Digital Photography
- CGD1843 Design for the Web


## Graphic Art and Design Concentration

The graphic art and design concentration exposes students to all aspects of graphic design and data visualization with outputs to print, web and smart devices.

## Major Requirements (18 credits)

- ART1151 General Drawing I or ART1161 General Painting I
- ART2236 Introduction to Color
- ARTH1205 Art History: Prehistoric Through Medieval
- ARTH1206 Art History: Renaissance Through Today
- CGDH2020 History of Graphic Design
- CGD4500 Portfolio Preparation


## Major Electives (15 credits)

Choose five from the following courses:

- ART1231 2-Dimensional Design
- ART1167 Collage and Mixed Media
- CGD1177 Introduction to Digital Media
- CGD1192 Digital Photography
- CGD1313 Creative Imagery with Photoshop
- CGD2174 Digital Publishing
- CGD3179 Digital Illustration and Design


## For Information

For the Art Major at the Metropolitan Campus contact:
Marie Roberts
Professor of Fine Arts
bitterwo@fdu.edu
For the Computer Art and Design Concentration at the Metropolitan Campus contact:
Yelena Aronson
Professor of Digital Art
lena@fdu.edu
For the Graphic Art and Design Concentration at the Metropolitan Campus contact:
Janet O'Neil, Director of Graphic Design Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Graphic Design
joneil@fdu.edu

## Biochemistry BS

The Bachelor of Science with a major in biochemistry program is designed for students who plan to enter graduate school or the chemical or pharmaceutical industry. In particular, it is ideal for the preprofessional student preparing for admission into a school of medicine, dentistry, veterinary medicine or physical therapy. The Florham Campus curriculum is certified by the American Chemical Society.
The biochemistry curriculum is particularly well suited to premedical students. Entrance requirement for most medical schools require an undergraduate program to include two semesters of biology, physics, English composition, a modern language and some calculus in addition to a strong chemistry background. Preprofessional counseling for science and health careers is available on campus.
The biochemistry major is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey.
A biochemistry major with a prepharmacy concentration is available only at the Florham Campus.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.

## Semesters 1 and 2

- CHEM1201 General Chemistry I Lecture
- CHEM1203 Lab: General Chemistry I
- CHEM1202 General Chemistry II Lecture
- CHEM1204 Lab: General Chemistry II Laboratory


## Semesters 3 and 4

- CHEM2261 Organic Chemistry I Lecture
- CHEM2263 Lab: Organic Chemistry I
- CHEM2262 Organic Chemistry II Lecture
- CHEM2264 Lab: Organic Chemistry II


## Semester 5

- CHEM3241 Physical Chemistry I
- CHEM3243 Physical Chemistry I Laboratory
- CHEM3281 Biochemistry I Lecture
- CHEM3389 Biochemistry I Laboratory


## Semester 6

- CHEM3242 Physical Chemistry II Lecture
- CHEM3244 Physical Chemistry II Laboratory
- CHEM3282 Biochemistry II Lecture
- CHEM4401 Chemistry Seminar


## Semester 7

- CHEM2211 Inorganic Chemistry Lecture
- CHEM2221 Analytical Chemistry Lecture
- CHEM2223 Analytical Chemistry Laboratory


## Semester 8

- CHEM2314 Inorganic Chemistry Laboratory or CHEM2213 Inorganic Chemistry Lab
- CHEM4233 Instrumental Analysis Lecture
- CHEM4234 Instrumental Analysis Laboratory
- CHEM4215 Advanced Inorganic Chemistry or CHEM4373 Polymer Chemistry


## Cognate Requirements

## Semesters 1 and 2

- MATH1201 Calculus I
- MATH2202 Calculus II
- BIOL1221/BIOL1222 Biological Diversity Lecture/Laboratory
- BIOL1233/BIOL1234 Introduction to Molecules, Cells and Genes Lecture/Laboratory


## Semesters 3 and 4

- PHYS2203/PHYS2201 University Physics I Lecture/Laboratory PHYS2204/PHYS2202 University Physics II Lecture/Laboratory


## Semester 8

- BIOL3050/BIOL3051 Cell Biology and Lab (or)
- BIOL3100/BIOL3101 Genetics and Lab


## Major Requirements

Free Electives: May be chosen from any courses offered at the University after consultation with an adviser (student may not take BIOL1101 Concepts of Plant Biology and BIOL1102 Concepts of Animal Biology). (Foreign language is recommended for students intending to go to graduate school.);
Advance Mathematics Course: select one course, three credits, from the following:

- MATH2203 Calculus III
- MATH2337 Applied Statistics

Science Electives: Any upper-level (3000 or 4000) undergraduate or graduate science course or Independent Study.
A minimum of 120 credits is required for graduation.

## General Education Requirements (Florham Campus)

I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits)

- MATH1203 Calculus I
- MATH2202 Calculus II


## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002-level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000 level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- BIOL1221, BIOL1222 Biological Diversity (Lecture and Laboratory)
- BIOL1233, BIOL1234 Molecules, Cells and Genes (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biochemistry BS (Prepharmacy concentration)

The Bachelor of Science with a major in biochemistry program with a concentration in prepharmacy is designed for students who plan to enter graduate school in pharmaceutical science or the pharmaceutical industry. It is designed to meet the entrance requirements for the FDU School of Pharmacy but also contains the entrance requirements for most schools of pharmacy. In addition to the basic school of pharmacy entrance requirements, the program includes introductory pharmaceutical chemistry courses designed to give the student a strong foundation in pharmaceutical chemistry. These are Pharmacokinetics, Pharmacology and Introduction to Medicinal Chemistry. Additional pharmaceutical chemistry major electives are also available. The curriculum is certified by the American Chemical Society if the student meets the required 400 laboratory course hours. Preprofessional counseling for science and health careers is available on campus.
The biochemistry major with a prepharmacy concentration is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, only at the Florham Campus, Madison, New Jersey.
A biochemistry major with no concentration is offered at both the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey.

## Degree Plan

## Semester 1 (16 credits)

- BIOL1221, BIOL1222 Biological Diversity (Lecture and Laboratory) (Overall grade point ratio [GPR] of at least 2.00 in required courses)
- BIOL1223 Biological Diversity Recitation (Overall GPR of at least 2.00 in required courses)
- CHEM1201 General Chemistry I Lecture (Overall GPR of at least 2.00 in required courses)
- CHEM1203 General Chemistry I Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM1211 General Chemistry I Recitation (Overall GPR of at least 2.00 in required courses)
- MATH1203 Calculus I
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## Semester 2 (16 credits)

- BIOL1233, BIOL1235 Molecules, Cells and Genes (Lecture and Recitation) (Overall GPR of at least 2.00 in required courses)
- BIOL1234 Molecules, Cells and Genes Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM1202 General Chemistry II Lecture (Overall GPR of at least 2.00 in required courses)
- CHEM1204 General Chemistry II Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM1212 General Chemistry II Recitation (Overall GPR of at least 2.00 in required courses)
- MATH2202 Calculus II (Overall GPR of at least 2.00 in required courses)
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument


## Semester 3 ( 15 credits)

- BIOL1205 Anatomy and Physiology I (Overall GPR of at least 2.00 in required courses)
- BIOL1207 Anatomy and Physiology I Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM2261 Organic Chemistry I Lecture (Overall GPR of at least 2.00 in required courses)
- CHEM2263 Organic Chemistry I Laboratory (Overall GPR of at least 2.00 in required courses)
- PHYS2201 Physics I Laboratory
- PHYS2203 University Physics I
- Cross-cultural Understanding


## Semester 4 (15 credits)

- BIOL1206 Anatomy and Physiology II (Overall GPR of at least 2.00 in required courses)
- BIOL1208 Anatomy and Physiology II Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM2262 Organic Chemistry II Lecture (Overall GPR of at least 2.00 in required courses)
- CHEM2264 Organic Chemistry II Laboratory (Overall GPR of at least 2.00 in required courses)
- PHYS2202 Physics II Laboratory
- PHYS2204 University Physics II
- Knowledge of Global Issues


## Semester 5 (14 credits)

- CHEM2211 Inorganic Chemistry (Overall GPR of at least 2.00 in required courses)
- CHEM2213 Inorganic Chemistry Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM3281 Biochemistry I (Overall GPR of at least 2.00 in required courses)
- CHEM3389 Biochemistry Laboratory (Overall GPR of at least 2.00 in required courses)
- COMM2099 Professional Communications
- Major Elective (Overall GPR of at least 2.00 in required courses)


## Semester 6 (16 credits)

- CHEM2221 Analytical Chemistry (Overall GPR of at least 2.00 in required courses)
- CHEM2223 Analytical Chemistry Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM3242 Physical Chemistry II Lecture (Overall GPR of at least 2.00 in required courses)
- CHEM3244 Physical Chemistry II Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM3282 Biochemistry II (Overall GPR of at least 2.00 in required courses)
- Humanities Course (must be at the 2000-level or above)


## Semester 7 (15 credits)

- CHEM4233 Instrumental Analysis Lecture (Overall GPR of at least 2.00 in required courses)
- CHEM4234 Instrumental Analysis Laboratory (Overall GPR of at least 2.00 in required courses)
- CHEM4285 Pharmacology (Overall GPR of at least 2.00 in required courses)
- ECON2001 Introduction to Microeconomics
- Modern Language 1002
- Modern Language 1008


## Semester 8 (13-14 credits)

- CHEM4263 Introduction to Medicinal Chemistry (Overall GPR of at least 2.00 in required courses)
- CHEM4401 Chemistry Seminar Overall GPR of at least 2.00 in required courses)
- MATH1133 Applied Statistics or MATH2203 Calculus III or MATH6771 Ordinary Differential Equation
- Ethical and Moral Analysis Course
- Creative and Expressive Arts Course


## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits)

- MATH1203 Calculus I
- MATH2202 Calculus II


## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY),

Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000 level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## For Information

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# Biochemistry BA, Chemistry MS (Pharmaceutical Chemistry concentration) Combined Degree 

Qualified students may earn a Bachelor of Science degree in biochemistry and a Master of Science degree in chemistry with a pharmaceutical chemistry concentration. The five-year program is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semester 5

- CHEM3241, CHEM3243 Physical Chemistry I Lecture and Laboratory
- CHEM3281, CHEM3389 Biochemistry I Lecture and Laboratory


## Semester 6

- CHEM3242, CHEM3244 Physical Chemistry II Lecture and Laboratory
- CHEM3282 Biochemistry II
- CHEM4401 Chemistry Seminar


## Semester 7

- CHEM2211 Inorganic Chemistry
- CHEM2221, CHEM2223 Analytical Chemistry Lecture and Laboratory
- Pharmaceutical Chemistry Requirement
- Graduate Elective


## Semester 8

- CHEM2314 Lab: Inorganic Chemistry II
- CHEM4215 Advanced Inorganic Chemistry or CHEM4373 Polymer Chemistry
- CHEM4233, CHEM4234 Instrumental Analysis Lecture and Laboratory
- Pharmaceutical Chemistry Requirement (3 credits)


## Semester 9

- Pharmaceutical Chemistry Requirements (9 credits)
- Graduate Elective (3 credits)


## Semester 10

- Pharmaceutical Chemistry Requirement (3-4 credits)
- Pharmaceutical Chemistry Electives (6 credits)
- Graduate Elective (3 credits)


## Cognate Requirements

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- MATH1201 Calculus I
- MATH2202 Calculus II


## Semesters 3 and 4

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Semester 6

- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory or BIOL3100, BIOL3101 Genetics Lecture and Laboratory


## Major Requirements

## Advance Mathematics Course

Select one course from the following:

- MATH2203 Calculus III or MATH2337 Applied Statistics I


## Graduate Courses for BS and MS Degrees

Students should consult with their advisers for course selections and new course offerings.

## Required Courses

- BIOL6758 Advances in Pharmacology
- CHEM6673 Physical Organic Chemistry
- CHEM6781 Biochemistry
- CHEM6754 Drug-delivery Systems


## 6-7 credits from the following:

- CHEM6755 Medicinal Chemistry or CHEM6752 Drug Design and Discovery
- CHEM7737 Chemical Analysis of Pharmaceuticals or BIOL6845, BIOL6846 Molecular Biology Techniques Lecture and Laboratory


## Pharmaceutical Chemistry Electives (6 credits)

Any 5000- or higher-level biology (BIOL), chemistry (CHEM), cosmetic science (COSC), management (MGMT), marketing (MKTG), mathematics (MATH) or pharmaceutical chemistry (PHAR) course Graduate Electives (9 credits)
Any 5000- or higher-level biology (BIOL), chemistry (CHEM) or cosmetic science (COSC) course
A minimum of 120 credits is required for the BS degree, and a minimum of an additional $24-25$ graduate credits is required for the MS degree, for a total of 144-145 credits for the combined degree.

## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication ( $\mathbf{3}$ credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- BIOL1221, BIOL1222 Biological Diversity (Lecture and Laboratory)
- BIOL1233, BIOL1234 Molecules, Cells and Genes (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

James Dougherty, Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences
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Becton College of Arts and Sciences
Assistant Professor of Biochemistry
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973-443-8786

## Biochemistry BS, Cosmetic Science MS Combined Degree

Qualified students can earn a BS in biochemistry and a Master of Science in cosmetic science.
The five-year program is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).

A minimum of 120 credits is required for the BS degree, and a minimum of an additional 23 credits are required for the MS degree, for a total of 143 credits for the combined degree.

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semester 5

- CHEM3241, CHEM3243 Physical Chemistry I Lecture and Laboratory
- CHEM3281, CHEM3389 Biochemistry I Lecture and Laboratory


## Semester 6

- CHEM3242, CHEM3244 Physical Chemistry II Lecture and Laboratory
- CHEM3282 Biochemistry II
- CHEM4401 Chemistry Seminar


## Semester 7

- CHEM2211 Inorganic Chemistry
- CHEM2221, CHEM2223 Analytical Chemistry Lecture and Laboratory
- Cosmetic Science Requirements (6 credits)


## Semester 8

- CHEM2314 Lab: Inorganic Chemistry II
- CHEM4215 Advanced Inorganic Chemistry or CHEM4373 Polymer Chemistry
- CHEM4233, CHEM4234 Instrumental Analysis Lecture and Laboratory
- Cosmetic Science Requirement (3 credits)


## Semester 9

- Cosmetic Science Requirement (3 credits)
- Cosmetic Science Electives (6 credits)
- Graduate Elective (3 credits)


## Semester 10

- COSC6548 Cosmetic Science Laboratory
- Cosmetic Science Requirements (6 credits)
- Graduate Elective (3 credits)


## Cognate Requirements

## Semesters 1 and 2

- MATH1201 Calculus I
- MATH2202 Calculus II
- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory


## Semesters 3 and 4

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Semester 6

- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory or BIOL3100, BIOL3101 Genetics Lecture and Laboratory


## Major Requirement

Advance Mathematics Course - select one course from the following:

- MATH2203 Calculus III or
- MATH2337 Applied Statistics I


## Graduate Courses for BS and MS Degree

Students should consult with their advisers for course selections and new course offerings.

## Required Courses (20 additional credits from the following)

- CHEM6526 Product Development
- CHEM6529 Microtoxicity and Biochemistry
- COSC6547 Skin-care Raw Materials and Formulations
- COSC6543 Hair-care Raw Materials and Formulations
- COSC6548 Cosmetic Science Laboratory
- COSC6753 Applied Colloid and Surface Science
- COSC6756 Dermal Pharmacology and Immunology


## Cosmetic Science Electives (6 credits)

- BIOL6728 Bioethics
- CHEM6546 Perfumery
- CHEM6781 Biochemistry
- CHEM6773 Polymer Chemistry
- COSC6542 Claims Substantiation
- COSC6549 Color Cosmetics


## Graduate Electives (9 credits):

Includes any 5000 -level or higher graduate course in biology (BIOL), chemistry (CHEM), communication (COMM or MCOM), cosmetic science (COSC), management (MGMT), marketing (MKTG) or pharmaceutical chemistry (PHAR).

## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- BIOL1221, BIOL1222 Biological Diversity (Lecture and Laboratory)
- BIOL1233, BIOL1234 Molecules, Cells and Genes (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biochemistry BS, Pharmacy PharmD Combined Degree

Fairleigh Dickinson University's accelerated seven-year BS in biochemistry/PharmD program, provides a platform for currently enrolled students at both New Jersey campuses who are interested in FDU's Doctor of Pharmacy program within the School of Pharmacy and Health Sciences.
The BS in biochemistry/PharmD combined degree program is jointly offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey, and by the School of Pharmacy and Health Sciences, Florham Park, New Jersey.
High-achieving students can enter into one of three accelerated tracks (in biochemistry, biology or chemistry) with the potential to matriculate into the School of Pharmacy and Health Sciences following completion of three years of undergraduate study. Students who maintain a 3.30 cumulative grade point ratio (CGPR) with no pharmacy prerequisite course below a B- are guaranteed an interview for admission to the Doctor of Pharmacy program. A letter of recommendation from a faculty member or adviser is also required.
Following the interview process, students admitted to the Doctor of Pharmacy program will maintain their undergraduate scholarships and aid during the fourth "bridge" year while completing both their first professional year of study and their baccalaureate degree in their major area of study.
A minimum of 120 credits is required for the BS degree; 98 of these are taken at the Florham or Metropolitan Campus in years one through three, plus 22 credits (to be approved by department chair/director) in year 4 at FDU's School of Pharmacy and Health Sciences. Students not accepted into FDU's School of Pharmacy and Health Sciences have the option of switching out of the BS in biochemistry/PharmD combined degree and into another concentration.

## Degree Plan

Note: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.
PharmD prerequisite: Students must have a grade of B- or higher.

## Semesters 1 and 2

- CHEM1201 General Chemistry I Lecture
- CHEM1203 General Chemistry I Laboratory
- CHEM1202 General Chemistry II Lecture
- CHEM1204 General Chemistry II Laboratory


## Semesters 3 and 4

- CHEM2261 Organic Chemistry I Lecture
- CHEM2263 Organic Chemistry I Laboratory
- CHEM2262 Organic Chemistry II Lecture
- CHEM2264 Organic Chemistry II Laboratory


## Semester 5

- CHEM2211 Inorganic Chemistry
- CHEM2213 Inorganic Chemistry Laboratory
- CHEM3241 Physical Chemistry I
- CHEM3243 Physical Chemistry I Laboratory
- CHEM3245 Physical Chemistry I Recitation
- CHEM3281 Biochemistry I Lecture
- CHEM3389 Biochemistry I Laboratory


## Semester 6

- CHEM2221 Analytical Chemistry Lecture
- CHEM2223 Analytical Chemistry Laboratory
- CHEM3242 Physical Chemistry II
- CHEM3244 Physical Chemistry II Laboratory
- CHEM3246 Physical Chemistry II Recitation


## Semester 7

- PHRM6100 Foundations in Pharmaceutical Sciences - Medicinal Chemistry, Pharmacology (3 credits)
- PHRM6101 Foundations in Basic Biomedical Sciences Pathology/Pathophysiology/Microbiology/Immunology (4 credits)
- PHRM6200 Introduction to Pharmacokinetics (2 credits)
- PHRM6201 Physical Pharmacy (2 credits)
- PHRM6211 Pharmaceutical Calculations I (1 credit)
- PHRM6300 Evidence Based Practice I (2 credits)
- PHRM6401 Professional Pharmacy Practice I - Health Care Delivery (2 credits)
- PHRM6700 Pharmacy Beyond the Curriculum (0 credits)


## Semester 8

- PHRM6102 Integrated Pharmacotherapy - Gastrointestinal (2 credits)
- PHRM6104 Integrated Pharmacotherapy - Cardiology/Pulmonary (3 credits)
- PHRM6111 Integrated Pharmacotherapy - Conceptual Connections and Patient Care (2 credits)
- PHRM6202 Applied Biopharmaceutics and Pharmacokinetics (3 credits)
- PHRM6203 Genetics and Pharmacogenomics (2 credits)
- PHRM6212 Pharmaceutical Calculations II (1 credit)
- PHRM6402 Professional Pharmacy Practice II - Communication in Health Care (2 credits)
- PHRM6701 Pharmacy Beyond the Curriculum (1 credit)


## Cognate Requirements

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- MATH1201 Calculus I or MATH1203 Calculus I
- MATH2202 Calculus II


## Semesters 3 and 4

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Semesters 5 and 6

- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL3357, BIOL3358 Human Structure and Function II Lecture and Laboratory
- MATH2337 Applied Statistics I


## Major Requirements

NOTE: Some sections of the pharmacy curriculum are under review and are subject to change.

## Years 5-7 (School of Pharmacy and Health Sciences)

- PHRM6501 Introductory Pharmacy Practice Experience
- PHRM7105 Integrated Pharmacotherapy V: Neurology, Psychiatry and Anesthesiology
- PHRM7106 Integrated Pharmacotherapy VI: Infectious Disease
- PHRM7107 Integrated Pharmacotherapy VII: Pulmonary, EENT
- PHRM7108 Integrated Pharmacotherapy VIII: Endocrine, Renal, Repro.
- PHRM7111 Integrated Pharmacotherapy V-VI: Conceptual Connection
- PHRM7112 Integrated Pharmacotherapy VII-VIII: Conceptual Connection
- PHRM7201 Pharmaceutical Dispensing and Compounding
- PHRM7202 Pharmaceutics III: Sterile Products and Biopharmaceuticals
- PHRM7301 Biostatics
- PHRM7302 Epidemiology and Public Health
- PHRM7401 Professional Pharmacy Practice III: Informatics/Drug Information
- PHRM7501 Introductory Pharmacy Practice Experience II
- PHRM7701 Beyond the Curriculum II
- PHRM8109 Integrated Pharmacotherapy IX: Autoimmune and Rare
- PHRM8110 Integrated Pharmacotherapy X: Hematology and Oncology
- PHRM8111 Integrated Pharmacotherapy I-X: Whole System Overview
- PHRM8112 Case Studies in Pharmacy
- PHRM8201 Pharmacogenomics and Personalized Medicine
- PHRM8202 Pharmacogenomics \& Personalized Medicine
- PHRM8301 Pharmacoepidemiology, Pharmacoeconomics, Outcomes
- PHRM8302 Public Health and the Global Mission of Pharmacy
- PHRM8402 Professional Pharmacy Practice IV: Leadership/Management
- PHRM8501 Introductory Pharmacy Practice Experience III
- PHRM9101 Advanced Pharmacy Practice Experience (APPE) I: Community
- PHRM9102 Advanced Pharmacy Practice Experience (APPE) II: Institutional
- PHRM9103 Advanced Pharmacy Practice Experience (APPE) III: Ambulatory Care
- PHRM9104 Advanced Pharmacy Practice Experience (APPE) IV: Acute Care
- PHRM92XX Advanced Pharmacy Practice Experience V: Elective
- PHRM93XX Advanced Pharmacy Practice Experience VI: Elective
- PHRM94XX Advanced Pharmacy Practice Experience VII: Elective
- PHRM95XX Advanced Pharmacy Practice Experience VIII: Elective
- PHRM9900 Pharmacy Capstone


## Elective Courses (21 credits)

General Education Requirements (Florham Campus)
I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits)

- MATH1203 Calculus I
- MATH2202 Calculus II


## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY),

Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000 level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- BIOL1221, BIOL1222 Biological Diversity (Lecture and Laboratory)
- BIOL1233, BIOL1234 Molecules, Cells and Genes (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS

This curriculum is designed for students who plan to attend graduate school and for pre-professional students who wish to prepare for admission to a school of chiropractic, dentistry, medicine, osteopathy, pharmacy, podiatry or veterinary medicine. This program is offered by the department of biological
sciences, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
The preprofessional adviser helps students prepare for entrance into their desired professions. It should be noted that the majority of the students accepted to graduate schools have completed four years of undergraduate work.

## Admission Requirements

For admission and matriculation into the biology major curriculum, successful completion of secondaryschool courses in elementary algebra and plane geometry and a year of science are required.
Candidates for the Bachelor of Science degree must complete the following courses and earn a grade of C- or higher in the course work.

## Degree Plan

Note: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements. (See below.)

## Biology Major Courses

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semester 3 and 4

- BIOL2150, BIOL2250 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design (Metropolitan Campus only)
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3 $\qquad$ /4 $\qquad$ Biology Elective I
- BIOL3 $\qquad$ 14 Biology Elective II


## Semesters 7 and 8

- BIOL3 $\qquad$ /4 $\qquad$ Biology Elective III
- BIOL3 __ /4__ Biology Elective IV
- BIOL3 $\qquad$ 14 $\qquad$ Biology Elective V
- BIOL4950 Biology Seminar
- Elective area I: Ecology and Environmental Biology
- Elective area II: Cellular and Molecular Biology
- Elective area III: Organismal Biology
- Elective area IV and V: Anatomy and Physiology, Ecology and Environmental Biology, Cellular and Molecular Biology, Organismal Biology


## Courses for BIOL3000/BIOL4000 Elective I (and Electives IV And V if Concentrating In Ecology and Environmental Biology)

- BIOL3310, BIOL3311 Evolution Lecture and Laboratory
- BIOL3380, BIOL3381 Animal Behavior Lecture and Laboratory
- BIOL3390, BIOL3391 Conservation Biology and Wildlife Management Lecture and Laboratory
- BIOL4100, BIOL4110 Marine Ecology Lecture and Laboratory
- BIOL4210, BIOL4215, Wildlife and Population Ecology Lecture and Laboratory
- BIOL4420, BIOL4423 Evolution and Biodiversity Lecture and Laboratory
- BIOL4431 Selected Studies in Ecology and Environmental Biology
- BIOL4460, BIOL4461 Environmental Toxicology Lecture and Laboratory
- BIOL4771 Behavioral Ecology
- BIOL4772 Ecotoxicology
- BIOL4775 Physiological Ecology
- MBIO3201 Aquatic Vegetation
- MBIO3701 Marine Ecology


## Courses for BIOL3000/BIOL4000 Elective II (and Electives IV And V if Concentrating In Cellular and Molecular Biology)

- BIOL3009, BIOL3019 Microbiology Lecture and Laboratory
- BIOL3221, BIOL3231 Microbiology - Medical Focus Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3332, BIOL3333 Immunology Lecture and Laboratory
- BIOL3345 Molecular Genetics
- BIOL3420, BIOL3421 Developmental Biology Lecture and Laboratory
- BIOL3470, BIOL3471 Advanced Molecular Biology Lecture and Laboratory
- BIOL3408, BIOL3409 Forensic Science Lecture and Laboratory
- BIOL3417 Introduction to Recombinant DNA
- BIOL3420, BIOL3421 Developmental Biology Lecture and Laboratory
- BIOL4220, BIOL4221 Histology Lecture and Laboratory
- BIOL4240, BIOL4241 Molecular Cell Biology Lecture and Laboratory
- BIOL4444 Selected Studies in Cell and Molecular Biology
- BIOL4470, BIOL4471 Introduction to Neuroscience Lecture and Laboratory
- BIOL4500, BIOL4501 Cell Biology Cancer Lecture and Laboratory
- BIOL4600, BIOL4601 Gene Expression and Regulation Lecture and Laboratory
- BIOL4855, BIOL4856 Molecular Biology Techniques Lecture and Laboratory
- BIOL5306 Immunology
- BIOL6720 Molecular Biotechnology
- BIOL6840 or BIOL4840 Cell Culture


## Courses for BIOL3000/BIOL4000 Elective III

- BIOL3028, BIOL3029 Plant Morphology Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL3253, BIOL3254 Comparative Anatomy Lecture and Laboratory
- BIOL3310, BIOL3311 Evolution Lecture and Laboratory
- BIOL3337, BIOL3327 General Physiology Lecture and Laboratory
- BIOL3357, BIOL3358 Human Structure and Function II Lecture and Laboratory
- BIOL3380, BIOL3381 Animal Behavior Lecture and Laboratory
- BIOL3413, BIOL3423 Entomology Lecture and Laboratory
- BIOL3420, BIOL3421 Developmental Biology Lecture and Laboratory
- BIOL4235, BIOL4236 Developmental Biology Lecture and Laboratory
- BIOL4420, BIOL4423 Evolution and Biodiversity Lecture and Laboratory
- BIOL4452 Selected Studies in Anatomy and Physiology
- BIOL4480, BIOL4481 Insect-transmitted Diseases Lecture and Laboratory
- MBIO3201 Aquatic Vegetation
- MBIO3401 Marine Invertebrates
- MBIO3650, MBIO3651 Physiology of Marine Animals Lecture and Laboratory
- MBIO3901 Marine Vertebrates


## Courses for BIOL3000/BIOL4000 Electives IV And V if Concentrating in Anatomy and Physiology

- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL3253, BIOL3254 Comparative Anatomy Lecture and Laboratory
- BIOL3337, BIOL3327 General Physiology Lecture and Laboratory
- BIOL3357, BIOL3358 Human Structure and Function II Lecture and Laboratory
- BIOL3420, BIOL3421 Developmental Biology Lecture and Laboratory
- BIOL4235, BIOL4236 Developmental Biology Lecture and Laboratory
- BIOL4470, BIOL4471 Introduction to Neuroscience Lecture and Laboratory
- BIOL4452 Selected Studies in Anatomy and Physiology
- BIOL4888 Physiology of Disease
- BIOL4893 Human Physiology
- MBIO3650, MBIO3651 Physiology of Marine Animals Lecture and Laboratory

If two biology elective courses are selected from the same major area, a concentration in that area may be declared. Four credits of undergraduate research (permission of instructor required) may be substituted for one major area course as a biology elective.

## Anatomy and Physiology Concentration

Students majoring in biology with concentration in anatomy and physiology must take:

## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL3357, BIOL3358 Human Structure and Function II Lecture and Laboratory
- BIOL3___/4__ Biology Elective I


## Semesters 7 and 8

- BIOL3___/4__ Biology Elective II
- BIOL3__14__ Biology Elective III
- BIOL3___ 4 ___ Biology Elective IV
- BIOL3___/4__ Biology Elective V
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar

A minimum of 121 credits is required for graduation.

## Ecology and Environmental Biology Concentration

## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3___/4__ Biology Elective I


## Semesters 7 and 8

- BIOL3___/4__ Biology Elective II
- BIOL3___/4__ Biology Elective III
- BIOL3___ 4 ___ Biology Elective IV
- BIOL3___/4__ Biology Elective V
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar

A minimum of 120 credits is required for graduation.

## Cellular and Molecular Biology Concentration Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3470, BIOL3471 Advanced Molecular Biology Lecture and Laboratory
- BIOL3 $\qquad$ /4 $\qquad$ Biology Elective I


## Semesters 7 and 8

- BIOL3 $\qquad$ /4 Biology Elective II
- BIOL3 $\qquad$ /4 Biology Elective III
- BIOL3___ 4 __ Biology Elective IV
- BIOL3___/4__ Biology Elective V
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar

A minimum of 120 credits is required for graduation.

## Biotechnology Concentration

(Offered only at the Metropolitan Campus)

## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory


## Semesters 7 and 8

- BIOL3345 Molecular Genetics
- BIOL4855, BIOL4856 Molecular Biology Techniques Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar
- BIOL5306 Immunology
- BIOL6720 Molecular Biotechnology
- BIOL6840 Cell Culture

A minimum of 120 credits is required for graduation.

## Common Cognate Requirements

Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- PHYS2203/PHYS2201 University Physics I Lecture/Laboratory
- PHYS2204/PHYS2202 University Physics II Lecture/Laboratory


## Major Requirements

- Free electives: May be chosen from any courses offered at the University after consultation with an adviser, but may include no more than six credits of 1000-level biology courses. Physical Education is recommended for students to go on to schools of veterinary medicine. Foreign language is recommended for students intending to go on to graduate school.
- The program is designed for students who plan to attend graduate school or who wish to prepare for admission to a school of medicine, dentistry, chiropractic, optometry, etc., as well as those interested in entering directly into the workforce.


## General Education Requirements (Florham Campus) <br> I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits)

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.

## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

## For the Metropolitan Campus

Marion McClary, Chair, Department of Biological Sciences, Maxwell Becton College of Arts and Sciences<br>Professor of Biological Sciences<br>marion mcclary@fdu.edu<br>201-692-2606

## For the Florham Campus

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## Biology BS, Biology MS (Biotechnology Concentration) Combined Degree

The combined accelerated program BS/MS in biology allows students to earn both degrees for a total of 142 credits, instead of 161 . Students must decide to be in this program by the end of their sophomore year and arrange their program for their junior and senior years in close consultation with their academic advisers.

The concentration in biotechnology is designed to provide the student with a thorough background in molecular and cellular biology, with emphasis on current developments in areas including genetics, immunology, microbiology, cell physiology, recombinant DNA techniques and cell and tissue culture. This program prepares students for careers in research or the health care professions, as well as careers in business, law and scientific writing.

The program is designed for students who plan to attend graduate school or who wish to prepare for admission to a school of medicine, dentistry, chiropractic, optometry, etc., as well as those interested in entering directly into the workforce.

The combined-degree program is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.

A minimum of 120 credits is required for the BS degree, and a minimum of an additional 22 credits for the MS degree.
Candidates for a concentration in biotechnology must complete the courses required for the major in biology and include the following courses: BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory; BIOL3345 Molecular Genetics; BIOL5306 Immunology; and BIOL6840 Cell Culture.

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation

Semester 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL3345 Molecular Genetics


## Semesters 7 and 8

- BIOL4405 Ethics in Science
- BIOL4855, BIOL4856 Molecular Biology Techniques Lecture and Laboratory
- BIOL4950 Biology Seminar
- BIOL4950 Biology Seminar II
- BIOL5306 Immunology
- BIOL6240, BIOL6241 Molecular Cell Biology Lecture and Laboratory
- BIOL6840 Cell Culture


## Semesters 9 and 10 (22 credits)

- BIOL6720 Molecular Biotechnology (3 credits)
- Graduate Biology Electives (19 credits) (Students may take any BIOL course at or above the 5000-level)


## Cognate Requirements

Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS, Biology MS Combined Degree

The combined accelerated BS/MS in biology program allows students to earn both degrees for a total of 141 credits, instead of 160 . Students must decide to be in this program by the end of their sophomore year and arrange their program for their junior and senior years in close consultation with their academic advisers.
The program is designed for students who plan to attend graduate school or who wish to prepare for admission to a school of medicine, dentistry, chiropractic, optometry, etc., as well as those interested in entering directly into the workforce.
The program is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).
A minimum of 120 credits is required for the BS degree, and a minimum of an additional 21 credits for the MS degree.

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- Biology Elective


## Semesters 7 and 8

- BIOL4405 Ethics in Science
- BIOL4855, BIOL4856 Molecular Biology Techniques Lecture and Laboratory
- BIOL4950 Biology Seminar
- BIOL4950 Biology Seminar II
- BIOL5306 Immunology
- BIOL6240, BIOL6241 Molecular Cell Biology Lecture and Laboratory
- BIOL6840 Cell Culture
- Biology Elective


## Semesters 9 and 10 ( 22 credits)

- Graduate Biology Electives (Students may take any BIOL courses at or above the 5000 -level)


## Cognate Requirements

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS, Chiropractic DC Combined Degree

This accelerated, combined-degree program enables students to earn both baccalaureate and Doctor of Chiropractic (DC) degrees in just six years and four months - a full year less than the normal study time of seven years and four months.
The combined-degree program is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey; at the Metropolitan Campus, Teaneck, New Jersey; and at an offsite or partner location.

The bachelor's degree is awarded by Fairleigh Dickinson University and the Doctor of Chiropractic degree is awarded by a participating Council on Chiropractic Education (CCE)-accredited College of Chiropractic. To date, the University has affiliations with:

- Northeast College of Health Sciences, Seneca Falls, N.Y.
- Logan University, Chesterfield, Mo.
- Parker University, Dallas, Texas
- University of Western States, Portland, Ore. and
- Palmer College of Chiropractic, Davenport, Iowa


## Admission Requirements

Students are admitted into FDU's combined-degree program as incoming freshmen or qualified transfer students. The BS degree is awarded after the students complete six semesters (three years) at FDU (including the courses listed below or their approved equivalent), the first two trimesters of study at a participating chiropractic college with grades of C or better and is accepted into the third trimester. Up to 32 credits accepted in transfer toward completion of BS degree requirements will be selected from appropriate graduate-level courses offered by a participating chiropractic college.

## Degree Plan

Note: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below). (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)

## Metropolitan Campus Major Requirements

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation
- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory
- CHEM1211 General Chemistry I Recitation
- CHEM1212 General Chemistry II Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory
- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar
- CHEM3281 Biochemistry I
- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Semesters 7 and 8

Upper-level biology electives will differ to prepare students based on the requirements of specific chiropractic schools.

- BIOL4950 Biology Seminar
- BIOL3___/4__ Biology Elective III
- BIOL3__/4__ Biology Elective IV
- BIOL3__/4__ Biology Elective V


## Florham Campus Major Requirements

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation
- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory
- BIOL3253, BIOL3254 Comparative Anatomy Lecture and Laboratory
- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3337, BIOL3327 General Physiology Lecture and Laboratory
- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Semesters 7 and 8

Upper-level biology electives will differ to prepare students based on the requirements of specific chiropractic schools.

- BIOL4950 Biology Seminar
- BIOL3 $\qquad$ /4 $\qquad$ Biology Elective III
- BIOL3 $\qquad$ /4 Biology Elective IV
- BIOL3 $\qquad$ 14 $\qquad$ Biology Elective V


## Graduate Degree Requirements

Graduate degree requirements are dependent on the chiropractic school in which the student is accepted and enrolls.

## General Education Requirements (Florham Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits) '

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.

## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002-level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at
the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
- or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding ( 3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS, Dental Medicine DMD Combined Degree (Florham)

Students accepted into this program will spend their first three years at FDU. The following four years will be spent at the Rutgers School of Dental Medicine (RSDM) in Newark, N.J., for the Doctor of Dental Medicine (DMD.) degree. Following the successful completion of the first year of study at RSDM the student will be awarded a BS degree by FDU.
The combined-degree program is offered by the department of biological sciences, Maxwell Becton School of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Admission Requirements

Students who are in their fourth semester at FDU and who meet the application criteria may apply to the combined-degree program with RSDM. Applicants must have had secondary-school preparation in English, mathematics, biology, chemistry and physics. Please speak to the FDU preprofessional adviser for additional information on application criteria.
Following evaluation of applications by the FDU and RSDM admissions offices, the joint admissions committee will decide which applicants to interview at FDU and RSDM. The interview at RSDM will be conducted by a member of its admissions committee. The final decision will be made by the joint admissions committee following the review of the interviewers' comments.

## Admission to RSDM

Final admission into the Rutgers School of Dental Medicine is dependent on satisfactory completion of the following:

- 98 credits as listed below in the department of biological sciences, Fairleigh Dickinson University.
- A minimum grade point ratio (GPR) of 3.50 and a minimum grade of $B$ in each of the science courses required for admission to RSDM. There shall be no final grade of D, F or I in any course required for admission to RSDM, appearing on the student's transcript.
- A satisfactory score on the Dental Aptitude Test must be submitted prior to admission to RSDM.
- Recommendations from at least four FDU faculty members including the chair of the department of biological sciences, Maxwell Becton School of Arts and Sciences, at the Florham Campus, Madison, New Jersey and the preprofessional adviser.
- Students wishing to participate in the program must apply in writing to the preprofessional adviser no later than completion of 60 credits at FDU.
- Participation in any orientation programs required by RSDM.
- Final entrance into the DMD. program is contingent on satisfactory performance in all six semesters at FDU.


## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their Bachelor degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)
A minimum of 124 credits is required for graduation with BS in biology.

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar


## Semesters 7 and 8

- Approved credits taken at professional school (29 credits)


## Cognate Requirements

Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- CHEM3281 Biochemistry I


## Major Requirements

The program is designed for students who are accepted into professional school (e.g., schools of medicine, dentistry, chiropractic and optometry) after three years of undergraduate study. Twenty-nine credits earned during the first year of professional school are used to supplement the 95 credits earned at FDU to complete the 124 credits required for the BS degree.

## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits) '

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.

## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage
speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## For Information

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## Biology BS, Dental Medicine DMD Combined Degree (Metro)

Students accepted into this program will spend their first three years at FDU. The following four years will be spent at the Lecom School of Dental Medicine (LSDM) for the Doctor of Dental Medicine (DMD.) degree. Following the successful completion of the first year of study at LSDM the student will be awarded a BS degree by FDU.
The combined-degree program is offered by the department of biological sciences, Maxwell Becton School of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

Students who are in their fourth semester at FDU and who meet the application criteria may apply to the combined-degree program with LSDM. Applicants must have had secondary-school preparation in English, mathematics, biology, chemistry and physics. Please speak to the FDU preprofessional adviser for additional information on application criteria.
Following evaluation of applications by the FDU and the Lecom admissions offices, the joint admissions committee will decide which applicants to interview at FDU and Lecom. The interview at Lecom will be conducted by a member of its admissions committee. The final decision will be made by the joint admissions committee following the review of the interviewers' comments.

## Admission to LSDM

Final admission into the Lecom School of Dental Medicine is dependent on satisfactory completion of the following:

- 98 credits as listed below in the department of biological sciences, Fairleigh Dickinson University.
- A minimum grade point ratio (GPR) of 3.50 and a minimum grade of $B$ in each of the science courses required for admission to LSDM. There shall be no final grade of D, F or I in any course required for admission to LSDM, appearing on the student's transcript.
- A satisfactory score on the Dental Aptitude Test must be submitted prior to admission to LSDM.
- Recommendations from at least four FDU faculty members including the chair of the department of biological sciences and the preprofessional adviser.
- Students wishing to participate in the program must apply in writing to the preprofessional adviser no later than completion of 60 credits at FDU.
- Participation in any orientation programs required by LSDM.
- Final entrance into the DMD. program is contingent on satisfactory performance in all six semesters at FDU.


## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their Bachelor degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)
A minimum of 124 credits is required for graduation with BS in biology.

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar


## Semesters 7 and 8

- Approved credits taken at professional school (29 credits)


## Cognate Requirements

Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- CHEM3281 Biochemistry I


## Major Requirements

The program is designed for students who are accepted into professional school (e.g., schools of medicine, dentistry, chiropractic and optometry) after three years of undergraduate study. Twenty-nine credits earned during the first year of professional school are used to supplement the 95 credits earned at FDU to complete the 124 credits required for the BS degree.

## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
- or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS, Medicine MD Combined Degree

The BS in biology and doctor of medicine (MD) is an eight-year program offered by FDU and Ross University School of Medicine, Dominica, West Indies. This $4+4$ combined-degree program provides qualified students the opportunity to complete a baccalaureate degree and an MD degree in eight years. The bachelor's degree is awarded by Fairleigh Dickinson University and the MD degree by Ross University School of Medicine. English is the teaching language.
The program prepares students interested in pursuing a Doctor of Medicine degree to become successful physicians in the United States.
The program is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- High-school seniors with a combined Scholastic Aptitude Test (SAT) score of 1170 and highschool grade point ratio (GPR) of 3.25 may apply for admission to the combined-degree program.
- All applicants for admission to the combined-degree program must satisfy secondary-school preparation in English, mathematics, biology, chemistry and physics.
- The high-school GPR and rank in class, along with letters of recommendation from high-school teachers, will be of primary importance in evaluating applicants' credentials.
- Applicants are required to submit scores in the verbal and mathematical components of the SAT.


## Qualifying for Enrollment at Ross University

Students must meet the following criteria to qualify for admission to the medicine phase of the program:

- Completion of all FDU curriculum requirements, including the General Education Requirements and the degree-program requirements for the major and all prerequisite courses required for admission at Ross University School of Medicine. Students must obtain a grade point ratio (GPR) of 3.00 or higher in prerequisite courses with no grades of C-, D or F in any of the courses;
- An overall GPR of 3.20 or higher; and
- Other requirements include a satisfactory MCAT score and other minimum admissions requirements set forth by Ross University.


## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor-degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar


## Semesters 7 and 8

- Approved credits taken at professional school (29 credits)


## Cognate Requirements

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- CHEM3281 Biochemistry I


## Major Requirements

The program is designed for students who are accepted into professional school (e.g., schools of medicine, dentistry, chiropractic and optometry) after three years of undergraduate study. Twenty-nine credits earned during the first year of professional school are used to supplement the 95 credits earned at FDU to complete the 124 credits required for the BS degree.
A minimum of 124 credits is required for graduation with a BS in biology.

## General Education Requirements (Florham Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits)

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.

## III. First-year Seminar Courses (2 credits

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002-level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program® (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000 -level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities ( $\mathbf{6}$ credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS, Osteopathic Medicine DO Combined Degree

FDU has partnered with the Lake Erie College of Osteopathic Medicine (LECOM) to offer paths to a Doctor of Osteopathic Medicine (DO) degree. The bachelor's degree (BS in biology) is awarded by Fairleigh Dickinson University and the doctoral degree (DO) by Lake Erie College of Osteopathic Medicine (LECOM).

- The seven-year program (or 3 plus 4 years): BS in biology from FDU's Maxwell Becton College of Arts and Sciences and DO from LECOM.
- The eight-year program (or 4 plus 4 years): BS in biology from FDU's Maxwell Becton College of Arts and Sciences and DO from LECOM.

These combined-degree programs provide qualified students the opportunity to complete a baccalaureate degree and a Doctor of Osteopathic Medicine (DO) degree in seven (accelerated) or eight years.
The combined-degree program is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
Through these Early-acceptance Programs, Fairleigh Dickinson University undergraduate students are enrolled jointly by FDU and by LECOM. Once recommended by FDU, LECOM will interview the students prior to their enrollment at Fairleigh Dickinson University or within the first two years of being properly enrolled in the program. Students must schedule the interview with LECOM via the LECOM portal (generally by April 1 of the year of FDU matriculation).

Students interviewing successfully will be offered a provisional acceptance to LECOM's Doctor of Osteopathic Medicine program. To receive the official Provisional Letter of Acceptance, students must request for the letter by emailing LECOM from their FDU email address within 12 months of their interview date.
The $\mathbf{4}$ plus $\mathbf{4}$ track is composed of two phases:

- Phase I - four years of undergraduate education at FDU and completion of the BS in biology degree
- Phase II - four years (three years for the Primary Care Scholars Pathway) of medical school education at LECOM and its associated clinical training sites

The $\mathbf{3}$ plus $\mathbf{4}$ track is composed of two phases:

- Phase I - three years of undergraduate education at FDU
- Phase II - four years (three years for the Primary Care Scholars Pathway) of medical school education at LECOM and its associated clinical training sites.

Students enrolled in this track will receive a BS in biology from FDU upon completion of at least 24 credit hours at LECOM.

Each academic year, a combined total of five students (maximum) will be accepted by LECOM into Phase II of the Early-acceptance Program from each campus of FDU. Provisionally accepted students may not apply to any other medical school. Application to another medical school will result in the loss of the student's provisional acceptance.

## Admission Requirements

All applicants for admission to the combined-degree program must satisfy secondary-school preparation in English, mathematics, biology, chemistry and physics. The high-school grade point ratio (GPR) and rank in class, along with letters of recommendation from high-school teachers, will be of primary importance in evaluating applicants' credentials. Applicants are required to submit scores in the verbal and the mathematical components of the SAT. High-school seniors meeting the following minimum criteria may apply for admission to the combined degree program:

## Medical 3+4 Admission Criteria, Phase I

- SAT (Math + Verbal) or ACT score: 1340 (new SAT), 1280 (old SAT) or 29 (ACT)
- High school unweighted GPR: 3.80
- Academic Index Score: 125


## Medical 4+4 Admission Criteria, Phase I

- SAT (Math + Verbal) or ACT score: 1240 (new SAT), 1170 (old SAT) or 26 (ACT)
- High school unweighted GPR: 3.50
- Academic Index Score: 117

Full-time students currently enrolled at FDU who seek admission to the combined-degree programs must apply to the department of biological sciences, Maxwell Becton College of Arts and Sciences, Metropolitan Campus, Teaneck, New Jersey, or Florham Campus, Madison, New Jersey, prior to February 1 of their freshman year for the 3 Plus 4 Early-acceptance Program, or by February 1 of their sophomore year for the 4 Plus 4 program.

## Admission to Phase II

While enrolled in Phase I at FDU, students are required to follow the accelerated preprofessional curriculum in biology (for the $3+4$ track) or a curriculum in biology for the $4+4$ track. Completion of all FDU curriculum requirements, including General Education Requirements, degree-program requirements for the major and all prerequisite courses, is required prior to beginning Phase II at LECOM. Students must complete all prerequisite courses with a grade of C or better, and must achieve the minimum cumulative overall grade point ratio (GPR) and cumulative science GPR as indicated below. Qualified students enrolled in the combined-degree programs must meet the following criteria as part of the application process for Phase II:

## Medical 3 Plus 4 Admission Criteria, Phase II

- Cumulative Overall GPR: 3.50
- Cumulative Science GPR: 3.20
- Academic Index Score: 125
- MCAT: Score at or above the 50th percentile (Students matriculating to LECOM in 2016 and later will be exempt from the MCAT requirement, provided that the minimum Academic Index Score requirement has been met and that the student has earned a grade of C or better in biochemistry and genetics.)


## Medical 4 Plus 4 Admission Criteria, Phase II

- Cumulative Overall GPR: 3.40
- Cumulative Science GPR: 3.20
- Academic Index Score: 115
- MCAT: Score at or above the 50th percentile (Students matriculating to LECOM in 2016 and later will be exempt from the MCAT requirement, provided that the minimum Academic Index Score requirement has been met and that the student has earned a grade of C or better in biochemistry and genetics.)


## Additional admission requirements include:

- Timely submission of a completed AACOMAS (American Association of Colleges of Osteopathic Medicine Application Service) application, secondary LECOM application, letters of recommendation (including one letter from an osteopathic physician) and MCAT score (if applicable);
- Advanced Placement (AP) credits may not be used to satisfy any of the biology, chemistry, physics or calculus course requirements. LECOM will only accept AP credits for the English and behavioral science courses and only if the student scores a four (4) or five (5) on the AP exam. A replacement course of equal or greater credit hours applicable to the field of medicine or a course of similar academic rigor, if approved by the Phase I adviser, must be taken at Fairleigh Dickinson University.
- No reduced course load will be accepted. No summer courses will be accepted, except in the case of scheduling conflicts;
- Students in the 3 Plus 4 medical track may switch to the 4 Plus 4 medical track by obtaining approval from FDU's prehealth adviser and LECOM prior to starting their third year of study at FDU.


## Premedical Curricula

Students enrolled in the 4 Plus 4 Early-acceptance Program will follow the curricula for the BS in biology.
Under the provisions of the pre-osteopathic medicine accelerated program (3 Plus 4 track), students matriculate on either New Jersey campus for a minimum of 96 credits of coursework leading to the BS in biology (preprofessional option).

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)

## 3 Plus 4 Track

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL4405 Ethics in Science


## Semesters 7 and 8 ( 24 credits minimum)

- Approved credits taken at professional school


## Major Requirements

- The program is designed for students who are accepted into professional school (e.g., school of medicine, dentistry, chiropractic and optometry) after three years of undergraduate study. Twenty-four credits earned during the first year of professional school are used to supplement the 98 credits earned at FDU to complete the 124 credits required for the BS degree.


## 4 Plus 4 Track

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3___/4__ Biology Elective I (BIOL3337, BIOL3327 General Physiology Lecture and Laboratory recommended)


## Semesters 7 and 8

- BIOL3__/4__ Biology Elective II (BIOL3337, BIOL3327 General Physiology Lecture and Laboratory recommended)
- BIOL3__ 44 __ Biology Elective III
- BIOL3 __ /4__ Biology Elective IV
- BIOL3 $\qquad$ /4 $\qquad$ Biology Elective V
- BIOL4950 Biology Seminar


## Biology Electives (15-20 credits)

- Elective Area I: Ecology and Environmental Biology
- Elective Area II: Cellular and Molecular Biology
- Elective Area III: Organismal Biology
- Elective Areas IV and V: Anatomy and Physiology, Ecology and Environmental Biology, Cellular and Molecular Biology, Organismal Biology


## Major Requirements

- Free Electives: May be chosen from any courses offered at the University after consultation with an adviser, but may include no more than six credits of 1000 -level biology courses. Physical Education is recommended for students to go on to schools of veterinary medicine. Foreign language is recommended for students intending to go on to graduate school.
- The program is designed for students who plan to attend graduate school or who wish to prepare for admission to a school of medicine, dentistry, chiropractic, optometry, etc., as well as those interested in entering directly into the workforce.

A minimum of 120 credits is required for graduation.

## Common Cognate Requirements for Both Tracks

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory
- MATH1203 Calculus I


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory
- MATH1133 Applied Statistics


## Semesters 5 and 6

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- CHEM3281 Biochemistry I


## General Education Requirements (Florham Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits) '

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.

## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits) <br> - BIOL4405 Ethics in Science

## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding ( 3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS, Pharmacy PharmD Combined Degree

Students accepted into the accelerated seven-year BS in biology/PharmD program will spend their first three years at FDU. The following four years will be spent at FDU's School of Pharmacy and Health Sciences, Florham Park, New Jersey.
A minimum of 124 credits is required for the BS degree - 96 of these are taken at the Metropolitan Campus in years $1-3$ plus 28 credits (to be approved by department chair/director) in year 4 at the School of Pharmacy and Health Sciences. Students not accepted into FDU's School of Pharmacy and Health Sciences have the option of switching out of the BS in biology/PharmD combined degree and into another concentration.

The BS in biology/PharmD combined-degree program is jointly offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey, and by the School of Pharmacy and Health Sciences, at the Florham Campus, Madison, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor-degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3100, BIOL3101 Genetics Lecture and Laboratory


## Semesters 5 and 6

- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar


## Semester 7

- PHRM6100 Foundations in Pharmaceutical Sciences - Medicinal Chemistry, Pharmacology (3 credits)
- PHRM6101 Foundations in Basic Biomedical Sciences Pathology/Pathophysiology/Microbiology/Immunology (4 credits)
- PHRM6200 Introduction to Pharmacokinetics (2 credits)
- PHRM6201 Physical Pharmacy (2 credits)
- PHRM6211 Pharmaceutical Calculations I (1 credit)
- PHRM6300 Evidence Based Practice I (2 credits)
- PHRM6401 Professional Pharmacy Practice I - Health Care Delivery (2 credits)
- PHRM6700 Pharmacy Beyond the Curriculum ( 0 credits)


## Semester 8

- PHRM6102 Integrated Pharmacotherapy - Gastrointestinal (2 credits)
- PHRM6104 Integrated Pharmacotherapy - Cardiology/Pulmonary (3 credits)
- PHRM6111 Integrated Pharmacotherapy - Conceptual Connections and Patient Care (2 credits)
- PHRM6202 Applied Biopharmaceutics and Pharmacokinetics (3 credits)
- PHRM6203 Genetics and Pharmacogenomics (2 credits)
- PHRM6212 Pharmaceutical Calculations II (1 credit)
- PHRM6402 Professional Pharmacy Practice II - Communication in Health Care (2 credits)
- PHRM6701 Pharmacy Beyond the Curriculum (1 credit)


## Cognate Requirements <br> Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- CHEM3281 Biochemistry I
- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Major Requirements

NOTE: Some sections of the pharmacy curriculum are under review and are subject to change.

## Years 5-7 (School of Pharmacy and Health Sciences)

- PHRM6501 Introductory Pharmacy Practice Experience
- PHRM7105 Integrated Pharmacotherapy V: Neurology, Psychiatry and Anesthesiology
- PHRM7106 Integrated Pharmacotherapy VI: Infectious Disease
- PHRM7107 Integrated Pharmacotherapy VII: Pulmonary, EENT
- PHRM7108 Integrated Pharmacotherapy VIII: Endocrine, Renal, Repro.
- PHRM7111 Integrated Pharmacotherapy V-VI: Conceptual Connection
- PHRM7112 Integrated Pharmacotherapy VII-VIII: Conceptual Connection
- PHRM7201 Pharmaceutical Dispensing and Compounding
- PHRM7202 Pharmaceutics III: Sterile Products and Biopharmaceuticals
- PHRM7301 Biostatics
- PHRM7302 Epidemiology and Public Health
- PHRM7401 Professional Pharmacy Practice III: Informatics/Drug Information
- PHRM7501 Introductory Pharmacy Practice Experience II
- PHRM7701 Beyond the Curriculum II
- PHRM8109 Integrated Pharmacotherapy IX: Autoimmune and Rare
- PHRM8110 Integrated Pharmacotherapy X: Hematology and Oncology
- PHRM8111 Integrated Pharmacotherapy I-X: Whole System Overview
- PHRM8112 Case Studies in Pharmacy
- PHRM8202 Pharmacogenomics and Personalized Medicine
- PHRM8301 Pharmacoepidemiology, Pharmacoeconomics, Outcomes
- PHRM8302 Public Health and the Global Mission of Pharmacy
- PHRM8402 Professional Pharmacy Practice IV: Leadership/Management
- PHRM8501 Introductory Pharmacy Practice Experience III
- PHRM9101 Advanced Pharmacy Practice Experience (APPE) I: Community
- PHRM9102 Advanced Pharmacy Practice Experience (APPE) II: Institutional
- PHRM9103 Advanced Pharmacy Practice Experience (APPE) III: Ambulatory Care
- PHRM9104 Advanced Pharmacy Practice Experience (APPE) IV: Acute Care
- PHRM92XX Advanced Pharmacy Practice Experience V: Elective
- PHRM93XX Advanced Pharmacy Practice Experience VI: Elective
- PHRM94XX Advanced Pharmacy Practice Experience VII: Elective
- PHRM95XX Advanced Pharmacy Practice Experience VIII: Elective
- PHRM9900 Pharmacy Capstone


## Elective Courses (21 credits)

A minimum of 124 credits is required for the BS degree; 96 of these are taken at the Metropolitan Campus in years $1-3$ plus 28 credits (to be approved by department chair/director) in year 4 at FDU's School of Pharmacy and Health Sciences.

## General Education Requirements (Florham Campus) <br> I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits) '

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.

## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication ( $\mathbf{3}$ credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits) <br> - BIOL4405 Ethics in Science

## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS, Physical Therapy DPT Combined Degree

The BS in biology/Doctor of Physical Therapy program is a collaborative program between Fairleigh Dickinson University and the Rutgers School of Health Professions (Rutgers SHP). At FDU, the program is offered by the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey, and by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.
The program specializes in doctoral-level education for individuals wishing to become physical therapists. Students in the Doctor of Physical Therapy (DPT) program receive state-of-the-art education that prepares them to be at the forefront of the physical-therapy profession.
Physical therapy means the examination, treatment and instruction of human beings to detect, assess, prevent, correct, alleviate and limit physical disability, movement, dysfunction, bodily malfunction and pain from injury, disease and other bodily and mental conditions, and includes the administration, interpretation and evaluation of tests and measurements. It includes the planning, administration, evaluation and modification of treatment and instruction, including the use of physical measures, activities and devices for preventative and therapeutic purposes; and the provision of consultative, educational and other advisory services for the purpose of reducing the incidence and severity of physical disability, movement, dysfunction, bodily malfunction and pain. Physical therapists continue to be in demand throughout the United States.

## Admission Requirements

- High-school diploma or its equivalent (GED)
- English as a Second Language (ESL) placement test and completion of ESL courses, if necessary.
- A minimum of 550 on the TOEFL exam for applicants with foreign credentials who are transferring into the DPT program.
- Completion of any necessary developmental courses as determined by the University's Basic Skill Test.
- A minimum Grade Point Ratio (GPR) of 2.75 for all transfer students.


## Admission to Rutgers SHP

- Complete all general education requirements, maintaining an overall GPR of 3.00 ;
- Minimum GPR of 3.00 in all required science and mathematics courses;
- Demonstrate knowledge of the physical-therapy profession through actual work and/or volunteer experience;
- Demonstrate evidence of community service;
- Formal application to the Rutgers School of Health Professions Physical Therapy Program for the professional component of the program. (Admission to the program cannot be guaranteed by FDU.);
- Satisfactory score on all three sections (verbal, quantitative and analytical) of the Graduate Record Exam;
- Three letters of recommendation; and
- Basic computer literacy, including file management, use of word processing and spreadsheet programs, use of email and the internet.


## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)

## Florham Campus

## Semester 1 (16 credits)

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory (overall grade point ratio [GPR] of at least 2.33 required)
- BIOL1223 Biological Diversity Recitation (overall GPR of at least 2.33 required)
- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- MATH1107 Precalculus
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## Semester 2 (16 credits)

- BIOL1233, BIOL1235 Molecules, Cells and Genes Lecture and Recitation (overall GPR of at least 2.33 required)
- BIOL1234 Molecules, Cells and Genes Lab (overall GPR of at least 2.33 required)
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory
- MATH1203 Calculus I
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument


## Semester 3 ( 17 credits)

- BIOL1205, BIOL1207 Anatomy and Physiology I Lecture and Laboratory (overall GPR of at least 2.33 required)
- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- MATH1133 Applied Statistics
- PSYC1201 General Psychology
- UNIV2001 Cross Cultural Perspectives


## Semester 4 (16 credits)

- BIOL1206, BIOL1208 Anatomy and Physiology II Lecture and Laboratory (overall GPR of at least 2.33 required)
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory (overall GPR of at least 2.33 required)
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory
- Modern Language 1002
- Modern Language 1003


## Semester 5 (17 credits)

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory (overall GPR of at least 2.33 required)
- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- Humanities Course (at the 2000 level or above)
- Creative and Expressive Arts
- PHIL1440 Bio-medical Ethics


## Semester 6 (16 credits)

- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- Social/Behavioral Sciences Course (at the 2000 level or above)
- Humanities Course (at the 2000 level or above)
- Speech/Professional Communication
- Free Elective


## Semester 7

Approved credits taken at professional school

## Semester 8

Approved credits taken at professional school

## General Education Requirements

## Written Communication

WRIT1002 Composition I: Rhetoric and Inquiry and WRIT1003 Composition II: Research and Argument will satisfy this requirement.

## Quantitative Analysis (Mathematics Sequence)

In the freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I or Calculus II.

## Humanities

Take 6 credits from any course that has the prefix ENGL (English), HIST (History), HUMN (Humanities), LANG (Languages), PHIL (Philosophy) or RELI (Religion) or the following ART courses: ART1101 Art Appreciation, ART1135 Cinema I: The Director's Vision, $\underline{\text { ART1136 Cinema II: Themes in }}$ Films, ARTH1120 Modern Art to Mid-century, ARTH1137 History of Fashion Design, ARTH2020 History of Graphic Design, ARTH2137 Global Roots of American Architecture, ARTH2238 The Global Art World and ARTH2265 History of Photography.
Courses may be within the same discipline or from different disciplines. Either way, at least one course must be at the 2000 level or above.

## Speech/Professional Communication

Requirements consist of a 3-credit speech course.

## Social and Behavioral Sciences

Take three credits of coursework in COMM (Communication), CRIM (Criminal Justice), POLS (Political Science), PSYC (Psychology) or SOCI (Sociology).

## Ethical and Moral Analysis

Students must take BIOL4405 Ethics in Science to satisfy the requirement.

## Scientific Analysis

This requirement will be satisfied by CHEM1201 General Chemistry I or CHEM1202 General Chemistry II.

## Metropolitan Campus

## Semesters 1 and 2

- BIOL1221, BIOL1222, BIOL1223 Biological Diversity Lecture, Laboratory and Recitation
- BIOL1233, BIOL1234, BIOL1235 Molecules, Cells and Genes Lecture, Laboratory and Recitation
- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory
- MATH1107 Precalculus
- MATH1201 Calculus I
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## Semester 3 and 4

- BIOL2203, BIOL2223 Human Anatomy and Physiology I Lecture and Laboratory
- BIOL2204, BIOL2224 Human Anatomy and Physiology II Lecture and Laboratory
- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory
- PSYC1201 General Psychology


## Semesters 5 and 6

- BIOL2125, BIOL2126 Microbiology for the Health Sciences Lecture and Laboratory
- MEDT1130 Bioethics
- MEDT4308 Management Principles for Healthcare Professionals
- NURS3208 Introduction to Health Care Economics
- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- PSYC2210 Psychological Statistics


## General Education Requirements

## Written Communication

WRIT1002 Composition I: Rhetoric and Inquiry and WRIT1003 Composition II: Research and Argument will satisfy this requirement.

## Quantitative Analysis (Mathematics Sequence)

In the freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I.

## Humanities

Take 3 credits from any course that has the prefix LITS (literature). Course must be at the 2000 level or above.

## Speech/Professional Communication

Requirements consist of a 3-credit speech course.

## Social and Behavioral Sciences

Take 3 credits of coursework.
PSYC1201 General Psychology

## Ethical and Moral Analysis

Students must take MEDT1130 Bioethics.

## Scientific Analysis

This requirement will be satisfied by CHEM1201 General Chemistry I or CHEM1202 General Chemistry II.

## For Information

For Metropolitan Campus

## For Florham Campus

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## Biology BS, Veterinary Medicine DVM Combined Degree

This accelerated, combined-degree program provides qualified students the opportunity to complete a baccalaureate degree and a Doctor of Veterinary Medicine (DVM) degree in seven years, one year less than the normal span of eight years. The bachelor's degree (BS in biology) is awarded by Fairleigh Dickinson University and the doctoral degree (DVM) by Ross University School of Veterinary Medicine, Basseterre, St. Kitts, West Indies. English is the teaching language.
Students are admitted to FDU as incoming freshmen or qualified transfer students. They may apply for the BS-DVM combined degree upon successful completion of six semesters at FDU, including the courses listed below, and the first year of study (three semesters) at Ross University. A maximum of 32 credits from Ross University may be transferred toward completion of the BS degree at FDU.
The program prepares students interested in pursuing a Doctor of Veterinary Medicine degree to become successful veterinarians in the United States. The program is an accelerated program, which takes a little more than three years. The last three semesters are spent on the campus of one of the U.S. veterinary schools affiliated with Ross University School of Veterinary Medicine. The U.S. Department of Education has certified Ross University School of Veterinary Medicine as an eligible institution for the Title IV U.S. Federal Family Education Loan program.
The BS in biology/DVM combined degree is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and at an offsite or partner location.

## Admission Requirements

- High-school seniors with a combined SAT score of 1170 and high-school grade point ratio (GPR) of 3.25 may apply for admission to the combined-degree program.
- All applicants for admission to the combined-degree program must satisfy secondary-school preparation in English, mathematics, biology, chemistry and physics.
- The high-school GPR and rank in class, along with letters of recommendation from high-school teachers, will be of primary importance in evaluating applicants' credentials.
- Applicants are required to submit scores in the verbal and mathematical components of the SAT.


## Qualifying for Enrollment at Ross University

Students must meet the following criteria to qualify for admission to the veterinary phase of the program:

- Completion of all FDU curriculum requirements, including the General Education Requirements and the degree program requirements for the major and all prerequisite courses required for admission at Ross University School of Veterinary Medicine. Students must obtain a GPR of 3.00 or higher in prerequisite courses with no grades of C-, D or F in any of the courses;
- An overall GPR of 3.20 or higher;
- A score in the 25th percentile or better in each category of the Graduate Record Examination; and
- Other minimum admission requirements set forth by Ross University.


## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their Bachelor degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory or MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar


## Semesters 7 and 8

- Approved credits taken at professional school (29 credits)


## Cognate Requirements

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 5 and 6

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- CHEM3281 Biochemistry I


## Major Requirements

The program is designed for students who are accepted into professional school (e.g., schools of medicine, dentistry, chiropractic and optometry) after three years of undergraduate study. Twenty-nine credits earned during the first year of professional school are used to supplement the 95 credits earned at FDU to complete the 124 credits required for the BS degree.
A minimum of 124 credits is required for graduation with a BS in biology.

## General Education Requirements (Florham Campus)

I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits) '

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.
III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002-level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Biology BS: Prepharmacy

The Bachelor of Science in biology with a prepharmacy concentration is not affiliated with a particular pharmacy school. It is designed to prepare a student to apply to pharmacy school.
The biology major with a prepharmacy concentration is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, only at the Florham Campus, Madison, New Jersey.

## Degree Plan

All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements. (Florham Campus students are required to take SPCH1107 Fundamentals of Speech and PHIL1440 Bio-Medical Ethics as part of their General Education Requirements.)

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory
- BIOL2300 Experimental Design
- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- MBIO2209, MBIO22109 Introduction to Marine Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory
- BIOL3 $\qquad$ /4 Biology Elective I
- BIOL3 $\qquad$ 14 Biology Elective II


## Semesters 5 and 6

- BIOL3__14__ Biology Elective III
- BIOL3___ 4 __ Biology Elective IV
- BIOL3 $\qquad$ /4 $\qquad$ Biology Elective V
- BIOL4950 Biology Seminar

Students in the prepharmacy concentration must take the following courses as part of their requirements:

- BIOL3253, BIOL3254 Comparative Anatomy Lecture and Laboratory
- BIOL3337, BIOL3327 General Physiology Lecture and Laboratory
- CHEM3281 Biochemistry I
- ECON2001 Introduction to Microeconomics
- PHIL1440 Bio-Medical Ethics
- SPCH1107 Fundamentals of Speech


## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits) '

In their freshman year, students are required to take either Precalculus or Calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I and Applied Statistics.
III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## For Information

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## Business Administration BS (Florham and Metro)

The Silberman College of Business offers a BS degree in business administration. The college is accredited by AACSB International. Students may choose to complete the business administration major with or without an area of concentration. The business administration major provides the option to focus on an area of concentration by taking advanced businesscourses that help define the student's skill set.
Depending on the concentration, different departments are responsible for the major. The BS in business administration degree is offered by the department of management and entrepreneurship (for the major with no concentration and for the professional selling and sales management concentration); department of economics, finance and international business (for the major with international business concentration); and the department of marketing, information systems and decision sciences (for the major with information systems concentration), Silberman College of Business, at the Metropolitan Campus, Teaneck, New Jersey; and at the Florham Campus, Madison, New Jersey.
The Silberman College of Business also offers a BS in business administration degree at the Vancouver Campus, British Columbia, Canada.

## Degree Plan

All students enrolled in the Bachelor of Science program must complete the University and Business Core Curriculum in addition to the credits listed below for their business administration major degree option.

## BS in Business Administration Without a Concentration (21 credits)

## BS Degree Requirements

Students pursuing a business administration major without a concentration must complete 21 credits of business major courses as follows.

## Required Course

- MIS4307 Introduction to E-Business or MIS4303 Spreadsheet Applications in Business


## Major Elective Courses

Select 18 credits among the business major courses offered by the other Silberman College of Business majors (provided that course prerequisites have been met). No more than 9 of these credits can be taken in any given discipline.

## Information Systems Concentration (21 credits) (Optional)

## Required Courses

- MIS4301 Data, Communications and Networks
- MIS4303 Spreadsheet Applications in Business
- MIS4304 Database Applications in Business
- MIS4305 Systems Analysis, Design and Implementation


## Select three elective business courses

Courses chosen from any permissible courses offered in other Silberman College of Business majors. Permissible means the student has satisfied all prerequisites for any course in which he/she wishes to enroll.

## International Business Concentration (21 credits) (Optional)

The BS in business administration with an international business concentration prepares students to understand and effectively participate in the management of business firms operating in a multinational environment. Courses examine in-depth theories and applied concepts relevant to conducting business in a competitive global arena.

## Required Courses

- ECON4208 International Trade
- IBUS3201 Fundamentals of International Business
- MGMT3371 International Management
- MIS4307 Introduction to E-Business or MIS4303 Spreadsheet Applications in Business
- MKTG3371 Principles of International Marketing


## Two 3-credit electives

Select two elective courses from any permissible major courses offered in the other Silberman College of Business majors.

## Professional Selling and Sales Management Concentration (Optional)

## Required Courses

- MGMT4380 Client Relations or WMA4380 Client Relations in Financial Management
- MIS4307 Introduction to E-business or MIS4303 Spreadsheet Applications in Business
- MKTG3341 Professional Sales and Sales Management


## Elective Courses

Students choosing a concentration in Professional Selling and Sales Management must also complete four elective courses.
Select two elective courses from any of the following courses:

- MGMT3620 Leadership and Personal Development
- MGMT3700 Human Resources Management
- MKTG4272 Consumer Behavior
- WMA3335 Personal Financial Management

Additionally, select two elective courses at the 3000- or 4000-level in any of the following subject areas (accounting [ACCT], entrepreneurship [ENTR], finance [FIN], management [MGMT], marketing [MKTG], management information systems [MIS] and wealth management advisory [WMA]) with the following exceptions: ENTR2710 Fundamentals of Entrepreneurship and Innovation, FIN3310 Intermediate Financial Analysis and FIN4211 Special Topics in Finance.

## Business Core Curriculum

Silberman College's Business Core Curriculum features coursework in all business disciplines accounting, economics, entrepreneurship, finance, information systems and decisions sciences, international business, business law, management, marketing and taxation, to provide students with essential business knowledge.
Silberman College of Business BS students must complete a minimum of 120 credits, distributed as follows:

- Business Core (38 credits)
- Restricted Business Core ( 3 credits)
- Business Major Courses (21 credits)
- University Core (7 credits)
- General Education Requirements (36 credits)
- Free Electives ( 15 credits)

TOTAL CREDITS - 120 credits

## Business Core ( 38 Credits)

All courses are 3 credits except where indicated otherwise.

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CARR3000 Career Strategies (2 credits)
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Restricted Business Core (3 Credits)

- ENTR2710 Fundamentals of Entrepreneurship and Innovation


## University Core (7 credits)

- UNIV1001 Transitioning to University Life
- UNIV2001 Cross-cultural Perspectives
- UNIV2002 Global Issues


## General Education Requirements (36 credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward scientific analysis or free elective credits.

## For Information

Business Administration Major Without a Concentration<br>Business Administration Major with Professional Selling and Sales Management Concentration<br>Gwen Jones, Chair, Department of Management and Entrepreneurship, Silberman College of Business<br>Professor of Management<br>gjones@fdu.edu<br>973-443-8850 (Florham Campus); 201-692-7215 (Metropolitan Campus)

## Business Administration Major with International Business Concentration

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## Business Administration Major with Information Systems Concentration

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## Business Administration BS <br> (Vancouver)

A degree from the Silberman College of Business prepares students to become leaders in business and management - someone who will bring ethical perspectives to any professional environment. The business degree coursework will give students firsthand experience with the business community, providing them with proven methods in financial and strategic analysis, general business planning and implementation.
The BS in business administration program is accredited by AACSB International - The Association to Advance Collegiate Schools of Business. The Silberman College of Business at Fairleigh Dickinson University is one of only four AACSB-accredited institutions in British Columbia, the hallmark of excellence in management education and represents the highest standard of achievement for business schools worldwide.
The BS in business administration degree is offered by the Silberman College of Business at the Vancouver Campus, British Columbia, Canada.

The Silberman College of Business also offers a BS in business administration degree at the Metropolitan Campus, Teaneck, New Jersey; and at the Florham Campus, Madison, New Jersey.

## Program Highlights

## International Business Concentration

The international business concentration prepares students to understand and effectively participate in the management of business firms operating in a multinational environment. Courses examine in-depth theories and applied concepts relevant to conducting business in a competitive global arena.

## Required Courses

- ECON4208 International Trade
- IBUS3201 Fundamentals of International Business
- MGMT3371 International Management
- MKTG3371 Principles of International Marketing
- MIS4303 Spreadsheet Applications in Business or MIS4307 Introduction to E-Business


## Two 3-credit electives

Select two elective courses from any permissible major courses offered by Silberman College of Business.

## Optional Concentration in Information Systems

Students have the option to add a concentration in information systems, a field that has recently experienced dramatic growth. BS in business administration students who add this concentration acquire relevant knowledge and skills for the design and use of information and communications technologies in support of business objectives and operations.

## Optional Minor in Digital Marketing

A bachelor's degree in business administration, with an international business concentration and a minor in digital marketing, will prepare students for a career in this dynamic field and will equip them with the knowledge and skills to plan, design and manage a well-integrated marketing strategy.

## Optional Minor in Financial Planning and Wealth Management

A bachelor's degree in business administration with a minor in financial planning and wealth management will provide students with the fundamentals for starting a career in the rapidly growing personal financial-services industry.

## Accelerated 4 + 1 Combined Degrees

Students can earn both an undergraduate and graduate degree in just five years. This program offers a pathway for motivated and high-performing students to earn a bachelor's and a master's degree in one year less than it would traditionally take. The master's part of the degree is completed at FDU's New Jersey campuses in the United States. For more information go to MBA Core Curriculum.

## Internship Opportunities

During their last year of study, students have the opportunity to enroll in an internship either for credit or not for credit.

## Study-abroad Opportunities and Global Business Experience

Students can travel, meet other people and learn about other cultures while studying and earning credits toward their degree. Numerous destinations are available including Wroxton College (FDU campus in England); Metropolitan Campus and Florham Campus (FDU campuses in New Jersey, United States); Sungkyungkwan University (South Korea); Zeppelin University (Germany); IESEG (France); Chengdu (China); and many more.

## Degree Plan

NOTE: The requirements below are detailed on the Silberman College of Business page. Any student with specific questions should contact the adviser on their home campus.

## Business Core (38 credits)

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Restricted Business Core

- ENTR2710 Fundamentals of Entrepreneurship and Innovation

Major Required Courses (International Business Concentration) (15 credits)

- ECON4208 International Trade
- IBUS3201 Fundamentals of International Business
- MGMT3371 International Management
- MIS4303 Spreadsheet Applications in Business or MIS4307 Introduction to E-Business
- MKTG3371 Principles of International Marketing


## Major Elective Courses (6 credits)

Select two courses from the following:

- ENTR3101 Small Business Management: An Entrepreneurial Perspective
- ENTR3300 E-business for Entrepreneurs
- FIN3330 Personal Financial Management
- MGMT3620 Leadership and Personal Development
- MGMT3700 Human Resources Management
- MKTG3360 Digital Marketing
- MKTG4272 Consumer Behavior
- MKTG3383 Social Media Marketing
- MKTG4365 Marketing Communications


## Major Required Courses for (Optional Information Systems Concentration) (12 credits)

- MIS4301 Data, Communications and Networks
- MIS4303 Spreadsheet Applications in Business
- MIS4304 Database Applications in Business
- MIS4305 Systems Analysis, Design and Implementation


## University Core (7 credits)

- UNIV1001 Transitioning to University Life
- UNIV2001 Cross-cultural Perspectives
- UNIV2002 Global Issues


## General Education Requirements (36 credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward scientific analysis or free elective credits.

## Free Elective Courses (15 credits)

Can be used toward a minor or a second concentration

## For Information

Jill Reid, Director, Silberman College of Business Vancouver Programs
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## Business Administration BS, Finance MBA Combined Degree

The combined-degree program is offered by the department of economics, finance and international business, Silberman College of Business, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey. The college is accredited by AACSB International.

## Admission Requirements

In order to participate in the combined undergraduate-graduate degree (4 Plus 1) program, all students must be current undergraduate students at Fairleigh Dickinson University or an undergraduate student at a partner institution with which Fairleigh Dickinson University has established an articulation agreement for a $4+1$ program.
In order to advance into the MBA portion of the program, all applicants must meet the following requirements:

1. Students must formally apply with the Graduate Advising Office and be accepted into the graduate portion of the program.
2. The GMAT/GRE is waived for Silberman College of Business students having a cumulative grade point ratio (CGPR) of 3.00 or higher upon completion of the first semester of their junior year (a grade point ratio [GPR] of 3.20 or higher is required for non-Silberman College majors). Applicants not satisfying this minimum GPR requirement are required to submit a GMAT/GRE score taken within the last five years.
3. Eligible to waive at least 9 of the MBA Core credits.

Acceptance into the program takes place during the sixth semester of the undergraduate program (or three semesters prior to the student's anticipated undergraduate graduation date). Accepted students will take
graduate-level coursework during their last two semesters as undergraduate students. Accepted students must complete their undergraduate degrees before undertaking full-time graduate study during their Plus 1 year.

## Degree Plan

The MBA curriculum comprises of 42 credits

## MBA Core (33 credits)

- ACCT6400 Accounting Decision Making
- DSCI6400 Data Science and Analytics
- DSCI6401 Supply and Value Chain Management
- ECON6400 Economics for Business Decisions
- ENTR6400 Innovation and Entrepreneurial Mindset
- FIN6400 Financial Decision Making
- LAW6400 Society, Ethics and Law
- MGMT6400 Organization Behavior and Leadership
- MGMT7400 Global Business Capstone
- MIS6400 Information Systems for Managers
- MKTG6400 Marketing Decision Making


## Finance Specialization (9 credits)

- FIN6601 Corporate Finance - Long Term
- FIN6605 Investment Analysis
- FIN6610 Financial Markets: Theory and Practice


## For Information

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Professor of Finance
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973-443-8979 (Florham Campus); 201-692-7213 (Metropolitan Campus)

## Business Administration BS, Management MBA Combined Degree

The combined-degree program is offered by the department of management and entrepreneurship, Silberman College of Business, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey. The college is accredited by AACSB International.

## Admission Requirements

In order to participate in the combined undergraduate-graduate degree (4 Plus 1) program, all students must be current undergraduate students at Fairleigh Dickinson University or an undergraduate student at a partner institution with which Fairleigh Dickinson University has established an articulation agreement for a $4+1$ program.
In order to advance into the MBA portion of the program, all applicants must meet the following requirements:

1. Students must formally apply with the Graduate Advising Office and be accepted into the graduate portion of the program.
2. The GMAT/GRE is waived for Silberman College of Business students having a cumulative grade point ratio (CGPR) of 3.00 or higher upon completion of the first semester of their junior year (a grade point ratio [GPR] of 3.20 or higher is required for non-Silberman College majors). Applicants not satisfying this minimum GPR requirement are required to submit a GMAT/GRE score taken within the last five years.
3. Eligible to waive at least 9 of the MBA Core credits.

Acceptance into the program takes place during the sixth semester of the undergraduate program (or three semesters prior to the student's anticipated undergraduate graduation date). Accepted students will take graduate-level coursework during their last two semesters as undergraduate students. Accepted students must complete their undergraduate degrees before undertaking full-time graduate study during their Plus 1 year.

## Degree Plan

The MBA curriculum comprises of 42 credits

## MBA Core (33 credits)

- ACCT6400 Accounting Decision Making
- DSCI6400 Data Science and Analytics
- DSCI6401 Supply and Value Chain Management
- ECON6400 Economics for Business Decisions
- ENTR6400 Innovation and Entrepreneurial Mindset
- FIN6400 Financial Decision Making
- LAW6400 Society, Ethics and Law
- MGMT6400 Organization Behavior and Leadership
- MGMT7400 Global Business Capstone
- MIS6400 Information Systems for Managers
- MKTG6400 Marketing Decision Making


# Management Specialization (9 credits) 

- MGMT6611 Managing Sustainability
- MGMT6612 Managing Individuals and Teams
- MGMT6633 Leadership and Change Management or MGMT6621 Strategic Human Resource Management


## For Information

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# Business Administration BS, Marketing MBA Combined Degree 

The combined-degree program is offered by the department of marketing, information systems and decision sciences, Silberman College of Business, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey. The college is accredited by AACSB International.

## Admission Requirements

In order to participate in the combined undergraduate-graduate degree (4 Plus 1) program, all students must be current undergraduate students at Fairleigh Dickinson University or an undergraduate student at a partner institution with which Fairleigh Dickinson University has established an articulation agreement for a $4+1$ program.
In order to advance into the MBA portion of the program, all applicants must meet the following requirements:

1. Students must formally apply with the Graduate Advising Office and be accepted into the graduate portion of the program.
2. The GMAT/GRE is waived for Silberman College of Business students having a cumulative grade point ratio (CGPR) of 3.00 or higher upon completion of the first semester of their junior year (a grade point ratio [GPR] of 3.20 or higher is required for non-Silberman College majors). Applicants not satisfying this minimum GPR requirement are required to submit a GMAT/GRE score taken within the last five years.
3. Eligible to waive at least 9 of the MBA Core credits.

Acceptance into the program takes place during the sixth semester of the undergraduate program (or three semesters prior to the student's anticipated undergraduate graduation date). Accepted students will take
graduate-level coursework during their last two semesters as undergraduate students. Accepted students must complete their undergraduate degrees before undertaking full-time graduate study during their Plus 1 year.

## Degree Plan

The MBA curriculum comprises of 42 credits

## MBA Core (33 credits)

- ACCT6400 Accounting Decision Making
- DSCI6400 Data Science and Analytics
- DSCI6401 Supply and Value Chain Management
- ECON6400 Economics for Business Decisions
- ENTR6400 Innovation and Entrepreneurial Mindset
- FIN6400 Financial Decision Making
- LAW6400 Society, Ethics and Law
- MGMT6400 Organization Behavior and Leadership
- MGMT7400 Global Business Capstone
- MIS6400 Information Systems for Managers
- MKTG6400 Marketing Decision Making


## Marketing Specialization (9 credits)

- MKTG6620 Marketing Research
- MKTG6630 Consumer Behavior
- MKTG6640 Foundations of Digital Marketing


## For Information

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# Business Administration BS, Supply Chain Management MBA Combined Degree 

The combined-degree program is offered by the department of marketing, information systems and decision sciences, Silberman College of Business, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey. The college is accredited by AACSB International.

## Admission Requirements

In order to participate in the combined undergraduate-graduate degree (4 Plus 1) program, all students must be current undergraduate students at Fairleigh Dickinson University or an undergraduate student at a partner institution with which Fairleigh Dickinson University has established an articulation agreement for a $4+1$ program.
In order to advance into the MBA portion of the program, all applicants must meet the following requirements:

1. Students must formally apply with the Graduate Advising Office and be accepted into the graduate portion of the program.
2. The GMAT/GRE is waived for Silberman College of Business students having a cumulative grade point ratio (CGPR) of 3.00 or higher upon completion of the first semester of their junior year (a grade point ratio [GPR] of 3.20 or higher is required for non-Silberman College majors). Applicants not satisfying this minimum GPR requirement are required to submit a GMAT/GRE score taken within the last five years.
3. Eligible to waive at least 9 of the MBA Core credits.

Acceptance into the program takes place during the sixth semester of the undergraduate program (or three semesters prior to the student's anticipated undergraduate graduation date). Accepted students will take graduate-level coursework during their last two semesters as undergraduate students. Accepted students must complete their undergraduate degrees before undertaking full-time graduate study during their Plus 1 year.

## Degree Plan

The MBA curriculum comprises of 42 credits

## MBA Core (33 credits)

- ACCT6400 Accounting Decision Making
- DSCI6400 Data Science and Analytics
- DSCI6401 Supply and Value Chain Management
- ECON6400 Economics for Business Decisions
- ENTR6400 Innovation and Entrepreneurial Mindset
- FIN6400 Financial Decision Making
- LAW6400 Society, Ethics and Law
- MGMT6400 Organization Behavior and Leadership
- MGMT7400 Global Business Capstone
- MIS6400 Information Systems for Managers
- MKTG6400 Marketing Decision Making


# Supply Chain Management Specialization (9 credits) 

- DSCI6820 Logistics Management
- DSCI6840 Global Sourcing, Procurement and Negotiations
- DSCI6780 Sustainable and Lean Six Sigma


## For Information

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## Chemistry BS

The BS in chemistry is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at both the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey. It is the primary degree for entry into the chemical and pharmaceutical industry and also graduate programs in chemistry, biochemistry, pharmaceutical chemistry, biomedical engineering and many other areas. This degree is especially suitable for potential applicants to professional schools in medicine, pharmacy and veterinary medicine. Premed students usually take the MCAT exam in their junior years after completing organic chemistry. The Florham Campus curriculum is certified by the American Chemical Society.

## Degree Plan

All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.

## Semesters 1 and 2

- CHEM1201 General Chemistry I Lecture
- CHEM1203 Lab: General Chemistry I
- CHEM1202 General Chemistry II Lecture
- CHEM1204 Lab: General Chemistry II
- CHEM1211 General Chemistry I Recitation
- CHEM1212 General Chemistry II Recitation


## Semesters 3 and 4

- CHEM2261 Organic Chemistry I Lecture
- CHEM2263 Lab: Organic Chemistry I
- CHEM2262 Organic Chemistry II Lecture
- CHEM2264 Lab: Organic Chemistry II


## Semester 5

- CHEM2211 Inorganic Chemistry Lecture
- CHEM2213 Inorganic Chemistry Laboratory
- CHEM3241 Physical Chemistry I Lecture
- CHEM3243 Physical Chemistry I Laboratory


## Semester 6

- CHEM2221 Analytical Chemistry Lecture
- CHEM2223 Analytical Chemistry Laboratory
- CHEM3242 Physical Chemistry II Lecture
- CHEM3244 Physical Chemistry II Laboratory


## Semester 7

- CHEM3281 Biochemistry I Lecture
- CHEM3389 Biochemistry I Laboratory
- CHEM4233 Instrumental Analysis Lecture
- CHEM4234 Instrumental Analysis Laboratory


## Semester 8

- CHEM4215 Advanced Inorganic Chemistry or CHEM4373 Polymer Chemistry
- CHEM4401 Chemistry Seminar


## Cognate Requirements

## Semesters 1 and 2

- MATH1201 or MATH1203 Calculus I
- MATH2202 Calculus II


## Semesters 3 and 4

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Major Requirements

Science Electives: Any upper-level (3000 or 4000) undergraduate or graduate science course or Independent Study
Free Electives: May be chosen from any courses offered at the University after consultation with an adviser (student may not take BIOL1101-BIOL1102). (Foreign language is recommended for students intending to go to graduate school.)
Advanced Mathematics Course: select one course, three credits, from the following:

- MATH1133 Applied Statistics
- MATH2203 Calculus III

Major electives: Take 1-8 credits of CHEM or BIOL. Please see an adviser for a list of courses.
A minimum of 120 credits is required for graduation.

## General Education Requirements (Florham Campus) <br> I. Written Communication ( 6 credits) <br> - WRIT1002 Composition I: Rhetoric and Inquiry <br> - WRIT1003 Composition II: Research and Argument

## II. Quantitative Analysis (8 credits)

- MATH1203 Calculus I
- MATH2202 Calculus II


## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program® (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot also be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## QUEST Options Available

- BS in Chemistry-MAT, Secondary Education and Special Education Concentration
- BS in Chemistry-MAT, Elementary Education Concentration
- BS in Chemistry-MAT, Secondary Education Concentration
- BS in Chemistry-MAT, Elementary Education and Special Education Concentration
- BS in Chemistry-MAT, P-3 Certification
- BS in Chemistry-MAT, Secondary Education and ESL

For Information<br>Metropolitan Campus<br>James Dougherty, Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences<br>Professor of Chemistry<br>james_dougherty@fdu.edu<br>201-692-2487

## Florham Campus

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## Chemistry BS, Chemistry MS (Pharmaceutical Chemistry concentration) Combined Degree

Qualified students can earn a Bachelor of Science degree in chemistry and a Master of Science degree in chemistry with a pharmaceutical chemistry concentration through a five-year program.
The combined-degree program is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).
A minimum of 120 credits is required for the BS degree, and a minimum of an additional 24-25 graduate credits is required for the MS degree, for a total of 144-145 credits for the combined degree.

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semester 5

- CHEM3241, CHE3243 Physical Chemistry I Lecture and Laboratory
- CHEM3281, CHEM3389 Biochemistry I Lecture and Laboratory


## Semester 6

- CHEM3242, CHEM3244 Physical Chemistry II Lecture and Laboratory


## Semester 7

- CHEM2211 Inorganic Chemistry
- CHEM2221, CHEM2223 Analytical Chemistry Lecture and Laboratory
- Pharmaceutical Chemistry Requirement


## Semester 8

- CHEM2314 Lab: Inorganic Chemistry II
- CHEM4215 Advanced Inorganic Chemistry or CHEM4373 Polymer Chemistry
- CHEM4233, CHEM4234 Instrumental Analysis Lecture and Laboratory
- CHEM4401 Chemistry Seminar
- Pharmaceutical Chemistry Requirement (6 credits)


## Semester 9

- Pharmaceutical Chemistry Requirement (6 credits)
- Pharmaceutical Chemistry Elective (see below) (3 credits)
- Graduate Elective (3 credits)


## Semester 10

- Pharmaceutical Chemistry Requirement (3-4 credits)
- Pharmaceutical Chemistry Elective (3 credits)
- Graduate Elective (6 credits)


## Cognate Requirements

## Semesters 1 and 2

- MATH1201 Calculus I
- MATH2202 Calculus II


## Semesters 3 and 4

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Major Requirements

Undergraduate Science Electives: Any upper-level (3000 or 4000) undergraduate or graduate science course or Independent Study
Undergraduate Free Electives: May be chosen from any courses offered at the University after consultation with an adviser. (Students may not take BIOL1101 Concepts of Plant Biology or BIOL1102 Concepts of Animal Biology.)
Undergraduate Major Electives: Take 1-8 credits of CHEM or BIOL. Please see an adviser for a list of courses.

Undergraduate Advanced Mathematics Course
Select one course from the following:

- MATH2203 Calculus III
- MATH2337 Applied Statistics I


## Graduate Courses for BS and MS Degree

Students should consult with their advisers for course selections and new course offerings.

## Graduate Required Courses

- BIOL6758 Advances in Pharmacology
- CHEM6673 Physical Organic Chemistry
- CHEM6754 Drug-delivery Systems
- CHEM6781 Biochemistry

Choose 6-7 credits from the following:

- CHEM6755 Medicinal Chemistry or CHEM6752 Drug Design and Discovery and
- CHEM7737 Chemical Analysis of Pharmaceuticals or BIOL6845, BIOL6846 Molecular Biology Techniques Lecture and Laboratory


## Pharmaceutical Chemistry Electives (6 credits)

Any 5000- or higher-level biology (BIOL), chemistry (CHEM), cosmetic science (COSC) management (MGMT), marketing (MKTG), mathematics (MATH) or pharmaceutical chemistry (PHAR) course

## Graduate Electives (9 credits)

Any 5000- or higher-level chemistry (CHEM), cosmetic science (COSC) or biology (BIOL) course.

## General Education Requirements (Florham Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits)

- MATH1203 Calculus I
- MATH2202 Calculus II


## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy
(PHIL) or Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy
(PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Chemistry BS, Cosmetic Science MS Combined Degree

Qualified students can earn a BS in biochemistry and a Master of Science in cosmetic science.
The five-year program is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).
A minimum of 120 credits is required for the BS degree, and a minimum of an additional 23 credits are required for the MS degree, for a total of 143 credits for the combined degree.

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semester 5

- CHEM3241, CHEM3243 Physical Chemistry I Lecture and Laboratory
- CHEM3281, CHEM3389 Biochemistry I Lecture and Laboratory


## Semester 6

- CHEM3242, CHEM3244 Physical Chemistry II Lecture and Laboratory
- CHEM3282 Biochemistry II
- CHEM4401 Chemistry Seminar


## Semester 7

- CHEM2211 Inorganic Chemistry
- CHEM2221, CHEM2223 Analytical Chemistry Lecture and Laboratory
- Cosmetic Science Requirements (6 credits)


## Semester 8

- CHEM2314 Lab: Inorganic Chemistry II
- CHEM4215 Advanced Inorganic Chemistry or CHEM4373 Polymer Chemistry
- CHEM4233, CHEM4234 Instrumental Analysis Lecture and Laboratory
- Cosmetic Science Requirement (3 credits)


## Semester 9

- Cosmetic Science Requirement (3 credits)
- Cosmetic Science Electives (6 credits)
- Graduate Elective (3 credits)


## Semester 10

- COSC6548 Cosmetic Science Laboratory
- Cosmetic Science Requirements (6 credits)
- Graduate Elective (3 credits)


## Cognate Requirements

## Semesters 1 and 2

- MATH1201 Calculus I
- MATH2202 Calculus II
- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory


## Semesters 3 and 4

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Semester 6

- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory or BIOL3100, BIOL3101 Genetics Lecture and Laboratory


## Major Requirement

Advance Mathematics Course - select one course from the following:

- MATH2203 Calculus III or
- MATH2337 Applied Statistics I


## Graduate Courses for BS and MS Degree

Students should consult with their advisers for course selections and new course offerings.

## Required Courses (20 additional credits from the following)

- CHEM6526 Product Development
- CHEM6529 Microtoxicity and Biochemistry
- COSC6547 Skin-care Raw Materials and Formulations
- COSC6543 Hair-care Raw Materials and Formulations
- COSC6548 Cosmetic Science Laboratory
- COSC6753 Applied Colloid and Surface Science
- COSC6756 Dermal Pharmacology and Immunology


## Cosmetic Science Electives (6 credits)

- BIOL6728 Bioethics
- CHEM6546 Perfumery
- CHEM6781 Biochemistry
- CHEM6773 Polymer Chemistry
- COSC6542 Claims Substantiation
- COSC6549 Color Cosmetics


## Graduate Electives (9 credits):

Includes any 5000-level or higher graduate course in biology (BIOL), chemistry (CHEM), communication (COMM or MCOM), cosmetic science (COSC), management (MGMT), marketing (MKTG) or pharmaceutical chemistry (PHAR).

## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Compositon I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- BIOL1221, BIOL1222 Biological Diversity (Lecture and Laboratory)
- BIOL1233, BIOL1234 Molecules, Cells and Genes (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Chemistry BS, Pharmacy PharmD Combined Degree

Fairleigh Dickinson University's accelerated seven-year BS in chemistry/PharmD program provides a platform for currently enrolled students at both New Jersey campuses who are interested in FDU's Doctor of Pharmacy program within the School of Pharmacy and Health Sciences.
High-achieving students can enter into one of three accelerated tracks (in biochemistry, biology or chemistry) with the potential to matriculate into the School of Pharmacy and Health Sciences following completion of three years of undergraduate study. Students who maintain a 3.30 grade point ratio (GPR) with no pharmacy prerequisite course below a B- are guaranteed an interview for admission to the Doctor of Pharmacy program. A letter of recommendation from a faculty member or adviser is also required.

Following the interview process, students admitted to the Doctor of Pharmacy program will maintain their undergraduate scholarships and aid during the fourth "bridge" year while completing both their first professional year of study and their baccalaureate degree in their major area of study.
A minimum of 120 credits is required for the BS degree; 94 of these are taken at the Metropolitan Campus in years one through three, plus 26 credits (to be approved by department chair/director) in year 4 at FDU's School of Pharmacy and Health Sciences. Students not accepted into FDU's School of Pharmacy and Health Sciences have the option of switching out of the BS in chemistry/PharmD combined degree and into another concentration.
The BS in chemistry/PharmD combined degree program is jointly offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey, and the School of Pharmacy and Health Sciences, Florham Park, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.
PharmD prerequisite: Students must have a grade of B- or higher.

## Semesters 1 and 2

- CHEM1201 General Chemistry I Lecture
- CHEM1203 General Chemistry I Laboratory
- CHEM1202 General Chemistry II Lecture
- CHEM1204 General Chemistry II Laboratory


## Semesters 3 and 4

- CHEM2261 Organic Chemistry I Lecture
- CHEM2263 Organic Chemistry I Laboratory
- CHEM2262 Organic Chemistry II Lecture
- CHEM2264 Organic Chemistry II Laboratory


## Semester 5

- CHEM3241 Physical Chemistry I
- CHEM3243 Physical Chemistry I Laboratory
- CHEM3281 Biochemistry I Lecture
- CHEM3389 Biochemistry I Laboratory
- CHEM4233 Instrumental Analysis Lecture
- CHEM4234 Instrumental Analysis Laboratory


## Semester 6

- CHEM2221 Analytical Chemistry Lecture
- CHEM2223 Analytical Chemistry Laboratory
- CHEM3242 Physical Chemistry II Lecture
- CHEM3244 Physical Chemistry II Laboratory
- CHEM3282 Biochemistry II Lecture


## Semester 7

- PHRM6100 Foundations in Pharmaceutical Sciences - Medicinal Chemistry, Pharmacology (3 credits)
- PHRM6101 Foundations in Basic Biomedical Sciences Pathology/Pathophysiology/Microbiology/Immunology (4 credits)
- PHRM6200 Introduction to Pharmacokinetics (2 credits)
- PHRM6201 Physical Pharmacy (2 credits)
- PHRM6211 Pharmaceutical Calculations I (1 credit)
- PHRM6300 Evidence Based Practice I (2 credits)
- PHRM6401 Professional Pharmacy Practice I - Health Care Delivery (2 credits)
- PHRM6700 Pharmacy Beyond the Curriculum (0 credits)


## Semester 8

- PHRM6102 Integrated Pharmacotherapy - Gastrointestinal (2 credits)
- PHRM6104 Integrated Pharmacotherapy - Cardiology/Pulmonary (3 credits)
- PHRM6111 Integrated Pharmacotherapy - Conceptual Connections and Patient Care (2 credits)
- PHRM6202 Applied Biopharmaceutics and Pharmacokinetics (3 credits)
- PHRM6203 Genetics and Pharmacogenomics (2 credits)
- PHRM6212 Pharmaceutical Calculations II (1 credit)
- PHRM6402 Professional Pharmacy Practice II - Communication in Health Care (2 credits)
- PHRM6701 Pharmacy Beyond the Curriculum (1 credit)


## Cognate Requirements

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- MATH1201 Calculus I
- MATH2202 Calculus II


## Semesters 3 and 4

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## Semesters 5 and 6

- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- BIOL3357, BIOL3358 Human Structure and Function II Lecture and Laboratory
- MATH2337 Applied Statistics I


## Major Requirements

NOTE: Some sections of the pharmacy curriculum are under review and are subject to change.

## Years 5-7 (School of Pharmacy and Health Sciences)

- PHRM6501 Introductory Pharmacy Practice Experience
- PHRM7105 Integrated Pharmacotherapy V: Neurology, Psychiatry and Anesthesiology
- PHRM7106 Integrated Pharmacotherapy VI: Infectious Disease
- PHRM7107 Integrated Pharmacotherapy VII: Pulmonary, EENT
- PHRM7108 Integrated Pharmacotherapy VIII: Endocrine, Renal, Repro.
- PHRM7111 Integrated Pharmacotherapy V-VI: Conceptual Connection
- PHRM7112 Integrated Pharmacotherapy VII-VIII: Conceptual Connection
- PHRM7201 Pharmaceutical Dispensing and Compounding
- PHRM7202 Pharmaceutics III: Sterile Products and Biopharmaceuticals
- PHRM7301 Biostatics
- PHRM7302 Epidemiology and Public Health
- PHRM7401 Professional Pharmacy Practice III: Informatics/Drug Information
- PHRM7501 Introductory Pharmacy Practice Experience II
- PHRM7701 Beyond the Curriculum II
- PHRM8109 Integrated Pharmacotherapy IX: Autoimmune and Rare
- PHRM8110 Integrated Pharmacotherapy X: Hematology and Oncology
- PHRM8111 Integrated Pharmacotherapy I-X: Whole System Overview
- PHRM8112 Case Studies in Pharmacy
- PHRM8201 Pharmacogenomics and Personalized Medicine
- PHRM8202 Pharmacogenomics \& Personalized Medicine
- PHRM8301 Pharmacoepidemiology, Pharmacoeconomics, Outcomes PHRM8302 Public Health and the Global Mission of Pharmacy
- PHRM8402 Professional Pharmacy Practice IV: Leadership/Management
- PHRM8501 Introductory Pharmacy Practice Experience III
- PHRM9101 Advanced Pharmacy Practice Experience (APPE) I: Community
- PHRM9102 Advanced Pharmacy Practice Experience (APPE) II: Institutional
- PHRM9103 Advanced Pharmacy Practice Experience (APPE) III: Ambulatory Care
- PHRM9104 Advanced Pharmacy Practice Experience (APPE) IV: Acute Care
- PHRM92XX Advanced Pharmacy Practice Experience V: Elective
- PHRM93XX Advanced Pharmacy Practice Experience VI: Elective
- PHRM94XX Advanced Pharmacy Practice Experience VII: Elective
- PHRM95XX Advanced Pharmacy Practice Experience VIII: Elective
- PHRM9900 Pharmacy Capstone


## Elective Courses (21 credits)

A minimum of 120 credits is required for the BS degree; 94 of these are taken at the Metropolitan Campus in years one through three, plus 26 credits (to be approved by department chair/director) in year 4 at FDU's School of Pharmacy and Health Sciences. Students not accepted into FDU's School of Pharmacy and Health Sciences have the option of switching out of the BS in chemistry/PharmD combined degree and into another concentration.

## General Education Requirements (Florham Campus)

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (8 credits)

- MATH1203 Calculus I
- MATH2202 Calculus II


## III. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002 -level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement
may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## General Education Requirements (Metropolitan Campus) <br> I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3 -credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues ( $\mathbf{3}$ credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Civil Engineering BSCE

Civil engineering is one of the most important engineering disciplines, affecting everybody's daily life everywhere in the world. It is the second-oldest engineering discipline after military engineering. Civil engineers are employed in both public and private sectors, including municipal public works departments, state and federal government agencies and private domestic and global companies. As the nation's infrastructure ages, more civil engineers will be needed to supervise projects that maintain, repair, rebuild or upgrade highways, bridges, canals, tunnels, dams, waste-treatment plants and water systems. They are also needed to design and build new houses, buildings, highways and various components of infrastructure as the population continues to grow. Moreover, civil engineers contribute to environmental sustainability and protection and energy conservation by designing, building and maintaining smart green buildings and cities, as well as managing renewable-energy projects. They build structures that benefit mankind for hundreds of years and that stood the test of time. The civil- engineering profession is consistently ranked among the top earners. It has substantial career opportunities, excellent average starting salary, very good median long-term salary, robust job growth and great career fulfillment. The demand for civil engineers will further increase when the $\$ 1$-trillion Infrastructure Investment and Jobs Act is implemented over the next eight years.
The Bachelor of Science in Civil Engineering (BSCE) program prepares graduates for entrance into the high-demand profession of civil engineering or graduate study. Graduates work in the industry as civil engineers, typically specializing as construction, geotechnical, structural or transportation engineers. They may also hold other job titles, including field supervisors, project managers, job superintendents, contractors, estimators, safety specialists, schedulers, examiners or surveyors.
The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in Civil Engineering program has applied for initial accreditation with the Engineering Accreditation Commission of ABET (https://www.abet.org), and it is under review.
The BSCE curriculum provides students with a varied and balanced educational experience through an appropriate combination of theoretical concepts and practical applications. It also provides students with an engineering-design experience that expands in breadth and depth as they progress through their studies. A stimulating course of study is maintained by offering students a reasonable variety of focus areas and contemporary courses. The engineering laboratory experience is fully integrated with coursework. Students work in state-of-the-art laboratories.
The program focuses on three key areas of civil engineering: structural, geotechnical and environmental engineering. Students learn to analyze, test and use soils and construction materials; design, build, operate and maintain infrastructure and facilities; estimate construction costs; manage projects; and interpret contracts and specifications. They also learn to survey lands, plan their usage, protect the environment and utilize energy-saving materials and devices. Students will be able to intern or find employment with construction and engineering companies and government agencies.

## Educational Objectives

The educational objectives of the BS in Civil Engineering program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Enter into and advance in the profession of civil engineering, particularly in the areas of structural, geotechnical or environmental engineering.
2. Continue their formal education and obtain advanced degrees in civil engineering or other related fields.
3. Become responsible professionals and global citizens who are aware of ethical issues and societal needs and problems.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

The BS in Civil Engineering program has adopted the student outcomes of the Engineering Accreditation Commission (EAC) of ABET as its own student outcomes, which define the attributes, skills and knowledge that the graduates are expected to possess upon or before graduation. Each civil engineering graduate will demonstrate the following attributes and achievements as required by the EAC of ABET upon or before graduation:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

## Cooperative Education Option

Students in the BS in Civil Engineering program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives. Note that these credits may not be substituted for any required coursework. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Industry benefits from better-prepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.

## Degree Plan

The program requires the successful completion of 129 credits with a minimum cumulative grade point ratio (CGPR) of 2.00. The credit distribution is as follows:

- Mathematics and Science Requirements ( 32 credits)
- Liberal Arts Requirements (20 credits)
- Civil Engineering Core Requirements (77 credits)


## Semester 1 ( 15 credits)

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I (3 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## Semester 2 (17 credits)

- ENGR1223 Introduction to CAD (2 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2202 Calculus II (4 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II (3 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## Semester 3 (16 credits)

- CENG1205 Surveying I (3 credits)
- CENG1245 Construction Materials and Systems (3 credits)
- CHEM1201 General Chemistry I (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- ENGR2221 Statics (3 credits)
- MATH2210 Differential Equations (3 credits)


## Semester 4 (18 credits)

- ENGR1204 Programming Languages in Engineering (3 credits)
- ENGR2210 Technical Communications (3 credits)
- ENGR2228 Strength of Materials (3 credits)
- ENGR3431 Dynamics (3 credits)
- MATH3220 Linear Algebra (3 credits)
- UNIV2001 Cross Cultural Perspectives ( 3 credits)


## Semester 5 (15 credits)

- CENG3250 Structural Analysis (3 credits)
- CENG3257 Concrete Structures (3 credits)
- CENG4241 Soil Mechanics (3 credits)
- ENGR4254 Fluid Mechanics (3 credits)
- MATH2203 Calculus III (3 credits)


## Semester 6 (18 credits)

- CENG4242 Foundations (3 credits)
- CENG4276 Advanced Concrete Design (3 credits)
- CENG4320 Transportation Engineering ( 3 credits)
- ENGR3351 Applied Thermodynamics (3 credits)
- ENGR4221 Engineering Statistics and Reliability (3 credits)
- Science Elective (3 credits)


## Semester 7 ( 15 credits)

- CENG3256 Steel Structures (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- ENGR4263 Project Management in Engineering and Technology (3 credits)
- UNIV2002 Global Issues (3 credits)
- Technical Elective (3 credits)


## Semester 8 (15 credits)

- CENG3260 Environmental Engineering (3 credits)
- CENG3270 Environmental and Land Use Planning (3 credits)
- CENG4272 Advanced Steel Design (3 credits)
- CENG4385 Senior Design Project (3 credits)
- Technical Elective (3 credits)


## Science Elective (3 credits)

The student must take 3 credits of lab science electives, to be chosen from the following list:

- BIOL1001 Principles of Modern Biology Lecture (3 credits)

BIOL1011 Lab: Principles of Modern Biology ( 0 credits)

- BIOL1105 The Human Environment Lecture (3 credits)

BIOL1115 Lab: The Human Environment (0 credits)

- ENVR1001 Introduction to Environmental Science Lecture (3 credits) ENVR1002 Lab: Introduction to Environmental Science (0 credits)
- ENVR1101 Physical Geology Lecture (3 credits) ENVR1102 Lab: Physical Geology (0 credits)

Science electives other than chemistry and physics may be taken with prior approval from a program adviser.

## Technical Electives (6 credits)

The student must take 6 credits of technical electives, to be chosen from the following list:

- CENG1206 Surveying II (3 credits)
- CENG3261 Estimating I (3 credits)
- CENG4260 Contracts and Specifications (3 credits)
- CENG4321 Bridge Design (3 credits)
- EENG2221 Signals and Systems I (4 credits)
- ENGR3211 Engineering Materials I (3 credits)
- ENGR4001 FE/EIT Exam Preparation I (2 credits) and ENGR4002 FE/EIT Exam Preparation II (1 credit)
- MENG4040 Heating, Ventilation and Air Conditioning (3 credits)
- MENG4356 Stress and Vibration Analyses (3 credits)

Other technical electives may be taken with prior approval from a program adviser. In addition, students may undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## For Information

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## Civil Engineering Technology BSCivET

The Bachelor of Science in Civil Engineering Technology (BSCivET) program educates and trains students for industrial positions requiring a sophisticated, applied technical orientation in planning, designing, building and maintaining infrastructure and facilities. The curriculum consists of an integrated sequence of undergraduate courses emphasizing the application of engineering and scientific knowledge, methods, technology and technical skills appropriate to the civil engineering technology discipline. The program graduates are capable of solving design and applied-engineering problems, as well as performing managerial, business and sales functions. The graduates work in areas such as transportation, water systems, utilities, structures, pollution control, surveying, soil mechanics and foundations. Job responsibilities would include design, development, liaison, cost estimation, supervision, installation, testing, maintenance, services or sales. The civil engineering technology profession has substantial career opportunities, excellent average starting salary, very good median long-term salary, robust job growth, and great career fulfillment. The demand for the program graduates will further increase, as the $\$ 1$ trillion Infrastructure Investment and Jobs Act is implemented over the next eight years.
The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in Civil Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET (https://www.abet.org).
The faculty members maintain excellent communication with the industry and encourage students to gain industrial experience through cooperative education. Laboratory and industry-oriented project assignments complement the lectures and recitations throughout the program to provide students with these learning opportunities that are crucial to their success in the workplace. Students work in state-of-the-art laboratories. A capstone project based on an approved written proposal is required in the eighth semester for all students.

## Educational Objectives

The educational objectives of the BS in Civil Engineering Technology program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:
1.Enter into and advance their careers in the planning, design, construction, operation or maintenance of buildings and infrastructures utilizing their theoretical knowledge and practical skills in analyzing and designing systems or structures, specifying construction methods and materials, performing cost estimates and analyses and inspecting and managing civil projects.
2. Continue their formal education and obtain advanced degrees such as MS in construction management, MBA (industrial management), MS in environmental studies, MS in technology management or other related fields.
3.Continue to conduct themselves as both responsible professionals and global citizens who are aware of and who understand ethical issues and societal needs and problems.
These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

Each civil engineering technology graduate will demonstrate the following attributes and achievements as required by the ETAC of ABET upon or before graduation:

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering and technology to solve broadly defined engineering problems appropriate to the discipline;
2. An ability to design systems, components or processes meeting specified needs for broadly defined engineering problems appropriate to the discipline;
3. An ability to apply written, oral and graphical communication in broadly defined technical and nontechnical environments; and an ability to identify and use appropriate technical literature;
4. An ability to conduct standard tests, measurements and experiments and to analyze and interpret the results to improve processes; and
5. An ability to function effectively as a member as well as a leader on technical teams.

## Cooperative Education or Work Experience Option

Students in the BS in Civil Engineering Technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Industry benefits from betterprepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.

Instead of undertaking cooperative education, students may earn up to 6 academic credits for appropriately documented industrial experience (work experience) counted toward their technical electives. Note that credits earned from industrial experience and/or cooperative education may not be substituted for any required coursework and that they altogether may not exceed a total of 6 credits. Students must have successfully completed the course EGTG2210 Technical Communications before the application for work-experience credits can be considered. The application form and directions for submission of necessary documents in support of the application may be obtained from GHSCSE.

## Degree Plan

The program requires the successful completion of 128 credits with a minimum cumulative grade point ratio (CGPR) of 2.00 as described below.

## 1st Semester (15 credits)

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1107 Precalculus (4 credits)
- PHYS2101 General Physics I (3 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (17 credits)

- EGTC1223 Introduction to CAD (2 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2102 General Physics II (3 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (17 credits)

- CHEM1201 General Chemistry I (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- EGTC1205 Surveying I (3 credits)
- EGTC1245 Construction Materials and Systems (3 credits)
- EGTG2221 Statics (3 credits)
- MATH2202 Calculus II (4 credits)


## 4th Semester (18 credits)

- EGTC1206 Surveying II (3 credits)
- EGTG2210 Technical Communications (3 credits)
- EGTG2228 Strength of Materials (3 credits)
- EGTG4221 Engineering Statistics and Reliability (3 credits)
- ENGR1204 Programming Languages in Engineering (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 5th Semester (15 credits)

- EGTC3250 Structural Analysis (3 credits)
- EGTC3257 Concrete Structures (3 credits)
- EGTC3261 Estimating I (3 credits)
- EGTC4241 Soil Mechanics (3 credits)
- EGTG4254 Fluid Mechanics (3 credits)


## 6th Semester (15 credits)

- EGTC4242 Foundations (3 credits)
- EGTC4276 Advanced Concrete Design (3 credits)
- EGTG3351 Applied Thermodynamics (3 credits)
- EGTG3431 Dynamics (3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (15 credits)

- EGTC3256 Steel Structures (3 credits)
- EGTC4263 Project Management and Control I (3 credits)
- EGTG2215 Circuits I (3 credits)
- EGTG3211 Materials Technology I (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)


## 8th Semester (16 credits)

- EGTC3270 Environment and Land Use Planning (3 credits)
- EGTC4260 Contracts and Specifications (3 credits)
- EGTC4272 Advanced Steel Design (3 credits)
- EGTC4385 Civil Technology Design Project (1 credit)
- Technical Electives (6 credits)


## Technical Electives ( $\mathbf{6}$ credits)

The student must take 6 credits of technical electives, to be chosen from the following list:

- CHEM1202 General Chemistry II (3 credits) with CHEM1204 Lab: General Chemistry II (1 credit)
- EGTC4320 Highway Design (3 credits)
- EGTC4321 Bridge Design (3 credits)
- EGTC4322 Hydraulic Design (3 credits)
- EGTC4323 Seismic Design (3 credits)
- EGTG3212 Materials Technology II (3 credits)
- EGTM4356 Stress and Vibration Analyses (3 credits)

Other technical electives may be taken with prior approval from a program adviser. Up to 6 credits for work experience or cooperative education experience but not both may be used in place of technical electives.

## For Information

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## Program Co-Coordinators

Vahid Alizadeh
Associate Professor of Civil and Construction Engineering Technology

## Clinical Laboratory Sciences BSCLS

The BS in Clinical Laboratory Science degree is available through the Henry P. Becton School of Nursing and Allied Health at the Florham and Metropolitan campuses. The Bachelor of Science in Clinical Laboratory Science will prepare graduates with a concentration in medical laboratory sciences awarded jointly between FDU and the Rutgers School of Health Professions. Students must complete 6 semesters of pre-professional courses at FDU before applying for the clinical laboratory experience at Rutgers.
At the Metropolitan Campus, the degree is available through the Henry P. Becton School of Nursing and Allied Health. At the Florham Campus, the degree is also offered through the department of biological sciences, Maxwell Becton College of Arts and Sciences.

## Medical Laboratory Sciences

Medical laboratory scientists are clinical laboratory professionals who play a major role in patient care, providing laboratory data which are crucial for the diagnosis of diseases, the management of patient therapy and maintenance of health. Medical laboratory scientists perform a wide variety of analytical procedures requiring expertise in state-of-the-art technology and instrumentation, as well as organizational, problem solving and communication skills. Major disciplines in medical technology include clinical chemistry, clinical immunology, clinical microbiology, hematology, immunohematology and urinalysis.

## Admission Requirements

## Admission to FDU

- Graduation from an accredited secondary school with a record indicating potential to succeed in college.
- Students admitted to the BS in medical imaging science major must maintain a minimum grade point average of 2.85 in their preprofessional coursework.
- A separate application to Rutgers University will be filled out in the fall of the third year at FDU.
- Admission decisions for the professional component are made in accordance with criteria, policies and procedures established by a joint Committee on Admissions and Academic Status and cannot be guaranteed by FDU.


## Admission to the Clinical Laboratory Experience at Rutgers

- Six semesters of college work are required for admission to the joint program with Rutgers, SHP.
- Students must apply in their third year for the clinical training.
- The 15 -month clinical training program, which is required of students who wish to qualify for the examination given by the Board of Registry of the American Society for Clinical Pathology (ASCP) for the certification as a Clinical Laboratory Scientist (CLS-ASCP).
- Admission is clearly competitive.
- If students are not selected for admission, an option may be chosen to continue for a Bachelor of Science in science or Bachelor of Science in Health Studies - science track.


## Degree Plan

After completion of three years of study (minimum of 94 credits) at FDU, the program is completed in 12-15 months at Rutgers SHP. With successful completion of the program at Rutgers SHP the student will earn the BS in Clinical Laboratory Science.

A minimum of 131 credits is required for graduation.

## 1st Semester (16 credits)

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1211 Recitation: General Chemistry I
- MATH1107 Precalculus
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## 2nd Semester (18 credits)

- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory
- CHEM1212 Recitation: General Chemistry II
- CSCI1105 Survey of Computers and Computer Software
- MATH1201 Calculus I
- WRIT1003 Composition II: Research and Argument


## 3rd Semester (12 credits)

- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- PSYC1201 General Psychology
- UNIV1002 Preparing for Professional Life


## 4th Semester (14 credits)

- BIOL4240, BIOL4241 Molecular Cell Biology Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory
- PSYC2210 Psychological Statistics
- UNIV2001 Cross Cultural Perspectives


## 5th Semester (17 credits)

- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- CHEM3281 Biochemistry I
- MEDT1130 Bioethics
- UNIV2002 Global Issues


## 6th Semester (15 credits)

- BIOL5306 Immunology
- MEDT1201 Introduction to Medical Technology I
- MEDT4308 Management Principles for Healthcare Professionals
- NURS4430 Critique/Use of Research
- SPCH1155 Public Speaking


## Special Information

This degree is a joint partnership with Fairleigh Dickinson University and Rutgers SHP.

## For Information

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## Communication BA

The BA in communication is an interdisciplinary liberal arts major that prepares students for a wide range of communication careers as well as for advanced study. Course requirements in media studies, theory, research, international communication and writing introduce students to major areas of study and practice.

Students can select from the following concentrations: human communication, multimedia journalism or public relations.
The degree is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.
The major culminates in an internship in a communication-related position where students acquire realworld experience. The combination of required and elective courses allows students to build areas of specialization in a wide range of interests including communication theory, public relations, advertising, digital media or journalism.

## Degree Plan

All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor's degree requirements.

## Major Requirements (45 credits)

## Required Courses (18 credits)

- COMM2102 International Communication
- COMM2204 Introduction to Human Communication
- COMM2861 Mass Communication
- COMM3101 Research Methods
- COMM4001 Communication Internship I
- COMM4007 Communication Theory


## Communication Electives (27 credits)

Note: Three credits in COMM4002 Internship Experience II may be used to fulfill a Major Elective Requirement.
COMM2204 Introduction to Human Communication and COMM3838 Media Ethics will be applied toward General Education Requirements.

## Concentrations

Students have the option of completing a concentration within the communication major. Concentrations require more intensive study and differ from minors in that they require an additional 9 credits of coursework related to the given area of study. Students should consult with an adviser about communication concentration.

## Human Communication Concentration (27 credits)

This concentration is for students who wish to gain a thorough understanding of human communication and the theories that describe and explain it. Recommended for students with an interest in all aspects of human interaction or for students considering an advanced course of study.

## Required Concentration Courses (18 credits)

## Fundamentals ( 6 credits - take both courses)

- COMM2002 Small Group Communication
- COMM2003 Interpersonal Communication

Principles ( 6 credits) - take any two courses

NOTE: Students may take one or both of the two classes not chosen to satisfy the requirements for this section and have them count as one or two of the three open COMM electives.

- COMM2006 Nonverbal Communication
- COMM3004 Organizational Communication
- COMM3006 Narrative Communication
- COMM3014 Family Communication


## Exploration (6 credits) - take any two courses

NOTE: Students may take any of the remaining classes not chosen to satisfy the requirements for this section and have them count as one of the three open COMM electives.

- COMM3005 Social Media, Communication and Community
- COMM3023 Film and Culture
- COMM3051 Communication and Gender
- COMM3437 Talk at Work


## Electives (9 credits)

Note: Three credits from COMM4002 Internship Experience II may be used to fulfill a Major Elective Requirement.

## Multimedia Journalism Concentration (27 credits)

This concentration is for students interested in pursuing a career in the ever-changing world of journalism. Although journalism still involves the basics of researching and gathering information, today's journalists have more tools at their disposal for delivering that information to the public: photography, blogs, podcasts, webcasts and more.

## Required Concentration Courses (18 credits)

## Fundamentals (6 credits)

- COMM2011 Introduction to Journalism
- COMM4444 Multimedia Journalism


## Principles (6 credits) - take any two courses

NOTE: Students may take one or both of the two classes not chosen to satisfy the requirements for this section and have them count as one or two of the three open COMM electives.

- COMM2214 Introduction to Broadcasting and Digital Journalism
- COMM3012 News Writing
- COMM3016 News Editing


## Exploration (6 credits) - take any two courses

NOTE: Students may take any of the remaining classes not chosen to satisfy the requirements for this section and have them count as one of the three open COMM electives.

- COMM2012 Introduction to Television and Digital Journalism
- COMM3013 Feature Writing
- COMM3060 Television News and Digital Journalism
- COMM3248 Writing for Broadcast and Podcast
- COMM3341 Radio Management and Digital Journalism
- COMM3432 Sports Journalism
- COMM3838 Media Ethics


## Electives (9 credits)

Note: Three credits from COMM4002 Internship Experience II may be used to fulfill a Major Elective Requirement.

## Public Relations Concentration ( 27 credits)

This concentration is for students interested in pursuing a career in the public relations field. Potential positions include: publicity manager, events planner, press agent, lobbyist, strategic communication manager and more.

## Required Concentration Courses (18 credits)

## Fundamentals (6 credits)

- COMM2004 Public Relations Principles
- COMM3035 Public Relations Writing

Principles ( 6 credits) - take any two courses
NOTE: Students may take one or both of the two classes not chosen to satisfy the requirements for this section and have them count as one or two of the three open COMM electives.

- COMM3004 Organizational Communication
- COMM3030 Events Planning
- COMM3244 Public Relations Campaigns
- COMM3248 Writing for Broadcast and Podcast


## Exploration ( 6 credits) - take any two courses

NOTE: Students may take any of the remaining classes not chosen to satisfy the requirements for this section and have them count as one of the three open COMM electives.

- COMM2002 Small Group Communication
- COMM3005 Social Media, Communication and Community
- COMM3006 Narrative Communication
- COMM4480 Crisis Communication in a PR Context


## Electives (9 credits)

Note: Three credits from COMM4002 Internship Experience II may be used to fulfill a Major Elective Requirement.

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis ( 6 to 7 credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( 3 to 4 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:
-___1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)

## VI. Humanities (6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)


## These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theatre Experience (formerly THEA3339)


## For Information

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## Communication BA, Communication MA Combined Degree

The five-year BA/MA accelerated program combines the Bachelor of Arts in communication with a Master of Arts in communication. It is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey. Students can earn an MA by taking 30 credits of graduate-level coursework, nine of which are taken during the undergraduate senior year.
MA coursework typically takes one extra school year, including one summer or winter session course. Students must complete the Becton College General Education Requirements as part of their undergraduate degree (see below).

## Admission into the Five-year BA/MA Program

Students apply for the BA/MA program in their junior year (once they have earned 60-80 credits). Candidates for the five-year BA/MA program will have a strong academic record including:

- Completion of at least two of the following:
- COMM2102 International Communication
- COMM2204 Introduction to Human Communication
- COMM2861 Mass Communication
- COMM3101 Research Methods
- COMM4001 Communication Internship I
- COMM4007 Communication Theory
- Completion of at least two other COMM courses at the 3000 level.
- Maintaining a cumulative grade point ratio (CGPR) of 3.00 or higher.


## Application Process

The application process begins with a meeting with Kate Dunsmore, director of the MA program, to learn about the program and how it could fit with the student's goals. This meeting will include an initial review of the student's academic record and will consider individual circumstances.
Students interested in the five-year BA/MA complete an application form, which includes listing two references and providing a personal statement about their motivation in pursuing the degree. To get the application form, email Kate Dunsmore.

## Degree Plan

## Senior Year Undergraduate (9 graduate credits)

The senior undergraduate year of all BA/MA students is a qualifying year. The three listed graduate courses count toward the completion of the BA degree. Students must earn a grade of B or better in each of the three required classes in order to qualify for the graduate year. Failure to earn grades of B or better in each required class means that the student will graduate at the end of the senior year with a BA in communication, but will not be allowed to continue into the graduate year.

## Fall of Undergraduate Senior Year

- MCOM6001 Principles and Practices of Communication


## Spring of Undergraduate Senior Year

- MCOM6005 Group Communication and Leadership
- MCOM6006 Research Methods


## Graduate Year (21 credits)

## Summer (3 credits)

- MCOM7002 International Communication and Culture, a cultural context course offered at FDU's Wroxton College, in the United Kingdom. Students typically take the summer course following the completion of their senior undergraduate year. Students may also complete 3 credits with a winter session course or MCOM context course


## Fall Graduate Year (9 credits)

- MCOM6002 Professional Writing and Editing
- MCOM6003 Presentation Methods
- MCOM context course


## Spring (9 credits)

- MCOM6004 Executive Lectures
- MCOM6099 The Capstone Experience
- MCOM context course


## For Information

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## Computer Science BS (Florham)

The Bachelor of Science in computer science program, offered by the department of mathematics and computer science in the Maxwell Becton College of Arts and Sciences at the Florham Campus, Madison, New Jersey, is designed to give students broad knowledge in the theoretical as well as practical aspects of computer science. The program provides graduates with a solid foundation in the fundamentals of computer science, preparing them for a professional career in the field as well as for graduate studies. The skills and knowledge that students acquire will provide them with the ability to adapt and grow in the workplace, which is continually changing with advances in technology and globalization.
Students can choose from three different concentrations as part of their major: cybersecurity, data science and game development.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor's degree requirements. (See below.)

## Computer Science Required Courses

- CSCI1205 Introduction to Computer Programming
- CSCI2205 Introduction to Computer Science I
- CSCI2216 Introduction to Computer Science II
- CSCI2233 Data Structures and Algorithms
- CSCL2255 Discrete Structures
- CSCI3268 Database Systems (excluding cybersecurity concentration)
- CSCI3304 Computer Organization
- CSCI3278 Operating Systems
- CSCI3315 Software Design
- CSCI3371 Modeling and Simulation or MATH3300 Statistics I
- CSCI4391 Senior Project I, CSCI4392 Senior Project II or CSCI4498 Computer Science Internship


## Computer Science Electives

Five additional courses to be selected from the 3000- or higher-level offerings in computer science (CSCI designation).

## Mathematics Required Courses

- MATH1107 Precalculus
- MATH1203 Calculus I
- MATH2202 Calculus II
- MATH3220 Linear Algebra or MATH3318 Differential Equations
- Mathematics Elective (3 credits)

One additional course to be selected from the mathematics offerings (MATH designation) above2000.

## Physics Required Courses

- 8 credits of cognate physics courses


## Concentrations

Students can choose to pursue one of three concentrations: cybersecurity, data science and game development.

## Cybersecurity Concentration

The demand for cybersecurity professionals is high and is expected to grow even more in the coming years in both the public and private sectors. Cybersecurity professionals are needed to protect computer networks and systems in the financial, communication, energy and transportation industries - as well as in the government - against cyber-attacks.
The BS in computer science with a concentration in cybersecurity, which is offered at the Florham Campus, has been validated by the National Security Agency (NSA) and the Department of Homeland Security (DHS) in the field of Cyber Defense through 2026 and as such Fairleigh Dickinson University has been designated as a National Center of Academic Excellence in Information Assurance Education (CAE/CDE) for the academic years 2022 through 2026.
The information assurance (IA) academic program described on this web page helps impart the skills and training needed to defend America's cyberspace.
FDU's cybersecurity curriculum has been designed to lay a solid foundation in computer science and mathematics. This concentration for the computer science major has been based on carefully chosen courses in the department of mathematics and computer science and is further strengthened by requiring courses in network and data security. There is a provision for internships that will provide practical experience in the field. The Florham Campus enjoys the proximity of several computer science and information technology companies in the area and a number of computer science and mathematics
students have had internship positions with these organizations. The department will continue to build and strengthen ties with these organizations with a view to expanding experiential-learning opportunities for the students in the field of cybersecurity.
Courses in this concentration will cover a range of topics from an overview of Computer Security, Foundations - Access Control Matrix, Policy - Security Policies, Confidentiality Policies, Integrity Policies, Hybrid Policies, to Implementation - Information Hiding Techniques - Steganography, Digital Watermarking, Cryptography, Fingerprinting, Key Management, Cipher Techniques, Authentication, Access Control Mechanisms, Confinement Problem, User and System Security, Data Security, Copyright, Digital Certificates, Digital Rights Management.
A Certificate of Completion of an NSA- and DHS-designated CAE/CDE program of study is awarded to eligible students who complete the BS in computer science degree with a concentration in cybersecurity.
In addition to the required computer science courses, students in the concentration take the following computer science courses.

- CSCI3157 Cyber Security
- CSCI3158 Information Security Design and Management
- CSCI3355 Introduction to Cryptography
- CSCI3666 Data Communications and Computer Networks
- CSCI3869 Network Security
- CSCI3870 Security Regulations, Detection and Forensics


## Data Science Concentration

We are now witnessing a new era in modern information technology, namely, the era of big data. Huge amounts of data are continuously generated every minute. Data sources range from social-networking sites, stock-trading sites, news agencies, insurance companies and search engines to sensors in meteorological and climate systems, patient-monitoring systems and acquisition and control systems that can be found in cell towers, cars, airplanes and power plants. With these enormous amounts of data, systems and techniques are needed to extract knowledge, information and patterns for prediction, forecasting and decision-making purposes.
As an example of the amounts of data that are being generated, a recent study estimates that Google receives more than " 2 trillionsearches per year, which amounts to 3.8 million searches per minute, 228 million searches per hour and 5.6 billion searches per day."
In addition to the required computer science courses listed above, students in the concentration take the following computer science courses:

- CSCI3269 Introduction to Data Mining
- CSCI3270 Introduction to Machine Learning
- CSCI3998 Artificial Intelligence


## Game Development Concentration

The gaming industry is doing well. According to Game Developer Research, there are about 220,000 employees in the field earning an average salary of $\$ 101,644$. The Bureau of Labor Statistics predicts that the growth of employment in software engineering, of which game development is a part, will be about a third in the next decade.
The demand for game developers comes from a variety of industries including entertainment, education, government, military and consumer products.

The game development concentration at Fairleigh Dickinson University provides students with the technical skills that are needed in the gaming industry.
The game development curriculum has been designed to lay a solid foundation in computer science and mathematics with carefully chosen courses in the department of mathematics and computer science, select physics courses, as well as courses in the School of the Arts. The concentration is designed based on guidelines provided by the International Game Developers Association (IGDA).
Students planning to major in computer science with a concentration in game development will take courses in computer science, mathematics and animation. The concentration prepares students for a career in gaming as well as a career in computer science. Students will take special courses that have been designed for this concentration as well as courses in animation and game design.
In addition to required computer science courses, students in the concentration take the following:

- CSCI3388 Introduction to Game Development
- CSCI3389 Introduction to Human and Computer Interaction
- CSCI3998 Artificial Intelligence
- CSCI4488 Advanced Game Development

Two cognate electives to be selected from the following animation courses:

- ANIM1650 Game Design
- ANIM2270 ZBrush Digital Sculpting Human Anatomy
- ANIM2285 3D Asset Creation for Video Games
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3350 3D Game Creation Using Unreal
- ANIM3450 3D Game Creation Using Unity


## General Education Requirements

I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## III. Quantitative Analysis (8 credits) '

- MATH1203 Calculus I
- MATH2202 Calculus II


## IV. Speech /Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## V. Ethical and Moral Analysis (3 credits)

Choose one course from the following:

- COMM3838 Media Ethics
- CSCI1109 Computer Ethics
- EDUC3601 Equity, Ethics and Education
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3-4 credits)

Demonstrated proficiency in a foreign language at the 1002-level or above is required. This requirement may be met by completing the 1002 course in a selected language, demonstrating equivalent proficiency on a placement test (required of all students continuing a language previously studied and heritage speakers) or taking the College-level Examination Program ${ }^{\circledR}$ (CLEP) or New York University (NYU) language exams for credit. Maxwell Becton College of Arts and Sciences currently offers instruction at the introductory 1002 level in Arabic, French, German, Italian, Japanese and Spanish. This requirement may also be met by completing SIGN1002 American Sign Language II. Students desiring to study other languages may select courses offered at Drew University or Saint Elizabeth University at no additional cost and as part of the FDU registration process with some additional restrictions.

## VII. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation - Humanities (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) or Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Social and Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African-American Studies (AFAM), Anthropology (ANTH), Communication Studies (COMM), Criminal Justice (CRIM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Politics (GOVT), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## IX. Natural Sciences (8 credits)

- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)


## X. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Theater (THEA) or Video/Electronic Film (VDEO).

## XI. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## XII. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## For Information

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## Computer Science BS (Metro)

Computer software applications are ubiquitous, benefiting people's daily lives - from home to school to workplace. The Bachelor of Science (BS) in computer science program prepares graduates for entrance into the high-demand profession of computer science or graduate study. The program graduates work in industry as computer professionals, holding various titles, including computer or data scientist, software developer, apps or web developer, systems or information security analyst, network architect, and system or database administrator.
The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in computer science program is accredited by the Computing Accreditation Commission of ABET (https://www.abet.org). This accreditation applies only to the BS in computer science program offered by the GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
The computer science discipline focuses on the analysis and development of software systems, and computer science students are trained to program, develop software and solve problems logically, optimally and creatively. These skills are invaluable to any employer and in any field. Since all industries use software, they employ computer science graduates in various capacities and roles. Common job titles include computer, data or research and development scientist; software developer or engineer; apps or web developer, systems or information security analyst; network architect; system or database administrator; and chief information security officer.
The demand for computer professionals far exceeds supply. As such, computer professionals account for many high-paying jobs. The computer science profession is consistently ranked among the very top earners. It has ample and diverse career opportunities, excellent average starting salary, outstanding median long-term salary, robust job growth and great career fulfillment. The demand for computer professionals will further increase as the $\$ 1$-trillion Infrastructure Investment and Jobs Act, which includes funds for expanding the nation's broadband networks, is implemented over the next eight years.
The BS in computer science curriculum provides students a varied and balanced educational experience through an appropriate combination of theoretical concepts and practical applications. Students are exposed to a broad range of fundamental concepts in such areas as software engineering, computer
organization, database systems, management information systems and operating systems, as well as to a wide variety of computer applications. The core curriculum of required courses are supplemented by contemporary courses in three in-demand fields through three concentrations:

- Big Data Analytics,
- Cybersecurity and Information Assurance
- Game and Mobile Application Development

Students select one of the three concentrations for specialization based on their interests and goals. The computer laboratory experience is fully integrated with coursework. Students work in many state-of-theart laboratories, including the computer networking lab, the cyber defense lab, the apps development lab and the robotics lab. GHSCSE is a member of the Cisco Networking Academy.

Students completing the BS in computer science program with a concentration in cybersecurity and information assurance are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education.
The program requires the successful completion of at least 120 credits of coursework. Graduates of the program are prepared to work well in virtually all computing environments in various industries. They are familiar with a spectrum of fundamental principles and proficient in the use of modern tools and technology, and they have been trained to approach problems with creativity.
Students in the BS in computer science program can also pursue one of the three accelerated combined five-year BS and master of science (MS) degree programs, thereby saving time and money and expanding their career opportunities. The three accelerated programs are as follows:

- BS in computer science/ MS in computer science combined degree program
- BS in computer science/MS in cybersecurity and information assurance combined degree program
- BS in computer science/MS in management information system combined degree program


## Educational Objectives

The educational objectives of the BS in computer science program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Utilize a varied and balanced educational experience with an appropriate combination of theoretical knowledge and practical skills that enable entrance into and advancement in the profession of computer science.
2. Build on educational knowledge and experience to continue formal education and obtain advanced degrees in the fields of computer science, cybersecurity, management information systems, business administration or computer engineering.
3. Continue to develop as responsible professionals and global citizens who are mindful of ethical issues, societal needs and problems inherent in the computing field.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

Each computer science graduate will demonstrate the following attributes and achievements as required by the Computing Accreditation Commission (CAC) of ABET by the time of graduation:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply computer science theory and software development fundamentals to produce computingbased solutions.

## Cooperative Education Option

Students in the BS in computer science program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their electives. Note that these credits may not be substituted for any required coursework. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. The industry benefits from better-prepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.

## Credit Distribution

The program requires the successful completion of 120 credits with a minimum cumulative grade point ratio (CGPR) of 2.00. The credit distribution is provided below.

## Computer Science Requirements (42 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2215 Introduction to Computer Science (3 credits)
- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI2235 Survey of Computing Security (3 credits)
- CSCI2247 Assembly Language Programming ( 3 credits)
- CSCI3240 Computer Networks (3 credits)
- CSCI3249 Computer Organization (3 credits)
- CSCI3251 Design of Software Systems (3 credits)
- CSCI3260 Mathematical Foundations of Computer Science (3 credits)
- CSCI3268 Database Systems (3 credits)
- CSCI3278 Operating Systems (3 credits)
- CSCI4384 Preparation for Computer Science Senior Project (1 credit)
- CSCI4386 Computer Science Senior Project (2 credits)
- ENGR2286 Digital System Design (3 credits)


## Mathematics Requirements (17 credits)

- MATH1201 Calculus I (4 credits)
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3237 Probability and Statistics I (3 credits)


## Science Requirements (8 credits)

- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2203 University Physics I Lecture (3 credits)
- PHYS2204 University Physics II Lecture (3 credits)


## Liberal Arts/Humanities/Social Science Requirements (26 credits)

Courses are 3 credits unless otherwise indicated.

- ENGR2210 Technical Communications (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Humanities Elective (3 credits)
- Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)
- Social and Behavioral Science Elective (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)


## Electives (12 credits)

- Technical Electives (9 credits)
- Can take courses in computer science, engineering, engineering technology, information technology and mathematics at the appropriate levels based on students' interests.
- A science course ( 3 credits), a lab science course ( 4 credits) or a business course ( 3 credits) may be taken and counted toward 3 to 4 credits of 9 credits of technical electives.
- Free Elective (3 credits)
- Students may undertake cooperative experience or internship and earn 3 academic credits per semester up to a maximum of 6 credits through CSCI4498, CSCI4499 Co-op in Computer Science. The 6 credits earned are counted towards the technical electives.
- For Technical and Free Electives, courses may not include CSCI1105 Survey of Computers and Computer Software, MATH0198 Computation and Algebra Skills, MATH0298 Algebra Skills, MATH1105 College Algebra, MATH1107 Precalculus and all MIS-prefixed courses.
- Students must obtain prior approval from a GHSCSE academic adviser for all course selections and substitutions.


## Concentration Requirements (15 credits)

Students must complete any one of three concentration areas: big data and analytics, cybersecurity and information assurance or game and mobile application development. Each concentration requires the successful completion of five courses ( 15 credits). Students pursuing a concentration in game and mobile application development are recommended to take two computer animation courses from the School of the Arts as a free elective and a technical elective in the BS in computer science curriculum.

## Big Data Analytics Concentration

- CSCI3318 Cloud Computing (3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCI3387 Machine Learning (3 credits)
- CSCI3460 Data Warehouse and Data Mining (3 credits)
- CSCI3485 Big Data Analytics (3 credits)


## Cybersecurity and Information Assurance Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3410 Foundations of Cybersecurity (3 credits)
- CSCI3420 Cryptography (3 credits)
- CSCI3783 Information Security (3 credits)


## Game and Mobile Application Development Concentration

- CSCI3314 Mobile Application Development (3 credits)
- CSCI3317 Computer Game Programming ( 3 credits)
- CSCI3385 Artificial Intelligence (3 credits)
- CSCI3444 Programming for the Internet (3 credits)
- CSCI4380 Systems Development with Java (3 credits)


## Degree Plan

The program requires the successful completion of 120 credits with a minimum cumulative grade point ratio of 2.00 . The course distribution per semester is provided below.

## 1st Semester (14 credits)

- CSCI1201 Computer Programming I (3 credits)
- ENGR2286 Digital System Design (3 credits)
- MATH1201 Calculus I (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CSCI1202 Computer Programming II (3 credits)
- CSCI2215 Introduction to Computer Science ( 3 credits)
- MATH2202 Calculus II (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- ENGR2210 Technical Communications (3 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I Lecture (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- CSCI3268 Database Systems (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II Lecture (3 credits)
- UNIV2002 Global Issues (3 credits)


## 5th Semester (15 credits)

- CSCI3240 Computer Networks (3 credits)
- CSCI3278 Operating Systems (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2255 Discrete Structures (3 credits)
- Humanities Elective (3 credits)


## 6th Semester (15 credits)

- CSCI3251 Design of Software Systems (3 credits)
- MATH3220 Linear Algebra (3 credits)
- Concentration Courses ( 6 credits)
- Free Elective (3 credits)


## 7th Semester (16 credits)

- CSCI3249 Computer Organization (3 credits)
- CSCI4384 Preparation for Computer Science Senior Project (1 credit)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Concentration Course (3 credits)
- Technical Electives (6 credits)


## 8th Semester (14 credits)

- CSCI3260 Mathematical Foundations of Computer Science (3 credits)
- CSCI4386 Computer Science Senior Project (2 credits)
- Concentration Courses ( 6 credits)
- Technical Elective (3 credits)

With the approval of the academic adviser, students may take other higher-level CSCI courses as electives. Students intending to pursue an MS in computer science or an MS in management information systems must see an adviser for the proper selection of electives. To take any course, a student must meet all the prerequisites for that course.

## For Information

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## Computer Science BS, Computer Science MS Combined Degree (Florham)

Qualified students can earn a Bachelor of Science degree in computer science and a Master of Science degree in computer science through a five-year program that has a combined course load of 141 credits.
The combined-degree program is offered by the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Admission Requirements

Students who have completed the first 15 credits of the computer science program with a grade point ratio (GPR) of 3.00 or better (in computer science courses) are eligible to apply to the combined BS/MS fiveyear program.
Applications should be submitted before the student has completed 27 credits of computer science courses. Upon completion of their undergraduate degree, students who have maintained a 3.00 GPR in their computer science courses will be admitted to the graduate computer science program.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).
A minimum of 120 credits is required for the BS degree and a minimum of 141 credits is required for the combined BS/MS degree in computer science.

## Required Major Courses

- CSCI1205 Introduction to Computer Programming
- CSCI2205 Introduction to Computer Science I
- CSCI2216 Introduction to Computer Science II
- CSCI2233 Data Structures and Algorithms
- CSCI2255 Discrete Structures
- CSCI3315 Software Design
- CSCI3371 Modeling and Simulation or MATH3300 Statistics I
- CSCI4391 Senior Project I or CSCI4498 Internship in Computer Science
- CSCI4392 Senior Project II (if CSCI4498 Internship in Computer Science not chosen)
- CSCI4999 Computer Science Assessment
- CSCI6603 Computer Architecture
- CSCI6623 Database Systems
- CSCI6638 Operating Systems

CSCI6603 Computer Architecture, CSCI6623 Database Systems and CSCI6638 Operating Systems can be applied towards the MS degree provided the student earns a grade of B or better.

## Computer Science Electives ( 15 credits)

Selected from CSCI3000-level or higher

## Mathematics Required Courses

- MATH1107 Precalculus
- MATH1203 Calculus I
- MATH2202 Calculus II
- MATH3220 Linear Algebra or MATH3318 Differential Equations
- Mathematics Elective (3 credits)

One additional course to be selected from the mathematics offerings (MATH designation) above the 2000 level.

## Required Dual-credit Courses Applied Toward Undergraduate Degree

- CSCI6603 Computer Architecture
- CSCI6623 Database Systems
- CSCI6638 Operating Systems

These courses can be applied toward the MS degree provided that the student earns a grade of B or better. Upon completion of the undergraduate degree, students who earned a 3.00 GPR in computer science courses will be admitted into the graduate computer science program.

## Additional Graduate Courses to Complete the MS degree (21 credits)

- CSCI6620 Software Engineering
- CSCI7645 Systems Programming


## Graduate Electives in Computer Science (15 credits if no concentration is chosen)

Students also take General Education Requirements and can choose to minor in other fields or complete a concentration as well as take free electives.

## Concentrations

Concentrations are available in cybersecurity, data science and game development.

## Cybersecurity Concentration

In addition to the required computer science courses, students in the concentration take the following computer science courses.

- CSCI3157 Cyber Security
- CSCI3158 Information Security Design and Management
- CSCI3355 Introduction to Cryptography
- CSCI3666 Data Communications and Computer Networks
- CSCI3869 Network Security
- CSCI3870 Security Regulations, Detection and Forensics


## Other Courses

As part of the humanities and social science requirements, students will opt to take PHIL1103 Ethics and SOCI2306 Crime and Criminology.

## Data Science Concentration

In addition to the required computer science courses, students in the concentration take the following computer science courses.

- CSCI3269 Introduction to Data Mining
- CSCI3270 Introduction to Machine Learning
- CSCI3998 Artificial Intelligence


## Game Development Concentration

In addition to the required computer science courses, students in the concentration take the following computer science courses.

- CSCI3388 Introduction to Game Development
- CSCI3389 Introduction to Human and Computer Interaction
- CSCI3998 Artificial Intelligence
- CSCI4488 Advanced Game Development

Two cognate electives to be selected from the following animation courses:

- ANIM1650 Game Design
- ANIM2270 ZBrush Digital Sculpting Human Anatomy
- ANIM2285 3D Asset Creation for Video Games
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3350 3D Game Creation Using Unreal
- ANIM3450 3D Game Creation Using Unity


## General Education Requirements

## I. College Writing ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

- MATH1107 Precalculus
- CSCI1205 Introduction to Computer Programming


## III. Speech/ Professional Communication (3 credits)

- COMM2099 Professional Communications or SPCH1107 Fundamentals of Speech


## IV. First Year Seminar (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## V. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-medical Ethics
- PHIL2008 Ethical Issues in the Movies


## VI. Modern Language (3 to 4 credits). (Waived for BS in computer science majors)

- ___ 1002 (Beginning Language II) (3 credits)
- ___ 1008 (Beginning Language II) Practicum (1 credit)
- ___ Advanced Language (3 credits)


## VII. Humanities ( 6 credits)

Take 6 credits (two groups) from the following disciplines: ANIMH (Animation Humanities), ARTH (Art History), CGDH (Computer Graphic Design Humanities), CINE (Cinema Studies), DANH (Dance Humanities), ENGL (English [Wroxton courses]), HIST (History), HUMN (Humanities), LITS (Literature), MUSIH (Music Humanities), PHIL (Philosophy) or THEAH (Theater Humanities). One course must be at the 2000 level or above and may be within the same discipline. The following Wroxton courses may also be taken: ART3415 Development of British Painting, ENGL3410 Modern Novels on the Screen, ENGL3421 Not of an Age ... But for All Time, ENGL3422 The Play's the Thing, ENGL3424 To Hold the Mirror Up to Nature, ENGL3456 20th- and 21st-century Drama, ENGL3463 England's Green and Pleasant Land, ENGL3466 Three 19th-century Writers or ENGL3467 18th-century Literature.

## VIII. Social/Behavioral Sciences (6 credits)

Take 6 credits from: AFAM (African-American Studies), ANTH (Anthropology), COMM (Communications), CMLGY (Criminology), ECON (Economics), GEOG (Geography), GOVT (Government), PSYC (Psychology) or SOCI (Sociology). One course must be at the 2000 level or above. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy and POLS3456 The British Prime Minister.

## IX. Natural Sciences (7 credits)

Take the following courses:

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory


## X. Creative and Expressive Arts (3 credits)

Take 3 credits from ANIM (Animation), ART (Art), CGD (Computer Graphic Design), CREW (Creative Writing), DAN (Dance), FILM (Filmmaking), Music (MUSIC), RDIO (Radio Broadcasting, THEA (Theater) or VDEO (Video/Electronic Film).

## XI. Cross Cultural Understanding ( $\mathbf{3}$ credits)

Take 3 credits of a cross-cultural understanding course: UNIV2001 Cross Cultural Perspectives
XII. Knowledge of Global Issues (3 credits)

Take 3 credits of a cross-cultural understanding course: UNIV2002 Global Issues

## XIII. Global and Comparative Studies (3 credits) (Waived for all BS majors)

## For Information

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## Computer Science BS, Computer Science MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to obtain a Bachelor of Science (BS) in computer science degree and a Master of Science (MS) in computer science degree with a combined
course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6603 Computer Architecture (3 credits), CSCI6623 Database Systems ( 3 credits) and CSCI6638 Operating Systems ( 3 credits), when successfully completed under the combined-degree program, can be credited toward both the BS and the MS degrees. This combined degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey. The BS in computer science program is accredited by the Computing Accreditation Commission of ABET (https://www.abet.org). This accreditation applies only to the BS in computer science program offered by the GHSCSE at the Metropolitan Campus.
Students in the BS in computer science program must take one of the three concentrations: big data analytics, cybersecurity and information assurance or game and mobile application development. Students completing the BS in computer science program with a concentration in cybersecurity and information assurance are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education.
Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in computer science degree, and a minimum of 141 of credits is required for the combined BS in computer science/MS in in cybersecurity and information assurance degrees. In addition, for degree completion, the BS in computer science degree requires a minimum CGPR of 2.00 and the MS in cybersecurity and information assurance degree requires a minimum CGPR of 2.75.

## Cooperative Education Option

Students in the BS in computer science program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## 1st Semester (14 credits)

- CSCI1201 Computer Programming I (3 credits)
- ENGR2286 Digital System Design (3 credits)
- MATH1201 Calculus I (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CSCI1202 Computer Programming II (3 credits)
- CSCL2215 Introduction to Computer Science (3 credits)
- MATH2202 Calculus II (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (14 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- ENGR2210 Technical Communications (3 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I Lecture (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- CSCI6623 Database Systems (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II Lecture (3 credits)
- UNIV2002 Global Issues (3 credits)


## 5th Semester (15 credits)

- CSCI3240 Computer Networks (3 credits)
- CSCI6638 Operating Systems (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2255 Discrete Structures (3 credits)
- Humanities Elective (3 credits)
- Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)


## 6th Semester (15 credits)

- CSCI3251 Design of Software Systems (3 credits)
- MATH3220 Linear Algebra (3 credits)
- Concentration Courses (6 credits)
- Free Elective (3 credits)


## 7th Semester (16 credits)

- CSCI6603 Computer Architecture (3 credits)
- CSCI4384 Preparation for Computer Science Senior Project (1 credit)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Concentration Course (3 credits)
- Technical Electives (6 credits)


## 8th Semester (16 credits)

- CSCI3260 Mathematical Foundations of Computer Science (3 credits)
- CSCI4386 Computer Science Senior Project (2 credits)
- Concentration Courses (6 credits)
- Technical Elective (3 credits)


## 9th Semester (12 credits)

- CSCI7645 Systems Programming (3 credits)
- Graduate Electives (9 credits)


## 10th Semester ( 9 credits)

- Graduate Elective (3 credits)
- May take CSCI8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits.
- Graduate Electives (6 credits)


## Concentration Requirements (15 credits)

Students must complete any one of three concentration areas: big data and analytics, cybersecurity and information assurance or game and mobile application development. Each concentration requires the successful completion of five courses ( 15 credits). Students pursuing a concentration in game and mobile application development are recommended to take two computer animation courses from the School of the Arts as free electives and a technical elective from the BS in computer science curriculum.

## Big Data and Analytics Concentration

- CSCI3318 Cloud Computing (3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCI3387 Machine Learning (3 credits)
- CSCI3460 Data Warehouse and Data Mining ( 3 credits)
- CSCI3485 Big Data Analytics (3 credits)


## Cybersecurity and Information Assurance Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3410 Foundations of Cybersecurity (3 credits)
- CSCI3420 Cryptography ( 3 credits)
- CSCI3783 Information Security (3 credits)


## Game and Mobile Application Development Concentration

- CSCI3314 Mobile Application Development
- CSCI3317 Computer Game Programming
- CSCI3385 Artificial Intelligence
- CSCI3444 Programming for the Internet
- CSCI4380 Systems Development with Java
- CSCI6836 Computer Algorithms


## Electives (12 credits)

- Technical Electives (9 credits)
- Can take courses in computer science, engineering, engineering technology, information technology and mathematics at the appropriate levels based on students' interests.
- A science course ( 3 credits), lab science course ( 4 credits) or business course ( 3 credits) may be taken and counted toward 3 to 4 credits of 9 credits of technical electives.
- Free Elective (3 credits)
- Students may undertake cooperative experience or internship and earn 3 academic credits per semester up to a maximum of 6 credits through CSCI4498, CSCI4499 Co-op in Computer Science. The 6 credits earned are counted towards the technical electives.
- For Technical and Free Electives, courses may not include CSCI1105 Survey of Computers and Computer Software, MATH0198 Computation and Algebra Skills, MATH0298 Algebra Skills, MATH1105 College Algebra, MATH1107 Precalculus and all MIS-prefixed courses.
- Students must obtain prior approval from a GHSCSE academic adviser for all course selections and substitutions.


## Graduate Elective Courses (18 Credits)

Graduate elective courses in computer science are listed with CSCI-prefixed course numbers ranging from CSCI6617 to CSCI8891. Students may register for CSCI8891 Internship/Work Experience (3 credits) only after completing the BS degree and 18 graduate credits. The internship will count as a onecourse elective. Students may also take up to 6 credits of EENG-prefixed courses (EENG6600 level or above). Any prerequisites for the electives must be fulfilled before the electives are taken. Please consult an academic adviser for additional details regarding electives and their prerequisites if any or consult the FDU Graduate Studies catalog.

## For Information

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## Program Coordinator

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Associate Professor of Computer Science and Information Systems, Lee Gildart and Oswald Haase

# Computer Science BS, Cybersecurity and Information Assurance MS Combined Degree 

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to obtain a Bachelor of Science (BS) in computer science degree and a Master of Science (MS) in cybersecurity and information assurance degree with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6623 Database Systems (3 credits), CSCI6638 Operating Systems ( 3 credits) and CSCI6731 Computer Networks ( 3 credits), when successfully completed under the combined-degree program, can be credited toward both the BS and the MS degrees. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey. The BS in computer science program is accredited by the Computing Accreditation Commission of ABET (https://www.abet.org). This accreditation applies only to the BS in computer science program offered by the GHSCSE at the Metropolitan Campus.
Students in the BS in computer science program must take one of the three concentrations: big data analytics, cybersecurity and information assurance or game and mobile application development. Students completing the BS in computer science program with a concentration in cybersecurity and information assurance are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education.
Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in computer science degree, and a minimum of 141 of credits is required for the combined BS in computer science/MS in cybersecurity and information assurance degrees. In addition, for degree completion, the BS in computer science degree requires a minimum CGPR of 2.00 and the MS in cybersecurity and information assurance degree requires a minimum CGPR of 2.75.

## Cooperative Education Option

Students in the BS in computer science program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## 1st Semester (14 credits)

- CSCI1201 Computer Programming I (3 credits)
- ENGR2286 Digital System Design (3 credits)
- MATH1201 Calculus I (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CSCI1202 Computer Programming II (3 credits)
- CSCI2215 Introduction to Computer Science (3 credits)
- MATH2202 Calculus II (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- ENGR2210 Technical Communications (3 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I Lecture (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- CSCI6623 Database Systems (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II Lecture (3 credits)
- UNIV2002 Global Issues (3 credits)


## 5th Semester (15 credits)

- CSCI6638 Operating Systems (3 credits)
- CSCI6731 Computer Networks (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2255 Discrete Structures (3 credits)
- Humanities Elective (3 credits)
- Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)


## 6th Semester (15 credits)

- CSCI3251 Design of Software Systems (3 credits)
- MATH3220 Linear Algebra (3 credits)
- Concentration Courses (6 credits)
- Free Elective (3 credits)


## 7th Semester (16 credits)

- CSCI3249 Computer Architecture (3 credits)
- CSCI4384 Preparation for Computer Science Senior Project (1 credit)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Concentration Course (3 credits)
- Technical Electives (6 credits)


## 8th Semester (14 credits)

- CSCI3260 Mathematical Foundations of Computer Science (3 credits)
- CSCI4386 Computer Science Senior Project (2 credits)
- Concentration Courses ( 6 credits)
- Technical Elective (3 credits)


## 9th Semester (12 credits)

- CSCI6738 Cybersecurity ( 3 credits)
- CSCI6747 Applied Cryptography ( 3 credits)
- CSCI6870 Penetration Testing and Vulnerability Testing (3 credits)
- Graduate Elective (3 credits)


## 10th Semester (9 credits)

- CSCI6807 Cybersecurity and Information Assurance Graduate Capstone Project (3 credits)
- Graduate Electives (6 credits)
- May take CSCI8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits


## Concentration Requirements (15 credits)

Students must complete any one of three concentration areas: big data and analytics, cybersecurity and information assurance or game and mobile application development. Each concentration requires the successful completion of five courses ( 15 credits). Students pursuing a concentration in game and mobile
application development are recommended to take two computer animation courses from the School of the Arts as free electives and a technical elective from the BS in computer science curriculum.

## Big Data Analytics Concentration

- CSCI3318 Cloud Computing (3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCI3387 Machine Learning (3 credits)
- CSCI3460 Data Warehouse and Data Mining (3 credits)
- CSCI3485 Big Data Analytics (3 credits)


## Cybersecurity and Information Assurance Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3410 Foundations of Cybersecurity (3 credits)
- CSCI3420 Cryptography (3 credits)
- CSCI3783 Information Security (3 credits)


## Game and Mobile Application Development Concentration

- CSCI3314 Mobile Application Development (3 credits)
- CSCI3317 Computer Game Programming (3 credits)
- CSCI3385 Artificial Intelligence (3 credits)
- CSCI3444 Programming for the Internet (3 credits)
- CSCI4380 Systems Development with Java (3 credits)


## Electives (12 credits)

- Technical Electives (9 credits)
- Can take courses in computer science, engineering, engineering technology, information technology and mathematics at the appropriate levels based on students' interests.
- A science course ( 3 credits), lab science course ( 4 credits) or business course ( 3 credits) may be taken and counted toward 3 to 4 credits out of 9 credits of Technical Electives.
- Free Elective (3 credits)
- Students may undertake cooperative experience or internship and earn 3 academic credits per semester up to a maximum of 6 credits through CSCI4498, CSCI4499 Co-op in Computer Science. The 6 credits earned are counted toward Technical Electives.
- For Technical and Free Electives, courses may not include CSCI1105 Survey of Computers and Computer Software, MATH0198 Computation and Algebra Skills, MATH0298 Algebra Skills, MATH1105 College Algebra, MATH1107 Precalculus and all MIS-prefixed courses.
- Students must obtain prior approval from a GHSCSE academic adviser for all course selections and substitutions.


## Graduate Elective Courses (9 credits)

Students are encouraged to take three courses ( 9 credits) from one of the following two focus areas as provided below. Alternatively, students can also take any three courses (3 credits) from the approved electives based on their interests and needs. Students have the option of registering for CSCI8891
Internship/Work Experience ( 3 credits) after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective.

## Electives for Network Security Administration Focus

- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)


## Electives for Secure Software Development Focus

- CSCI6620 Software Engineering (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)


## Approved Electives

- CSCI6620 Software Engineering (3 credits)
- CSCI6811 Advanced Special Projects (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)
- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)
- CSCI7783 Information Security (3 credits)
- CSCI7870 Linux System Administration (3 credits)
- CSCI8891 Internship/Work Experience (3 credits)


## For Information

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## Program Coordinators

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Associate Professor of Computer Science and Information Systems

## Computer Science BS, Management Information Systems MS Combined Degree

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to obtain a Bachelor of Science (BS) in computer science degree and a Master of Science (MS) in management information systems degree with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6603 Computer Architecture ( 3 credits), CSCI6623 Database Systems ( 3 credits) and CSCI6638 Operating Systems ( 3 credits), when successfully completed under the combined-degree program, can be credited toward both the BS and the MS degrees.
This combined degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey. The BS in computer science program is accredited by the Engineering Accreditation Commission of ABET (https://www.abet.org). This accreditation applies only to the BS in computer science program offered by the GHSCSE at the Metropolitan Campus.
Students in the BS in computer science program must take one of the three concentrations: big data analytics, cybersecurity and information assurance or mobile and game app development. Students completing the BS in computer science program with a concentration in cybersecurity and information assurance are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA).
Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in computer science degree, and a minimum of 141 of credits is required for the combined BS in computer science/MS in management information systems degrees. In addition, for degree completion, the BS in computer science degree requires a minimum CGPR of 2.00 and the MS in management information systems requires a minimum CGPR of 2.75 .

## Cooperative Education Option

Students in the BS in computer science program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## 1st Semester (14 credits)

- CSCI1201 Computer Programming I (3 credits)
- ENGR2286 Digital System Design (3 credits)
- MATH1201 Calculus I (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CSCI1202 Computer Programming II (3 credits)
- CSCI2215 Introduction to Computer Science (3 credits)
- MATH2202 Calculus II (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (14 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- ENGR2210 Technical Communications (3 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I Lecture (3 credits)
- UNIV2001 Cross Cultural Perspectives ( 3 credits)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security ( 3 credits)
- CSCI6623 Database Systems (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II Lecture (3 credits)
- UNIV2002 Global Issues (3 credits)


## 5th Semester ( 15 credits)

- CSCI3240 Computer Networks (3 credits)
- CSCI6638 Operating Systems (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2255 Discrete Structures (3 credits)
- Humanities Elective (3 credits)
- Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)


## 6th Semester (15 credits)

- CSCI3251 Design of Software Systems (3 credits)
- MATH3220 Linear Algebra (3 credits)
- Concentration Courses ( 6 credits)
- Free Elective (3 credits)
- Take MKTG2120 Principles of Marketing (3 credits)


## 7th Semester (16 credits)

- CSCI4384 Preparation for Computer Science Senior Project (1 credit) - CSCI6603 Computer Architecture (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Concentration Course ( 3 credits)
- Technical Electives (6 credits)
- Take ACCT2021 Introductory Financial Accounting (3 credits)


## 8th Semester (14 credits)

- CSCI3260 Mathematical Foundations of Computer Science (3 credits)
- CSCI4386 Computer Science Senior Project (2 credits)
- Concentration Courses (6 credits)
- Technical Elective (3 credits)


## 9th Semester (12 credits)

- CSCI6720 Management Information Systems (3 credits)
- CSCI7727 Development of MIS I: Project Management and System Analysis (3 credits)
- Graduate Electives (6 credits)


## 10th Semester ( 9 credits)

- CSCI6758 Electronic Commerce (3 credits)
- CSCI7791 Information Systems for Competitive Advantage (3 credits)
- Graduate Electives (3 credits)
- May take CSCI8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits.


## Concentration Requirements (15 credits)

Students must complete any one of three concentration areas: big data and analytics, cybersecurity and information assurance or mobile and game app development. Each concentration requires the successful completion of five courses ( 15 credits). Students pursuing a concentration in mobile and game app development are recommended to take two computer animation courses from the School of the Arts as free electives and a technical elective from the BS in computer science curriculum.

## Big Data Analytics Concentration

- CSCI3318 Cloud Computing (3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCI3387 Machine Learning (3 credits)
- CSCI3460 Data Warehouse and Data Mining (3 credits)
- CSCI3485 Big Data Analytics (3 credits)


## Cybersecurity and Information Assurance Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3410 Foundations of Cybersecurity (3 credits)
- CSCI3420 Cryptography (3 credits)
- CSCI3783 Information Security (3 credits)


## Mobile and Game App Development Concentration

- CSCI3314 Mobile Application Development (3 credits)
- CSCI3317 Computer Game Programming ( 3 credits)
- CSCI3385 Artificial Intelligence (3 credits)
- CSCI3444 Programming for the Internet (3 credits)
- CSCI4380 Systems Development with Java (3 credits)


## Electives (12 credits)

- Technical Electives (9 credits)
- Can take courses in computer science, engineering, engineering technology, information technology and mathematics at the appropriate levels based on students' interests.
- A science course ( 3 credits), lab science course ( 4 credits) or business course ( 3 credits) may be taken and counted toward 3 to 4 credits out of 9 credits of Technical Electives.
- Take ACCT2021 Introductory Financial Accounting (3 credits)
- Free Elective (3 credits)
- Take MKTG2120 Principles of Marketing ( 3 credits)
- Students may undertake cooperative experience or internship and earn 3 academic credits per semester up to a maximum of 6 credits through CSCI4498, CSCI4499 Co-op in Computer Science. The 6 credits earned are counted toward Technical Electives.
- For Technical and Free Electives, CSCI1105 Survey of Computers and Computer Software, MATH0198 Computation and Algebra Skills, MATH0298 Algebra Skills, MATH1105 College Algebra, MATH1107 Precalculus and all MIS-prefixed courses.
- Students must obtain prior approval from a GHSCSE academic adviser for all course selections and substitutions.


## Graduate Elective Courses (9 credits)

Students must select three courses from the list below. However, students have the option of registering for CSCI8891 Internship/Work Experience ( 3 credits), which counts as one graduate elective course, after completing the BS degree and 18 graduate credits. At the discretion of the school and consistent with the program objectives, other information technology and business-oriented course may be added to this list.

- CSCI6733 Decision Support Systems (3 credits)
- CSCI6734 Expert Systems (3 credits)
- CSCI6735 Client-server Computing (3 credits)
- CSCI6751 Artificial Intelligence (3 credits)
- CSCI6810 Java and the Internet (3 credits)
- CSCI6844 Programming for the Internet (3 credits)
- CSCI7728 Development of MIS II: Systems Design, Implementation and Maintenance (3 credits)
- CSCI7781 Advanced Database Systems (3 credits)
- CSCI7785 Distributed Database Systems (3 credits)
- CSCI7795 Building Electronic Commerce Systems (3 credits)


## For Information

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## Construction Engineering Technology BSConET

The Bachelor of Science in Construction Engineering Technology (BSConET) program educates and trains students for industrial positions requiring a sophisticated, applied-technical orientation in building construction, engaging in construction-project design, development and management. The curriculum consists of an integrated sequence of undergraduate courses emphasizing the application of engineering and scientific knowledge, methods, technology and management and technical skills appropriate to the construction engineering technology discipline. The program graduates are capable of solving design and applied-engineering problems, as well as performing managerial, business and sales functions. The graduates of this program work in the construction industry as contractors, field supervisors, project managers, job superintendents, estimators, safety specialists, schedulers and examiners. Job responsibilities would include design, development, liaison, cost estimation, supervision, installation, testing, maintenance, services or sales. The construction engineering technology profession has substantial career opportunities, excellent average starting salary, very good median long-term salary, robust job growth and great career fulfillment. The demand for the program graduates will further increase as the $\$ 1$-trillion Infrastructure Investment and Jobs Act is implemented over the next eight years.

The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in Construction Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET (https://www.abet.org).

The faculty members maintain excellent communication with the industry and encourage students to gain industrial experience through cooperative education. Laboratory and industry-oriented project assignments complement the lectures and recitations throughout the program to provide students with these learning opportunities that are crucial to their success in the workplace. Students work in state-of-the-art laboratories. A capstone project based on an approved written proposal is required in the eighth semester for all students.

## Educational Objectives

The educational objectives of the BS in Construction Engineering Technology program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Enter into and advance their careers in construction, operation and/or maintenance of buildings and infrastructures using their theoretical knowledge and practical skills in managing and inspecting construction projects, analyzing and estimating cost and specifying construction methods and materials.
2. Continue their formal education and obtain advanced degrees such as MS in construction management, MBA (industrial management), MS in environmental studies, MS in technology management or other related fields.
3. Continue to conduct themselves as both responsible professionals and global citizens who are aware of and who understand ethical issues and societal needs and problems.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

Each construction engineering technology graduate will demonstrate the following attributes and achievements as required by the ETAC of ABET upon or before graduation:

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering and technology to solve broadly defined engineering problems appropriate to the discipline;
2. An ability to design systems, components or processes meeting specified needs for broadly defined engineering problems appropriate to the discipline;
3. An ability to apply written, oral and graphical communication in broadly defined technical and nontechnical environments; and an ability to identify and use appropriate technical literature;
4. An ability to conduct standard tests, measurements and experiments and to analyze and interpret the results to improve processes; and
5. An ability to function effectively as a member as well as a leader on technical teams.

## Cooperative Education or Work Experience Option

Students in the BS in Construction Engineering Technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Industry benefits from betterprepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.
Instead of undertaking cooperative education, students may earn up to 6 academic credits for appropriately documented industrial experience (work experience) counted toward their technical electives. Note that credits earned from industrial experience and/or cooperative education may not be substituted for any required coursework and that they altogether may not exceed a total of 6 credits. Students must have successfully completed the course EGTG2210 Technical Communications before the application for work-experience credits can be considered. The application form and directions for submission of necessary documents in support of the application may be obtained from GHSCSE.

## Degree Plan

The program requires the successful completion of 128 credits with a minimum cumulative grade point ratio of 2.00 as described below.

## 1st Semester (15 credits)

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1107 Precalculus (4 credits)
- PHYS2101 General Physics I (3 credits)
- PHYS2201 Lab: Physics I (1 credit)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (17 credits)

- EGTC1223 Introduction to CAD (2 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2102 General Physics II (3 credits)
- PHYS2202 Lab: Physics II (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (17 credits)

- CHEM1201 General Chemistry I (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- EGTC1205 Surveying I (3 credits)
- EGTC1245 Construction Materials and Systems (3 credits)
- EGTG2221 Statics (3 credits)
- MATH2202 Calculus II (4 credits)


## 4th Semester (18 credits)

- EGTC1206 Surveying II (3 credits)
- EGTG2210 Technical Communications (3 credits)
- EGTG2228 Strength of Materials (3 credits)
- EGTG4221 Engineering Statistics and Reliability (3 credits)
- ENGR1204 Programming Languages in Engineering (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 5th Semester (15 credits)

- EGTC3250 Structural Analysis (3 credits)
- EGTC3257 Concrete Structures (3 credits)
- EGTC3261 Estimating I (3 credits)
- EGTC4241 Soil Mechanics (3 credits)
- EGTG4254 Fluid Mechanics (3 credits)


## 6th Semester (15 credits)

- EGTC2246 Timber Structures and General Building Systems (3 credits)
- EGTC3262 Estimating II (3 credits)
- EGTC4242 Foundations (3 credits)
- EGTG3351 Applied Thermodynamics (3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (15 credits)

- EGTC3256 Steel Structures (3 credits)
- EGTC4263 Project Management and Control I (3 credits)
- EGTC4265 Construction Practices I (3 credits)
- EGTG2215 Circuits I (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)


## 8th Semester (16 credits)

- EGTC3270 Environmental and Land-use Planning (3 credits)
- EGTC4260 Contracts and Specifications (3 credits)
- EGTC4264 Project Management and Control II (3 credits)
- EGTC4384 Construction Technology Design Project (1 credit)
- Technical Electives (6 credits)


## Technical Electives

The student must take 6 credits of technical electives, to be chosen from the following list:

- CHEM1202, CHEM1204 General Chemistry II Lecture (3 credits) and Laboratory (1 credit)
- EGTC3271 Construction Labor (3 credits)
- EGTC4320 Highway Design (3 credits)
- EGTC4321 Bridge Design (3 credits)
- EGTC4322 Hydraulic Design (3 credits)
- EGTC4323 Seismic Design (3 credits)
- EGTG3211 Materials Technology I (3 credits)
- EGTG3431 Dynamics (3 credits)
- EGTM4040 Heating, Ventilation and Air Conditioning (3 credits)
- EGTM4041 Heating, Ventilation, Air Conditioning and Refrigeration Controls (3 credits)

Other technical electives may be taken with prior approval from a program adviser. Up to 6 credits for work experience or cooperative education experience but not both may be used in place of technical electives.

## For Information

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## Program Co-Coordinators

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## Creative Writing BA

The BA in creative writing, offered by the School of the Arts, Maxwell Becton College of Arts and Sciences on the Florham Campus, Madison, New Jersey, provides wonderful opportunities for emerging writers as they prepare for careers in a variety of fields.
Students have the chance to study with nationally celebrated professional authors and editors and to play a valued role in a vital community of writers and readers. The distribution of course requirements provides students with a solid background in literary studies, an introduction to creative writing in a number of genres, an advanced focus in a particular genre and an opportunity to choose from dozens of complementary minors to tailor the major to the student's particular interests and needs.
The program is devoted to providing students with the best possible foundation for careers both in and out of the creative writing field. The program's students are editors, lawyers, writers, teachers, professors and advertising and marketing executives - and many choose to go on to graduate school in creative writing or literature. Students will have many opportunities to volunteer in the community and discover just how much their particular talents are valued in the world while making a significant contribution to it.

## Degree Plan

Students majoring in creative writing must complete 30 to 36 credits of writing courses and 9 credits in literature courses. An internship in an appropriate setting can be used as a writing elective.

## Major Requirements (39-45 credits plus 6 cognate credits) ( 2.00 grade point ratio required)

6 credits from the major may be applied toward General Education requirements
6 credits from the minor may be applied toward General Education requirements

## Required Major Courses (24 Credits)

- CREW1001 Introduction to Creative Writing
- CREW2002 Creative Writing: Fiction
- CREW2003 Creative Writing: Poetry
- CREW2016 CNF: What's Your Real Story
- CREW3020 Reading as Writers
- CREW4001 Senior Writing Project I
- CREW4002 Senior Writing Project II
- CREWH2255 Creative Writing: Playwriting and Dramatic Structure


## Creative Writing Advanced Courses (6-12 credits)

Students must take an advanced course ( 3000 level) in at least two of the four genres. Students must have completed the 2000-level course in the genre in order to register.
Students may elect other CREW3000-level courses.

- CREW3011 Advanced Fiction Writing
- CREW3012 Advanced Poetry Writing
- CREW3013 Advanced Dramatic Writing
- CREW3018 Advanced Creative Nonfiction


## Creative Writing Electives

If students want to take more electives in the major, they can choose from the following 3-credit courses:

- CREW2300 Fiction: Young Adult and Children's Literature
- CREW3010 Invented Worlds
- CREW3030 Pathological Perspectives
- CREW3080 Music and Poetry
- CREW4498 Internship in Creative Writing


## Required Literature Courses (9 Credits)

Select one of the following courses:

- LITS2101 British and European Literature I
- LITS2102 British and European Literature II
- LITS2201 World Literature I
- LITS2202 World Literature II
- LITS2301 American Literature I
- LITS2302 American Literature II

For the remaining six credits, students may choose any LITS course in the 2000-4000 series, with permission of the creative writing adviser. Wroxton literature courses may be used for literature electives.

- SOAC3001 Career Path to the Arts
- SOAC4002 Professional Practice: Creative Writing


## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language (3 to 4 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:
$\qquad$ 1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)

## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## Creative Writing BA, Creative Writing MFA Combined Degree Program

A five-year BA/MFA combined degree program with concentrations in fiction, creative nonfiction, poetry, literary translation and writing for young adults and children is available.

## Special Information

Students have the chance to work as interns at Fairleigh Dickinson University's The Literary Review, one of the oldest and most prestigious literary magazines in the country of publishing important writers from around the world. FDU's student magazine, Iron Horse, offers students the chance to work in all aspects of publishing while making friends and contacts here and around the world.

## For Information on How to Apply

René Steinke, Director, MFA in Creative Writing Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Creative Writing
rene steinke@fdu.edu
973-443-8823

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## Creative Writing BA, Creative Writing MFA Combined Degree

The BA/MFA in creative writing is a uniquely designed accelerated degree that provides outstanding undergraduate students in FDU's creative writing program the opportunity to begin work on their graduate degree as they enter their senior year. After graduating from the BA program, students continue in the low-residency MFA program and may complete their MFA degree within 18 months.
The accelerated BA-MFA program offers students both a shorter time frame to earn their MFA degrees and significant cost savings by applying 12 credits of graduate coursework toward undergraduate degree requirements. Scholarships and financial aid are available to eligible students.

The BA/MFA in creative writing is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Admission Requirements

Undergraduate creative writing majors at FDU must apply to the accelerated BA/MFA program during their junior year by submitting a letter of interest in the program and a writing sample to writingmfa@fdu.edu. Applications will be evaluated on the basis of the writing sample and previous undergraduate work in creative writing.

## Degree Plan

Once accepted, creative writing students complete 12 credits of graduate coursework during the senior year ( 6 credits in the first semester and 6 credits in the second semester), in the genre of their concentration: fiction, creative nonfiction, poetry, literary translation or writing for young adults and children.
The BA degree ( 120 credits) must be completed before the additional graduate courses may be taken for the MFA degree.

## Major Requirements (33-39 credits plus 6 cognate credits and 12 dual credits)

Required Major Courses (18 credits)

- CREW1001 Introduction to Creative Writing
- CREW2002 Creative Writing: Fiction
- CREW2003 Creative Writing: Poetry
- CREW2016 Creative Writing: Personal Essay
- CREW2255/CREWH2255 Creative Writing: Playwriting and Dramatic Structure or FILM2250 Screenwriting I
- CREW3020 Reading As Writers


## Required Advanced Creative Writing Courses (6-12 credits)

Students must take an advanced course ( 3000 level) in at least two of the four genres. Students must have completed the 2000-level course in the genre in order to register.

- CREW3011 Advanced Fiction Writing
- CREW3012 Advanced Poetry Writing
- CREW3013 Advanced Dramatic Writing
- CREW3018 Advanced Creative Nonfiction


## Creative Writing Electives

If students were to take more electives in the major, they can choose from the following courses:

- CREW2300 Fiction: Young Adult and Children's Literature
- CREW3030 Pathological Perspectives
- CREW3080 Music and Poetry
- CREW4498 Internship in Creative Writing


## Required Literature Courses (9 Credits)

Select one of the following courses:

- LITS2101 British and European Literature I
- LITS2102 British and European Literature II
- LITS2201 World Literature I
- LITS2202 World Literature II
- LITS2301 American Literature I
- LITS2302 American Literature II

For the remaining six credits, students may choose any LITS course in the 2000-4000 series, with permission of the creative writing adviser. Wroxton literature courses may be used for literature electives.

## Cognate Requirements (6 Credits)

- SOAC3001 Career Path to the Arts
- SOAC4002 Professional Practice: Creative Writing


## Dual Courses (12 credits)

Graduate courses applied to undergraduate degree
Students will take modules in the genre of their concentration: fiction, creative nonfiction, poetry, literary translation or writing for young adults and children.

- Module 1 Genre ( 6 credits) CRWR75XX
- Module 2 Genre (6 credits) CWRR75XX


## Graduate Courses (48 credits)

## Required Courses

Residencies

- CRWR7600 MFA Residency
- CRWR7600 MFA Residency
- CRWR7600 MFA Residency


## Modules

- Module 3 Genre (6 credits) CRWR75XX
- Module 4 Genre (6 credits) CRWR75XX
- Module 5 Craft and Form (6 credits)
- Module 6 Elective: in a concentration not their own (6 credits) CRWR75XX
- Module 7 Genre ( 6 credits) CRWR75XX
- Module 8 Genre ( 6 credits)

CRWR75XX

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCL1205 Introduction to Computer Programming
- CSCL2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( 3 to 4 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:
$\qquad$ 1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)

## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## For Information

René Steinke, Director, MFA in Creative Writing, School of the Arts, Maxwell Becton College of Arts and Sciences
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## Criminal Justice BA

The criminal-justice curriculum, offered by the department of criminology and criminal justice, Maxwell Becton College of Arts and Sciences, on the Metropolitan Campus, Teaneck, New Jersey, is designed to skillfully integrate theory and academic constructs in direct relationship with the operational realities that influence and shape the ever-changing nature and composite of the United States criminal-justice system.
The curriculum closely examines: the nature and incidence of crime; theories of criminality and punishment; the interdependent operation of the various components of the criminal justice system, which comprise police and law enforcement, the courts and adjudication process and corrections; the organizational and personnel management theories relevant to criminal justice management and administration; the use and application of the state-of-the-art computers and information technologies; forensic psychology; the forensic sciences; the impact of major social problems on crime and the criminal-justice system; and the growing implications of cybercrime, terrorism and transnational crime.

## Degree Plan

Note: All students are required to complete the general education requirements of their campus in fulfillment of their bachelor degree requirements. (See below.)

## Required Major Courses (33 credits)

- CRIM1101 Introduction to Criminal Justice
- CRIM1102 Criminology and Social Theory
- CRIM2100 Professional and Legal Writing
- CRIM2201 Police and Society
- CRIM2202 Corrections, Parole and Probation
- CRIM2204 Juvenile Justice and Delinquency
- CRIM2205 Criminal Justice Research Methods
- CRIM2208 Victimology
- CRIM3304 Criminal Justice Ethics
- CRIM3319 Courts and Judicial Process
- CRIM4405 Criminal Justice Capstone Seminar


## Major Electives (12 credits)

Criminal-justice majors are advised to refer to Webadvisor or the current Undergraduate Studies Catalog for criminal-justice courses that may fulfill their major elective courses. Students considering the BA/MA combined-degree program are advised to confer with their advisers before registering for major elective courses.

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Metropolitan Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Florham Campus should consult the BA Major, Florham Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (6 to 7 credits)

Students must take a math placement test (developmental course work may be required).
Select one from the following:

- MATH1101 Comprehensive Mathematics
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I

For the second course, students take 3 credits at a higher level or in a different prefix than the first course taken for Quantitative Analysis. Students must fulfill any applicable prerequisites for a course before taking it. Select from following list of approved courses:

- CENG1205 Surveying I
- CENG1245 Construction Materials and Systems
- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I or Any CSCI course above1201
- EGTC1205 Surveying I
- EGTC1245 Construction Materials and Systems
- EGTC3261 Estimating I
- EGTM2232 Mechanical Measurement and Devices
- ENGR1301 Engineering Practices, Graphics and Design
- ENGR2286 Digital System Design
- ENGR3000 Modern Technologies: Principles, Applications and Impacts
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2243 Statistical Programming
- MATH2337 Applied Statistics I or PSYC2210 Psychological Statistics
- MENG2235 Manufacturing Processes
- Any Information Technology (INFO) course


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Modern Language (3 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test.
$\qquad$ 1102 (Introductory Level II)

- For students beginning a new language, Elementary II (1102) fulfills the language requirement.
- For students taking a language previously studied, successful completion of Intermediate I (2103) fulfills this requirement.
- Students who place above Intermediate I (2103) are excused from the language requirement and replace the 3 credits with free electives.


## VI. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences ( $\mathbf{6}$ credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Natural Sciences (8 credits)

Choose two, 4-credit laboratory science courses from the following disciplines: Biology (BIOL), Chemistry (CHEM), Environmental Sciences (ENVR), Marine Biology (MBIO) or Physics (PHYS). Students must also complete the corequisite lab.

## IX. Arts (6 credits)

Choose two, 3-credit courses from the following disciplines: Art (ART), Graphic Design (CGD), Creative Writing (CREW) or Theater (THEA).

## For Information

Amy Shlosberg, Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Associate Professor of Criminology

## Criminal Justice BA, Criminal Justice MA Combined Degree

The department of criminology and criminal justice of the Maxwell Becton College of Arts and Sciences offers a combined-degree program that affords students the opportunity to combine their undergraduate and graduate studies in criminal justice at the Metropolitan Campus, Teaneck, New Jersey. With the approval of their academic advisers and the program director, students can take up to two designated graduate courses that fulfill the requirements for both undergraduate and graduate degrees, thus accelerating completion of their Master of Arts in criminal justice.

## Admission Requirements

Admission to the program is based on an applicant's demonstrated interest, aptitude and motivation to successfully undertake and complete master's-level studies. This will be determined by the following minimal requirements and indicators:

- Official transcripts from all institutions of higher learning attended
- A cumulative undergraduate grade point ratio of at least 3.00 on a 4.00 scale, which may be waived
- Performance on the Graduate Record Examination, which may be waived
- A $250-500$ word personal essay expressing one's interest for applying to the program
- Two letters of recommendation attesting to the applicant's interest and ability to undertake graduate-level studies
- Personalized interviews may be considered by the department's Admission Committee
- Applicants under consideration may be required to complete an abbreviated research paper that demonstrate their ability for effective writing

Waivers for applicants who do not meet the grade point ratio or standardized test scores will be considered on an individual basis.
It is recommended that students interested in the combined-degree program declare their candidacy upon successful completion of 64 credits and/or upon entering their junior year; however, no later than having
completed 90 undergraduate credits. This affords students the opportunity to collaborate with their advisers in the timely and appropriate selection of undergraduate and graduate courses.
To qualify for the combined program in criminal justice, students must possess and maintain a minimum of a 3.00 overall cumulative grade point ratio (CGPR), must possess and maintain a 3.25 CGPR within the criminal justice major and must be able to demonstrate a proficiency in writing. Students in the combined-degree program must maintain a minimum of a 3.00 CGPR in the graduate courses for which they have been approved.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).

## Required Courses (39 credits)

- CRIM1101 Introduction to Criminal Justice
- CRIM1102 Criminology and Social Theory
- CRIM2100 Professional and Legal Writing
- CRIM2201 Police and Society
- CRIM2202 Corrections, Parole and Probation
- CRIM2204 Juvenile Justice and Delinquency
- CRIM2205 Criminal Justice Research Methods
- CRIM2208 Victimology
- CRIM3304 Criminal Justice Ethics
- CRIM3319 Courts and Judicial Process
- CRIM6000 Professional Seminar in Criminal Justice
- CRIM6010 U.S. Constitution, Public Policy and Criminal Justice
- CRIM6025 Social Science Research Methods and Statistics


## Major Electives (12 credits)

Students in the BA/MA combined-degree program are advised to confer with their advisers before registering for major elective courses.

## Master's Degree Courses (27 credits)

- CRIM6005 Advanced Criminological Theory
- CRIM8000 Critical Analysis of Criminal Justice
- Graduate Electives (21 credits)

Graduate courses CRIM6000 Professional Seminar in Criminal Justice, CRIM6010 U.S. Constitution, Public Policy and Criminal Justice and CRIM6025 Social Science Research Methods and Statistics will be taken in a student's senior year with the following conditions:

- 21 credits of Graduate Electives may be selected from the following:
- CRIM6030 Relationship Violence
- CRIM7020 Ethics, Politics and Justice
- CRIM7025 Comparative Criminal Justice Systems
- CRIM7030 Principles of Leadership
- CRIM7060 Social Justice Advocacy
- CRIM7065 Crime, Victimology and Risk Reduction
- CRIM7070 Contemporary Issues in Crime and Justice
- CRIM7071 Criminal Profiling
- CRIM7072 Contemporary Policing Issues
- CRIM7073 Sex Crimes
- CRIM7074 Forensic Science and Administration of Justice
- CRIM7080 Politics and Policies of Criminal Justice
- CRIM7082 Crime and Punishment
- CRIM7084 Transnational Crime and Global Issues: Selected Studies in Criminal Justice
- CRIM7085 Advanced Internship in Criminal Justice
- CRIM7090 Professional Development Seminar
- CRIM6000 Professional Seminar in Criminal Justice must be taken within a student's first 6-9 credits of graduate courses


## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Metropolitan Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Florham Campus should consult the BA Major, Florham Campus General Education Requirements.
The Metropolitan Campus General Education Requirements follow:

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (6 to 7 credits)

Students must take a math placement test (developmental course work may be required).
Select one from the following:

- MATH1101 Comprehensive Mathematics
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I

For the second course, students take 3 credits at a higher level or in a different prefix than the first course taken for Quantitative Analysis. Students must fulfill any applicable prerequisites for a course before taking it. Select from following list of approved courses:

- CENG1205 Surveying I
- CENG1245 Construction Materials and Systems
- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I or Any CSCI course above1201
- EGTC1205 Surveying I
- EGTC1245 Construction Materials and Systems
- EGTC3261 Estimating I
- EGTM2232 Mechanical Measurement and Devices
- ENGR1301 Engineering Practices, Graphics and Design
- ENGR2286 Digital System Design
- ENGR3000 Modern Technologies: Principles, Applications and Impacts
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2243 Statistical Programming
- MATH2337 Applied Statistics I or PSYC2210 Psychological Statistics
- MENG2235 Manufacturing Processes
- Any Information Technology (INFO) course


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Modern Language (3 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test.

- $\qquad$ 1102 (Introductory Level II)
- For students beginning a new language, Elementary II (1102) fulfills the language requirement.
- For students taking a language previously studied, successful completion of Intermediate I (2103) fulfills this requirement.
- Students who place above Intermediate I (2103) are excused from the language requirement and replace the 3 credits with free electives.


## VI. Humanities ( $\mathbf{6}$ credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level
or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Natural Sciences (8 credits

Choose two, 4-credit laboratory science courses from the following disciplines: Biology (BIOL), Chemistry (CHEM), Environmental Sciences (ENVR), Marine Biology (MBIO) or Physics (PHYS). Students must also complete the corequisite lab.

## IX. Arts ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art (ART), Graphic Design (CGD), Creative Writing (CREW) or Theater (THEA).

## For Information

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## Criminology BA

The Bachelor of Arts in criminology is offered by the department of criminology and criminal justice in the Maxwell Becton College of Arts and Sciences on the Florham Campus, Madison, New Jersey. Minors in criminology and prelaw are also offered at the Florham Campus.
Criminology is the study of the root causes of crime and deviant behavior in society. Early criminologists believed that crime was a choice based on an individual's free will, but the field expanded to include biological, psychological and sociological explanations of crime. Poverty, family structure and capitalism are among some of the widely debated root causes of crime.
Criminologists consider what motivates offenders as well as the impact of crime on victims and society as a whole. By studying the causes of crime, criminologists can offer practical solutions to reduce or even prevent certain types of crime. Criminologists have been instrumental in evaluating criminal-justice policies, such as Megan's Laws, mandatory sentencing for drug offenders and Three Strikes laws.

FDU's criminology courses also focus on national and international systems of law; comparative punishment and the administration of justice; and the various mechanisms of law enforcement and control at the local, state, federal and international levels. Additional courses focus on international social and political problems that underlie current issues in international criminal law.

## Degree Plan

Note: All students are required to complete the general education requirements of their campus in fulfillment of their bachelor degree requirements. (See below.)

## Required Major Courses (18 credits)

- CMLGY1201 Introduction to Sociology
- CMLGY1306 Introduction to Crime and Criminology
- CMLGY2203 Research Methods in Criminology
- CMLGY2307 Deviance and Social Control
- CMLGY3309 Policy Analysis
- CMLGY3997 Internship in Criminology (See Criminology Internships)


## Elective Courses (18 credits)

The elective courses vary by semester, but some of the options include the following:

- CMLGY2300 Wrongful Convictions
- CMLGY2317 Probation and Parole: Theory and Practice
- CMLGY2333 Criminal Law
- CMLGY2503 Crime and Media
- CMLGY3012 Crisis Intervention
- CMLGY3030 Surveillance and Security
- CMLGY3205 Responses to Mass Violence
- CMLGY3301 Women and Crime
- CMLGY3308 Law and Society
- CMLGY3310 Juvenile Delinquency


## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( 3 to $\mathbf{4}$ credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:
$\qquad$ 1002 (Beginning Language II) (3 credits)

- $\qquad$ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities (6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)


## These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## For Information

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## Degree Completion BA

The Bachelor of Arts degree-completion program is a baccalaureate degree program structured to meet the educational needs of adult learners. Designed for busy adults, the degree provides nontraditional students with a variety of options in meeting University requirements for an undergraduate degree grounded in the liberal arts. The degree is ideally suited to employed adult learners who have already earned some college credit. FDU will accept up to 90 credits, of the 120 required for the degree, from other sources. The BA in degree-completion program is offered by the Maxwell Becton College of Arts and Sciences and the Petrocelli Center for Continuing Studies online.
Students who receive the full 90 credits may complete the degree in as little as 18 months. The program recognizes the value of life/work experience and affords students the opportunity to receive advanced standing through portfolio assessment.
Students in the program may choose to pursue a single area of study in-depth or design a program of study by combining liberal-arts courses with career-related specializations in a subject that matches their professional goals or personal interests. The result is a degree program that will be immediately appealing to mature adults who bring to FDU traditional coursework completed over a period of years at a number of institutions; a history of work and life experiences that can be equated with credit-bearing courses; and the desire, commitment and self-discipline to complete the degree requirements.

## Admission Requirements

For adult learners, eligibility for admission to the University is based on previous educational experience:

- Completed online application. There is no fee to apply.
- Official transcripts or General Educational Development (GED). If you have previously attended a regionally accredited college or university and have at least 24 transfer credits, submit official transcripts from each institution attended. These will be evaluated both for admission eligibility and to determine the students' advanced standing in (i.e. transfer credits to) their selected degree program. If students have not attended a regionally accredited college or university or have fewer than 24 transfer credits, they should submit an official high-school transcript or proof of a GED (with Scoresheet).
- SAT or ACT scores are not required.


## Degree Requirements

The minimum requirements for the baccalaureate degree are as follows:

- Completion of a minimum of 120 credits.
- Cumulative grade point ratio (GPR) of 2.00.
- Cumulative GPR of 2.00 in the upper-level courses completed at FDU.
- Upper-level credit courses: of the courses completed at FDU 24 credits (eight courses) must be upper-level.
- At least 30 credits, normally the last 30 , must be completed at FDU.
- Residency requirement/time limit on degree completion as explained below.

A transfer student may transfer credit achieved through either formal coursework or through proficiency examination to the extent that the credits transferred do not circumvent existing University policy requiring a minimum of 30 credits in residence, including at least 50 percent of the credits required for upper-level course selections to be taken at FDU. Any coursework completed more than 10 years before the projected date of awarding the degree (including work for which credit is transferred from another college) shall be evaluated for its currency by the appropriate department. Where it is deemed appropriate, the department will recommend courses to familiarize the student with more recent developments.

## Online BA Enrollment

The online BA option consists of registration forms and processes that are particular to this modality. The following links contain forms to assist students with enrollment in online courses.

- Course Registration Form
- Course Add/Drop Form
- Application for Readmission
- Online BA Checklist
- Online Programs Reference Guide
- Corporate Reimbursement Deferred Payment Plan


## Degree Plan

Students completing the requirements for the Bachelor of Arts degree-completion program are required to demonstrate proficiency in the following areas:

## I. Communication, Mathematics and Computer Skills - 18 credits (6 courses)

- Written Communication -6 credits ( 2 courses)

Six credits in English composition (WRIT1002 Composition I: Rhetoric and Inquiry and WRIT1003 Composition II: Research and Argument).

- Speech/Professional Communication - 3 credits ( 1 course)

Three credits in a course substantially concerned with public speaking, oral, written and/or professional communication/presentations (e.g. SPCH1155 Public Speaking, COMM3310 Professional Presentations, COMM3329 Communication in a Changing World).

- Ethical and Moral Analysis - 3 credits (1 course)

Three credits in a course from any discipline that is substantially concerned with ethical theories and questions such as a course in philosophy, religion or a course with "ethics" in its title (e.g. PHIL2255 Business Ethics, PHIL2261 Ethical Issues in Computer Information Technology, PHIL2351 Medical Law and Ethics).

- Quantitative Analysis - 6 credits ( 2 courses)

Three of the six credits must be in a college-level mathematics course (e.g. MATH1131 College Mathematics I). The other three credits can be from a second mathematics course or from a statistics, logic, computer science, computer technology or other course that requires substantial quantitative analysis (e.g. MATH1132 College Mathematics II, MATH1142 Introduction to Statistics, PHIL1101 Introduction to Logic, MIS1135 Introduction to Computers, MIS2151 Electronic Commerce and Beyond: Special Topics for a Global Marketplace).

## II. Liberal Arts and Sciences $\mathbf{- 2 4}$ credits ( $\mathbf{8}$ courses)

- Scientific Analysis - 6 credits (2 courses)

Six credits in coursework from biology, chemistry, physics, environmental/earth/planetary sciences and/or other course that requires substantial scientific analysis (e.g. SCIE2008 Chemistry in Everyday Life, SCIE2010 Contemporary Environmental Issues). Courses need not be from the same scientific discipline.

- Arts and Culture - 6 credits ( 2 courses)

Six credits from any combination of studio, performing or creative arts or global studies/culture including, but not limited to, computer animation, photography, creative writing, dance, film production, globalization, culture and identity, world literature. Courses may be from the same discipline/category (e.g. ART1071 Film and Society, ENGL2211 Masterpieces of Literature I, ENGL3111 Introduction to Memoir Writing, SOCI3610 Multicultural Perspectives)

- Social and Behavioral Sciences - 6 credits ( 2 courses)

Six credits from any combination of courses in the social sciences (anthropology, economics, criminology, geography, political science, sociology) or behavioral sciences (psychology or communication studies). Courses may be in the same discipline; at least three credits must be at the 2000 level or above.

- Humanities -6 credits ( 2 courses) at least two of the following areas must be represented: Six credits in any combination of courses in history, literature, philosophy, art history, film (not filmmaking). Courses may be in the same discipline; at least three credits must be at the 2000 level or above.


## III. University Core -8 credits ( $\mathbf{4}$ courses)

FDU requires all students to complete this common University Core curriculum consisting of the following four integrated courses that have a strong emphasis on liberal arts:

- UNIV1001 Transitioning to University Life (waived for adult learners)
- UNIV1002 Preparing for Professional Life (waived for adult learners)
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues

UNIV1001 and UNIV1002 are waived for adult learners; either two transfer credits or two additional credits of free electives may be used to meet the 120 credits required for the degree.

## Major Requirements ( 24 credits)

## I. International Perspective - 3 credits (1 course)

This requirement may be met through one of a variety of designated courses from anthropology, business, economics, literature, fine arts, history, music, philosophy, political science or sociology. This course must emphasize an international perspective.

## II. Advanced Writing -3 credits (1 course)

This requirement must be met with a writing-intensive course at the 2000 level or above (e.g. COMM2101 Professional Communication, ENGL2209 Business Communications, ENGW3006 Persuasive Writing, ENGL3115 Food Writing and ENGL3141 Travel Writing).

## III. Specialization - $\mathbf{1 8}$ credits ( $\mathbf{3}$ courses)

A minimum of 18 credits ( 6 courses) that provides the student an opportunity to pursue a single area of study in depth. A minimum of nine credits must be taken in FDU graded coursework and be at the 2000 level or above.

## Electives (46 credits)

It is recommended that interdisciplinary electives be chosen to support the area of specialization

## For Information

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## Degree Completion BA: Yeshiva and Seminary

Designed for busy students in the Orthodox Jewish community, the Yeshiva and Seminary Program at Fairleigh Dickinson University allows yeshiva and seminary students to transfer various credits and earn a bachelor of arts degree in less than 15 months. As a student in FDU's Yeshiva Program for men or Seminary Program for women, you'll complete your bachelor's degree and achieve career success through exceptional academics, supportive professors and affordable tuition. The Yeshiva and Seminary Program has graduated hundreds of yeshiva and seminary students who have gone on to graduate and professional schools such as Harvard, Columbia, and Penn Law Schools, Johns Hopkins Medical School, the FDU Silberman College of Business MS in Accounting program, Rutgers Dental School, Wurzweiler and Touro Schools of Social Work, Wharton School of Business and various MBA Programs.
Additionally, FDU Yeshiva and Seminary students have the opportunity to advance into FDU's Doctor of Occupational Therapy or Physician Assistant (PA) professional degree programs within our School of Pharmacy \& Health Sciences. Our students have also pursued various careers in business with their college degrees.

## Program Highlights

- Enjoy easy access to NYC with our convenient location in Teaneck, NJ.
- In-person as well as synchronous and asynchronous online classes.
- Tuition that's $50 \%$ less than many other FDU programs.
- Transfer up to 90 credits (up to 72 credits from prior yeshiva and seminary study and up to 18 more from the CLEP or other exams and colleges) into the program and complete your BA in just one year.
- Dedicated faculty who deliver highly specialized career development and graduate assistance that is tailored to meet the needs of yeshiva and seminary students.
- Get ahead with shorter terms, including Jewish holiday "Z'man" mini sessions.
- Customize your degree with a specialization in business, psychology, entrepreneurship, public administration, healthcare administration, or pre-med.


## Admissions Requirements

- Completed online application. There is no fee to apply.
- Proof of a high school diploma (official transcript) or GED.
- One year of post-secondary yeshiva/seminary studies in a recognized program.
- Official Yeshiva/Seminary transcripts.


## Degree Requirements

- Completion of 120 credits (at least 30 at FDU)
- Cumulative GPA of 2.0 in upper-level courses completed at FDU
- Completion of 18 credits in the chosen specialization

Every student must take at least 30 credits (including online courses) with FDU. Of these 30 credits, the following must be taken at FDU:

- 6 credits of Advanced English
- 18 credits of the degree concentration
- 6 credits of CORE courses (Global Issues and Cross-Cultural Perspectives)

In addition, the following requirements must be fulfilled:

- 6 credits of English (English Composition/Writing I \& II)
- 3 credits of Speech/Public Speaking
- 6 credits of Natural Science
- 6 credits of Math, 3 of which may be in Computer Science


## For Information

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## Electrical Engineering BSEE

Electrical engineering is one of largest, broadest and most dynamic engineering disciplines. It has more than 30 subdisciplines, including biomedical, computer, communications, control, electronics, navigation or power engineering. As such, electrical engineers are employed in virtually all sectors of many industries, and they account for many engineering jobs. Several subdisciplines of electrical engineering, including computer engineering and biomedical engineering, have become major engineering disciplines themselves. Electrical engineers have contributed to the greatest engineering achievements of the 20th and 21st centuries, which include electrification; household appliances; radio and television; telephones, cellphones and satellite communications; laser and fiber optics; computers and computer networks; control, navigation, transportation and travel; medical imaging and health technologies; internet; robotics, electric vehicles, to name a few. Moreover, as the nation's infrastructure ages and its population continues to grow, more electrical engineers will be needed to maintain, repair, upgrade or expand utility infrastructure, power grids and power plants, as well as to build new ones, focusing on renewable-energy sources. The electrical engineering profession is consistently ranked among the top earners. It has substantial career opportunities, excellent average starting salary, very good median long-term salary, robust job growth and great career fulfillment. The demand for electrical engineers will further increase as the $\$ 1$-trillion Infrastructure Investment and Jobs Act is implemented over the next eight years.
The Bachelor of Science in Electrical Engineering (BSEE) program prepares graduates for entrance into the high-demand profession of electrical engineering or graduate study. Graduates work in the industry as electrical engineers, typically specializing as biomedical, computer, control, communications, electronics, integrated-circuit (IC) design, instrumentation, signal processing or power engineers. They may also hold
other titles including facilities engineers, systems engineers, project engineers, and project or technical managers.
The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET (https://www.abet.org).
The BSEE curriculum provides students with a varied and balanced educational experience through an appropriate combination of theoretical concepts and practical applications. It also provides students with an engineering-design experience that expands in breadth and depth as they progress through their studies. A stimulating course of study is maintained by offering students a reasonable variety of focus areas and contemporary courses in current and emerging fields. The program focuses on communications, computers, control, electronics, embedded systems, power and signal processing. The engineering laboratory experience is fully integrated with coursework. Students work in many state-of-the-art laboratories.
In particular, the design experience is introduced early in the curriculum. Simple design examples are presented in a freshmen introductory course to engineering. Students begin to learn basic AC and DC circuits, operational amplifiers, three-phase circuits, two-port networks, filters and system analysis in a three-course sequence in circuit theory and systems. This enables them to design complex linear and nonlinear analog electronic circuits and devices in a three-course sequence in electronics. Students also design digital systems involving logic gates, counters, shift registers, multiplexers, demultiplexers, encoders and decoders and advance to the design of microprocessor and microcontroller-embedded systems in a three-course sequence in digital logic and system design. The design of digital filters is conducted in a digital signal processing course. Students also learn about the principles and applications of electromagnetic fields and waves (EMF) and how to design, build and test various types of antennas in an EMF course.
Advanced courses help students acquire additional experimental, design and computer-simulation skills and integrate theory with practice. As a culmination of their design experience, senior students are required to successfully design a component, a system or a process in the senior capstone project course by utilizing their past coursework, following professional practice, exercising sound engineering judgment and by incorporating appropriate engineering standards and multiple realistic constraints.
Because of the importance of modern telecommunications technology in a global society and particularly in the state of New Jersey, which is home to many leading telecommunication companies, three telecommunications courses: communication systems, data communications and computer networks and wireless communications are required in the curriculum. An analog and digital control course is also required because of the wide utilization of automatic control systems in industry. Moreover, because of the great demand for power engineers, an electrical energy conversion course is added to the curriculum. Electives allow students to further enhance their knowledge and to develop design skills in various technical areas based on their interests and goals.
The school also offers an electrical engineering minor (for non-electrical engineering majors) and the $\mathrm{BSEE} / \mathrm{MS}$ in computer engineering and BSEE/MS in Electrical Engineering combined-degree programs.

## Educational Objectives

The educational objectives of the BS in Electrical Engineering program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Enter into and advance in the profession of electrical engineering, particularly in the areas of systems and devices, computers and communications.
2. Continue their formal education and obtain advanced degrees in electrical engineering or other related fields.
3. Become responsible professionals and global citizens who are aware of ethical issues and societal needs and problems.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program's constituents, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

Each electrical engineering graduate will demonstrate the following attributes and achievements as required by the EAC of ABET upon or before graduation:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

## Cooperative Education Option

Students in the BSEE program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives. Note that these credits may not be substituted for any required course work. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Industry benefits from better-prepared graduates with real and relevant work experience saving time and money by reducing the training period for new employees.

## Degree Plan

The program requires the successful completion of 128 credits with a minimum cumulative grade point ratio (CGPR) of 2.00 as described below.

## 1st Semester (15 credits)

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I (3 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (18 credits)

- ENGR1204 Programming Languages in Engineering (3 credits)
- ENGR2286 Digital System Design (3 credits)
- MATH2202 Calculus II (4 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II (3 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- EENG2221 Signals and Systems I (4 credits)
- ENGR2287 Microprocessor System Design I (3 credits)
- ENGR3200 Advanced Engineering Programming (3 credits)
- MATH2210 Differential Equations (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 4th Semester ( 15 credits)

- EENG2222 Signals and Systems II (3 credits)
- EENG3288 Microprocessor System Design II (3 credits)
- ENGR2210 Technical Communications (3 credits)
- ENGR4221 Engineering Statistics and Reliability (3 credits)
- UNIV2002 Global Issues (3 credits)


## 5th Semester (15 credits)

- EENG3223 Linear Systems (3 credits)
- EENG3265 Electronics I (3 credits)
- EENG4375 Electrical Energy Conversion (3 credits)
- ENGR2221 Statics (3 credits)
- MATH2203 Calculus III (3 credits)


## 6th Semester (16 credits)

- CHEM1201 General Chemistry I (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- EENG3224 Digital Signal Processing (3 credits)
- EENG3266 Electronics II (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- ENGR3341 Advanced Engineering Mathematics (3 credits)


## 7th Semester (16 credits)

- EENG3244 Electromagnetic Fields and Waves (3 credits)
- EENG3267 Electronics III (3 credits)
- EENG4260 Preparation for Electrical Engineering Project (1 credit)
- EENG4342 Data Communications and Computer Networks (3 credits)
- EENG4355 Analog and Digital Control (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)


## 8th Semester (17 credits)

- EENG4268 Electrical Engineering Project (2 credits)
- EENG4341 Communication Systems ( 3 credits)
- EENG4347 Wireless Communication (3 credits)
- Technical Electives (9 credits)


## Technical Electives

The student must take 9 credits of technical electives. Examples of technical electives are as follows:

- EENG4354 Knowledge Engineering I (3 credits)
- EENG4381 Computer-aided Analysis and Design I (3 credits)
- ENGR4001 FE/EIT Exam Preparation I (2 credits) and ENGR4002 FE/EIT Exam Preparation II (1 credit)

Other technical electives are also available, and a list of approved courses is available in GHSCSE's office. Appropriate upper-level courses in math, science and computer science may be taken as technical electives with prior approval from the program adviser. Moreover, students may undertake cooperative experience or internship and earn 3 academic credits per semester up to a maximum of 6 credits through EENG4498 and EENG4499 Co-op in Electrical Engineering. The 6 credits earned are counted toward the technical electives. Students may also elect to do independent study under the direction of a faculty member with approval of the deputy director or school director. Graduate courses can also be taken as technical electives.

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## Electrical Engineering BSEE, Computer Engineering MS Combined Degree

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to obtain a Bachelor of Science (BS) in information technology (IT) and a Master of Science (MS) in computer engineering with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey. In particular, three graduate courses: CSCI6623 Database Systems (3 credits), CSCI6638 Operating Systems ( 3 credits) and CSCI6731 Computer Networks ( 3 credits) when successfully completed under the combined-degree program, can be credited toward both the BS and MS degrees. Students can take one or more of the three concentrations: network and system administration, security and forensics and web-development technology in the BS in information technology program.
Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in information technology, and a minimum of 141 of credits is required for the combined BS in information technology/MS in computer engineering degrees. In addition, for degree completion, the BS in information technology degree requires a minimum CGPR of 2.00 , while the MS in computer engineering degree requires a minimum CGPR of 2.75 .
GHSCSE also offers a minor in computer forensics for all majors.

## Professional Accreditation and Other

## Designation

The BS in information technology program is accredited by the Computing Accreditation Commission of ABET. This accreditation applies only to the BS in information technology program offered by the GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.

Students completing the BS in information technology program with a concentration in security and forensics are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education.

## Cooperative Education Option

Students in the BS in information technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## 1st Semester (14 credits)

- CSCI1105 Survey of Computers and Computer Software ( 3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- MATH1105 College Algebra (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- INFO1201 Information Technology (3 credits)
- MATH1107 Precalculus (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- EGTG2210 Technical Communications (3 credits)
- INFO2101 Computer Programming for Information Technologists I ( 3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- First course of the Laboratory Science Sequence Elective (4 credits)

Students are required to complete one full-year laboratory science sequence totaling 8 credits. They select the first course of the sequence from the following courses:

- BIOL1221 Biological Diversity Lecture (3 credits) and BIOL1222 Biological Diversity Lab (1 credit)
- CHEM1201 General Chemistry I Lecture (3 credits) and CHEM1203 General Chemistry Laboratory (1 credit) or
- PHYS2101 General Physics I Lecture ( 3 credits) and PHYS2201 Physics I Laboratory (1 credit)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- EGTG2286 Digital System Design (3 credits)
- INFO2102 Computer Programming for Information Technologists II (3 credits)
- INFO2106 Website Design and Management (3 credits)
- Second course of the Laboratory Science Sequence Elective (4 credits)

Select the second course of the sequence in the same science discipline from the following courses:

- BIOL1233 Molecules, Cells and Genes Lecture (3 credits) and BIOL1234 Lab: Molecules, Cells and Genes (1 credit)
or
- CHEM1202 General Chemistry II Lecture (3 credits) and

CHEM1204 Lab: General Chemistry II (1 credit)
or

- PHYS2102 General Physics II Lecture ( 3 credits) and PHYS2202 Physics II Laboratory (1 credit)


## 5th Semester (15 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- EGTE2287 Microprocessor System Design I (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2337 Applied Statistics I (3 credits)
- Concentration or Minor or IT Elective Course (3 credits)


## 6th Semester (15 credits)

- CSCI3274 Linux System Administration (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6638 Operating Systems (3 credits)
- INFO3205 Digital Media Publishing (3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (15 credits)

- CSCI6731 Computer Networks (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)
- INFO3201 Human Computer interface (3 credits)
- INFO4844 Programming for the Internet or Concentration or Minor or IT Elective Course (3 credits)
- MATH2255 Discrete Structures (3 credits)


## 8th Semester (15 credits)

- INFO4201 Information Technology Needs Assessment and Management (3 credits)
- INFO4205 Information Technology Capstone Project (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)
- Concentration or Minor or IT Elective Courses (6 credits)


## 9th Semester (12 credits)

- CSCI6620 Software Engineering (3 credits)
- EENG7701 Logic System Design (3 credits)
- EENG Graduate Electives (6 credits)


## 10th Semester ( 9 credits)

- CSCI6603 Computer Architecture (3 credits)
- EENG7709 Embedded Systems (3 credits)
- EENG or CSCI Graduate Elective (3 credits)
- May take CSCI8891 Internship/Work Experience (up to 3 credits) or EENG8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits.


## Concentration or Minor or IT Elective Requirements (12 credits)

The program offers three in-demand concentration areas: network and system administration, security and forensics and web-development technology. Each concentration is 15 credits. The program also offers a 15 -credit minor in computer forensics. The courses for the three concentrations are listed below.

## Network and System Administration Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI6638 Operating Systems (3 credits)
- CSCI6731 Computer Networks (3 credits)
- INFO2101 Computer Programming for Information Technologists I ( 3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)


## Security and Forensics Concentration

- CRIM2218 Computer Technologies and Cyber Crime (3 credits)
- CRIM3327 File System Forensic Analysis and Investigation (3 credits)
- CRIM4010 Computer Forensic, Software and Hardware Applications (3 credits)
- CSCI3783 Information Security (3 credits)
- CSCI6638 Operating Systems (3 credits)


## Web-development Technology Concentration

- CGD1177 Introduction to Digital Media (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- INFO2106 Website Design and Management (3 credits)
- INFO3201 Human Computer Interface (3 credits)
- INFO4844 Programming for the Internet (3 credits)

All five required courses in the network and system administration are already included in the IT core requirements, so students automatically fulfill this concentration. Four out of the five courses in the webdevelopment technology concentration are also included in the IT core requirements, so students just need to take INFO4844 Programming for the Internet ( 3 credits) to complete this concentration. Moreover, one of the five required courses in the security and forensics concentration is also part of the IT core requirements, so students must take the remaining four courses if they want to complete this concentration.
The 15 -credit minor in computer forensics consists of 12 credits of four required courses and a 3-credit elective to be selected between two courses. Two of the required courses and one of the two elective courses are already included in the IT core requirements. Thus, IT majors only need to take the two remaining required courses, CRIM2218 Computer Technologies and Cyber Crime (3 credits) and CRIM3327 File System Forensic Analysis and Investigation (3 credits) in order to pursue the minor in computer forensics.
Students can do one of the following to complete the remaining four courses ( 12 credits):

- Take the remaining four courses in the security and forensics concentration to complete this concentration and the minor in computer forensics.
- Take INFO4844 Programming for the Internet to fulfill the web-development technology concentration and either
- Three 3-credit IT electives or
- CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation, the two remaining required courses - completing the minor in computer forensics - and one 3-credit IT elective course.
- Take CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation - completing the minor in computer forensics - and two 3-credit IT elective courses.
- Take four 3-credit IT electives.

Students must obtain prior approval from the GHSCSE academic adviser for any course selection. The required courses in the three concentrations are listed above. To take any course in the concentration, a student must meet all the prerequisites for that course. They must complete 15 credits of the required courses in the concentration to be eligible for a certificate in that area.

## Information Technology Electives

A list of recommended IT electives is provided below. Prerequisites for any courses selected must be met.

- COMM2215 Photoshop for Advertisement and Illustration (3 credits)
- COMM2648, COMM2649 Basic Video Editing Lecture and Laboratory (3 credits)
- CSCI3314 Mobile Application Development (3 credits)
- CSCI3317 Computer Game Programming (3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCI3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3380 UNIX Shell Programming ( 3 credits)
- CSCI3420 Cryptography ( 3 credits)
- CSCI3460 Data Warehouse and Data Mining (3 credits)
- CSCI3485 Big Data Analytics (3 credits)
- CSCI4380 Systems Development with Java (3 credits)
- EGTE3288 Microprocessor System Design II (3 credits)


## Graduate Electives ( 9 credits)

## EENG Graduate Electives (6 credits)

Select 6 credits (two courses) from the following:

- EENG6610 Computer Aided Analysis and Design (3 credits)
- EENG6633 Digital Signaling Processing (3 credits)
- EENG6747 Digital Communications (3 credits)
- EENG7702 Microprocessor Design (3 credits)
- EENG7707 Neural Networks and Fuzzy Logic Systems (3 credits)


## CSCI or EENG Graduate Electives ( $\mathbf{3}$ credits)

Take 3 additional credits from computer science (CSCI) or electrical engineering (EENG) courses (6000level or higher). Students may register for CSCI8891 Internship/Work Experience (up to 3 credits) or EENG8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective.

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## Electrical Engineering BSEE, Electrical Engineering MSEE Combined Degree

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to obtain a Bachelor of Science in Electrical Engineering (BSEE) degree and a Master of Science in Electrical Engineering (MSEE) degree with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: EENG6633 Digital Signal Processing (3 credits), EENG6747 Digital Communications ( 3 credits) and EENG7725 Automatic Control Systems I (3 credits), when successfully completed under the combined-degree program, can be credited toward both the BSEE and the MSEE degrees. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey. The BS in Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET (https://www.abet.org).
Students must register for this program by their junior year and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 128 credits is required for the BSEE degree, and a minimum of 149 of credits is required for the combined BSEE/MSEE degrees. In addition, for degree completion, the BSEE degree requires a minimum CGPR of 2.00 and the MSEE requires a minimum CGPR of 2.75.

## Cooperative Education Option

Students in the BSEE program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 149 credits. The course distribution is provided below.

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I Lecture (3 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (18 credits)

- ENGR1204 Programming Languages in Engineering (3 credits)
- ENGR2286 Digital System Design (3 credits)
- MATH2202 Calculus II (4 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II Lecture (3 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- EENG2221 Signals and Systems I (4 credits)
- EENG2287 Microprocessor System Design I (3 credits)
- ENGR3200 Advanced Engineering Programming (3 credits)
- MATH2210 Differential Equations (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 4th Semester (15 credits)

- EENG2222 Signals and Systems II (3 credits)
- EENG3288 Microprocessor System Design II (3 credits)
- ENGR2210 Technical Communications (3 credits)
- ENGR4221 Engineering Statistics and Reliability (3 credits)
- UNIV2002 Global Issues (3 credits)


## 5th Semester (15 credits)

- EENG3223 Linear Systems (3 credits)
- EENG3265 Electronics I (3 credits)
- EENG4375 Electrical Energy Conversion (3 credits)
- ENGR2221 Statics (3 credits)
- MATH2203 Calculus III (3 credits)


## 6th Semester (16 credits)

- CHEM1201 General Chemistry I Lecture (3 credits)
- CHEM1203 General Chemistry I Laboratory (1 credit)
- EENG3266 Electronics II (3 credits)
- EENG6633 Digital Signal Processing (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- ENGR3341 Advanced Engineering Mathematics (3 credits)


## 7th Semester (16 credits)

- EENG3244 Electromagnetic Fields and Waves (3 credits)
- EENG3267 Electronics III (3 credits)
- EENG4260 Preparation for Electrical Engineering Project (1 credit)
- EENG4342 Data Communications and Computer Networks (3 credits)
- EENG7725 Automatic Control Systems I (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)


## 8th Semester (17 credits)

- EENG4268 Electrical Engineering Project (2 credits)
- EENG4341 Communication Systems (3 credits)
- EENG4347 Wireless Communication (3 credits)
- EENG6747 Digital Communications (3 credits)
- Technical Electives (6 credits)


## 9th Semester (12 credits)

- EENG7701 Logic System Design (3 credits)
- EENG7709 Embedded Systems (3 credits)
- Graduate Electives (6 credits)


## 10th Semester (9 credits)

- Graduate Elective (3 credits)
- May take EENG8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits.
- Graduate Elective (6 credits)


## Technical Electives (6 credits)

The student must take 6 credits of technical electives. Examples of technical electives are as follows:

- EENG4354 Knowledge Engineering I (3 credits)
- EENG4381 Computer-aided Analysis and Design I (3 credits)
- ENGR4001 FE/EIT Exam Preparation I (2 credits)
- ENGR4002 FE/EIT Exam Preparation II (1 credit)

Other technical electives are also available, and a list of approved courses is available in GHSCSE's office. Appropriate upper-level courses in math, science and computer science may be taken as technical electives with prior approval from the program adviser. Moreover, students may undertake cooperative experience or internship and earn 3 academic credits per semester up to a maximum of 6 credits through EENG4498 and EENG4499 Co-op in Electrical Engineering. The 6 credits earned are counted toward the technical electives. Students may also elect to do independent study under the direction of a faculty member with approval of the GHSCSE deputy director or school director. Graduate courses can also be taken as technical electives.

## Graduate Electives (15 credits)

## Specialization Elective Courses (9 credits)

Select three courses from the areas of specialization shown. Any course may be selected, although it is recommended that they are in the same area.

## Computers Specialization

- EENG6610 Computer-aided Analysis and Design (3 credits)
- EENG7702 Microprocessor Design (3 credits)
- EENG7707 Neural Networks and Fuzzy Logic Systems (3 credits)
- EENG7737 Computer Communication Networks (3 credits)
- EENG7773 Digital Image Processing (3 credits)


## Devices and Systems Specialization

- EENG6601 Linear Systems I (3 credits)
- EENG6610 Computer-aided Analysis and Design (3 credits)
- EENG7706 Robotics Engineering (3 credits)
- EENG7715 Integrated Circuit Devices (3 credits)
- EENG7755 VLSI Systems (3 credits)
- EENG7775 Optics (3 credits)


## Digital Signal Processing and Communications Specialization

- EENG6629 Random Processes in Communications (3 credits)
- EENG7738 Wireless Communication (3 credits)
- EENG7748 Advanced Digital Communications (3 credits)
- EENG7753 Applications of Digital Signal Processing (3 credits)
- EENG7852 Digital Signal Processing with C and DSP Processors (3 credits)


## Additional Elective Courses (6 credits)

Electives may include any graduate electrical engineering courses. Students have the option of registering for a 3-credit internship after completing the BS degree and 18 graduate credits. A 6-credit thesis option is also available in consultation with electrical engineering faculty. Courses in other technical programs such as computer science may be taken with permission from an academic adviser.

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## Electrical Engineering Technology BSEET

The Bachelor of Science in Electrical Engineering Technology (BSEET) program educates and trains students for industrial positions requiring a sophisticated, applied-technical orientation in designing and building electrical and electronic devices, systems and processes. The curriculum consists of an integrated sequence of undergraduate courses emphasizing the application of engineering and scientific knowledge, methods, technology and management and technical skills appropriate to the electrical engineering technology discipline. The program graduates are capable of solving design and applied-engineering problems, as well as performing managerial, business and sales functions. The program graduates find employment in such areas as computer systems and networks, electronics, telecommunications, power generation and distribution, controls, instrumentation and automation. Job responsibilities would include design, development, liaison, cost estimation, supervision, installation, testing, maintenance, services or sales. The electrical engineering technology profession has substantial career opportunities, excellent average starting salary, very good median long-term salary, robust job growth and great career fulfillment. The demand for the program graduates will further increase when the $\$ 1$-trillion infrastructure bill in U.S. Congress is passed and implemented over the next eight years.
The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in Electrical Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET (https://www.abet.org).
The school also offers an electrical engineering technology minor (for non-electrical engineering technology majors and non-electrical engineering majors).

The faculty members maintain excellent communication with the industry and encourage students to gain industrial experience through cooperative education. Laboratory and industry-oriented project assignments complement the lectures and recitations throughout the program to provide students with these learning opportunities that are crucial to their success in the workplace. Students work in many state-of-the-art laboratories. A capstone project based on an approved written proposal is required in the eighth semester for all students.

## Educational Objectives

The educational objectives of the BS in Electrical Engineering Technology program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Enter into and advance their careers in the analysis, design, development, application, implementation, building, manufacturing, installation, testing, operation and/or maintenance of electrical and electronics systems, including those used in control, instrumentation, communications, computer or power.
2. Continue their education to obtain advanced degrees, licensures or certifications.
3. Continue to conduct themselves as both responsible professionals and global citizens who are aware of and who understand ethical issues and societal needs and problems.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

Each electrical engineering technology graduate will demonstrate the following attributes and achievements as required by the ETAC of ABET upon or before graduation:

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering and technology to solve broadly defined engineering problems appropriate to the discipline;
2. An ability to design systems, components or processes meeting specified needs for broadly defined engineering problems appropriate to the discipline;
3. An ability to apply written, oral and graphical communication in broadly defined technical and nontechnical environments; and an ability to identify and use appropriate technical literature;
4. An ability to conduct standard tests, measurements and experiments and to analyze and interpret the results to improve processes; and
5. An ability to function effectively as a member as well as a leader on technical teams.

## Cooperative Education or Work Experience Option

Students in the BS in Electrical Engineering Technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs,
gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Industry benefits from betterprepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.
Instead of undertaking cooperative education, students may earn up to 6 academic credits for appropriately documented industrial experience (work experience) counted toward their technical electives. Note that credits earned from industrial experience and/or cooperative education may not be substituted for any required coursework and that they altogether may not exceed a total of 6 credits. Students must have successfully completed the course EGTG2210 Technical Communications before the application for work-experience credits can be considered. The application form and directions for submission of necessary documents in support of the application may be obtained from GHSCSE.

## Degree Plan

The program requires the successful completion of 128 credits with a minimum cumulative grade point ratio (CGPR) of 2.00 as described below.

## 1st Semester ( $\mathbf{1 5}$ credits)

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1107 Precalculus (4 credits)
- PHYS2101 General Physics I (3 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- EGTC1223 Introduction to CAD (2 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2102 General Physics II (3 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (17 credits)

- CHEM1201 General Chemistry I (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- EGTG2210 Technical Communications (3 credits)
- EGTG2215 Circuits I (3 credits)
- EGTG2221 Statics (3 credits)
- MATH2202 Calculus II (4 credits)


## 4th Semester (18 credits)

- EGTE2216 Circuits II (3 credits)
- EGTG2228 Strength of Materials (3 credits)
- EGTG2286 Digital System Design (3 credits)
- EGTG4221 Engineering Statistics and Reliability (3 credits)
- ENGR1204 Programming Languages in Engineering (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 5th Semester (18 credits)

- EENG4375 Electrical Energy Conversion (3 credits)
- EGTE2287 Microprocessor System Design I (3 credits)
- EGTG2265 Electronics I (3 credits)
- EGTG3211 Materials Technology I (3 credits)
- EGTG4254 Fluid Mechanics (3 credits)
- ENGR3200 Advanced Engineering Programming (3 credits)


## 6th Semester (15 credits)

- EGTE3266 Electronics II (3 credits)
- EGTE3288 Microprocessor System Design II (3 credits)
- EGTG3223 Instrumentation (3 credits)
- EGTG3351 Applied Thermodynamics (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)


## 7th Semester (15 credits)

- EGTC4263 Project Management and Control I (3 credits)
- EGTE3267 Electronics III (3 credits)
- EGTE4342 Data Communication and Computer Networks (3 credits)
- EGTG4224 Process and Electro/Mechanical Control Systems Technology (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)


## 8th Semester (16 credits)

- EGTE4381 Computer-aided Analysis and Design (3 credits)
- EGTE4387 Electrical Technology Design Project (1 credit)
- EGTG4225 Industrial Automation (3 credits)
- UNIV2002 Global Issues (3 credits)
- Technical Electives (6 credits)


## Technical Electives

The student must take 6 credits of technical electives, to be chosen from the following list:

- CHEM1202 General Chemistry II Lecture (3 credits) and CHEM1204 Lab: General Chemistry II (1 credit)
- EGTE4047 Optical Technology I (3 credits)
- EGTE4049 Optical Technology II (3 credits)
- EGTE4345 Microwave Technology (3 credits)
- EGTG3431 Dynamics (3 credits)
- EGTG4340 Manufacturing Systems (3 credits)
- EGTM4040 Heating, Ventilation and Air Conditioning (3 credits)
- EGTM4041 Heating, Ventilation, Air Conditioning and Refrigeration Controls (3 credits)

Other technical electives may be taken with prior approval from a program adviser. Up to 6 credits for work experience may be used in place of technical electives. Up to 6 credits for work experience or cooperative education experience but not both may be used in place of technical electives.

## For Information

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## Program Coordinator

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## Entrepreneurship BS

The entrepreneurship major is offered by the department of management and entrepreneurship of the Silberman College of Business on the Florham Campus, Madison, New Jersey. The college is accredited by AACSB International.
The major will show students a path to become successful by helping them discover their entrepreneurial potential and building a solid understanding of the journey from initial idea to a fully operational business. In addition, FDU's entrepreneurship program will benefit those seeking careers in corporate
enterprise as "intrapreneurs," identifying opportunities and participating in the large organization's innovation process.
Entrepreneurship course offerings emphasize: experiential learning that enables students to develop practical entrepreneurial skill-sets, a global perspective that emphasizes innovation and long-term sustainable business practices, interactive lectures that engages the student in the learning process, the use of team-based teaching and learning and real-world readiness by connecting with the resources and outreach programs through the Rothman Institute of Innovation and Entrepreneurship.

## Degree Plan

All students enrolled in the Bachelor of Science degree program must complete the Business Core Curriculum in addition to the major requirements listed below. Any student interested in pursuing a minor in entrepreneurship should refer to the list of minors offered at the Silberman College of Business.

## Major Requirements

The current degree program requires 21 credits of major specific courses listed below. Students with specific questions should contact their adviser on their home campus.

## Required Courses

- ENTR3710 The Lean LaunchPad: From Idea to Launch
- ENTR4100 Managing Growing Ventures
- ENTR4600 Managing Growing Ventures
- MGMT3620 Leadership and Personal Development or ENTR4498/ENTR4499 Internship in Entrepreneurial Studies
- MKTG3341 Professional Sales and Sales Management


## Elective Courses (select two)

Please note that elective courses are not offered every semester

- ENTR3101 Small Business Management: Entrepreneurial Perspective
- ENTR3202 Family Business Management
- ENTR3300 E-Business for Entrepreneurs(online)
- ENTR3601 Women as Entrepreneurs(online)
- MGMT3400 Managing Sustainably in the Global Context


## Business Core Curriculum

Silberman College's Business Core Curriculum features coursework in all business disciplines accounting, economics, entrepreneurship, finance, information systems and decisions sciences, international business, business law, management, marketing and taxation, to provide students with essential business knowledge.

## Silberman College of Business BS students must complete a minimum of $\mathbf{1 2 0}$ credits, distributed as follows:

- Business Core and Restricted Business Core (41 credits)
- Business Major Courses (21 credits)
- University Core (7 credits)
- General Education Requirements (36 credits)
- Free Electives ( 15 credits)


## TOTAL CREDITS - $\mathbf{1 2 0}$ credits

## Business Core ( 38 credits)

All courses are 3 credits except where indicated otherwise.

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CARR3000 Career Strategies (2 credits)
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Restricted Business Core (3 credits)

- ENTR2710 Fundamentals of Entrepreneurship (required for business administration, entrepreneurship, management and marketing majors)


## University Core (7 credits)

- UNIV1001 Transitioning to University Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## General Education Requirements (36 credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward scientific analysis or free elective credits.
See adviser for help in selection of courses.

## Free Electives (15 Credits)

Can be used toward a minor or a second major.

## For Information

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## Film and Animation BA (Animation Concentrations)

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a Bachelor of Arts in film and animation with three animation concentrations (3D animation, 2D animation and video game animation) at the Florham Campus, Madison, New Jersey.
The school also offers a BA in film and animation with film concentrations at the Florham Campus.

## Admission Requirements

Undergraduate program applicants are not required to submit portfolios as part of the admissions process. At the undergraduate level, the University admits students based on the criteria set by the admissions department. However, if students have a portfolio, it is recommended that they submit it for review as it may strengthen their application. Students should contact the program director to request a log-in to the animation program's cloud to upload their portfolio.

## Degree Plan

Upon entry, animation majors select one of three animation concentrations to be their area of focus. As they work their way through the curriculum students have the option to switch concentrations, should
they decide to do so. Anyone interested in doing double concentrations should meet with the program director to determine if that is possible on an individual basis.

## 3D Animation Concentration

Theory and Production (30 Credits)

- ANIM1500 Storyboarding
- ANIM1750 Motion Graphics with After Effects
- ANIM1850 3D Computer Modeling
- ANIM2270 ZBrush Digital Sculpting
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3331 Logo and Product Animation
- ANIM3341 Character Animation using CAT
- ANIM4500 Thesis I
- ANIM4600 Thesis II


## Major Electives (12-15 Credits)

- 4-5 ANIM1000- to 4000-level Courses


## Cognates ( 6 Credits)

- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation


## 2D Animation Concentration

## Required Theory and Production (27 Credits)

- ANIM1300 Writing for Animation
- ANIM1400 Character Design
- ANIM1500 Storyboarding
- ANIM1501 Fundamentals of Animation Principles
- ANIM1750 Motion Graphics with After Effects
- ANIM1800 Vector Animation Using Animate CC
- ANIM2100 Tradigital Animation
- ANIM4500 Thesis I
- ANIM4600 Thesis II


## Major Electives (15-18 Credits)

-5-6 ANIM1000- to 4000-level Courses

## Cognates (15 Credits)

- ART1201 Drawing I
- CGD1313 Creative Imagery with Photoshop
- CGD1314 Illustrator Graphics and Design
- SOAC4001 Professional Practice: Animation

Select one

- ART1202 Drawing II
- ART1250 Art of the Graphic Novel
- ART3302 Life Drawing


## Video Game Animation Concentration

## Theory and Production (30 Credits)

- ANIM1650 Game Design
- ANIM2240 Low Poly 3D Modeling
- ANIM2270 ZBrush Digital Sculpting
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3341 Character Animation using CAT
- ANIM3350 3D Game Creation Using Unreal
- ANIM3450 3D Game Creation Using Unity
- ANIM4500 Thesis I
- ANIM4600 Thesis II


## Major Electives (12-15 Credits)

- 4-5 ANIM1000- to 4000-level Courses


## Cognates (9 Credits)

- ART1201 Drawing I
- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation


## Other Animation Electives

- ANIM2243 Advanced After Effects
- ANIM2245 3D Character Modeling
- ANIM2280 3D Printing
- ANIM2285 3D Asset Creation for Video Games
- ANIM2300 Texturing for 3D Production
- ANIM3225 Vector Animation II
- ANIM3250 3D Particle Animation and Effects
- ANIM3343 Advanced Character Animation
- ANIM3345 Custom 3D Character Rigging and Animation
- ANIM4100 Design and Development of Video Games
- ANIM4422 Internship in Animation I
- ANIM4423 Internship in Animation II
- ANIM4800 Independent Study in Animation
- ANIM4900 Faculty/Student Research
- ANIM4901 Faculty/Student Research


## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCL1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( $\mathbf{3}$ to $\mathbf{4}$ credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- $\qquad$ 1002 (Beginning Language II) (3 credits)
- ___ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).

Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## For Information

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## Film and Animation BA (Film Concentrations)

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a Bachelor of Arts in film with four film concentrations (cinematography, directing, postproduction and producing) at the Florham Campus, Madison, New Jersey.
The school also offers a BA in film and animation with animation concentrations at the Florham Campus. The film major gives students a full overview of all the aspects of developing a story as a movie, video, internet content or TV episode. Students begin shooting with HD cameras their first term while taking both film history and film appreciation courses. The course of study continues with screenwriting, advanced production and postproduction courses, and then allows students to further explore their particular interests with a wide range of major electives. Internships and independent studies are also available.

## Degree Plan

## Major Requirements

The film major and all concentrations share 27 credits of FILM requirements, which means that students can commit to one of the concentrations as late as their junior year. In the last of the required courses, the capstone sequence Producing and Directing the Thesis Film I and II, each student will work in the area of their concentration in the development and execution of a professional-quality production.

- CINE3350 Twentieth-century Cinema
- FILM1005 Filmmaking I: Basic Production
- FILM1501 Cinematic Storytelling
- FILM2208 Filmmaking II: The Professional Crew
- FILM2250 Screenwriting I
- FILM2310 Postproduction I
- FILM3209 Filmmaking III: Mastering the Art and Craft of Film Production
- FILM4311 Producing and Directing the Thesis Film I
- FILM4312 Producing and Directing the Thesis Film II


## Electives in the Film Major (15 to 18 credits)

Note: Three credits in an internship may be used to fulfill elective credits.

- FILM courses
- CINE courses


## Cinematography Concentration

The cinematography concentration at FDU is unique in that it is one of the few offered at any undergraduate program. FDU alumni work in the industry and have made our program highly regarded and recognized in the profession.
This concentration is a rigorous course of study for students who have a special interest in the art and science of photographing the moving image. Whether working in film, video or a new digital process, the concepts, concerns and artistic approaches to achieving the right visual imagery are the same. The Core Major requirements are the same as the standard film major, thus students may elect this concentration as late as their junior year. The cinematography concentration requirements, which are a mix of crossdiscipline courses, educate students in the craft and practice of cinematography, enabling them to work as
the director of photography throughout the production sequence and on senior thesis film projects to build a camera reel and help start them on a future career working professionally in the camera and lighting industry.

## Requirements (9 credits)

- ART1191 Photography I
- FILM3211 Cinematography: Lighting
- FILM3214 Cinematography: Camerawork
- FILM3430 Reality TV Production (in camera department) or FILM2255 TV News and Magazine Production (in camera department) or FILM4465 Corporate Video Production (in camera department)


## Electives (6 credits)

Note: Three credits in an internship may be used to fulfill elective credits.

- FILM courses
- CINE courses


## Directing Concentration

Students in the directing concentration focus on what a film director must consider and incorporate into their storytelling process. Besides learning how to break down and visually approach a film project, directing students will study how to work with and direct actors, the preproduction process, the importance of telling a story visually and recognizing how their work may fit into the larger picture of culture and society.
Directing students work their entire senior year on making their senior thesis films, which receive an exciting and widely attended public screening at a local movie theater.

## Requirements (9 credits)

- FILM2350 The American Film Director
- FILM3363 Film Directing
- THEA1203 Basic Acting I


## Electives (6-9 credits)

Note: Three credits in an internship may be used to fulfill elective credits.

- FILM courses
- CINE courses


## Postproduction Concentration

The postproduction concentration is a course of study for students who have a special interest in the art of editing the moving image. Whether working in Premiere, Avid, Final Cut or any other nonlinear editing system, the concepts, concerns and artistic approaches to achieving the final edit remain the same.
The Core Major requirements are the same as the standard film major, thus students may elect this concentration as late as their junior year. The postproduction concentration requirements, which are a mix of cross-discipline courses, educate students in the craft and practice of postproduction, enabling them to
work as editors throughout the production sequence and on senior student film projects to build a reel and help start them on a future career working professionally in the postproduction industry.

## Requirements ( 9 credits)

- ANIM1750 Motion Graphics with After Effects
- FILM3212 Postproduction II
- FILM2214 Audio for Film and Video
- FILM4465 Client Driven Production (as an editor) or FILM3430 Reality TV Production (as an editor) or FILM2255 TV News and Magazine Production (as an editor)


## Electives (6-9 credits)

- Note: Three credits in an internship may be used to fulfill elective credits.
- FILM courses
- CINE courses


## Producing Concentration

The producing concentration allows students to pursue the organizational and business skills required of the producer in the film industry. Available courses within the discipline now include the study of producing for film, television and streaming content as well as distribution in all media formats. The producing concentration also allows students to incorporate coursework from business and communications, creating an interdisciplinary approach to those seeking to pursue this area of study.

## Requirements (6 credits)

- FILM3426 Producing Movies
- FILM3427 Distributing Movies and Media


## Electives (6 credits)

Note: Three credits in an internship may be used to fulfill elective credits.

- FILM courses
- CINE courses


## For Information

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## Film and Animation BA, Animation MA Combined Degree

The combined BA in film and animation/MA in animation degree provides FDU students the option to complete both the bachelor's and master's degrees in animation. This combined-degree program is designed for animation students seeking additional training at the graduate level that goes beyond their undergraduate education. Students may apply for the combined degree at any time from their entry into the BA in film and animation program up until the beginning of the senior year of their undergraduate studies.
The BA in film and animation/MA in animation is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Admission Requirements

During the first three years, students in the combined BA/MA program take undergraduate classes that are required of students for the BA in film and animation with a concentration in 3D animation, 2 D animation or video game animation. In the junior year of undergraduate studies, students in this program are required to submit a portfolio of their best work for review. In the senior year of undergraduate studies, students in this program take 12 graduate-level credits (included in their undergraduate tuition) as well as complete the remainder of their undergraduate courses. To transfer graduate credits completed in the undergraduate senior year into the MA program, a grade of $B$ or better is required. Those credits will be applied to both the undergraduate degree and the graduate degree.

## Degree Plan

## BA with a 3D Animation Concentration (including 12 dual credits)

## Theory and Production (30 credits)

- ANIM1500 Storyboarding
- ANIM1750 Motion Graphics with After Effects
- ANIM1850 3D Computer Modeling
- ANIM2270 ZBrush Digital Sculpting
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3331 Logo and Product Animation
- ANIM3341 Character Animation Using CAT
- ANIM4500 Thesis I
- ANIM4600 Thesis II

Major Electives (12-15 credits)
4-5 ANIM1000- to 4000-level courses

## Cognates (6 credits)

- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation


## Dual Courses Applied to BA and MA Degrees (12 credits)

4 ANIM5000- or higher-level courses

## MA with 3D Character Animation Concentration (including 12 dual credits)

Required Courses (18 credits)

- ANIM5300 Storytelling
- ANIM5400 Character Design
- ANIM6100 Digital Sculpting
- ANIM6150 3D Character Texturing
- ANIM6300 3D Character Animation
- ANIM7000 Advanced 3D Character Animation


## Major Electives (6 credits)

2 ANIM5000- or higher-level courses

## B.A with a 3D Animation Concentration(Including 12 dual credits)

Theory and Production (30 Credits)

- ANIM1500 Storyboarding
- ANIM1750 Motion Graphics with After Effects
- ANIM1850 3D Computer Modeling
- ANIM2270 ZBrush Digital Sculpting
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3331 Logo and Product Animation
- ANIM3341 Character Animation Using CAT
- ANIM4500 Thesis I
- ANIM4600 Thesis II

Major Electives (12-15 credits)
4-5 ANIM1000-4000 level courses

## Cognates (6 credits)

- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation


## Dual Courses Applied to BA and MA Degrees (12 credits)

4 ANIM5000- or higher-level courses
MA with Visual Effects Concentration (including 12 dual credits

Required Courses (18 credits)

- ANIM5300 Storytelling
- ANIM5500 Digital 2D Animation
- ANIM5600 3D Layers in After Effects
- ANIM5700 Dynamic Effects and Particle Systems in After Effects
- ANIM5800 Compositing in After Effects
- ANIM6350 3D Particle Systems and Effects


## Major Electives (6 credits)

2 ANIM5000- or higher-level courses

## BA with a Video Game Animation Concentration (including 12 dual credits) <br> Theory and Production (30 credits) <br> - ANIM1650 Game Design <br> - ANIM2240 Low Poly 3D Modeling <br> - ANIM2270 ZBrush Digital Sculpting <br> - ANIM2500 3D Computer Animation <br> - ANIM3330 3D Environment Modeling <br> - ANIM3341 Character Animation Using CAT <br> - ANIM3350 3D Game Creation Using Unreal <br> - ANIM3450 3D Game Creation Using Unity <br> - ANIM4500 Thesis I <br> - ANIM4600 Thesis II <br> Major Electives (12-15 credits) <br> 4-5 ANIM1000- to 4000-level courses

## Cognates (9 credits)

- ART1201 Drawing I
- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation


## Dual Courses Applied to BA and MA Degrees (12 credits)

4 ANIM5000- or higher-level courses

## MA with a Video Game Animation Concentration (including 12 dual credits

## Required Courses (18 credits)

- ANIM5400 Character Design
- ANIM5500 Digital 2D Animation
- ANIM6100 Digital Sculpting
- ANIM6400 3D Animation for Games
- ANIM6600 Game Creation
- ANIM7500 Advanced Game Creation


## Major Electives (6 credits)

2 ANIM5000- or higher-level courses

## Other Animation Electives

- ANIM2243 Advanced After Effects
- ANIM2245 3D Character Modeling
- ANIM2285 3D Asset Creation for Video Games
- ANIM2300 Texturing for 3D Production
- ANIM3225 Vector Animation II
- ANIM3250 3D Particle Animation and Effects
- ANIM3343 Advanced Character Animation
- ANIM3345 Custom 3D Character Rigging and Animation
- ANIM4100 Design and Development of Video Games
- ANIM4422 Internship in Animation I
- ANIM4423 Internship in Animation II
- ANIM4800 Independent Study in Animation
- ANIM4900 Faculty/Student Research
- ANIM4901 Faculty/Student Research
- ANIM5100 History of Animation and Special Effects
- ANIM5200 History of Video Games
- ANIM5750 3D Character Modeling
- ANIM5850 Advanced Digital 2D Animation
- ANIM5900 Expressions and Scripting in After Effects
- ANIM6700 Animating Fluids
- ANIM6805 Motion Tracking
- ANIM6900 Digital 2D Game Creation
- ANIM7100 3D Character Animation - Weight, Overlap and Follow Through
- ANIM7200 3D Character Animation - Emotion and Personality
- ANIM7250 Lip-syncing
- ANIM7300 Animation with Hair/Fur
- ANIM7400 Animation with Cloth
- ANIM7425 Motion Capture
- ANIM7525 Virtual Reality
- ANIM7550 Internship I
- ANIM7600 Video Game Team Project
- ANIM7700 Faculty/Student Research I
- ANIM7775 Internship II
- ANIM7805 Faculty/Student Research II
- ANIM7900 Animation Career Preparation


## For Information

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## Film and Animation BA, Animation MFA Combined Degree

The MFA degree is the highest degree available in animation. The combined BA in film and animation/MFA in animation degree offers FDU students the option to complete both the bachelor's and master of fine arts degrees in animation. This program is designed for talented, highly motivated students seeking specialized training at the terminal degree level in addition to their undergraduate education in animation. The curriculum culminates in a major thesis work, incorporates motion capture and virtualreality technology and also promotes career readiness. Students may apply to this program at any time from their entry into the BA in film and animation program up until the beginning of the senior year of their undergraduate studies.

The BA in film and animation/MFA in animation is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Admission Requirements

During the first three years, students in the combined BA/MFA program take undergraduate classes that are required of students in the BA in film and animation program with a concentration in 3D animation,

2D animation or video game animation. In the junior year of undergraduate studies, students in this program are required to submit a portfolio of their best work for review. In the senior year of undergraduate studies, students in this program take 12 master's-level credits (included in their undergraduate tuition) as well as complete the remainder of their undergraduate courses. To transfer graduate credits completed in the undergraduate senior year into the MFA program, a grade of B or better is required. Those credits will be applied to the undergraduate degree as well as the graduate degree.

## Degree Plan

## BA with a 3D Animation Concentration (including 12 dual credits)

Theory and Production (30 Credits)

- ANIM1500 Storyboarding
- ANIM1750 Motion Graphics with After Effects
- ANIM1850 3D Computer Modeling
- ANIM2270 ZBrush Digital Sculpting
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3331 Logo and Product Animation
- ANIM3341 Character Animation Using CAT
- ANIM4500 Thesis I
- ANIM4600 Thesis II


## Major Electives (12-15 credits)

4-5 ANIM1000- to 4000-level courses

## Cognates (6 credits)

- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation


## Dual Courses Applied to BA and MFA Degrees (12 credits)

4 ANIM5000- or higher-level courses

## MFA with a 3D Character Animation Concentration (including 12 dual credits)

## Required Courses (36 credits)

- ANIM5300 Storytelling
- ANIM5400 Character Design
- ANIM6100 Digital Sculpting
- ANIM6150 3D Character Texturing
- ANIM6300 3D Character Animation
- ANIM7000 Advanced 3D Character Animation
- ANIM7250 Lip-Syncing
- ANIM7425 Motion Capture
- ANIM7650 Thesis I
- ANIM7750 Thesis II
- ANIM7850 Thesis III
- ANIM7900 Animation Career Preparation

Major Electives (12 credits)
4 ANIM5000- or higher-level courses

## BA with a 3D Animation Concentration (including 12 dual credits)

Theory and Production (30 Credits)

- ANIM1500 Storyboarding
- ANIM1750 Motion Graphics with After Effects
- ANIM1850 3D Computer Modeling
- ANIM2270 ZBrush Digital Sculpting
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3331 Logo and Product Animation
- ANIM3341 Character Animation Using CAT
- ANIM4500 Thesis I
- ANIM4600 Thesis II


## Major Electives (12-15 credits)

4-5 ANIM1000- to 4000-level courses

## Cognates ( 3 credits)

- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation


## Dual Courses Applied to BA and MFA Degrees (12 credits)

4 ANIM5000- or higher-level courses

## MFA with a Visual Effects Concentration (including 12 dual credits)

## Required Courses (36 credits)

- ANIM5300 Storytelling
- ANIM5500 Digital 2D Animation
- ANIM5600 3D Layers in After Effects
- ANIM5700 Dynamic Effects and Particle Systems in After Effects
- ANIM5800 Compositing in After Effects
- ANIM6350 3D Particle Systems and Effects
- ANIM6700 Animating Fluids
- ANIM6805 Motion Tracking
- ANIM7650 Thesis I
- ANIM7750 Thesis II
- ANIM7850 Thesis III
- ANIM7900 Animation Career Preparation


## Major Electives (12 credits)

4 ANIM5000- or higher-level courses

## BA with a Video Game Animation Concentration (including

 12 dual credits)Theory and Production ( $\mathbf{3 0}$ credits)

- ANIM1650 Game Design
- ANIM2240 Low Poly 3D Modeling
- ANIM2270 ZBrush Digital Sculpting
- ANIM2500 3D Computer Animation
- ANIM3330 3D Environment Modeling
- ANIM3341 Character Animation Using CAT
- ANIM3350 3D Game Creation Using Unreal
- ANIM3450 3D Game Creation Using Unity
- ANIM4500 Thesis I
- ANIM4600 Thesis II

Major Electives (12-15 credits)
4-5 ANIM1000- to 4000-level courses

## Cognates (9 credits)

- ART1201 Drawing I
- CGD1313 Creative Imagery with Photoshop
- SOAC4001 Professional Practice: Animation

Dual Courses Applied to BA and MFA Degrees (12 credits)
4 ANIM5000- or higher-level courses

## MFA with a Video Game Concentration (including 12 dual credits)

## Required Courses (36 credits)

- ANIM5400 Character Design
- ANIM5500 Digital 2D Animation
- ANIM6100 Digital Sculpting
- ANIM6400 3D Animation for Games
- ANIM6600 Game Creation
- ANIM7500 Advanced Game Creation
- ANIM7525 Virtual Reality
- ANIM7600 Video Game Team Project
- ANIM7650 Thesis I
- ANIM7750 Thesis II
- ANIM7850 Thesis III
- ANIM7900 Animation Career Preparation


## Major Electives (12 credits)

4 ANIM5000- or higher-level courses
Other Animation Electives

- ANIM2243 Advanced After Effects
- ANIM2245 3D Character Modeling
- ANIM2280 3D Printing
- ANIM2285 3D Asset Creation for Video Games
- ANIM2300 Texturing for 3D Production
- ANIM3225 Vector Animation II
- ANIM3250 3D Particle Animation and Effects
- ANIM3343 Advanced Character Animation
- ANIM3345 Custom 3D Character Rigging and Animation
- ANIM4100 Design and Development of Video Games
- ANIM4422 Internship in Animation I
- ANIM4423 Internship in Animation II
- ANIM4800 Independent Study in Animation
- ANIM4900 Faculty/Student Research
- ANIM4901 Faculty/Student Research
- ANIM5100 History of Animation and Special Effects
- ANIM5200 History of Video Games
- ANIM5750 3D Character Modeling
- ANIM5850 Advanced Digital 2D Animation
- ANIM5900 Expressions and Scripting in After Effects
- ANIM6900 Digital 2D Game Creation
- ANIM7100 3D Character Animation - Weight, Overlap and Follow Through
- ANIM7200 3D Character Animation - Emotion and Personality
- ANIM7300 Animation with Hair/Fur
- ANIM7400 Animation with Cloth
- ANIM7550 Internship I
- ANIM7700 Faculty/Student Research I
- ANIM7775 Internship II
- ANIM7805 Faculty/Student Research II


## For Information

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## Finance BS

The finance major provides students with an understanding of financial analysis, financial management and financial systems. This program is offered through the Fairleigh Dickinson University Silberman College of Business' economics, finance and International business department at both the Florham Campus (Madison, New Jersey) and Metropolitan Campus (Teaneck, New Jersey) locations. The college holds prestigious accreditation by AACSB International - the Association to Advance Collegiate Schools of Business - which recognizes the quality of its faculty, academic programs and resources. Less than a third of all U.S. business schools hold AACSB recognition, adding value to an undergraduate business degree from Fairleigh Dickinson University. The University's finance program has earned affiliate status with the CFA Institute. Its financial planning and wealth management concentration is a CFP Board-registered program.
There is an optional concentration in financial planning and wealth management (see below).

## Degree Plan

All students enrolled in the Bachelor of Science degree program in financemust complete the University andBusiness Core Curriculum (see below). The two finance courses in the core are:

- FIN3250 Principles of Financial Analysis
- FIN3310 Intermediate Financial Analysis

Additional majorrequirements are listed below.

## Finance Major Requirements

## Required Courses (12 credits)

- FIN4341 Financial Markets and Institutions
- FIN4343 Securities and Investments
- FIN4405 Analytical Methods in Finance


## Electives (Select three)

- FIN3290 Working Capital Management
- FIN3330 Personal Financial Management
- FIN3421 Sports Finance
- FIN4221 Capital Budgeting and Value Creation
- FIN4350 Derivatives
- FIN4351 Portfolio Management
- FIN4498 Internship in Finance Studies
- Economics or accounting course with permission of the chair of the economics, finance and International business department

Note: Students with specific questions about the major requirementsshould contact the adviser on their home campus.

## Business Core Curriculum

Silberman College's Business Core Curriculum features coursework in all business disciplines accounting, economics, entrepreneurship, finance, information systems and decisions sciences, international business, business law, management, marketing and taxation, to provide students with essential business knowledge.

Silberman College of Business BS students must complete a minimum of $\mathbf{1 2 0}$ credits, distributed as follows:

- Business Core and Restricted Business Core (41 credits)
- Business Major Courses (21 credits)
- University Core (7 credits)
- General Education Requirements (36 credits)
- Free Electives (15 credits)


## TOTAL CREDITS - 120 credits

## Business Core ( $\mathbf{3 8}$ credits)

All courses are 3 credits except where indicated otherwise.

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CARR3000 Career Strategies (2 credits)
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Restricted Business Core (3 credits)

- FIN3310 Intermediate Financial Analysis (required for finance and accounting majors)


## University Core (7 credits)

- UNIV1001 Transitioning to University Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## General Education Requirements (36 credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward Scientific Analysis or free elective credits.

Students may take a certification exam in Bloomberg on the Silberman College of Business Bloomberg terminals. This is not a requirement, but it helps students in finance, accounting, economics and international business by providing some evidence of proficiency that students may add to their résumé.
See adviser for help in selection of courses.

## Free Electives (15 Credits)

Can be used toward a minor, a second major or a concentration.

## Financial Planning and Wealth Management Concentration <br> Required Courses (16 credits)

- FIN4341 Financial Markets and Institutions
- WMA3335 Personal Financial Management or FIN3330 Personal Financial Management
- WMA4265 Personal Tax Planning
- WMA4350 Investment Planning
- WMA4375 Risk Management and Insurance


## Major Electives (Required)

- WMA4267 Retirement Planning
- WMA4370 Personal Estate and Gift Planning
- WMA4380 Client Relations in Financial Management
- WMA4390 Financial Planning Capstone


## Optional

- WMA4498 Wealth Management Internship or FIN4498 Internship in Finance Studies or FIN4499 Internship in Finance Studies or ACCT4498 Internship in Accounting Studies or ACCT4499 Internship in Accounting Studies

WMA3335 Personal Financial Management must be taken before WMA4498 Wealth Management Internship; WMA4498 cannot be substituted for another WMA course without the permission of the chair of the economics, finance and International business department.

## For Information

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## $\underline{\text { Back to Top }}$

## Fine Arts: Studio Arts BA

The Bachelor of Arts in fine arts/studio arts offers a program of study for students interested in careers in the fine arts and related fields, The program is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, on the Florham Campus, Madison, New Jersey.
The program's innovative approach to the studio arts matches courses across disciplines: from the unique Art of the Graphic Novel and Ceramic Character Sculpture to the traditional Life Drawing and Life Sculpture. Its dedicated and exhibiting artists and professors teach a wide range of beginning through advanced-level studio art classes.

The program offers many opportunities for learning beyond the classroom including:

- Annual student fine art exhibitions
- Class trips to New York City museums, galleries and artist studios each semester
- Creative internships and career workshops
- Internationally recognized visiting artists (recently Nari Ward, Rina Peleg, Howard Cruse)
- Faculty-guided experiential learning/exhibition opportunities $\backslash$
- Student/faculty research projects with academic credit
- Regular contact with art alumni keeps former students connected to current students and activities, receptions and trips
- Support for alumni exhibitions at FDU and external venues


## Degree Plan

## Major Requirements (42-45 credits plus 12 cognate credits) <br> Studio Arts (27 credits)

- ART1201 Drawing I
- ART1202 Drawing II
- ART1225 Painting I
- ART1231 2-Dimensional Design
- ART1235 Sculpture I
- ART1315 Ceramics I
- ART2233 3-Dimensional Design
- ART2236 Introduction to Color
- ART2316 Ceramics II or ART2336 Sculpture II


## Cognate Requirements (12 credits; 3 credits also count toward General Education Requirements)

- ARTH1205 Art History: Prehistoric Through Medieval
- ARTH1206 Art History: Renaissance Through Today
- SOAC3001 Career Paths to the Arts
- SOAC4003 Professional Practice: Fine Arts


## Major Electives (15-18 credits)

It is suggested that electives be taken in studio arts and/or art history. See your adviser for the updated elective list.

- ART1157 Printmaking I
- ART1169 Watercolor Painting I
- ART1191 Photography I
- ART1250 Art of the Graphic Novel
- ART1260 Ceramic Character Sculpture
- ART2060 Advanced Character Sculpture
- ART2061 Animal Sculpture
- ART2269 Watercolor Painting II
- ART2316 Ceramics II
- ART2319 Drawing III
- ART2320 Drawing IV
- ART2326 Painting II
- ART2336 Sculpture II
- ART3302 Life Drawing
- ART3307 Ceramics III
- ART3308 Ceramics IV
- ART3313 Ceramics V
- ART3314 Ceramics VI
- ART3327 Painting III
- ART3328 Painting IV
- ART3337 Life Sculpture
- ART4422 Internship I
- ART4423 Internship II
- ARTH1402 Museums of New York
- ARTH1803 Modern Art in the New York Museum
- ARTH2218 20th-century Art
- ARTH2350 The 17th Century and Baroque Art
- ARTH3217 Late 19th-Century Art
- ARTH3219 Art in America
- ARTH3423 Women Artists
- ARTH4403 Public Art in New York City


## For Information

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## Government and Politics BA

Students in the Bachelor of Arts in government and politics degree program must complete 36 credits of major required courses. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the minor may be applied toward the General Education Requirements.
Government and politics is favored by students preparing for law school. Government and politics majors interested in a career in teaching may also be admitted to QUEST, the five-year accelerated preparation program for teaching certification. Students should see College Requirements for details of the General Education Requirements.
The Bachelor of Arts in government and politics is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey.
A Bachelor of Arts in government and politics and a Master of Arts in criminal justice combined degree is also being offered at the Metropolitan Campus.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.

## Required Major Courses (15 Credits)

- GOVT1000 American Government and Politics
- GOVT1100 Global Politics (Florham Campus)
- GOVT2130 International Relations (Metropolitan Campus)
- GOVT2216 Problems in Politics (Metropolitan Campus)
- GOVT2400 Political Ethics (Florham Campus)
- GOVT2500 Social Analysis
- GOVT2606 Politics and Ethics (Metropolitan Campus)
- GOVT3801 Current Events Seminar (Metropolitan Campus)


## Major Electives (21 Credits)

- Select from 2000-, 3000- and 4000-level courses in GOVT. At least six credits from 3000-level or higher.

Six credits from the major may be applied toward General Education Requirements
A minor is optional. Additional 15 credits of free electives will need to be taken in lieu of a minor.

## Concentrations

Students in the program can choose to take one of three concentrations: global politics (Florham Campus only), international affairs (Metropolitan Campus only) or legal studies (Florham Campus only).

## Global Politics Concentration (15-30 Credits)

(Florham Campus only)
Students majoring in government and politics with a concentration in global politics must complete 36-45 credits of course work in the area of government and politics.
The goal of the global politics concentration track is to prepare students for careers in international corporations, nongovernmental organizations (NGOs) and departments and agencies of the federal government, which manage foreign affairs.
In addition to the courses required of all government and politics majors, students in this track must take a minimum of 15 GOVT credits with a global politics emphasis at a 2000- or higher level (GOVT2100GOV2199, GOVT3100-GOVT3199 or GOVT4100-GOVT4199).

## International Affairs Concentration (15 Credits)

(Metropolitan Campus only)
The international affairs concentration offers students the opportunity to focus on how states and other actors, including nongovernmental organizations (NGOs), interact in the global environment, and within the dynamics of globalization that shape policy outcomes affecting levels of cooperation and conflict. International affairs provides the student with analytical and foundational courses and the flexibility to pursue individual career goals in government and private sectors, and in academics.
In addition to the courses required of all government and politics majors, students in the international affairs concentration must take a minimum of 15 GOVT credits.

- GOVT1101 Introduction to Political Science
- GOVT1102 Geography and World Issues
- GOVT2211 International Organization
- GOVT2212 International Law
- GOVT2231 Comparative Government and Politics


## Legal Studies Concentration (15-24 credits)

(Florham Campus only)
Students majoring in government and politics with a concentration in legal studies must complete 33-42 credits of course work in the area of government and politics.
The goal of the legal studies concentration is to prepare students for law school or to provide students with a basic overview of law and legal institutions to help them in a variety of careers in government service, public policy or the private sector.

In addition to the courses required of all government and law majors, students in this concentration shall take the following courses.

## Required Legal Studies Foundation Courses (6 Credits)

Choose at least two courses from the following:

- GOVT1200 Introduction to Law
- GOVT2030 The Supreme Court
- GOVT2230 Judicial Process
- GOVT2281, GOVT2283, GOVT2284 Mock Trial I, III, IV
- GOVT3200 American Constitutional Law
- GOVT3210 Civil Liberties and Civil Rights
- GOVT3220 Criminal Law
- GOVT3496 Legal Externship
- GOVT4496 Legal Internship


## Additional law courses (9-24 credits)

Select a minimum of 9 GOVT credits with a law emphasis at a 2000- or higher level designated GOVT2200-GOVT2299, GOVT3200-GOVT3299 or GOVT4200-GOVT4299.

## General Education Requirements (Florham Campus)

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis ( $\mathbf{6}$ to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCL2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( $\mathbf{3}$ to $\mathbf{4}$ credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- $\qquad$ 1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater

- Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.


## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## General Education Requirements (Metropolitan Campus)

Students pursuing a Bachelor of Arts degree at the Metropolitan Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Florham Campus should consult the BA Major, Florham Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication ( $\mathbf{3}$ credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (6 to $\mathbf{7}$ credits)

Students must take a math placement test (developmental course work may be required).
Select one from the following:

- MATH1101 Comprehensive Mathematics
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I

For the second course, students take 3 credits at a higher level or in a different prefix than the first course taken for Quantitative Analysis. Students must fulfill any applicable prerequisites for a course before taking it. Select from following list of approved courses:

- CENG1205 Surveying I
- CENG1245 Construction Materials and Systems
- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I or Any CSCI course above1201
- EGTC1205 Surveying I
- EGTC1245 Construction Materials and Systems
- EGTC3261 Estimating I
- EGTM2232 Mechanical Measurement and Devices
- ENGR1301 Engineering Practices, Graphics and Design
- ENGR2286 Digital System Design
- ENGR3000 Modern Technologies: Principles, Applications and Impacts
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2243 Statistical Programming
- MATH2337 Applied Statistics I or PSYC2210 Psychological Statistics
- MENG2235 Manufacturing Processes
- Any Information Technology (INFO) course


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Modern Language (3 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test.

- $\qquad$ 1102 (Introductory Level II)
- For students beginning a new language, Elementary II (1102) fulfills the language requirement.
- For students taking a language previously studied, successful completion of Intermediate I (2103) fulfills this requirement.
- Students who place above Intermediate I (2103) are excused from the language requirement and replace the 3 credits with free electives.


## VI. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences ( 6 credits)

Choose two, 3 -credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Natural Sciences (8 credits)

Choose two, 4-credit laboratory science courses from the following disciplines: Biology (BIOL), Chemistry (CHEM), Environmental Sciences (ENVR), Marine Biology (MBIO) or Physics (PHYS). Students must also complete the corequisite lab.

## IX. Arts ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art (ART), Graphic Design (CGD), Creative Writing (CREW) or Theater (THEA).

## For Information

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## Government and Politics BA, Criminal Justice MA Combined Degree

The goal of the BA in government and politics/MA in criminal justice combined degree program is to prepare students for careers in international corporations, nongovernmental organizations (NGOs) and departments and agencies of the federal government, which manage foreign affairs.
The combined-degree program is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

The combined BA in government and politics and MA in criminal justice is open to political science majors admitted to the University. After successful completion of 64 credits at the undergraduate level, but no later than completion of 90 credits, students who have a minimum cumulative grade point ratio (CGPR) of 3.00 - and 3.25 in their major - must declare their candidacy to continue in the combineddegree program. This affords students the opportunity to collaborate with their adviser in the selection of undergraduate and graduate courses. Students in the combined-degree program must maintain a minimum 3.00 CGPR in the graduate program for which they have been approved.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).

## Required Major Courses (24 credits)

- CRIM6000 Professional Seminar in Criminal Justice
- CRIM6005 Advanced Criminological Theory
- CRIM6025 Social Science Research Methods and Statistics
- GOVT1000 American Government and Politics
- GOVT2130 International Relations
- GOVT2216 Current Events in Politics
- GOVT2400 Political Ethics
- GOVT2500 Social Analysis


## Major Elective Courses (21 credits)

Select from 2000-, 3000- and 4000-level courses in GOVT. At least six credits must be from the 3000 level or higher.

## Free Electives (31 credits)

## Master's Curriculum (27 credits)

- CRIM6010 U.S. Constitution, Public Policy and Criminal Justice
- CRIM8000 Critical Analysis of Criminal Justice
- CRIM Graduate Electives (21 credits)

21 credits of Graduate Electives may be selected from the following:

- CRIM6015 Research Methods in Criminal Justice and Criminology
- CRIM6020 Statistics and Data Analysis
- CRIM7020 Ethics, Politics and Justice
- CRIM7025 Comparative Criminal Justice Systems
- CRIM7030 Principles of Leadership
- CRIM7060 Social Justice Advocacy
- CRIM7065 Crime, Victimology and Risk Reduction
- CRIM7070 Contemporary Issues in Crime and Justice
- CRIM7080 Politics and Policies of Criminal Justice
- CRIM7081 Civil Rights and the Administration of Justice
- CRIM7082 Crime and Punishment
- CRIM7084 Transnational Crime/Global Issues Selected Studies in Criminal Justice
- CRIM7085 Advanced Internship in Criminal Justice
- CRIM7090 Professional Development Seminar
- CRIM7800 Independent Studies

Graduate courses CRIM6000 Professional Seminar in Criminal Justice, CRIM6005 Advanced Criminological Theory and CRIM6020 Statistics and Data Analysis will be taken in a student's senior year with the following conditions:

- CRIM6000 Professional Seminar in Criminal Justice must be taken within a student's first 6-9 credits of graduate courses.
- CRIM6020 Statistics and Data Analysis serves as a prerequisite to CRIM6015 Research Methods in Criminal Justice and Criminology.

A minimum of 120 credits is required for graduation.

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Metropolitan Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Florham Campus should consult the BA in government and politics major, Florham Campus General Education Requirements.
The Metropolitan Campus General Education Requirements follow:

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (6 to 7 credits)

Students must take a math placement test (developmental course work may be required).
Select one from the following:

- MATH1101 Comprehensive Mathematics
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I

For the second course, students take 3 credits at a higher level or in a different prefix than the first course taken for Quantitative Analysis. Students must fulfill any applicable prerequisites for a course before taking it. Select from following list of approved courses:

- CENG1205 Surveying I
- CENG1245 Construction Materials and Systems
- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I or Any CSCI course above1201
- EGTC1205 Surveying I
- EGTC1245 Construction Materials and Systems
- EGTC3261 Estimating I
- EGTM2232 Mechanical Measurement and Devices
- ENGR1301 Engineering Practices, Graphics and Design
- ENGR2286 Digital System Design
- ENGR3000 Modern Technologies: Principles, Applications and Impacts
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2243 Statistical Programming
- MATH2337 Applied Statistics I or PSYC2210 Psychological Statistics
- MENG2235 Manufacturing Processes
- Any Information Technology (INFO) course


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Modern Language (3 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test.
$\qquad$ 1102 (Introductory Level II)

- For students beginning a new language, Elementary II (1102) fulfills the language requirement.
- For students taking a language previously studied, successful completion of Intermediate I (2103) fulfills this requirement.
- Students who place above Intermediate I (2103) are excused from the language requirement and replace the 3 credits with free electives.


## VI. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Natural Sciences (8 credits)

Choose two, 4-credit laboratory science courses from the following disciplines: Biology (BIOL), Chemistry (CHEM), Environmental Sciences (ENVR), Marine Biology (MBIO) or Physics (PHYS). Students must also complete the corequisite lab.

## IX. Arts ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art (ART), Graphic Design (CGD), Creative Writing (CREW) or Theater (THEA).

## For Information

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## Government and Politics BA, Political Science MA Combined Degree

This BA in government and politics/MA in political science combined degree program gives students the opportunity to combine their undergraduate and graduate studies. With the approval of their academic adviser and the program director, students can take up to three designated graduate courses that fulfill the requirements for both the undergraduate and graduate degrees, thus accelerating completion of their MA in political science.
The combined-degree program is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

The combined BA in government and politics and MA in political science is open to government and politics majors admitted to the University.
After successful completion of 64 credits at the undergraduate level but no later than completion of 90 credits, students who have a minimum overall grade point ratio (GPR) of 3.00 and 3.25 in their major must declare their candidacy to continue in the combined degree program. This affords students the opportunity to collaborate with their adviser in the selection of undergraduate and graduate courses. Students in the combined degree program must maintain a minimum 3.00 GPR in the graduate program for which they have been approved.

## Degree Plan

All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).

## Required Major Courses (15 credits)

- CRIM6025 Social Science Research Methods and Statistics
- GOVT1000 American Government and Politics
- GOVT2130 International Relations
- GOVT2216 Problems in Politics
- GOVT2400 Politics and Ethics
- GOVT2500 Research Methods in the Social Sciences
- POLS7820 Models of Political Systems (will be taken in a student's senior year)
- POLS7826 Politics of Public Policy (will be taken in a student's senior year)


## Major Electives (21 credits)

Select from 2000-, 3000- and 4000-level courses in GOVT. At least 6 credits must be taken at the 3000 level or higher.
Free Electives (31 credits)
Master's Curriculum (24 credits)

- POLS6800 Graduate Independent Study
- POLS Graduate Electives ( 21 credits)

21 credits of Graduate Electives may be selected from the following:

- CRIM6010 U.S. Constitution, Public Policy and Criminal Justice
- CRIM6015 Research Methods in Criminal Justice and Criminology (will be taken in a student's senior year)
- CRIM7020 Ethics, Politics and Justice
- CRIM7025 Comparative Criminal Justice Systems
- CRIM7030 Principles of Leadership
- CRIM7080 Politics and Policies of Criminal Justice
- CRIM7084 Transnational Crime/Global Issues Selected Studies in Criminal Justice
- CRIM7085 Advanced Internship in Criminal Justice
- POLS6682 Diplomatic History of the U.S.
- POLS6711 Genocide: American Perspective
- POLS6753 American Culture in Global Perspective
- POLS6871 U.S. Latin American Relations
- POLS7810 Constitutional Issues and U.S. Foreign Policy
- POLS7815 Nationalism and Its Discontents
- POLS7820 Models of Political Systems
- POLS7821 Modern Political Theory
- POLS7822 The Character of Revolutionary Movements
- POLS7825 Foreign Policy and Diplomacy
- POLS7830 International Organizations
- POLS7831 International Law
- POLS7832 International Problems and Conflict Resolution
- POLS7833 Modern Warfare and Global Stability
- POLS7834 Politics of the Global Economy
- POLS7835 Geography and World Politics
- POLS7851 Forces and Issues: Middle East
- POLS7853 The New Europe
- POLS7854 Changing Eastern Europe
- POLS7863 Comparative Government: Middle East
- POLS7867 Political and Economic Challenges: Africa
- POLS7868 Terrorism and Insurgency
- POLS7871 The Modern Asian State
- POLS7874 Latin America: New Challenges
- POLS7875 Canada, Mexico and U.S. Perspectives

A minimum of 120 credits is required for the BA degree and a minimum of 144 credits (combined) is required for the combined BA/MA degrees.

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Metropolitan Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Florham Campus should consult the BA in government and politics major, Florham Campus General Education Requirements.
The Metropolitan Campus General Education Requirements follow:

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (6 to 7 credits)

Students must take a math placement test (developmental course work may be required).
Select one from the following:

- MATH1101 Comprehensive Mathematics
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I

For the second course, students take 3 credits at a higher level or in a different prefix than the first course taken for Quantitative Analysis. Students must fulfill any applicable prerequisites for a course before taking it. Select from following list of approved courses:

- CENG1205 Surveying I
- CENG1245 Construction Materials and Systems
- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I or Any CSCI course above1201
- EGTC1205 Surveying I
- EGTC1245 Construction Materials and Systems
- EGTC3261 Estimating I
- EGTM2232 Mechanical Measurement and Devices
- ENGR1301 Engineering Practices, Graphics and Design
- ENGR2286 Digital System Design
- ENGR3000 Modern Technologies: Principles, Applications and Impacts
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2243 Statistical Programming
- MATH2337 Applied Statistics I or PSYC2210 Psychological Statistics
- MENG2235 Manufacturing Processes
- Any Information Technology (INFO) course


## IV. Ethical and Moral Analysis (3 credits)

- GOVT2400 Politics and Ethics


## V. Modern Language (3 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test.

- $\qquad$ 1102 (Introductory Level II)
- For students beginning a new language, Elementary II (1102) fulfills the language requirement.
- For students taking a language previously studied, successful completion of Intermediate I (2103) fulfills this requirement.
- Students who place above Intermediate I (2103) are excused from the language requirement and replace the 3 credits with free electives.


## VI. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Natural Sciences (8 credits)

Choose two, 4-credit laboratory science courses from the following disciplines: Biology (BIOL), Chemistry (CHEM), Environmental Sciences (ENVR), Marine Biology (MBIO) or Physics (PHYS). Students must also complete the corequisite lab.

## IX. Arts ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art (ART), Graphic Design (CGD), Creative Writing (CREW) or Theater (THEA).

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## Graphic Design BA

The graphic design major provides individuals with the opportunity to learn the skills, principles and latest industry-standard tools needed to prepare for a wide variety of careers in the graphic design industry. The courses focus on the art of communication and problem solving through the use of type, space, visual imagery and computer software.
This rigorous curriculum merges creative visual aesthetics with modern technology, which is necessary for mastering print, illustration or web media production. Completion of this program will result in a Bachelor of Arts in graphic design with a concentration in illustration, print design or web design awarded by Fairleigh Dickinson University. Admission decisions are made in accordance with criteria, policies and procedures established by FDU. Students must maintain a grade point ratio of 2.00 in their courses at FDU subsequent to admission.
The program is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Degree Plan

## Concentrations

The BA in graphic design offers concentrations in illustration, print and web design.
These concentrations emphasize individual discovery, as students work on collaborative projects that are showcased in a variety of exhibits and displays at the University. Career and freelance skills are taught in upper-level classes. No matter which concentration is chosen, all three instill the creative, technological and philosophical skills necessary to be competitive in today's market. Creativity and concept are key in the FDU design programs.

## Illustration Concentration

The illustration concentration allows students to focus on developing a personal style while practicing their craft. Imagination and experimentation are encouraged, as students learn techniques in traditional and digital media.

Illustration allows for a personal style, giving students a competitive edge in their design careers. The illustration concentration gives students the opportunity to develop their abilities in a wide range of marketing, advertising and editorial-art arenas, through the development of critical-thinking skills in visual communication. Students will learn a variety of digital and real-media techniques, with an emphasis on design principles and concept development.

## Required Theory and Production (33 credits)

- CGD1212 Introduction to Graphic Design
- CGD1313 Creative Imagery with Photoshop
- CGD1314 Illustrator Graphics and Design
- CGD1552 The Digital Children's Book
- CGD2212 Typography I
- CGD2213 Visual Principles in Design
- CGD2370 Print Layout
- CGD3300 Illustration: Special Topics
- CGD3351 Illustration Design
- CGD4420 Thesis
- CGD4500 Portfolio Preparation
- CGDH2020 History of Graphic Design


## Concentration Electives

Students choose three courses ( 9 credits) from other CGD and/or CGDH courses not listed in their concentration as required. They should check with their adviser as to the availability of elective courses as these vary by semester.

NOTE: Six credits in Graphic Design Internship may be used to fulfill concentration electives.

## Required Cognates (9 credits)

- ART1201 Drawing I
- SOAC4005 Professional Practice: Graphic Design
- Any ANIM, ART, ARTH or SOAC course Recommended: ART3350 Illustration


## Print Design Concentration

The print design concentration places a strong emphasis on problem-solving, concept development, technical and production skills as well as compelling design with type, graphic and image.
Students learn the creative process of producing visual communications within the constraints of a print environment in order to convey a specific message to a targeted audience. Common types of print formats such as posters, business cards, postcards, brochures, multipage publications, packaging as well as typographic designs are explored.

## Required Theory and Production (36 credits)

- CGD1212 Introduction to Graphic Design
- CGD1313 Creative Imagery with Photoshop
- CGD1314 Illustrator Graphics and Design
- CGD2212 Typography 1
- CGD2213 Visual Principles in Design
- CGD2370 Print Layout
- CGD3215 Editorial Design
- CGD3352 Typography 2
- CGD3355 Package Design
- CGD4420 Thesis
- CGD4500 Portfolio Preparation
- CGDH2020 History of Graphic Design


## Concentration Electives

Students choose three courses ( 9 credits) from other CGD and/or CGDH courses not listed in their concentration as required. They should check with their adviser as to the availability of elective courses as these vary by semester.
NOTE: Six credits in Graphic Design Internship may be used to fulfill concentration electives.

## Required Cognates (6 credits)

- ART1201 Drawing I
- SOAC4005 Professional Practice: Graphic Design
- Any ANIM, ART, ARTH or SOAC course


## Web Design Concentration

The web design concentration blends technical skill with design expertise, preparing students for a variety of careers in the interactive industry.
It encompasses a variety of skills in the design and production of websites and other internet products including interface design, authoring and coding through the use of proprietary software. Students study how websites work in order to produce the front-end user interface as well as developing the functionality, navigation and interactivity of web-based products.

## Required Theory and Production (33 credits)

- CGD1212 Introduction to Graphic Design
- CGD1313 Creative Imagery with Photoshop
- CGD1314 Illustrator Graphics and Design
- CGD2212 Typography 1
- CGD2213 Visual Principles in Design
- CGD3303 Web Design 1
- CGD3315 WordPress
- CGD3369 Motion on the Web
- CGD3377 Web Design II
- CGD4420 Thesis
- CGD4500 Portfolio Preparation
- CGDH2020 History of Graphic Design


## Concentration Electives

Students choose three courses ( 9 credits) from other CGD and/or CGDH courses not listed in their concentration as required. They should check with their adviser as to the availability of elective courses as these vary by semester.
NOTE: Six credits in Graphic Design Internship may be used to fulfill concentration electives.

## Required Cognates (9 credits)

- ART1201 Drawing I
- SOAC4005 Professional Practice: Graphic Design
- Any ANIM, ART, ARTH or SOAC course


## Electives

- CGD1050 Creative Concept Drawing
- CGD1552 The Digital Children's Book
- CGD2170 Branding Design
- CGD2213 Visual Principles in Design
- CGD2217 Motion Graphics for Designers
- CGD2243 Children's Book Publishing
- CGD2370 Print Layout
- CGD2800 Graphic Design Independent Study
- CGD2810 UI/UX: An Introduction to Digital Product Design
- CGD3047 Literary Publishing
- CGD3215 Editorial Design
- CGD3300 Illustration: Special Topics
- CGD3303 Web Design
- CGD3305 Dynamic Design
- CGD3315 WordPress
- CGD3351 Illustration Design
- CGD3352 Typography 2
- CGD3353 Content Marketing for Designer
- CGD3355 Package Design
- CGD3362 Mobile App Design
- CGD3363 Interactive Publishing
- CGD3369 Motion on the Web
- CGD3371 Sell Your Designs Online
- CGD3375 Fashion Illustration
- CGD3377 Web Design II
- CGD3380 Social Media Marketing Design
- CGD3500 Cartooning: Introduction, Techniques and Application
- CGD3800 Junior Independent Study
- CGD3890 Junior Independent Study
- CGD4422 Graphic Design Internship I
- CGD4423 Graphic Design Internship II
- CGD4800 Graphic Design Independent Study I
- CGD4891 Graphic Design Independent Study II
- CGD4900 Faculty/Student Research I
- CGD4901 Faculty/Student Research II
- CGDH2021 Aesthetics for Designers
- CGDH2216 Design for Social Responsibility


## For Information

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## Health Information Management BSHIM

The Bachelor of Science in Health Information Management program is awarded jointly between FDU and Rutgers School of Health Professions. The program is designed as a $2+2$ program with the first two years spent at FDU and the last two years spent at Rutgers SHP.
The health information manager is a member of the health care team and is the person responsible for the management of health information systems consistent with medical, administrative, ethical and legal requirements. Health information professionals collect, analyze and utilize data to provide information critical to the health care industry. A Registered Record Administrator (RHIA) collects many kinds of data from a variety of sources, monitors the integrity of the information, measures appropriate access to health records and manages the analysis and use of this data.
Students must complete 67 preprofessional credits during their first two years at FDU before applying for acceptance to the professional component at Rutgers SHP for their last two years.
The BS in health information management is offered by the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey

## Admission Requirements

## Admission to FDU

- Graduation from an accredited secondary school with a record indicating potential to succeed in college.
- Students admitted to the BS in health information management must maintain a minimum grade point ratio of 2.85 in their preprofessional course work.
- A separate application to Rutgers School of Health Professions will be filled out in the second semester of year 2 at FDU.
- Admission decisions for the professional component are made in accordance with criteria, policies and procedures established by a joint Committee on Admissions and Academic Status and cannot be guaranteed by FDU.


## Admission to Rutgers School of Health Professions

- A separate application in the fall semester of their sophomore year (second semester of the year 2 at FDU).
- Admission decisions for the professional component are made in accordance with criteria, policies and procedures established by a joint Committee on Admissions and Academic Status and cannot be guaranteed by FDU.
- Students admitted to the BS in health information management must maintain a minimum grade point ratio of 2.85 in their preprofessional coursework.


## Degree Plan

## 1st Semester (18 credits)

- CHEM1107, CHEM1117 Chemistry for Health Sciences Lecture and Laboratory
- CSCI1105 Survey of Computers and Computer Software
- MATH1105 College Algebra
- PSYC1201 General Psychology
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## 2nd Semester (17 credits)

- ACCT2021 Introductory Financial Accounting
- BIOL2125, BIOL2126 Microbiology for the Health Sciences Lecture and Laboratory
- PSYC2210 Psychological Statistics
- SPCH1155 Public Speaking
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument


## 3rd Semester (16 credits)

- BIOL2203, BIOL2223 Human Anatomy and Physiology I
- MEDT4301 American Health Care
- NURS3208 Introduction to Health Care Economics
- UNIV2001 Cross Cultural Perspectives


## 4th Semester (16 credits)

- BIOL2204, BIOL2224 Human Anatomy and Physiology II
- MEDT1130 Bioethics
- MEDT4302 Health Care Law and Policy
- UNIV2002 Global Issues
- CSCI/MIS Elective

After completion of 67 credits at FDU, the program is completed at Rutgers School of Health Professions ( 61 credits). With successful completion of the program at Rutgers School of Health Professions the student will earn the BS in health information management.
A minimum of 128 credits is required for graduation.

## For Information

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## Health Studies BSHS

The Bachelor of Science in Health Studies program is designed to prepare graduates with an understanding of a wide range of health-related concepts with a strong emphasis on problem-solving skills and critical thinking. The comprehensive curriculum provides a solid foundation of general education, health-related science and in-depth perspectives in health and health care delivery.
The BS in Health Studies program offers two tracks: a general track for students who plan to work in a health care field and are not interested in pursuing advanced degrees that require more intensive science prerequisites; and a science track for students who plan to go on for graduate studies in medicine, dentistry, physical therapy, occupational therapy, physician assistant, health administration or other graduate programs.
The BA in health studies is offered by the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey.

## Admission Requirements

- Graduates from an accredited secondary school with a record indicating potential to succeed in college.
- Students with an associate degree are allowed to transfer 60 credits following the criteria stated in the Admissions section of the Undergraduate Studies Catalog Admissions section.
- A minimum of 30 credits will be awarded to students holding hospital-based credit and a license/credential in an allied health profession but who do not possess an associate degree.


## Degree Plan

All students must take:

## General Education Courses

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation
- BIOL2203, BIOL2223 Human Anatomy and Physiology I Lecture and Laboratory
- BIOL2204, BIOL2224 Human Anatomy and Physiology II Lecture and Laboratory
- BIOL2125, BIOL2126 Microbiology for Health Science Lecture and Laboratory
- CHEM1107, CHEM1117 Chemistry for Health Sciences Lecture and Laboratory
- COMM2101 Professional Communication
- CSCI1105 Survey of Computers and Computer Software
- HIST___ History Elective
- LITS___ Literature Elective
- MATH1105 College Algebra
- MATH1107 Precalculus
- MEDT1130 Bioethics
- PSYC1201 General Psychology
- PSYC2210 Psychological Statistics
- PSYC2234 Social Psychology
- SPAN1111 Spanish for Health Personnel I
- SPCH1155 Public Speaking
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument

Science track students are required to take the following general education courses:

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory
- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- MATH1201 Calculus I
- PHYS2201 Lab: Physics I
- PHYS2203 University Physics I
- PHYS2202 Lab: Physics II
- PHYS2204 University Physics II


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Tracks

Graduates of the Bachelor of Science in health studies - general track may apply for the accelerated baccalaureate in nursing. Students in the Bachelor of Science in health studies - general track who have completed requirements and meet admission criteria may be eligible to transfer to the four-year Bachelor of Science in nursing program.
Graduates of the Bachelor in Science in health studies - science trackmay apply for graduate studies.

## BS Health Studies (General Track)

## General Education Courses (74 credits)

## Free Electives (6 credits)

## Major Requirements (38 credits)

- MEDT4301 American Health Care
- MEDT4302 Health Care Law and Policy
- MEDT4304 Population Health
- MEDT4307 Health Studies Practicum
- MEDT4308 Management Principles for Healthcare Professionals
- MGMT2600 Organizational Behavior
- MGMT3700 Human Resource Management
- NURS2210 Pathophysiology
- NURS2217 Information Systems and Applications in Healthcare
- NURS3208 Introduction to Health Care Economics
- NURS3351 Epidemiology in Health Care
- NURS3353 Introduction to Normal and Therapeutic Nutrition
- NURS4430 Critique/Use of Research

A minimum of 120 credits is required for graduation.

## BS Health Studies (Science Track)

## General Education Courses (79 credits) <br> Major Requirements (33 credits)

- MEDT4301 American Health Care
- MEDT4302 Health Care Law and Policy
- MEDT4304 Population Health
- MEDT4307 Health Studies Practicum
- MEDT4308 Management Principles for Healthcare Professionals
- MGMT2600 Organizational Behavior
- MGMT3700 Human Resource Management
- NURS2210 Pathophysiology
- NURS3208 Introduction to Health Care Economics
- NURS3351 Epidemiology in Health Care
- NURS4430 Critique/Use of Research


## For Information

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## History BA

History is the study of the human past from a wide variety of methodological perspectives and is an ongoing process of learning and discovery. Investigating history requires students to search out, critically analyze and lucidly present information in order to make sense of complex situations. These are the skills that decision-making in government, law, business, journalism and other fields requires.
The major is designed to provide students with a nuanced understanding of the past in a wide variety of geographical and chronological settings, and to equip them with the tools and skills necessary to become effective critical thinkers, researchers and writers. History majors interested in a career in teaching may also be admitted to QUEST, the five-year accelerated preparation program for teaching certification.
The Bachelor of Arts in history is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor's degree requirements.
History majors must complete $33-42$ credits plus 3 cognate credits in the discipline including World History I and II, and Historical Methods. They must also study at least one historical area organized around the world's great waterways. History students also complete a 4000-level seminar and take elective courses distributed between western and non-western history.

## Major Requirements (33-42 credits plus $\mathbf{3}$ cognate credits)

6 credits from the major may be applied toward General Education Requirements

## Required History Courses (15 credits)

- HIST1150 World History to 1500
- HIST1151 World History from 1500
- HIST3802 Historical Methods

Choose at least one of the following four courses:

- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds

Choose at least one from the 4000-level seminar (Note: Prerequisite is HIST3802 Historical Methods)

## Major Elective Courses (18-27 credits)

Note: Select 3 credits from each of the following areas. At least six credits of major electives must be at the 3000-level.

- Africa and Asia
- Europe
- Latin America
- United States


## Cognate Requirement (3 credits)

- GEOG1102 Geography and World issues

For the history minor ( 15 credits), 6 history credits from the minor may be applied toward General Education Requirements

## Internships

Every semester the department of social sciences and history offers a three-credit internship in history. Students, together with their instructors, identify appropriate internship sites and opportunities, and earn regular course credit for work in public history. Students work at a historical site each week and conduct historical research. In short, they do history. Interns complete hands-on projects, supplementing their classroom experiences with pragmatic and intriguing learning environments.

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to 7 credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCL2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( 3 to $\mathbf{4}$ credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- ___ 1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities (6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences ( 6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## For Information

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## Hospitality and Tourism Management BA

The BA in hospitality and tourism management is a 120 -credit program, which offers students a cuttingedge curriculum preparing them to become leaders in the industry.
This program is offered in two formats. One is a traditional on-campus study program that suits both freshmen and students who bring a variety of traditional coursework completed over a period of years at a number of institutions. It also suits candidates who can demonstrate a history of work and life experiences that can be equated with credit-bearing courses.
It is also offered as an "Immersion Studies" program. This unique program is offered in conjunction with AHTA (American Hotel Talent Acquisition) and its luxury resort partners. Students accepted in this program are placed in luxury resorts and concurrently work and study online with a robust academic support for the duration of their studies.

Although the study plan is different whether completing the on campus or "Immersion Studies" pathway, the academic learning outcomes are identical. Students are engaged in the theoretical and practical approach to industry needs that allows them to put theory into practice with experiential education.
Students complete a comprehensive set of hospitality courses that prepare them for a variety of careers in the field. Due to extensive workplace experience in both pathways, most hospitality students are employed in supervisory positions upon graduation.
This program recognizes that the tourism and hospitality industry has evolved and presents new challenges and opportunities that can only be met by highly specialized creative talent. This is a highly competitive sector in constant movement influenced by changing consumer habits and technology advances.
Special characteristics of the degree include:

- A program that offers options that suit the needs of students wishing to work and study and gain an unmatched level of experience, a real professional network and a highly regarded academic qualification that speaks to their talent and ambitions.
- One-on-one academic advising with personalized comprehensive support in both formats of this program.
- An ambitious career trajectory through supported career development within the program.
- Students successfully completing this program will have earned the industry certification, CHIA (Certified Hospitality Industry Analytics) and executive-level business simulations and the Hotel Schools of Distinction Visual Transcripttm
- Phi Theta Kappa Scholarships are available specifically for transfer students.

Freshmen and transfer students wishing to enter the "Immersion Studies" program must meet FDU academic requirements and successfully pass an interview with our resort partner.

Transfer students wishing to enter the traditional on-campus program must have successfully completed an associate degree from an accredited community college.
The BA in hospitality and tourism management program is for individuals interested in entering or advancing their careers in the hospitality industry. Studies are offered on FDU's Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey, in addition to the school's other locations:

- Southern and Central New Jersey, Atlantic, Cape, Ocean County and Mercer County locations


## Degree Plan

FDU's BA in hospitality and tourism management degree requires completion of 120 credits.
The minimum requirements for the baccalaureate degree are as follows:

- Completion of a minimum of 120 credits
- Cumulative grade point ratio of 2.00
- Cumulative grade point ratio of 2.00 in the upper-level courses completed at FDU
- Upper-level credit courses: of the courses completed at FDU, 24 credits (eight courses) must be upper-level
- A grade of C or better in all nine hotel/restaurant/tourism management (HRTM) specialization courses
- At least 30 credits, normally the last 30 , must be completed at FDU
- Residency requirement/time limit on degree completion as explained below.

A transfer student may transfer credit achieved through either formal coursework or through proficiency examination to the extent that the credits transferred do not circumvent existing University policy requiring a minimum of 30 credits in residence, including at least 50 percent of the credits required for upper-level course selections to be taken at Fairleigh Dickinson University.
Any coursework completed more than 10 years before the projected date of awarding the degree (including work for which credit is transferred from another college) shall be evaluated for its currency by the appropriate department. Where it is deemed appropriate, the department will recommend courses to familiarize the student with more recent developments.

## Curriculum

The BA in hospitality and tourism management degree is a 120 -credit baccalaureate degree program.

## Writing, Oral Communication and Quantitative Analysis: 15 Credits (8 Courses)

The ability to use the English language orally and in writing, the ability to understand and use basic mathematical symbols and the mastery of basic computer skills are required of all students in the BA in hospitality and tourism program.

## Requirements

- Writing: minimum of 6 credits ( 2 courses)

Any combination of freshman writing and advanced-level writing courses or their equivalents at other institutions. (Courses labeled Fundamentals of Composition are considered precollege level and do not count toward meeting degree requirements.)

- Oral Communication: 3 credits ( 1 course)

Three credits in a course substantially concerned with public speaking, oral, written and/or professional communication/presentations

- Quantitative Analysis: 6 credits ( 2 courses)

Three of the six credits must be in a college-level mathematics course. The other three credits can be from a second mathematics course or from a statistics, logic, computer science, computer technology or other courses that require substantial quantitative analysis.

## Liberal Arts and Foreign Language Requirements: 30 Credits (10 Courses)

A breadth and depth of study in the following areas are required of all degree candidates:

- Art and culture
- Ethics
- Humanities
- Social and behavioral sciences
- Scientific analysis
- Foreign language

Students will be exposed to artistic, cultural, social, scientific, aesthetic, moral and religious ideas, the purpose of which is to gain insight into how the concerns of people are interrelated, how knowledge has been accumulated and how unsolved problems remain a challenge to humanity.

## Requirements

- Art and Culture: 6 credits ( 2 courses)

Six credits from any combination of studio, performing or creative arts or global studies/culture including, but not limited to, computer animation, photography, creative writing, dance, film production, globalization, culture and identity, world literature. Courses may be from the same discipline/category.

- Ethics: 3 credits (1 course)
- Foreign Language: 6 credits ( 2 courses)
- Humanities: 6 credits (2 courses)

Six credits in any combination of courses in history, literature, philosophy, art history, film (not filmmaking). Courses may be in the same discipline; at least three credits must be at the 2000 level or above.

- Social and Behavioral Sciences: 6 credits (2 courses)

Six credits from any combination of courses in the social sciences (anthropology, economics, criminology, geography, political science, sociology) or behavioral sciences (psychology or communication studies). Courses may be in the same discipline; at least three credits must be at the 2000 level or above.

- Scientific Analysis: 6 credits ( 2 courses)

Six credits in coursework from biology, chemistry, physics, environmental/earth/planetary sciences and/or other courses that requires substantial scientific analysis. Courses need not be from the same scientific discipline. At least one course must have a laboratory requirement.

## University Core Requirement: 8 Credits (4 Courses)

Fairleigh Dickinson University requires all students to complete a common University Core curriculum. Eight credits of University Core courses are required:

- UNIV1001 Transitioning to College Life [Waived for transfer students with 30 or more credits]
- UNIV1002 Preparing for Professional Life [Waived for transfer students with 45 or more credits]
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Specialized Studies Core Courses: 27 Credits (9 Courses)

The BA in hospitality and tourism, in addition to providing certain skills and broad exposure to the major bodies of knowledge, also allows the opportunity to pursue a single area of study in-depth or any other combination of courses that fit into an individualized cohesive course of study, including appropriate certificate programs. The program requires the following nine core courses:

- HRTM2210 Sales and Marketing for Hospitality Managers
- HRTM2211 Accounting for Hospitality Managers
- HRTM3203 Food and Beverage Management
- HRTM3207 Lodging Operations and Revenue Management
- HRTM3208 Financial Management in the Hospitality Industry
- HRTM3209 Human Resource Management
- HRTM4102 Distribution Channel Management
- HRTM4109 Hospitality Operations Tactics and Strategy
- HRTM4204 Property Management


## Electives: 40 Credits

Students in the BA in hospitality and tourism program must take a minimum of 40 free elective credits. Students must take at least 22 free elective credits in HRTM. The remainder (up to 18 credits) may be from courses in any other area.
Students must complete the following courses:

- HRTM3100 Professional Development Sequence (PDS) Work Experience 3, which is a 300 -hour practical work-experience course
- HRTM3105 Managerial Challenges in the Workplace
- HRTM3106 The Manager and the Group

Students have the option to choose:

- HRTM4107 Concepts in Transportation and Travel
- HRTM4108 Global Issues in Hospitality Management or HRTM4280 Domestic and International Tourism

Other elective options may include the following courses. Not all options are available every semester and the below list is not exhaustive:

- ACCT2021 Introductory Financial Accounting
- BUSI2450 Business Dynamics
- HRTM2230 Introduction to the Study of Wine
- HRTM2250 Casino Management
- HRTM2260 Events Planning
- HRTM3108 Nutrition, Sanitation and Food Safety
- MGMT1110 Business in a Global Society
- MGMT2261 Human Motivation and Behavior
- MGMT2600 Organizational Behavior
- MGMT3371 International Management
- MKTG3371 Principles of International Marketing
- MKTG4365 Marketing Communications


## For Information

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## Hospitality and Tourism Management BA, Hospitality Management Studies MS Combined Degree

The International School of Hospitality, Sports, and Tourism Management offers a five-year BS in luxury hospitality management/Master in Hospitality Management Studies (MHMS). The program is offered at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

This program is available to select students who want to pursue both degrees simultaneously and have fulfilled the following requirements:

- Students must have a grade point ratio (GPR) of 3.00 or better while entering the program and also maintaining a minimum GPR of 3.00 or better throughout the BS/MHMS program. In addition, students must earn a GPR of 3.00 in each of the three core curriculum classes.
- Students must write a personal statement of 400 words, explaining their reason for pursuing the BS/MHMS degree, relative to career, personal and academic goals.
- Two letters of recommendation (one from internship director and one from hospitality faculty).
- An initial interview with the director of graduate studies.
- Final interview with the director of the International School of Hospitality, Sports, and Tourism Management after all prior requirements have been met.


## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.
Please see courses listed below for the combined-degree program. All courses are 3 credits except where otherwise indicated.

## Undergraduate Courses

- HRTM1100 Professional Development Sequence (PDS) Work Experience I (1 credit)
- HRTM1101 Career Orientation (1 credit)
- HRTM1102 Professional Skill Development (1 credit)
- HRTM2100 Professional Development Sequence (PDS) Work Experience 2 (1 credit)
- HRTM2103 Management Values and Professional Standards (2 credits)
- HRTM2104 The Hospitality Manager and Law (1-2 credits)
- HRTM2210 Sales and Marketing for Hospitality Managers
- HRTM2211 Accounting for Hospitality Managers
- HRTM2212 Dining Service and Etiquette
- HRTM2223 Heads in Beds
- HRTM2233 Exploration of Food and Beverage Senses
- HRTM2235 Ethical Sustainability and Ecotourism (fulfill Ethics requirement)
- HRTM2500 Professional Development Sequence (PDS) Lab (0 credits)
- HRTM3100 Professional Development Sequence (PDS) Work Experience 3 (1 credit)
- HRTM3105 Managerial Challenges in the Workplace (1 credit)
- HRTM3106 The Manager and the Group (1 credit)
- HRTM3108 Nutrition, Sanitation and Food Safety
- HRTM3203 Food and Beverage Management
- HRTM3207 Lodging Operations and Revenue Management
- HRTM3208 Financial Management in the Hospitality Industry
- HRTM3209 Human Resource Management
- HRTM3215 Luxury Hotel and Resort Management
- HRTM3250 Club Management or HRTM2230 Introduction to the Study of Wine
- HRTM3253 Guest Service Strategies
- HRTM3255 Externship Portfolio Project (2 credits)
- HRTM4102 Distribution Channel Management
- HRTM4107 Concepts in Transportation and Travel (2 credits)
- HRTM4108 Global Issues in Hospitality Management (2 credits)
- HRTM4109 Hospitality Operations Tactics and Strategy
- HRTM4280 Domestic and International Tourism


## Graduate Courses

- HRTM7713 Financial Management
- HRTM7714 Advanced Human Resource Management
- HRTM7715 Special Project
- HRTM7716 Service Management
- HRTM7734 Global Marketing
- HRTM7751 Research Methodology I
- HRTM7752 Research Methodology II
- HRTM7771 Organizational Behavior and Leadership
- Two HRTM Graduate Electives

The BS in luxury hospitality management requires a completion of at least 120 credits.
Total credits for the MHMS is 30 credits.
Total credits for the BS/MHMS combined-degree program is 150 credits.

## For Information

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## Humanities BA

The humanities major is offered by the department of literature, languages, writing and humanities of the Maxwell Becton College of Arts and Sciences on the Metropolitan Campus, Teaneck, New Jersey, and on the Florham Campus, Madison, New Jersey. It provides a broadly based liberal-arts education and an integrated interdisciplinary experience that draws on literature, history, philosophy, the visual and performing arts and culture courses in modern languages. Each discipline has its characteristic methods and interpretive moves, which are studied independently and which come together in an introductorymethods course and a senior capstone seminar, which offer intensive interdisciplinary study of themes and historical periods.
There are two degree plans: one with QUEST (Quality in Education, Schools and Teaching) and one without.

## Degree Plan (non-QUEST)

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements (see below).
The standard bachelor's degree at FDU is 120 credits, including the General Education Requirements and an optional 15 -credit minor or 15 credits of free electives. 36 credits are required for the major.

## Required Major Courses (9 credits)

- HUMN1100 Introduction to Methods in the Humanities
- HUMN4001 Humanities Senior Capstone
- Any 3-credit course in Philosophy ( $\underline{\text { PHIL }) ~ o r ~ R e l i g i o n ~(R E L I) ~}$


## Elective Courses (27 credits)

Electives can be any number of HUMN courses or a maximum of three courses ( 9 credits) per prefix from this list:

- ARTH (Art History/Appreciation)
- CINE (Cinema Studies)
- HIST (History)
- LANG (only culture or linguistic courses taught in English, not language courses)
- LITS (Literature) or ENGL (English)
- MUSIH (Music History/Appreciation)
- PHIL (Philosophy)
- RELI (Religion)
- THEAH (Theater History/Appreciation)

Up to one studio or performing arts course ( 3 credits) can be chosen from these prefixes combined:

- ART (Studio Art)
- CREW (Creative Writing)
- DAN (Dance)
- FILM (Filmmaking)
- MUSIC (Musical Performance)
- THEA (Theater)

Except with special permission, 1000-level elective courses are capped at one course (3 credits) per prefix (this includes HUMN) and three courses ( 9 credits) overall.
The department will consider requests to substitute upper-level courses in languages other than English (SPAN, etc.) for humanities major electives.
3 credits of approved internship in a humanities area can also count as a major elective.

## QUEST/MAT Options

- BA Humanities/QUEST/Preschool - Grade 3
- BA Humanities/QUEST/Elementary Education
- BA Humanities/QUEST/Preschool - Grade 3 Teacher of Students with Disabilities
- BA Humanities/QUEST/Elementary Education Special Education
- BA Humanities/QUEST/English as a Second Language
- BA Humanities/QUEST/Elementary Education ESL


## Degree Plan (QUEST)

The requirements for the QUEST versions of the humanities major were developed in consultation with the Peter Sammartino School of Education. The QUEST version of the major is expressly designed to give elementary-school teachers the skills to teach language arts, social studies, civics and more. Again, there are 36 required credits:

## Required Major Courses ( 6 credits)

- H Introduction to Methods in the Humanities
- HUMN4001 Humanities Senior Capstone


## Required Courses in Literature (15 credits)

- One course in World Literature, normally LITS2201 World Literature I or LITS2202 World Literature II
- One course in American Literature, normally LITS2301 American Literature I or LITS2302 American Literature II
- LITS2030 English Grammar or LITS2031 The English Language
- LITS2400 Children's Literature (or LITS2401 Young Adult Literature if LITS2400 Children's Literature is not available)
- A course on Shakespeare: common options include LITS3213 Shakespeare I, LITS3214 Shakespeare II and (at Wroxton College) ENGL3422 "The Play's the Thing"


## Required Courses in the Department of Social Sciences and History (12 credits)

- One HIST World History elective
- One HIST American History elective
- One GEOG Geography elective
- One GOVT/POLS course in American government or politics


## Major Elective (3 credits)

- One elective course in any humanities or arts discipline (ART, ARTH, CINE, CREW, DAN, FILM, HIST, HUMN, LANG, LITS/ENGL, MUSIC, MUSIH, PHIL, RELI, THEA or THEAH).


## General Education Requirements (Florham Campus)

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language (3 to 4 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- $\qquad$ 1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST),

Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## General Education Requirements (Metropolitan Campus)

Students pursuing a Bachelor of Arts degree at the Metropolitan Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General

Education Requirements. Students pursuing a Bachelor of Arts at the Florham Campus should consult the BA Major, Florham Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication ( $\mathbf{3}$ credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (6 to 7 credits)

Students must take a math placement test (developmental course work may be required).
Select one from the following:

- MATH1101 Comprehensive Mathematics
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I

For the second course, students take 3 credits at a higher level or in a different prefix than the first course taken for Quantitative Analysis. Students must fulfill any applicable prerequisites for a course before taking it. Select from following list of approved courses:

- CENG1205 Surveying I
- CENG1245 Construction Materials and Systems
- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I or Any CSCI course above1201
- EGTC1205 Surveying I
- EGTC1245 Construction Materials and Systems
- EGTC3261 Estimating I
- EGTM2232 Mechanical Measurement and Devices
- ENGR1301 Engineering Practices, Graphics and Design
- ENGR2286 Digital System Design
- ENGR3000 Modern Technologies: Principles, Applications and Impacts
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2243 Statistical Programming
- MATH2337 Applied Statistics I or PSYC2210 Psychological Statistics
- MENG2235 Manufacturing Processes
- Any Information Technology (INFO) course


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Modern Language (3 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test.

- $\qquad$ 1102 (Introductory Level II)
- For students beginning a new language, Elementary II (1102) fulfills the language requirement.
- For students taking a language previously studied, successful completion of Intermediate I (2103) fulfills this requirement.
- Students who place above Intermediate I (2103) are excused from the language requirement and replace the 3 credits with free electives.


## VI. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Natural Sciences (8 credits)

Choose two, 4-credit laboratory science courses from the following disciplines: Biology (BIOL), Chemistry (CHEM), Environmental Sciences (ENVR), Marine Biology (MBIO) or Physics (PHYS). Students must also complete the corequisite lab.

## IX. Arts (6 credits)

Choose two, 3-credit courses from the following disciplines: Art (ART), Graphic Design (CGD), Creative Writing (CREW) or Theater (THEA).

## For Information

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## Individualized Studies BA

The Bachelor of Arts (BA) in individualized studies degree is a baccalaureate degree program structured to meet the general educational needs of learners in the liberal arts. For students with previous postsecondary education, the program affords students the opportunity to receive up to 90 transfer credits. Students may choose to pursue a single or double concentration, allowing them in-depth study in an area related to their career aspirations. The result is a degree program that suits the needs of students who desire a broad education experience and/or possess traditional coursework experience that can be equated with credit-bearing courses.
Students completing the requirements for the BA in individualized studies degree will be required to demonstrate proficiency in a number of subject areas and related skills such as the following:

1. The use of basic intellectual tools, specifically to communicate effectively, both orally and in writing; to use mathematical reasoning; and to comprehend the nature, techniques and limits of the humanities, natural or physical sciences and the social and behavioral sciences.
2. The ability to learn and apply learning to the graduate's career and life experience, requiring the capability to define problems; to use information resources such as libraries and computers; and to analyze, synthesize and integrate knowledge, perspectives and techniques.
3. An understanding of the historic and global context of events and achievements over time as treated in subjects such as history, the arts and the humanities. Mastery of a considerable body of knowledge in one subject area or a group of related subjects.

The BA in individualized studies is offered by the Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey, and at the Vancouver Campus, British Columbia, Canada.

## Degree Plan

The BA in individualized studies degree consists of 120 credits ( 40 courses) in multiple disciplines. These disciplines and the course requirements are described below.

## Communication and Mathematics: 18-30 Credits (6-8 Courses)

The ability to use the English language orally and in writing, the ability to understand and use basic mathematical symbols and the mastery of basic computer skills are required of all students in the BA in individualized studies program.

## Requirements

- Written Communication: 9 credits (3 courses)

A combination of first-, second- and third-year writing and advanced-level writing courses or their equivalents at other institutions can fulfill the written-communication requirement. At least one advanced-level writing course ( 3 credits or one course) must be taken at the 2000-level or above. For the Puerta Al Futuro ${ }^{\circledR}$ program, COMM2099 Professional Communications fulfills the advanced-level writing requirement.

Students in the Puerta Al Futuro ${ }^{\circledR}$ program also take ENGL1003, ENGL1004 Introduction to Academic Writing I and II.

- Speech/Professional Communication: 3-9 credits (1-3 courses) Three credits in a course substantially concerned with public speaking, oral, written and/or professional communication/presentations. Students in the Puerta A1 Futuro ${ }^{\circledR}$ program take SPCH1111 Standard American Spoken English I, SPCH1112 Standard American Speech Patterns and SPCH1155 Public Speaking.
- Quantitative Analysis: 6 credits (2 courses)

Three of the 6 credits must be in a college-level mathematics course. The other 3 credits can be from a second mathematics course or from a statistics, logic, computer science, computer technology or other course that requires substantial quantitative analysis.

## Liberal Arts and Sciences: 27 Credits (9 Courses)

Students will be exposed to social, scientific, aesthetic, moral and religious ideas, the purpose of which is to gain insight into how the concerns of people are interrelated, how knowledge has been accumulated and how unsolved problems remain a challenge to humanity.

## Requirements

- Ethical and Moral Analysis: 3 credits (1 course)
- Three credits in a course from any discipline that is substantially concerned with ethical theories and questions such as a course in philosophy, humanities and religious studies.
- Scientific Analysis: 6 credits (2 courses)

Six credits in coursework from biology, chemistry, physics, environmental/earth/planetary sciences and/or other course that requires substantial scientific analysis. Courses need not be from the same scientific discipline. At the Vancouver Campus, at least one must be a laboratory science course. A first-year science course for majors may be substituted for any of the recommended courses listed below:

- Chemistry
- Earth and Planetary Sciences (Geology, Physical Science)
- Life Sciences (Biology)
- Physics
- Arts and Culture: 6 credits ( 2 courses)

Six credits from any combination of studio, performing or creative arts or global studies/culture including, but not limited to the following list. Courses may be from the same discipline/category.

- Animation
- Art
- Computer Animation
- Computer Graphic Design
- Creative Writing
- Dance
- Film
- Music
- Photography
- Spanish (Puerta Al Futuro ${ }^{\circledR}$ program)
- Theater
- Social and Behavioral Sciences: 6 credits ( 2 courses)

Six credits from any combination of courses in the social sciences or behavioral sciences. Courses may be in the same discipline; at the Vancouver Campus, at least three credits must be at the 2000-level or above.

- Anthropology
- Economics
- Geography
- Political Science
- Psychology
- Sociology
- Humanities: 6 credits ( 2 courses)

Six credits in any combination from the following list of courses. Courses may be in the same discipline; at the Vancouver Campus, at least three credits must be at the 2000-level or above.

- Art History/Appreciation
- Foreign Language
- History
- Literature
- Music History/Appreciation
- Philosophy
- Spanish (Puerta Al Futuro ${ }^{\circledR}$ program)
- Theater History


## University Core Courses: 8-9 Credits (3-4 Courses)

The BA in interdisciplinary studies program requires all students to complete a common University and College Core curriculum consisting of four integrated courses with a strong emphasis on the liberal arts.

## Requirements

- UNIV1001 College Core A - Transitioning to University Life (1 credit)
- UNIV1002 College Core B - Preparing for Professional Life (1 credit)
- UNIV2001 University Core A - Cross Cultural Perspectives (3 credits)
- UNIV2002 University Core B - Global Issues (3 credits)

Students entering with 30 transfer credits are exempt from UNIV1001 Transitioning to University Life. Transfer students entering with 45 or more transfer credits are exempt from UNIV1002 Preparing for Professional Life.
Students in the Puerta A1 Futuro ${ }^{\circledR}$ program are exempt from UNIV1001 and UNIV1002. They take EPS1301 Success Skills for Adult Learners instead.

## International Perspective Course: 3 Credits (1 Course)

The world is no longer composed of countries that are isolated from each other. Economic, political and cultural independence have been replaced by interdependence. In the 21st century, knowledge of other countries is essential. This requirement may be met through one of a variety of designated courses from the following disciplines:

- Anthropology
- Business
- Economics
- Literature
- Fine Arts
- History
- Music
- Philosophy
- Political Science
- Sociology


## Concentration: 18 Credits

In addition to providing liberal-arts skills and broad exposure to the major bodies of knowledge, the BA in interdisciplinary studies program also allows students the opportunity to pursue a single or double area of study in depth. A minimum of 18 credits must be completed in each discipline or recognized concentration. At least 9 of the 18 credits must be taken at FDU and at least 9 must be at the 3000-4000 level. The Vancouver Campus may have additional requirements. Certain limitations apply, including a restriction on the number of courses offered by the Silberman College of Business that can be completed and applied toward the degree.
Concentration Areas (not all concentrations offered in every program):
Applied Technology - suitable for students interested in pursuing careers in:

- computer programming
- computer systems analyst
- software development
- technological support
- webmaster or maintenance

Business - suitable for students interested in pursuing careers in:

- accounting/finance
- entrepreneurship
- human resources
- management
- marketing

Communications - suitable for students interested in pursuing careers in:

- business
- digital media
- marketing communications
- public relations
- training/education

Hospitality and Tourism - suitable for students interested in pursuing careers in:

- catering
- events organization
- hotel management
- restaurant management
- tourism

Humanities - suitable for students interested in pursuing careers in:

- government
- media and technical writing
- nonprofit organizations
- publishing and editing
- teaching

International Relations -suitable for students interested in pursuing careers in:

- government
- international business
- nongovernmental organizations
- politics
- United Nations/ambassadorship

Leadership Administration - suitable for students interested in pursuing careers in:

- government
- international business
- politics
- nongovernmental organizations
- nonprofit organizations

Psychology - suitable for students interested in pursuing careers in:

- counseling and therapy
- human resources
- mental health support services
- social work
- teaching

Spanish (Puerta Al Futuro ${ }^{\circledR}$ program only) — suitable for students interested in pursuing careers in:

- bilingual education
- human resources
- government and legal support services
- translation and interpreting services


## For Information

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## Individualized Studies BA, Cyber and Homeland Security Administration MS Combined Degree Program

The Petrocelli Center for Continuing Studies and the School of Public and Global Affairs offer a combined-degree program that affords students the opportunity to combine their undergraduate BA in individualized studies degree with graduate studies in the Master of Science in cyber and homeland security administration. For those with previous post-secondary education, the program affords students the opportunity to receive up to 90 transfer credits. With the approval of their academic advisers and the program director, students can take up to three graduate courses that fulfill the requirements for both undergraduate and graduate degrees, thus accelerating completion of their MS in cyber and homeland security administration.
The combined BA in individualized studies and MS in cyber and homeland security administration is offered by the Petrocelli Center for Continuing Studies and the School of Public and Global Affairs at the Metropolitan Campus, Teaneck, New Jersey; online; and at more than 25 off-site locations throughout New Jersey. Some graduate courses are offered at the Florham Campus in Madison, New Jersey.

## Admission Requirements

Admission to the program is based on an applicant's demonstrated interest, aptitude and motivation to successfully undertake and complete master's-level studies. This will be determined, in part, by the following minimal requirements and indicators:

- Proof of a high-school diploma (official transcript) or GED (required for those transferring fewer than 24 college credits from a regionally accredited post-secondary institution)
- Official transcripts from all previously attended colleges or universities (if applicable)
- Certificates earned from public safety training (New Jersey State Police should include human resource transcripts)

It is recommended that students interested in the combined-degree program submit their official transcripts for transfer credit review for up to 90 undergraduate credits prior to matriculation. This affords students the opportunity to collaborate with their advisers in the timely and appropriate selection of undergraduate and graduate courses.
To qualify for the combined program in cyber and homeland security administration, students must possess and maintain a minimum of 2.00 overall cumulative grade point ratio (CGPR) and must be able to demonstrate proficiency in writing. Students in the combined-degree program must maintain a minimum of 2.75 CGPR in the graduate courses for which they have been approved.

## Degree Plan

The BA in individualized studies degree consists of 120 credits ( 40 courses) in multiple disciplines. These disciplines and the course requirements are described below.

## I. General Education Requirements (48 credits)

Many students transfer to FDU with enough previous credits to satisfy part, if not all, of the general education requirements.

## A. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## B. Speech/Professional Communication (3 credits)

- Three credits in a course substantially concerned with public speaking, oral, written and/or professional communication/presentations.


## C. Ethical and Moral Analysis (3 credits)

- Three credits in a course from any discipline that is substantially concerned with ethical theories and questions such as a course in philosophy, humanities and religious studies.


## D. Quantitative Analysis (6 credits)

- Three of the 6 credits must be in a college-level mathematics course. The other 3 credits can be from a second mathematics course or from statistics, logic, computer science, computer technology or other course that requires substantial quantitative analysis.


## E. Scientific Analysis (6 credits)

- Six credits in course work from biology, chemistry, physics, environmental/earth/planetary sciences and/or other course that requires substantial scientific analysis. Courses need not be from the same scientific discipline. A first-year science course for majors may be substituted for any of the recommended courses listed below:
- Chemistry
- Earth and Planetary Sciences (Geology, Physical Science)
- Life Sciences (Biology)
- Physics


## F. Social and Behavioral Scientific Analysis ( 6 credits)

- Six credits from any combination of courses in the social sciences or behavioral sciences. Courses may be in the same discipline.
- Anthropology
- Economics
- Geography
- Political Science
- Psychology
- Sociology


## G. Art and Culture ( 6 credits)

- Six credits from any combination of studio, performing or creative arts or global studies/culture including, but not limited to, the following list. Courses may be from the same discipline/category.
- Animation
- Art
- Computer Animation
- Computer Graphic Design
- Creative Writing
- Dance
- Film
- Music
- Photography
- Spanish (Puerta Al Futuro ${ }^{\circledR}$ Program)
- Theater


## H. Humanities ( 6 credits)

- Six credits in any combination from the following list of courses. Courses may be in the same discipline.
- Art History/Appreciation
- Foreign Language
- History
- Literature
- Music History/Appreciation
- Philosophy
- Spanish (Puerta A1 Futuro ${ }^{\circledR}$ Program)
- Theater History


## I. University Core (8 credits)

- UNIV1001 Transitioning to University Life (1 credit) (Students entering with 30 transfer credits are exempted from this course.)
- UNIV1002 Preparation for Professional Life (1 credit) (Students entering with 45 or more transfer credits are exempt from this course.)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## II. Major Requirements (24 credits)

## A. Approved Course in International Perspectives (3 credits)

The world is no longer composed of countries that are isolated from each other. Economic, political and cultural independence have been replaced by interdependence. In the 21 st century, knowledge of other countries is essential. This requirement may be met through one of a variety of designated courses from the following disciplines:

- Anthropology
- Business
- Economics
- Literature
- Fine Arts
- History
- Music
- Philosophy
- Political Science
- Sociology


## B. Approved Course in Advanced Writing (3 credits)

This requirement must be met with a writing-intensive course at the 2000-level or above (e.g. COMM2101 Professional Communication, ENGL2209 Business Communications, ENGL3115 Food Writing, ENGL3141 Travel Writing and ENGW3006 Persuasive Writing).

## C. Specialization (18 credits)

A minimum of 18 credits ( 6 courses) that provides the student an opportunity to pursue a single area of study in depth. A minimum of 9 credits must be taken in FDU-graded course work and be at the 3000level or above.

## III. Free Electives ( 39 credits)

Free electives are any courses for which students have not received credit. Students should consult your adviser about electives that best complement their specialization.

## IV. Master's Degree Courses in Cyber and Homeland Security Administration (CHSA)

Up to 9 graduate credits are double dipped for the BA in individualized studies and MS in cyber and homeland security administration degree-completion program.
The MS in cyber and homeland security administration is a 36 -credit graduate program that focuses on the practical and theoretical aspects of enforcing and ensuring cyber and homeland security. There is also a strong emphasis on leadership throughout the program.

## Required Courses (12 credits)

- CHSA7601 Cyber and Homeland Security and Constitutional Issues
- CHSA7602 Research and Policy Analysis
- CHSA7603 WMD/Terrorism Awareness
- CHSA7604 Strategic Planning, Implementation and Evaluation (taken after completion of 27 credits)


## Concentrations

## A. Terrorism and Security Studies Concentration (18 credits)

Homeland security requires that the first-responder community and citizens develop the capability to prepare for, protect against, respond to, recover from and mitigate all hazards that may impact anytime anywhere. The field of emergency management is a broad area of study, which includes natural disasters, accidents or acts or terrorism. Choose any six courses below.

- CHSA6601 Terrorism Issues and Implications
- CHSA6602 Computer and Network Security
- CHSA6603 Cyber Forensics Issues and Impacts
- CHSA6604 Assessing Internal and External Threats
- CHSA6605 Preparing for Catastrophic Emergencies
- CHSA6606 Historical Perspectives of Terrorism
- CHSA6607 Border Security: Policies, Actions and Implications
- CHSA6608 Terrorism and Disaster Management
- CHSA6609 The Face of Terror
- CHSA6610 Bio-terrorism Preparedness and Response


## B. Leadership Concentration (18 credits)

Leadership is essential for successfully carrying out programs or tasks. This certificate is designed to meet the personal and professional development goals of those individuals in the broad field of homeland security, such as first responders, law enforcement, emergency management, various security personnel, health and hospital worker and the military. Choose any six courses below.

- CHSA6619 Collaborative leadership
- CHSA6620 Organizational Leadership
- CHSA6621 Human Resource Management
- CHSA6622 Effective Team Building
- CHSA6623 Implementing Organizational Change
- CHSA6624 Effective Decision Making for Organizations
- CHSA6625 Organizational Communication
- CHSA6626 Resolving Conflicts in Organizations
- CHSA6627 Values and Ethics for Decision Making


## Electives (6 credits)

## Choose any two below.

- CHSA6611 Emergency Management
- CHSA6613 Organizational Planning for Emergency Situations
- CHSA6614 Effective Risk Analysis
- CHSA6616 Stress Awareness and Management


## Degree Requirements

A minimum of 147 credits is required for graduation from the combined BA in individualized studies and the MS in cyber and homeland security administration degree program with a cumulative grade point ratio of 2.75 .

## For Information

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# Individualized Studies BA (Hospitality and Tourism Management Specialization, Vancouver Campus) 

The Vancouver area is one of Canada's most popular tourism destinations and as a result it is a location rich with career opportunities for people seeking employment in the hospitality and tourism industry.
The Bachelor of Arts in individualized studies program with a hospitality and tourism management specialization provides an ideal opportunity for both individuals wanting to prepare themselves for a career in the hospitality and tourism industry locally or internationally, and for those currently working in the industry wanting to obtain an undergraduate degree for advancement in their profession. At FDU's Vancouver Campus, students can earn the educational credentials needed for a rewarding career in the hospitality and tourism industry through this specialized program offered by the University's International School of Hospitality, Sports, and Tourism Management.
Students completing the requirements for the BA in individualized studies degree will be required to demonstrate proficiency in a number of subject areas and related skills. They include the following:

- The use of basic intellectual and critical-thinking skills, specifically to communicate effectively, both orally and in writing; to use mathematical reasoning; and to comprehend the nature, techniques and limits of the humanities, natural or physical sciences and the social and behavioral sciences.
- The ability to learn and apply learning to the graduate's career and life experience, requiring the capability to define problems; to use information resources such as libraries, online research tools and computers; and to analyze, synthesize and integrate knowledge, perspectives and techniques.
- The ability to be customer focused, analytical and independent.
- An understanding of the historic and global context of events and achievements over time as treated in subjects such as history, the arts and the humanities.
- Mastery of a considerable body of knowledge in one subject area or a group of related subjects.

The BA in individualized studies program offers a variety of ways to meet University requirements for an undergraduate degree grounded in the liberal arts. In addition to completing a traditional four-year program, the BA in individualized studies with a hospitality and tourism management specialization is also ideal for the student who brings a variety of traditional course work completed over a period of years at a number of institutions anda history of work and life experiences that can be equated with creditbearing courses.
The BA in individualized studies program requires a completion of 120 credits. Through pathway programs with partner colleges and transfer-credit options, this program allows students toearn their bachelor's degrees faster by offering:

- Small classes taught by academic and industry professionals
- Field trips and international study-abroad experiences for interested students
- Generous transfer-credit policies for previously earned college Practical work-experience opportunities
- Pathway opportunities into FDU Vancouver Campus' Master of Hospitality Management Studies program


## Degree Plan

The Bachelor of Arts in individualized studies degree is a baccalaureate degree program structured to meet the educational needs of learners. It includes a broad general education requirement, which provides a foundation in learning, communication and the development of critical-thinking skills. In addition, students complete a required course-specialization component to develop the learner's knowledge base in
the area of hospitality and tourism management; and students are able to broaden their understanding in both the hospitality and tourism industry and other areas through a selection of free elective options.
The minimum requirements for the baccalaureate degree are as follows:

- Completion of a minimum of 120 credits
- Cumulative grade point ratio of 2.00
- Cumulative grade point ratio of 2.00 in the upper-level courses completed at FDU
- Upper-level credit courses: of the courses completed at FDU, 24 credits (eight courses) must be upper-level
- A grade of C or better in all seven HRTM specialization courses
- At least 30 credits, normally the last 30 , must be completed at FDU
- Residency requirement/time limit on degree completion as explained below.

A transfer student may transfer credit achieved through either formal course work or through proficiency examination to the extent that the credits transferred do not circumvent existing University policy requiring a minimum of 30 credits in residence, including at least 50 percent of the credits required for upper-level course selections to be taken at Fairleigh Dickinson University.
Any course work completed more than 10 years before the projected date of awarding the degree (including work for which credit is transferred from another college) shall be evaluated for its currency by the appropriate department. Where it is deemed appropriate, the department will recommend courses to familiarize the student with more recent developments.

## Curriculum

The Bachelor of Arts in individualized studies degree is a 120 -credit baccalaureate degree program.

- Communication, Mathematics and Computer Requirements: 18 Credits
- Liberal Arts and Sciences Requirements: 24 Credits
- University Core Requirement: 8 Credits
- International Perspective Requirement: 6 Credits
- Hospitality and Tourism Management Specialization Requirements: 21 Credits
- Electives: 43 Credits
- Hospitality/Tourism Electives: at least 22 Credits
- Other Electives remainder: 0-21 Credits


## Communication, Mathematics and Computer Requirements: 18 Credits (6 Courses)

The ability to use the English language orally and in writing, the ability to understand and use basic mathematical symbols and the mastery of basic computer skills are required of all students in the BA in individualized studies program.

## Requirements

- Writing: minimum of 9 credits ( 3 courses)

Any combination of freshman writing and advanced-level writing courses or their equivalents at other institutions. At least one advanced-level writing course must be taken at FDU. (Courses labeled Fundamentals of Composition are considered pre-college level and do not count toward meeting degree requirements.)

- Oral Communication: 3 credits (1 course)

Three credits in a course substantially concerned with public speaking, oral, written and/or professional communication/presentations

- Quantitative Analysis: 6 credits (2 courses)

Three of the six credits must be in a college-level mathematics course. The other three credits can be from a second mathematics course or from a statistics, logic, computer science, computer technology or other courses that require substantial quantitative analysis.

## Liberal Arts and Sciences Requirements: 24 Credits (8 Courses)

A breadth and depth of study in the following areas are required of all degree candidates:

- Art and culture
- Humanities
- Social and behavioral sciences
- Scientific analysis

Students will be exposed to artistic, cultural, social, scientific, aesthetic, moral and religious ideas, the purpose of which is to gain insight into how the concerns of people are interrelated, how knowledge has been accumulated and how unsolved problems remain a challenge to humanity.

## Requirements

- Art and Culture: 6 credits (2 courses)

Six credits from any combination of studio, performing or creative arts or global studies/culture including, but not limited to, computer animation, photography, creative writing, dance, film production, globalization, culture and identity, world literature. Courses may be from the same discipline/category.

- Humanities: 6 credits ( 2 courses)

Six credits in any combination of courses in history, literature, philosophy, art history, film (not filmmaking). Courses may be in the same discipline; at least three credits must be at the 2000 level or above.

- Social and Behavioral Sciences: 6 credits ( 2 courses)

Six credits from any combination of courses in the social sciences (anthropology, economics, criminology, geography, political science, sociology) or behavioral sciences (psychology or communication studies). Courses may be in the same discipline; at least three credits must be at the 2000 level or above.

- Scientific Analysis: 6 credits (2 courses)

Six credits in course work from biology, chemistry, physics, environmental/earth/planetary sciences and/or other courses that requires substantial scientific analysis. Courses need not be from the same scientific discipline. At least one course must have a laboratory requirement.

## University Core Requirement: 8 Credits (4 Courses)

Fairleigh Dickinson University requires all students to complete a common University Core curriculum. Eight credits of University Core courses are required:

- UNIV1001 Transitioning to College Life [Waived for transfer students with 30 or more credits]
- UNIV1002 Preparing for Professional Life [Waived for transfer students with 45 or more credits]
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## International Perspective and Ethics Requirement: 6 Credits (2 Courses)

The world is no longer composed of countries that are isolated from each other. Economic, political and cultural independence has been replaced by interdependence. In the current global economy, knowledge of other countries is essential. This requirement may be met through one of a variety of designated courses from the following disciplines:

## International Perspective Course Subject Options

- Hospitality and Tourism
- Anthropology
- Business
- Economics
- Fine Arts
- History
- Literature
- Music
- Philosophy
- Political Science
- Sociology


## Ethics and Moral Analysis Course Options

Three credits in a course from any discipline that is substantially concerned with ethical theories and questions such as a course in philosophy, religion or a course with "ethics" in its title.

## Specialized Studies Core Courses: 21 Credits

The Bachelor of Arts in individualized studies, in addition to providing certain skills and broad exposure to the major bodies of knowledge, also allows the opportunity to pursue a single area of study in-depth or any other combination of courses that fit into an individualized cohesive course of study, including appropriate certificate programs. The hospitality and tourism management specialization requires the following seven 3-credit core courses:

- HRTM2210 Sales and Marketing for Hospitality Managers
- HRTM2211 Accounting for Hospitality Managers
- HRTM3203 Food and Beverage Management
- HRTM3208 Financial Management in the Hospitality Industry
- HRTM3209 Human Resource Management
- HRTM3207 Lodging Operations and Revenue Management
- HRTM4204 Property Management


## Electives: 43 Credits

Students in the hospitality and tourism management specialization must take a minimum of 43 free elective credits. Students must take at least 22 free elective credits in HRTM. The remainder (up to 21 credits) may be from courses in any other area.

Students are encouraged to complete three practical internship terms HRTM1100, HRTM2100 and HRTM3100, which are one credit each. Internship opportunities for students in the Bachelor of Arts in individualized studies program with hospitality and tourism management specialization on the Vancouver Campus are done through the school's Preferred Industry Partnership Program.

- HRTM1100 Professional Development Series Work Experience I
- HRTM2100 Professional Development Series Work Experience II
- HRTM3100 Professional Development Series Work Experience III

Other elective options may include the following 3-credit courses. Not all options are available every semester and the below list is not exhaustive:

- ACCT2022 Introductory Managerial Accounting
- BUSI2450 Business Dynamics
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3330 Personal Financial Management
- HRTM1103 Fundamentals of Event and Convention Management
- HRTM2230 Introduction to the Study of Wine
- HRTM2235 Sustainability and Ecotourism
- HRTM3108 Nutrition, Sanitation and Food Safety
- HRTM3253 Guest Service Strategies
- HRTM3260 Event Design, Production and Logistics
- HRTM4111 Global Issues in Tourism
- HRTM4217 Current Issues in Food Service
- HRTM4227 Seminar in Lodging Management
- HRTM4240 Event Technologies
- HRTM4280 Domestic and International Tourism
- HRTM4622 Understanding Tourism and Hospitality in BC and Beyond
- IBUS3201 Fundamentals of International Business
- MGMT2600 Organizational Behavior
- MGMT3371 Concept of International Management
- MGMT4160 Strategic Management
- MKTG2120 Principles of Marketing
- MKTG3360 Digital Marketing
- MKTG3383 Social Media Marketing
- MKTG4272 Consumer Behavior
- MKTG4365 Marketing Communications


## For Information

## Individualized Studies BA, Master of Administrative Science (MAS) Combined Degree Program

The Petrocelli Center for Continuing Studies and the School of Public and Global Affairs offer a combined-degree program that affords students the opportunity to combine their undergraduate BA in individualized studies degree and graduate studies in administrative science. For those with previous postsecondary education, the program affords students the opportunity to receive up to 90 transfer credits. With the approval of their academic advisers and the program director, students can take up to three graduate courses that fulfill the requirements for both undergraduate and graduate degrees, thus accelerating completion of their Master of Administrative Science.
The combined BA in individualized studies and MAS degree program is jointly offered by the Petrocelli Center for Continuing Studies and the School of Public and Global Affairs, at the Metropolitan Campus, Teaneck, New Jersey; online; and at more than 25 off-site locations throughout New Jersey. Some graduate courses are offered at the Florham Campus in Madison, New Jersey.

## Admission Requirements

Admission to the program is based on an applicant's demonstrated interest, aptitude and motivation to successfully undertake and complete master's-level studies. This will be determined, in part, by the following minimal requirements and indicators:

- Proof of a high-school diploma (official transcript) or GED (required for those transferring fewer than 24 college credits from a regionally accredited post-secondary institution)
- Official transcripts from all previously attended colleges or universities (if applicable)
- Certificates earned from public safety training (New Jersey State Police should include human resource transcripts)

It is recommended that students interested in the combined-degree program submit their official transcripts for transfer credit review for up to 90 undergraduate credits prior to matriculation. This affords students the opportunity to collaborate with their advisers in the timely and appropriate selection of undergraduate and graduate courses.
To qualify for the combined program in administrative science, students must possess and maintain a minimum of 2.00 overall cumulative grade point ratio (CGPR) and must be able to demonstrate
proficiency in writing. Students in the combined-degree program must maintain a minimum 2.75 CGPR in the graduate courses for which they have been approved.

## Degree Plan

The BA in individualized studies degree consists of 120 credits ( 40 courses) in multiple disciplines. These disciplines and the course requirements are described below.

## I. General Education Requirements (48 credits)

Many students transfer to FDU with enough previous credits to satisfy part, if not all, of the general education requirements.

## A. Written Communication (6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## B. Speech/Professional Communication (3 credits)

- Three credits in a course substantially concerned with public speaking, oral, written and/or professional communication/presentations.


## C. Ethical and Moral Analysis (3 credits)

- Three credits in a course from any discipline that is substantially concerned with ethical theories and questions such as a course in philosophy, humanities and religious studies.


## D. Quantitative Analysis (6 credits)

- Three of the 6 credits must be in a college-level mathematics course. The other 3 credits can be from a second mathematics course or from statistics, logic, computer science, computer technology or other course that requires substantial quantitative analysis.


## E. Scientific Analysis (6 credits)

- Six credits in course work from biology, chemistry, physics, environmental/earth/planetary sciences and/or other course that requires substantial scientific analysis. Courses need not be from the same scientific discipline. A first-year science course for majors may be substituted for any of the recommended courses listed below:
- Chemistry
- Earth and Planetary Sciences (Geology, Physical Science)
- Life Sciences (Biology)
- Physics


## F. Social and Behavioral Scientific Analysis (6 credits)

- Six credits from any combination of courses in the social sciences or behavioral sciences. Courses may be in the same discipline.
- Anthropology
- Economics
- Geography
- Political Science
- Psychology
- Sociology


## G. Art and Culture ( 6 credits)

- Six credits from any combination of studio, performing or creative arts or global studies/culture including, but not limited to, the following list. Courses may be from the same discipline/category.
- Animation
- Art
- Computer Animation
- Computer Graphic Design
- Creative Writing
- Dance
- Film
- Music
- Photography
- Spanish (Puerta Al Futuro ${ }^{\circledR}$ Program)
- Theater


## H. Humanities ( 6 credits)

- Six credits in any combination from the following list of courses. Courses may be in the same discipline.
- Art History/Appreciation
- Foreign Language
- History
- Literature
- Music History/Appreciation
- Philosophy
- Spanish (Puerta Al Futuro ${ }^{\circledR}$ Program)
- Theater History


## I. University Core (8 credits)

- UNIV1001 Transitioning to University Life (1 credit) (Students entering with 30 transfer credits are exempted from this course.)
- UNIV1002 Preparation for Professional Life (1 credit) (Students entering with 45 or more transfer credits are exempt from this course.)
- UNIV2001 Cross Cultural Perspectives ( 3 credits)
- UNIV2002 Global Issues (3 credits)


## II. Major Requirements (24 credits)

## A. Approved Course in International Perspectives (3 credits)

The world is no longer composed of countries that are isolated from each other. Economic, political and cultural independence have been replaced by interdependence. In the 21 st century, knowledge of other countries is essential. This requirement may be met through one of a variety of designated courses from the following disciplines:

- Anthropology
- Business
- Economics
- Literature
- Fine Arts
- History
- Music
- Philosophy
- Political Science
- Sociology


## B. Approved Course in Advanced Writing (3 credits)

This requirement must be met with a writing-intensive course at the 2000-level or above (e.g. COMM2101 Professional Communication, ENGL2209 Business Communications, ENGL3115 Food Writing, ENGL3141 Travel Writing and ENGW3006 Persuasive Writing).

## C. Specialization (18 credits)

A minimum of 18 credits ( 6 courses) that provides the student an opportunity to pursue a single area of study in depth. A minimum of 9 credits must be taken in FDU-graded course work and be at the 3000level or above.

## III. Free Electives (39 credits)

Free electives are any courses for which you have not received credit. You should consult your advisor about electives that best complement your specialization.

## IV. Master's Degree Courses in Administrative Science (MAS)

Up to 9 graduate credits are double dipped for the BA in individualized studies and Master of Administrative Science degree-completion program.
A student enrolled in the MAS degree program must complete 30 credits; 21 credits ( 7 courses) must be completed in the MAS program. All students must take the capstone course MADS6612 Seminar on Strategic Management.

- Administrative Competencies ( 6 classes/18 credits)
- Analytic and Decision-Making Competencies (3 classes/9 credits)


## Required Capstone (taken after the completion of 24 credits)

- MADS6612 Seminar on Strategic Management (Capstone Seminar)

This core area provides an integrative learning experience that focuses on organizational leadership and strategic planning. Ordinarily the last course that a student takes in the program, the capstone seminar is offered on Fairleigh Dickinson University's Metropolitan and Florham campuses, as well as in an online format.

## Electives - Administrative Competencies (6 classes/18 credits)

- MADS6600 Theory and Practice in Administration
- MADS6601 Financial Administration
- MADS6602 Personnel Administration
- MADS6603 Law and Administrative Practice
- MADS6604 Ethics and Public Values
- MADS6606 Administrative Leadership in Complex Organizations
- MADS6607 Collective Bargaining and Contract Administration
- MADS6608 Organizational Communication and Conflict Resolution
- MADS6613 Marketing of Public, Private and Not-for-Profit Organizations
- MADS6614 Comparative Public, Private and Not-for-Profit Systems
- MADS6616 Grant Writing and Administration
- MADS6617 Emergency Management and Safety Administration
- MADS6618 Leadership Plus
- MADS6629 Planning and Program Development
- MADS6631 Advanced Fundraising Practices
- MADS6633 GIS and Emergency Administration
- MADS6642 Global Health and Human Services Systems
- MADS6644 Law, Ethics and Policy for Health and Human Services
- MADS6645 Marketing Social Change
- MADS6647 Organizational Planning and Risk Communications
- MADS6653 Global Citizenship Seminar
- MADS6656 Social Problems and Solutions
- MADS6658 Leadership: Global Advanced Scholarship and Practice
- MADS6659 Latin America and Globalization
- MADS6662 Customer Service for Public and Not-for-Profit Organizations
- MADS6666 The New European Map
- MADS6672 Ethics and Human Rights
- MADS6674 Sociological Perspectives of Disaster
- MADS6676 Perspectives on Leadership from Films
- MADS6680 Strategic Planning for Intelligence-led Policing
- MADS6681 Intelligence Team Management
- MADS6684 Principles of Information and Intelligence Collection
- MADS6685 Fusion Center Operations and Integration
- MADS6692 Cultural Diversity, Stereotype and Profile
- MADS6693 Leading Culturally Diverse Workplaces
- MADS6695 Employment Law
- MADS6696 Building Effective Teams
- MADS6697 Current Issues in Cyber Forensics
- MADS6698 Current Issues on Terrorism and Security
- MADS6700 Global Technology Project Management
- MADS6701 Introduction to Computer Network Security
- MADS6702 Investigation of Computer System/Network Emergencies
- MADS6703 Public Presentations and Media Strategies
- MADS6704 Managing Media Relations: From Local to Global
- MADS6705 Homeland Security and Constitutional Issues
- MADS6706 Collaborative Leadership
- MADS6707 Impact of Terrorism on School Safety
- MADS6730 Malware Investigations
- MADS6731 Executive Communications as a Leadership Tool
- MADS6735 Introduction to Countermeasures Malware
- MADS6747 Relational Leadership
- MADS6751 Cultural and Social Awareness Seminar
- MADS6763 Grants and Sponsored Projects Operations
- MADS6773 Current Issues in Forensic Sciences
- MADS6779 Mass Communication Theories
- MADS6780 Society and Mass Communications
- MADS6781 Social Media Marketing


## Electives - Analytic and Decision-making Competencies (3 classes/9 credits)

- MADS6601 Financial Administration
- MADS6605 Principles of Information Systems
- MADS6609 Productivity and Human Performance
- MADS6610 Organizational Decision Making
- MADS6615 Global Leadership
- MADS6620 Human Resource Systems: Approaches and Techniques for the Workplace
- MADS6626 Law Enforcement Executive Leadership Seminar
- MADS6627 Women's Leadership in Today's Global World
- MADS6628 Building Strategic Partnerships
- MADS6632 Technology Applications for Not-for-Profit Management
- MADS6634 Community Threat Assessment and Risk Analysis
- MADS6635 Legal Research Methods and Analysis
- MADS6636 Global Preparedness for Catastrophic Emergencies
- MADS6637 Computer Systems Seizure and Examination
- MADS6639 The Forensic Expert
- MADS6640 Leading in Times of Crisis
- MADS6641 Contemporary Legal Issues
- MADS6643 Community Needs Assessment and Qualitative Analysis for Health and Human Services
- MADS6646 Finance and Accounting for Health and Human Services
- MADS6648 Disaster Recovery and Organizational Continuity
- MADS6651 Operations Administration
- MADS6654 Forensics Administration
- MADS6655 Contemporary Issues in Community Policing
- MADS6661 Managing Organizational Change
- MADS6675 Optimum Leadership
- MADS6677 Planning for Change in Information Technology
- MADS6679 Intelligence-led Policing: Concepts, Practices and Issues
- MADS6682 Intelligence Analysis
- MADS6683 Tactical and Operational Management
- MADS6686 Financial Crime: Its Nature and Extent
- MADS6691 Preventing Future Columbines
- MADS6694 New Challenges of Leadership in a Global Society
- MADS6776 Research Methods for Workforce Professionals
- MADS6777 Leading Volunteers in Organizations
- MADS6778 White Collar Crimes


## Special Topics

Students who qualify for either administrative competencies or analytic/decision-making competencies are permitted to take a maximum of two Special Topics courses in the MAS program.

- MADS6708 Special Topics: Administrative Research
- MADS6709 Special Topics: Creativity, Change and the 21st-century Leader
- MADS6710 Special Topics: Dissonant Issues Seminar
- MADS6714 Special Topics: First-responder Stress Awareness and Management
- MADS6715 Special Topics: Global Terrorism and Emergency Management Preparedness
- MADS6717 Special Topics: Leading Out of the Mainstream
- MADS6718 Special Topics: Lifestyle Modification for Community Leaders
- MADS6720 Special Topics: Metropolitan America: Influence of the Past and Future
- MADS6753 Special Topics: Elder Care: Legal Issues
- MADS6775 Career Development Process


## Degree Requirements

A minimum of 141 credits is required for graduation from the combined BA in individualized studies and the Master of Administrative Science degree program with a cumulative grade point ratio of 2.75.

## For Information

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## Individualized Studies BA, Master of Public Administration (MPA) Combined Degree Program

The Petrocelli Center for Continuing Studies and the School of Public and Global Affairs offer a combined-degree program that affords students the opportunity to combine their undergraduate BA in individualized studies program with graduate studies in the Master of Public Administration (MPA). For those with previous post-secondary education, the program affords students the opportunity to receive up to 90 transfer credits. With the approval of their academic advisers and the program director, students can take up to three graduate courses that fulfill the requirements for both undergraduate and graduate degrees, thus accelerating completion of their Master of Public Administration.
The combined BA in individualized studies and MPA degree program is jointly offered by the Petrocelli Center for Continuing Studies and the School of Public and Global Affairs, at the Metropolitan Campus, Teaneck, New Jersey; online; and at more than 25 off-site locations throughout New Jersey. Some graduate courses are offered at the Florham Campus in Madison, New Jersey.

## Admission Requirements

Admission to the program is based on an applicant's demonstrated interest, aptitude and motivation to successfully undertake and complete master's-level studies. This will be determined, in part, by the following minimal requirements and indicators:

- Proof of a high-school diploma (official transcript) or GED (required for those transferring fewer than 24 college credits from a regionally accredited post-secondary institution)
- Official transcripts from all previously attended colleges or universities (if applicable)
- Certificates earned from public safety training (New Jersey State Police should include human resource transcripts)

It is recommended that students interested in the combined-degree program submit their official transcripts for transfer credit review for up to 90 undergraduate credits prior to matriculation. This affords students the opportunity to collaborate with their advisers in the timely and appropriate selection of undergraduate and graduate courses.
To qualify for the combined program in public administration, students must possess and maintain a minimum of 2.00 overall cumulative grade point ratio (CGPR) and must be able to demonstrate proficiency in writing. Students in the combined-degree program must maintain a minimum 2.75 CGPR in the graduate courses for which they have been approved.

## Degree Plan

The BA in individualized studies degree consists of 120 credits ( 40 courses) in multiple disciplines. These disciplines and the course requirements are described below.

## I. General Education Requirements (48 credits)

Many students transfer to FDU with enough previous credits to satisfy part, if not all, of the general education requirements.

## A. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## B. Speech/Professional Communication (3 credits)

- Three credits in a course substantially concerned with public speaking, oral, written and/or professional communication/presentations.


## C. Ethical and Moral Analysis (3 credits)

- Three credits in a course from any discipline that is substantially concerned with ethical theories and questions such as a course in philosophy, humanities and religious studies.


## D. Quantitative Analysis (6 credits)

- Three of the 6 credits must be in a college-level mathematics course. The other 3 credits can be from a second mathematics course or from statistics, logic, computer science, computer technology or other course that requires substantial quantitative analysis.


## E. Scientific Analysis (6 credits)

- Six credits in course work from biology, chemistry, physics, environmental/earth/planetary sciences and/or other course that requires substantial scientific analysis. Courses need not be from the same scientific discipline. A first-year science course for majors may be substituted for any of the recommended courses listed below:
- Chemistry
- Earth and Planetary Sciences (Geology, Physical Science)
- Life Sciences (Biology)
- Physics


## F. Social and Behavioral Scientific Analysis (6 credits)

- Six credits from any combination of courses in the social sciences or behavioral sciences. Courses may be in the same discipline.
- Anthropology
- Economics
- Geography
- Political Science
- Psychology
- Sociology


## G. Art and Culture (6 credits)

- Six credits from any combination of studio, performing or creative arts or global studies/culture including, but not limited to, the following list. Courses may be from the same discipline/category.
- Animation
- Art
- Computer Animation
- Computer Graphic Design
- Creative Writing
- Dance
- Film
- Music
- Photography
- Spanish (Puerta Al Futuro ${ }^{\circledR}$ Program)
- Theater


## H. Humanities (6 credits)

- Six credits in any combination from the following list of courses. Courses may be in the same discipline.
- Art History/Appreciation
- Foreign Language
- History
- Literature
- Music History/Appreciation
- Philosophy
- Spanish (Puerta Al Futuro ${ }^{\circledR}$ Program)
- Theater History


## I. University Core (8 credits)

- UNIV1001 Transitioning to University Life (1 credit) (Students entering with 30 transfer credits are exempted from this course.)
- UNIV1002 Preparation for Professional Life ( 1 credit) (Students entering with 45 or more transfer credits are exempt from this course.)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## II. Major Requirements (24 credits)

## A. Approved Course in International Perspectives (3 credits)

The world is no longer composed of countries that are isolated from each other. Economic, political and cultural independence have been replaced by interdependence. In the 21st century, knowledge of other countries is essential. This requirement may be met through one of a variety of designated courses from the following disciplines:

- Anthropology
- Business
- Economics
- Literature
- Fine Arts
- History
- Music
- Philosophy
- Political Science
- Sociology


## B. Approved Course in Advanced Writing (3 credits)

This requirement must be met with a writing-intensive course at the 2000-level or above (e.g. COMM2101 Professional Communication, ENGL2209 Business Communications, ENGL3115 Food Writing, ENGL3141 Travel Writing and ENGW3006 Persuasive Writing).

## C. Specialization (18 credits)

A minimum of 18 credits ( 6 courses) that provides the student an opportunity to pursue a single area of study in depth. A minimum of 9 credits must be taken in FDU-graded course work and be at the 3000level or above.

## III. Free Electives (39 credits)

Free electives are any courses for which students have not received credit. Students should consult your adviser about electives that best complement their specialization.

## IV. Master's Degree Courses in Public Administration (PADM)

Up to 9 graduate credits are double dipped for the BA in individualized studies and Master of Public Administration degree-completion program. The MPA degree is granted for 39 to 42 credits, of which at least 30 credits must be taken at Fairleigh Dickinson University. The 39-credit total must contain:

## A. Required Foundation Courses in Management (18 credits)

- PADM6600 Public and Nonprofit Management
- PADM6601 Organization Theory
- PADM6602 Budgeting and Finance
- PADM6603 Public Policy Administration
- PADM6604 Human Resources Management
- PADM6606 Analytic Methods/Managerial Decision Making


## B. Electives (18 credits)

- MPA elective courses are designed to offer students the opportunity to pursue in-depth study in a variety of management areas.
- Specialization (12 credits)

Students may specialize within the MPA by taking four of their six electives in the following areas:

- Health Care Management: Investigates a range of topics, in addition to MPA core curriculum, the accreditation standards of the Association of University Programs in Health Administration. Students investigate a range of topics - from managing the continuum of care and global health issues to comparative health systems and health finance and control systems.
- Public Management: Offers a broad range of management studies from employee relations and delivery of public services to organizational-performance assessment.
- Public Policy: Emphasizes project-based learning to assess problems and devise solutions for leaders called on to analyze, evaluate and devise policy for others to implement.
- Global Affairs: Examines administrative structures, policy and management issues in the arena of international relations, stressing comparative analysis, leadership and cultural perspectives.
- Global Transportation Management: Focuses on the background, administrative structure and issues, environmental components and operational aspects in the context of international transportation and commerce.


## C. MPA Project Report or MPA Thesis (3 credits) - After completion of $\mathbf{3 0}$ graduate credits

- An accepted MPA project or MPA thesis


## D. Internship or Independent Study (3 credits)

- In addition to the 39 -credit degree requirement, students are required to participate in a 3 -credit internship (or in the case of working professionals, an independent study) that enhances the MPA
curriculum and prepares them for career advancement in the public and nonprofit sectors. NOTE: Waiver of the internship requirement is possible with review and approval of comparable public and nonprofit experience.


## Degree Requirements

A minimum of 153 credits is required for graduation from the combined BA in individualized studies and the Master of Public Administration degree program with a cumulative grade point ratio of 2.75.

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## Information Technology BS (Metro)

Information technology (IT) is credited with being a major factor in increased productivity and the driving force behind the global economy. IT professionals assess the IT needs of any organizations, resolve their IT problems, determine which technologies are most appropriate for them and help employ those technologies effectively. The IT discipline deals with the development and implementation of computing hardware, software, interfaces, media and web technology, networks and anything that facilitates communication and the transmittal of information.
IT students learn to maintain and upgrade computer systems and networks; evaluate current and emerging technologies; identify user needs; design user-friendly interfaces; apply, configure and manage these technologies; and assess their impacts on individual users, organizations and the environment. These skills are invaluable to any employer and in any field. Since all organizations use computers and networks, they employ IT graduates in various capacities and roles. Common job titles include computersupport specialist, web developer, systems or information security analyst, network architect, system or database administrator and chief information security officer.

The demand for IT professionals is high, especially for those with cyber and financial data security backgrounds. As such, IT professionals account for many high-paying jobs. The IT field has ample and diverse career opportunities, excellent average starting salary, outstanding median long-term salary, robust job growth and great career fulfillment. It is expected that the demand for IT professionals will further increase as the $\$ 1$-trillion Infrastructure Investment and Jobs Act is implemented over the next eight years. The Act includes funds for expanding the nation's broadband networks and IT infrastructure.
The Bachelor of Science (BS) in information program prepares graduates for entrance into the highdemand profession of IT or graduate study. The program provides students with the comprehensive knowledge, skills and training needed to pursue careers as IT professionals in one of the most dynamic areas of modern technology. The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey.
The BS in information technology curriculum provides students a varied and balanced educational experience through an appropriate combination of theoretical concepts and practical applications. Students learn about media and web development, computer-based systems, computer networks, cybersecurity, database systems, computer programming, systems administration, human-computer interface, as well as a wide variety of computer applications. The program allows students sufficient flexibility to complete at least one of the three concentrations listed below and/or to undertake a second discipline of interest (a minor):

- Network and System Administration
- Security and Forensic
- Web-development Technology

The computer laboratory experience is fully integrated with coursework. Students work in many state-of-the-art laboratories, including the computer networking lab, the cyber defense and digital forensics lab, the apps development lab and the robotics lab. GHSCSE is a member of the Cisco Networking Academy.
The program requires the successful completion of at least 120 credits of coursework. Graduates of the program are prepared to work well in virtually all computing environments in various industries. They are familiar with a spectrum of fundamental principles and proficient in the use of modern tools and technology, and they have been trained to approach problems with creativity.
Students in the BS in information technology program can also pursue one of the three accelerated, combined five-year BS and Master of Science (MS) degree programs, thereby saving time and money and expanding their career opportunities. The three accelerated programs are as follows:

- BS in information technology/MS in computer engineering combined degree program
- BS in information technology/MS in computer science combined degree program
- BS in information technology/MS in cybersecurity and information assurance combined degree program

GHSCSE also offers a minor in information technology for non-information technology majors and a minor in computer forensics for all majors.

## Professional Accreditation and Other Designation

The BS in information technology program is accredited by the Computing Accreditation Commission of ABET (https://www.abet.org). This accreditation applies only to the BS in information technology program offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.

Students completing the BS in information technology program with a concentration in security and forensics are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education. GHSCSE offers this concentration in collaboration with the department of criminology and criminal justice in the Maxwell Becton College of Arts and Sciences. In this concentration, students learn how to use the latest techniques and tools employed in cyber defense and computer forensics.

## Cooperative Education Option

Students in the BS in information technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their electives. Note that these credits may not be substituted for any required coursework. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. The industry benefits from better-prepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.

## Educational Objectives

The educational objectives of the BS in information technology program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Enter and advance in the profession of information technology, management information systems, business administration or other related fields.
2. Continue their education by obtaining professional certificates or advanced degrees in information technology, management information systems, business administration or other related fields.
3. Continue to conduct themselves as both responsible professionals and global citizens, who are aware of ethical issues and societal needs and problems.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

Each information technology graduate will demonstrate the following attributes and achievements as required by the CAC of ABET by the time of graduation:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation and administration of computing-based systems.

## Degree Plan

The program requires the successful completion of 120 credits with a minimum cumulative grade point ratio (CGPR) of 2.00. The course distribution per semester is provided below.

## 1st Semester (14 credits)

- CSCI1105 Survey of Computers and Computer Software ( 3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- MATH1105 College Algebra (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- INFO1201 Information Technology (3 credits)
- MATH1107 Precalculus (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- EGTG2210 Technical Communications (3 credits)
- INFO2101 Computer Programming for Information Technologies I (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- Laboratory Science Elective (4 credits)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- EGTG2286 Digital System Design (3 credits)
- INFO2102 Computer Programming for Information Technologies II ( 3 credits)
- INFO2106 Website Design and Management (3 credits)
- Laboratory Science Elective (4 credits)


## 5th Semester (15 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- ENGR3000 Modern Technologies: Principles Applications and Impacts (3 credits)
- MATH2337 Applied Statistics I (3 credits)
- INFO3201 Human Computer Interface (3 credits)
- Concentration or Minor or IT Elective Course (3 credits)


## 6th Semester (15 credits)

- CSCI3268 Database Systems (3 credits)
- CSCI3274 Linux System Administration (3 credits)
- INFO3205 Digital Media Publishing ( 3 credits)
- INFO4278 Operating Systems or Concentration or Minor or IT Elective Course (3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (15 credits)

- EGTG4269 Management and Engineering Economics (3 credits)
- INFO4101 Data Communication and Computer Networks I (3 credits)
- INFO4844 Programming for the Internet or Concentration or Minor or IT Elective Course (3 credits)
- MATH2255 Discrete Structures (3 credits)
- Concentration or Minor or IT Elective Course (3 credits)


## 8th Semester (15 credits)

- INFO4201 Information Technology Needs Assessment and Management (3 credits)
- INFO4205 Information Technology Capstone Project (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)
- Concentration or Minor or IT Elective Courses (6 credits)


## Science Electives (8 credits)

Students are required to complete one full-year laboratory science sequence totaling 8 credits to be chosen from the following courses:

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory (4 credits) and BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory (4 credits) or
- CHEM1201, CHEM1202 General Chemistry I and II (6 credits) and CHEM1203, CHEM1204 General Chemistry Laboratory I and II (2 credits) or
- PHYS2101, PHYS2102 General Physics I and II (6 credits) and PHYS2201, PHYS2202 Physics Laboratory I and II (2 credits)


## Concentration or Minor or IT Elective Courses (18 credits)

The program offers three in-demand concentration areas: network and system administration, security and forensics and web-development technology. Each concentration is 15 credits. The program also offers a 15 -credit minor in computer forensics. The courses for the three concentrations and the minor are listed below.

## Network and System Administration Concentration

This concentration is designed to prepare students to assume responsibilities involving IT system planning, installation and maintenance in business and industries. Students learn the fundamentals of operating systems, network and information security and obtain hands-on laboratory experience in these subjects. Moreover, they are encouraged to obtain professional certifications to enhance their career objectives. Several courses in this concentration may help lead to professional certification in Network+, Linux+ or Security+.

## Required Courses (15 credits)

- CSCI3274 Linux System Administration (3 credits)
- INFO2101 Computer Programming for Information Technologists I (3 credits)
- INFO4101 Data Communications and Computer Networks I (3 credits)
- INFO4278 Operating Systems (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)


## Security and Forensics Concentration

This concentration is designed to prepare students in assessing vulnerabilities, risks and cyber defense, as well as in gathering digital evidence in case of a cybercrime. The courses are developed and administered jointly by GHSCSE and the department of criminology and criminal justice in the Maxwell Becton College of Arts and Sciences. The BS in information technology degree program with security and forensics concentration met all the knowledge-unit requirements set forth toward the Center of Academic Excellence in Cyber Defense Education (CAE-CDE) designation in 2015.

## Required Courses (15 credits)

- CRIM2218 Computer Technologies and Cyber Crime ( 3 credits)
- CRIM3327 File System Forensic Analysis and Investigation (3 credits)
- CRIM4010 Computer Forensic, Software and Hardware Applications (3 credits)
- CSCI3783 Information Security (3 credits)
- INFO4278 Operating Systems (3 credits)


## Web-development Technology Concentration

This concentration is designed to prepare students in planning and developing professional websites and/or managing an existing website for businesses and e-commerce. Apart from gaining a solid knowledge of website development, students learn the applications of digital media, effective userinterface design and internet programming.

## Required Courses (15 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- INFO2106 Website Design and Management (3 credits)
- INFO3201 Human Computer Interface (3 credits)
- INFO4844 Programming for the Internet (3 credits)


## Computer Forensics Minor

Computer forensics involves the identification, preservation, extraction, interpretation and the documentation of digital evidence in criminal and civil investigations. The computer forensics minor is an interdisciplinary minor developed and administered jointly by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering and the department of criminology and criminal justice, Maxwell Becton College of Arts and Sciences. It is offered at the Metropolitan Campus, Teaneck, New Jersey. This 15 -credit minor is designedto provide students with a strong foundation in the knowledge, understanding and competencies sought by prospective employers in the area of computer forensics.

## Required Courses (12 credits)

- CRIM2218 Computer Technologies and Cyber Crime
- CRIM3327 File System Forensic Analysis and Investigation
- INFO1101 Computer Concepts and Technology
- INFO4101 Data Communications and Computer Networks I


## Elective Course (3 credits)

- CRIM4010 Computer Forensic, Software and Hardware Applications or INFO4410 Foundations of Cybersecurity

The web-development technology concentration requires students to take INFO4844 Programming for the Internet ( 3 credits), while the network and system administration concentration requires students to take INFO4278 Operating Systems ( 3 credits). The remaining four courses in each of these two concentrations are already included in the IT core requirements. INFO4278 Operating Systems is also one of the five required courses in the security and forensics concentration, but all five courses in this concentration are not part of the IT core requirements.
The program also offers a 15 -credit minor in computer forensics, which consists of 12 credits of four required courses and a 3 -credit elective to be selected between two courses. Two of the required courses and one of the two elective courses are already included in the IT core requirements. Thus, IT majors only need to take the two remaining required courses, CRIM2218 Computer Technologies and Cyber Crime ( 3 credits) and CRIM3327 File System Forensic Analysis and Investigation ( 3 credits) in order to pursue the minor in computer forensics.
To satisfy this concentration or minor or IT elective requirement, students can do one of the following:

- Take INFO4278 Operating Systems, completing the network and system administration concentration, and either:
- The remaining four courses in the security and forensics concentration, completing this concentration, and one 3-credit IT elective course.
or
- CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation, the remaining two courses in the computer forensics minor, completing this minor, and three 3-credit IT elective courses.
or
- Five 3-credit IT elective courses.
- Take CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation, completing the computer forensics minor, and four 3-credit IT elective courses.
- Take INFO4844 Programming for the Internet, completing the web-development technology concentration, and either the 15 -credit security and forensics concentration or a 15 -credit minor other than the computer forensics minor.
- Take the 15 -credit security and forensics concentration and one 3-credit IT elective course.
- Take both INFO4278 Operating Systems and INFO4844 Programming for the Internet, completing the two concentrations in network and system administration and web-development technology, and either the remaining four 3-credit courses from the security and forensics concentration to earn the third concentration or take any four 3-credit courses from this concentration and/or the IT electives, including INFO4498, INFO4499 Co-op in Information Technology ( 3 credits each) as approved by an academic adviser.
- Note that completing the security and forensics concentration also completes the computer forensics minor, but not vice versa.

Students must obtain prior approval from the GHSCSE academic adviser for any course selection. Moreover, any students intending to pursue any one of the three accelerated, combined five-year BS/MS degree programs mentioned earlier must see the academic adviser for proper selection of courses. The required courses in the three concentrations are provided above. To take any course in the concentration, a student must meet all the prerequisites for that course. They must complete 15 credits of the required courses in the concentration to be eligible for a certificate in that area.

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## Information Technology BS (Vancouver)

Information technology (IT) is credited with being a major factor in increased productivity and the driving force behind the global economy. IT professionals assess the IT needs of any organization, resolve its IT problems, determine which technologies are most appropriate for and help employ those technologies effectively. The IT discipline deals with the development and implementation of computing hardware, software, interfaces, media and web technology, networks and anything that facilitates communication and the transmittal of information.
IT students learn to maintain and upgrade computer systems and networks; evaluate current and emerging technologies; identify user needs; design user-friendly interfaces; apply, configure and manage these technologies; and assess their impacts on individual users, organizations and the environment. These skills are invaluable to any employer and in any field. Since all organizations use computers and networks, they employ IT graduates in various capacities and roles. Common job titles include computersupport specialist, web developer, systems or information security analyst, network architect, system or database administrator and chief information security officer.
The demand for IT professionals is high, especially for those with cyber and financial data security backgrounds. As such, IT professionals account for many high-paying jobs. The IT field has ample and diverse career opportunities, excellent average starting salary, outstanding median long-term salary, robust job growth and great career fulfillment.
The Bachelor of Science (BS) in information program prepares graduates for entrance into the highdemand profession of IT or graduate study. The program provides students with the comprehensive knowledge, skills and training needed to pursue careers as IT professionals in one of the most dynamic areas of modern technology. A business minor is integrated into the program whereby the program graduates will have a strong fundamental knowledge in the business processes allowing them to serve any business organization well. The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Vancouver Campus, Vancouver, British Columbia, Canada.
The BS in information technology curriculum provides students with a varied and balanced educational experience through an appropriate combination of theoretical concepts and practical applications. Students learn about media and web development, computer-based systems, computer networks, cybersecurity, database systems, computer programming, systems administration, human-computer interface, as well as a wide variety of computer applications.
The program requires the successful completion of at least 122 credits of coursework. Graduates of the program are prepared to work well in virtually all computing environments in various industries. They are familiar with a spectrum of fundamental principles and proficient in the use of modern tools and technology, and they have been trained to approach problems with creativity.
Students in the BS in information technology program can also pursue an accelerated, combined five-year BS in information technology degree and MS in applied computer science degree program, thereby saving time and money and expanding their career opportunities.

## Educational Objectives

The educational objectives of the BS in information technology program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:
1.Enter and advance in the profession of information technology, management information systems, business administration or other related fields.
2.Continue their education by obtaining professional certificates or advanced degrees in information technology, management information systems, business administration or other related fields.
3. Continue to conduct themselves as both responsible professionals and global citizens, who are aware of ethical issues and societal needs and problems.
These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the program's advisory board.

## Student Outcomes

The BS in information technology program has adopted the Student Outcomes of the Computing Accreditation Commission (CAC) of ABET as its own learning outcomes, which define the attributes, skills and knowledge that the graduates are expected to possess upon or before graduation. Each IT graduate will demonstrate the following attributes and achievements by the time of graduation:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation and administration of computing-based systems.

## Degree Plan

The program requires the successful completion of 122 credits with a minimum cumulative grade point ratio of 2.00 as described below.

## Information Technology Core Requirements (57 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI3268 Database Systems (3 credits)
- ENGR2286 Digital System Design (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- INFO1105 Software Application in Business and Technology (3 credits)
- INFO1201 Information Technology (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- INFO2106 Website Design and Management (3 credits)
- INFO3201 Human Computer Interface (3 credits)
- INFO3205 Digital Media Publishing (3 credits)
- INFO4101 Data Communication and Computer Networks I (3 credits)
- INFO4102 Data Communication and Computer Networks II (3 credits)
- INFO4201 Information Technology Needs Assessment and Management (3 credits)
- INFO4205 IT Capstone Project (3 credits)
- INFO4278 Operating Systems (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)
- INFO4844 Programming for the Internet (3 credits)


## Mathematics and Programming Requirements (15 credits)

- EGTG2201 Applied Calculus I (3 credits)
- INFO2101 Computer Programming for Information Technologists I (3 credits)
- INFO2102 Computer Programming for Information Technologists II (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH2337 Applied Statistics I (3 credits)


## Business Minor Requirements (18 credits)

- ACCT2021 Introductory Financial Accounting (3 credits)
- ECON2001 Introduction to Microeconomics (3 credits)
- FIN3250 Principles of Financial Analysis (3 credits)
- LAW2276 Business and the Law (3 credits)
- MGMT2600 Organizational Behavior (3 credits)
- MKTG2120 Principles of Marketing ( 3 credits)


## Liberal Arts Requirements (9 credits)

- EGTG2210 Technical Communications (3 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)


## Science Requirements ( 6 credits)

- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- Science Elective (3 credits)


## University Core Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Free Electives (9 credits)

- Free Elective 1 (3 credits)
- Free Elective 2 (3 credits)
- Free Elective 3 (3 credits)


## BS in Information Technology/MS in Applied Computer Science Combined Degree Program

GHSCSE offers a five-year program that allows qualified students to attain a Bachelor of Science degree in information technology and a Master of Science degree in applied computer science with a combineddegree load that is 9 credits less than that of the separate degrees, helping students save time and money. Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio of at least 2.75.

## For Information

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## Information Technology BS, Applied Computer Science MS (Vancouver)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined degree program that allows qualified students to obtain a Bachelor of Science (BS) in information technology degree and a Master of Science (MS) in applied computer science degree with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. This combined degree program is offered by GHSCSE at the Vancouver Campus of Fairleigh Dickinson University, Vancouver, British Columbia, Canada. In particular, three graduate courses: CSCI6623 Database Systems (3 credits), CSCI6638 Operating Systems ( 3 credits), and CSCI6844 Programming for the Internet ( 3 credits) or CSCI7783 Information Security, but not both, when successfully completed under the combined degree program, can be credited toward both the BS and the MS degrees.
The program features an integrated undergraduate Business Minor and allows graduate specialization in either Advanced Computer Programming or Database Administration.

Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 122 credits is required for the BS in Information Technology degree, and a minimum of 143 of credits is required for the combined BS in Information Technology/MS in Applied Computer Science degrees. In addition, for degree completion, the BS in Information Technology degree requires a minimum CGPR of 2.0 and the MS in Applied Computer Science requires a minimum CGPR of 2.75.

## Degree Plan

The total degree requirement for the combined degree program is 143 credits. The course distribution is provided below.

## Information Technology Core Requirements (57 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6638 Operating Systems (3 credits)
- ENGR2286 Digital System Design (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- INFO1105 Software Application in Business and Technology (3 credits)
- INFO1201 Information Technology (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- INFO2106 Website Design and Management (3 credits)
- INFO3201 Human Computer Interface (3 credits)
- INFO3205 Digital Media Publishing (3 credits)
- INFO4101 Data Communication and Computer Networks I (3 credits)
- INFO4102 Data Communication and Computer Networks II (3 credits)
- INFO4201 Information Technology Needs Assessment and Management (3 credits)
- INFO4205 Information Technology Capstone Project (3 credits)
- INFO4278 Operating Systems (3 credits)
- INFO4410 Foundations of Cybersecurity or CSCI7783 Information Security (3 credits)
- INFO4844 Programming for the Internet or CSCI6844 Programming for the Internet (3 credits)


## Mathematics and Programming Requirements (15 credits)

- EGTG2201 Applied Calculus I (3 credits)
- INFO2101 Computer Programming for Information Technologists I (3 credits)
- INFO2102 Computer Programming for Information Technologists II (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH2337 Applied Statistics I (3 credits)


## Business Minor Requirements (18 credits)

- ACCT2021 Introductory Financial Accounting (3 credits)
- ECON2001 Introduction to Microeconomics (3 credits)
- FIN3250 Principles of Financial Analysis (3 credits)
- LAW2276 Business and the Law (3 credits)
- MGMT2600 Organizational Behavior (3 credits)
- MKTG2120 Principles of Marketing (3 credits)


## Liberal Arts Requirements (9 credits)

- EGTG2210 Technical Communications (3 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)


## Science Requirements (6 credits)

- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- Science Elective (3 credits)


## University Core Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Free Electives (9 credits)

- Free Elective 1 (3 credits)
- Free Elective 2 (3 credits)
- Free Elective 3 (3 credits)
- Take CSCI2247 Assembly Language Programming to fulfill a prerequisite for the MS in Applied Computer Science program.


## Applied Computer Science Core Requirements (remaining 12 credits)

- CSCI6620 Software Engineering (3 credits)
- CSCI6806 Computer Science Graduate Capstone Project (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI7645 Systems Programming ( 3 credits)


## Graduate Elective Courses (9 credits)

- Students take 9 credits of graduate elective courses from one of the two specializations listed below. To pursue the advanced computer programming specialization, students must also complete CSCI6844 Programming for the Internet ( 3 credits) during their undergraduate degree program. Likewise, to pursue the database administration specialization, they must complete CSCI7783 Information Security ( 3 credits) instead of CSCI6844.


## Advanced Computer Programming Specialization (9 credits)

- CSCI6617 Computer Game Programming ( 3 credits)
- CSCI6809 Advanced Applications Development (3 credits)
- CSCI7873 Shell Programming (3 credits)


## Database Administration Specialization (9 credits)

- CSCI6882 Data Warehouse and Data Mining (3 credits)
- CSCI7741 Disaster Recovery (3 credits)
- CSCI7781 Advanced Database Systems (3 credits)


## For Information

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## Information Technology BS, Computer Engineering MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to obtain a Bachelor of Science (BS) in information technology (IT) and a Master of Science (MS) in computer engineering with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey. In particular, three graduate courses: CSCI6623 Database Systems (3 credits), CSCI6638 Operating Systems ( 3 credits) and CSCI6731 Computer Networks ( 3 credits) when successfully completed under the combined-degree program, can be credited toward both the BS and MS degrees.

Students can take one or more of the three concentrations: network and system administration, security and forensics and web-development technology in the BS in information technology program. They can also take a minor in computer forensics for all majors.
Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in information technology, and a minimum of 141 of credits is required for the combined BS in information technology/MS in computer engineering degrees. In addition, for degree completion, the BS in information technology degree requires a minimum CGPR of 2.00, while the MS in computer engineering degree requires a minimum CGPR of 2.75 .

## Professional Accreditation and Other Designation

The BS in information technology program is accredited by the Computing Accreditation Commission of ABET (https://www.abet.org). This accreditation applies only to the BS in information technology program offered by the GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
Students completing the BS in information technology program with a concentration in security and forensics are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education.

## Cooperative Education Option

Students in the BS in information technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## 1st Semester (14 credits)

- CSCI1105 Survey of Computers and Computer Software (3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- MATH1105 College Algebra (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- INFO1201 Information Technology (3 credits)
- MATH1107 Precalculus (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits


## 3rd Semester (16 credits)

- EGTG2210 Technical Communications (3 credits)
- INFO2101 Computer Programming for Information Technologists I (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- First course of the Laboratory Science Sequence Elective (4 credits)

Students are required to complete one full-year laboratory science sequence totaling 8 credits. They select the first course of the sequence from the following courses:

- BIOL1221 Biological Diversity Lecture (3 credits) andBIOL1222 Biological Diversity Lab (1 credit)
or
- CHEM1201 General Chemistry I Lecture (3 credits) and CHEM1203 General Chemistry Laboratory (1 credit)
or
- PHYS2101 General Physics I Lecture (3 credits) and PHYS2201 Physics I Laboratory (1 credit)


## 4th Semester (16 credits)

- CSCL2235 Survey of Computing Security (3 credits)
- EGTG2286 Digital System Design (3 credits)
- INFO2102 Computer Programming for Information Technologists II (3 credits)
- INFO2106 Website Design and Management (3 credits)
- Second course of the Laboratory Science Sequence Elective (4 credits)

Select the second course of the sequence in the same science discipline from the following courses:

- BIOL1233 Molecules, Cells and Genes Lecture (3 credits)
and BIOL1234 Lab: Molecules, Cells and Genes (1 credit)
or
- CHEM1202 General Chemistry II Lecture (3 credits) and CHEM1204 Lab: General Chemistry II (1 credit)
or
- PHYS2102 General Physics II Lecture (3 credits) and PHYS2202 Physics II Laboratory (1 credit)


## 5th Semester (15 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- EGTE2287 Microprocessor System Design I (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2337 Applied Statistics I (3 credits)
- Concentration or Minor or IT Elective Course (3 credits)


## 6th Semester (15 credits)

- CSCI3274 Linux System Administration (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6638 Operating Systems (3 credits)
- INFO3205 Digital Media Publishing (3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (15 credits)

- CSCI6731 Computer Networks (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)
- INFO3201 Human Computer interface (3 credits)
- INFO4844 Programming for the Internet or Concentration or Minor or IT Elective Course (3 credits)
- MATH2255 Discrete Structures (3 credits)


## 8th Semester (15 credits)

- INFO4201 Information Technology Needs Assessment and Management (3 credits)
- INFO4205 Information Technology Capstone Project (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)
- Concentration or Minor or IT Elective Courses ( 6 credits)


## 9th Semester (12 credits)

- CSCI6620 Software Engineering (3 credits)
- EENG7701 Logic System Design (3 credits)
- EENG Graduate Electives (6 credits)


## 10th Semester (9 credits)

- CSCI6603 Computer Architecture (3 credits)
- EENG7709 Embedded Systems (3 credits)
- EENG or CSCI Graduate Elective (3 credits)
- May take CSCI8891 Internship/Work Experience (up to 3 credits) or EENG8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits.


## Concentration or Minor or IT Elective Requirements (12 credits)

The program offers three in-demand concentration areas: network and system administration, security and forensics and web-development technology. Each concentration is 15 credits. The program also offers a 15 -credit minor in computer forensics. The courses for the three concentrations and in the minor are listed below.

## Network and System Administration Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI6638 Operating Systems (3 credits)
- CSCI6731 Computer Networks (3 credits)
- INFO2101 Computer Programming for Information Technologists I (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)


## Security and Forensics Concentration

- CRIM2218 Computer Technologies and Cyber Crime (3 credits)
- CRIM3327 File System Forensic Analysis and Investigation (3 credits)
- CRIM4010 Computer Forensic, Software and Hardware Applications (3 credits)
- CSCI3783 Information Security (3 credits)
- CSCI6638 Operating Systems (3 credits)


## Web-development Technology Concentration

- CGD1177 Introduction to Digital Media (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- INFO2106 Website Design and Management (3 credits)
- INFO3201 Human Computer Interface (3 credits)
- INFO4844 Programming for the Internet (3 credits)

All five required courses in the network and system administration are already included in the IT core requirements, so students automatically fulfill this concentration. Four out of the five courses in the webdevelopment technology concentration are also included in the IT core requirements, so students just need to take INFO4844 Programming for the Internet ( 3 credits) to complete this concentration. Moreover, one of the five required courses in the security and forensics concentration is also part of the IT core requirements, so students must take the remaining four courses if they want to complete this concentration.
The 15 -credit minor in computer forensics consists of 12 credits of four required courses and a 3-credit elective to be selected between two courses. Two of the required courses and one of the two elective courses are already included in the IT core requirements. Thus, IT majors only need to take the two remaining required courses, CRIM2218 Computer Technologies and Cyber Crime (3 credits) and CRIM3327 File System Forensic Analysis and Investigation (3 credits) in order to pursue the minor in computer forensics.
Students can do one of the following to complete the remaining four courses ( 12 credits):

- Take the remaining four courses in the security and forensics concentration to complete this concentration and the minor in computer forensics.
- Take INFO4844 Programming for the Internet to fulfill the web-development technology concentration and either
- Three 3-credit IT electives or
- CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation, the two remaining required courses - completing the minor in computer forensics- and one 3-credit IT elective course.
- Take CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation - completing the minor in computer forensics - and two 3-credit IT elective courses.
- Take four 3-credit IT electives.

Students must obtain prior approval from the GHSCSE academic adviser for any course selection. The required courses in the three concentrations are listed above. To take any course in the concentration, a student must meet all the prerequisites for that course. They must complete 15 credits of the required courses in the concentration to be eligible for a certificate in that area.

## Information Technology Electives

A list of recommended IT electives is provided below. Prerequisites for any courses selected must be met.

- COMM2215 Photoshop for Advertisement and Illustration (3 credits)
- COMM2648, COMM2649 Basic Video Editing Lecture and Laboratory (3 credits)
- CSCI3314 Mobile Application Development (3 credits)
- CSCI3317 Computer Game Programming ( 3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCL3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3380 UNIX Shell Programming (3 credits)
- CSCI3420 Cryptography (3 credits)
- CSCI3460 Data Warehouse and Data Mining (3 credits)
- CSCI3485 Big Data Analytics (3 credits)
- CSCI4380 Systems Development with Java (3 credits)
- EGTE3288 Microprocessor System Design II (3 credits)


## Graduate Electives (9 credits)

## EENG Graduate Electives (6 credits)

Select 6 credits (two courses) from the following:

- EENG6610 Computer Aided Analysis and Design (3 credits)
- EENG6633 Digital Signaling Processing (3 credits)
- EENG6747 Digital Communications ( 3 credits)
- EENG7702 Microprocessor Design (3 credits)
- EENG7707 Neural Networks and Fuzzy Logic Systems (3 credits)


## CSCI or EENG Graduate Electives (3 credits)

Take 3 additional credits from computer science (CSCI) or electrical engineering (EENG) courses (6000level or higher). Students may register for CSCI8891 Internship/Work Experience (up to 3 credits) or EENG8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective.

## For Information

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## Information Technology BS, Computer Science MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to obtain a Bachelor of Science (BS) in information technology (IT) and a Master of Science (MS) in computer science with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6623 Database Systems (3 credits), CSCI6638 Operating Systems
( 3 credits) and CSCI6731 Computer Networks (3 credits), when successfully completed under the combined-degree program, can be credited toward both the BS and the MS degrees. Students can take one or more of the three concentrations: network and system administration, security and forensics and web-development technology in the BS in information technology program. This combined-degree program is offered by the GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in information technology, and a minimum of 141 of credits is required for the combined BS in information technology/MS in computer science degrees. In addition, for degree completion, the BS in information technology degree requires a minimum CGPR of 2.00 , while the MS in computer science degree requires a minimum CGPR of 2.75.
GHSCSE also offers a minor in computer forensics for all majors.

## Professional Accreditation and Other Designation

The BS in information technology program is accredited by the Computing Accreditation Commission of ABET. This accreditation applies only to the BS in information technology program offered by the GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
Students completing the BS in information technology program with a concentration in security and forensics are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education.

## Cooperative Education Option

Students in the BS in information technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined-degree program is 141 credits. The course distribution is provided below.

## 1st Semester (14 credits)

- CSCI1105 Survey of Computers and Computer Software (3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- MATH1105 College Algebra (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- INFO1201 Information Technology (3 credits)
- MATH1107 Precalculus (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- EGTG2210 Technical Communications (3 credits)
- INFO2101 Computer Programming for Information Technologists I ( 3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- First course of the Laboratory Science Sequence Elective (4 credits)

Students are required to complete one full-year laboratory science sequence totaling 8 credits. They select the first course of the sequence from the following courses:

- BIOL1221 Biological Diversity Lecture (3 credits) and BIOL1222 Biological Diversity Lab (1 credit)
or
- CHEM1201 General Chemistry I Lecture (3 credits) and CHEM1203 General Chemistry Laboratory (1 credit) or
- PHYS2101 General Physics I Lecture ( 3 credits) and PHYS2201 Physics I Laboratory (1 credit)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- EGTG2286 Digital System Design (3 credits)
- INFO2102 Computer Programming for Information Technologists II (3 credits)
- INFO2106 Website Design and Management (3 credits)
- Second course of the Laboratory Science Sequence Elective (4 credits)

Select the second course of the sequence in the same science discipline from the following courses: PHYS2101, PHYS2102 General Physics I \& II and PHYS2201, PHYS2202 Physics Laboratory I \& II; CHEM1201, CHEM1202 General Chemistry I \& II and CHEM1203, CHEM1204 General Chemistry Laboratory I \& II; or BIOL1251, BIOL1252 General Biology I \& II and BIOL1253, BIOL1254 General Biology Laboratory I \& II.

## 5th Semester ( 15 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2337 Applied Statistics I (3 credits)
- Concentration or Minor or IT Elective Course (3 credits)


## 6th Semester (15 credits)

- CSCI3274 Linux System Administration (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6638 Operating Systems (3 credits)
- INFO3205 Digital Media Publishing ( 3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (15 credits)

- CSCI6731 Computer Networks (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)
- INFO3201 Human Computer interface (3 credits)
- INFO4844 Programming for the Internet or Concentration or Minor or IT Elective Course (3 credits)
- MATH2255 Discrete Structures (3 credits)


## 8th Semester (15 credits)

- INFO4201 Information Technology Needs Assessment and Management (3 credits)
- INFO4205 Information Technology Capstone Project (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)
- Concentration or Minor or IT Elective Courses (6 credits)


## 9th Semester (12 credits)

- CSCI6620 Software Engineering (3 credits)
- Graduate Electives (9 credits)


## 10th Semester (9 credits)

- CSCI6603 Computer Architecture (3 credits)
- CSCI7645 Systems Programming ( 3 credits)
- Graduate Elective (3 credits)
- May take CSCI8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits.


## Notes:

## Concentration or Minor or IT Elective Requirements (12 credits)

The program offers three in-demand concentration areas: network and system administration, security and forensics and web-development technology. Each concentration is 15 credits. All five required courses in the network and system administration are already included in the IT core requirements, so students automatically fulfill this concentration. Likewise, four out of the five courses in the webdevelopment technology concentration are also included in the IT core requirements, so students just need to take INFO4844 Programming for the Internet ( 3 credits) to complete this concentration. Moreover, one
of the five required courses in the security and forensics concentration is also part of the IT core requirements, so students must take the remaining four courses if they want to complete this concentration.
The program also offers a 15 -credit minor in computer forensics, which consists of 12 credits of four required courses and a 3-credit elective to be selected between two courses. Two of the required courses and one of the two elective courses are already included in the IT core requirements. Thus, IT majors only need to take the two remaining required courses, CRIM2218 Computer Technologies and Cyber Crime ( 3 credits) and CRIM3327 File System Forensic Analysis and Investigation (3 credits) in order to pursue the minor in computer forensics.

Students can do one of the following to complete the remaining four courses ( 12 credits):

- Take the remaining four courses in the security and forensics concentration to complete this concentration and the minor in computer forensics.
- Take INFO4844 Programming for the Internet to fulfill the web-development technology concentration and either
- Three 3-credit IT electives or
- CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation,the two remaining required courses - completing the minor in computer forensics - and one 3-credit IT elective course.
- Take CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation - completing the minor in computer forensics - and two 3-credit IT elective courses.
- Take four 3-credit IT electives.

Students must obtain prior approval from the GHSCSE academic adviser for any course selection. The required courses in the three concentrations are provided below. To take any course in the concentration, a student must meet all the prerequisites for that course. They must complete 15 credits of the required courses in the concentration to be eligible for a certificate in that area.

## Network and System Administration Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI6638 Operating Systems (3 credits)
- CSCI6731 Computer Networks (3 credits)
- INFO2101 Computer Programming for Information Technologists I (3 credits)
- INFO4410 Foundations of Cybersecurity (3 credits)


## Security and Forensics Concentration

- CRIM2218 Computer Technologies and Cyber Crime (3 credits)
- CRIM3327 File System Forensic Analysis and Investigation (3 credits)
- CRIM4010 Computer Forensic, Software and Hardware Applications (3 credits)
- CSCI3783 Information Security (3 credits)
- CSCI6638 Operating Systems (3 credits)


## Web Development Technology Concentration

- CGD1177 Introduction to Digital Media (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- INFO2106 Website Design and Management (3 credits)
- INFO3201 Human Computer Interface (3 credits)
- INFO4844 Programming for the Internet (3 credits)


## Information Technology Electives

A list of recommended IT electives is provided below. Prerequisites for any courses selected must be met.

- COMM2215 Photoshop for Advertisement and Illustration (3 credits)
- COMM2648, COMM2649 Basic Video Editing Lecture and Laboratory (3 credits)
- CSCI3314 Mobile Application Development (3 credits)
- CSCI3317 Computer Game Programming ( 3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCI3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3380 UNIX Shell Programming (3 credits)
- CSCI3420 Cryptography ( 3 credits)
- CSCI3460 Data Warehouse and Data Mining (3 credits)
- CSCI3485 Big Data Analytics (3 credits)
- CSCI4380 Systems Development with Java (3 credits)
- EGTE3288 Microprocessor System Design II (3 credits)


## Graduate Electives (12 credits)

Graduate elective courses in computer science are listed with CSCI-prefixed course numbers ranging from CSCI6617 to CSCI8891. Students may register for CSCI8891 Internship/Work Experience (3 credits) only after completing the BS degree and 18 graduate credits. The internship will count as a onecourse elective. Students may also take up to 6 credits of EENG-prefixed courses in electrical engineering (EENG6600-level or above). Any prerequisites for the electives must be fulfilled before the electives are taken. Students should consult an academic adviser for additional details regarding electives and their prerequisites if any or consult the FDU Graduate Studies catalog.

## For Information

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## Program Coordinators

Kalyan Mondal, Director of Center for Cybersecurity and Information Assurance, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering

## Information Technology BS, Cybersecurity and Information Assurance MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program at the Metropolitan Campus, Teaneck, New Jersey. It allows qualified students to obtain a Bachelor of Science (BS) in information technology and a Master of Science (MS) in cybersecurity and information assurance with a combined course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. This combined-degree program is offered by the GHSCSE at the Metropolitan Campus, Teaneck, New Jersey. In particular, three graduate courses: CSCI6638 Operating Systems ( 3 credits), CSCI6731 Computer Networks and CSCI6738 Cybersecurity, when successfully completed under the combined-degree program, can be credited toward both the BS and the MS degrees. Students can take one or more of the three concentrations: network and system administration, security and forensics and web-development technology in the BS in information technology program. They can also take a minor in computer forensics.
Students must register for this program upon completing at least 45 credits and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in information technology degree, and a minimum of 141 of credits is required for the combined BS in information technology/MS in cybersecurity and information assurance degrees. In addition, for degree completion, the BS in information technology degree requires a minimum CGPR of 2.00, while the MS in cybersecurity and information assurance degree requires a minimum CGPR of 2.75.

## Professional Accreditation and Other Designation

The BS in information technology program is accredited by the Computing Accreditation Commission of ABET (https://www.abet.org). This accreditation applies only to the BS in information technology program offered by the GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.

Students completing the BS in information technology program with a concentration in security and forensics are eligible to receive a Certificate of Completion of a National Security Agency (NSA) and Department of Homeland Security (DHS)-designated CAE-CDE program of study from FDU's Center for Cybersecurity and Information Assurance (CCIA). CAE-CDE denotes the Center for Academic Excellence for Cyber Defense Education.

## Cooperative Education Option

Students in the BS in information technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## 1st Semester (14 credits)

- CSCI1105 Survey of Computers and Computer Software ( 3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- MATH1105 College Algebra (4 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- CGD1177 Introduction to Digital Media (3 credits)
- INFO1201 Information Technology (3 credits)
- MATH1107 Precalculus (4 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- EGTG2210 Technical Communications (3 credits)
- INFO2101 Computer Programming for Information Technologists I ( 3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- First course of the Laboratory Science Sequence Elective (4 credits)

Students are required to complete one full-year laboratory science sequence totaling 8 credits. They select the first course of the sequence from the following courses:

- BIOL1221 Biological Diversity Lecture (3 credits) andBIOL1222 Biological Diversity Lab (1 credit)
- CHEM1201 General Chemistry I Lecture (3 credits) and CHEM1203 General Chemistry Laboratory (1 credit)
or
- PHYS2101 General Physics I Lecture (3 credits) and PHYS2201 Physics I Laboratory (1 credit)


## 4th Semester (16 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- EGTG2286 Digital System Design (3 credits)
- INFO2102 Computer Programming for Information Technologists II (3 credits)
- INFO2106 Website Design and Management (3 credits)
- Second course of the Laboratory Science Sequence Elective (4 credits)

Select the second course of the sequence in the same science discipline from the following courses:

- BIOL1233 Molecules, Cells and Genes Lecture (3 credits) and BIOL1234 Lab: Molecules, Cells and Genes (1 credit) or
- CHEM1202 General Chemistry II Lecture ( 3 credits)
and CHEM1204 Lab: General Chemistry II (1 credit)
or
- PHYS2102 General Physics II Lecture (3 credits)
and PHYS2202 Physics II Laboratory (1 credit)


## 5th Semester (15 credits)

- CSCI2234 Data Structures and Algorithms (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2337 Applied Statistics I (3 credits)
- Concentration or Minor or IT Elective Course (3 credits)


## 6th Semester (15 credits)

- CSCI3268 Database Systems (3 credits)
- CSCI3274 Linux System Administration (3 credits)
- CSCI6638 Operating Systems (3 credits)
- INFO3205 Digital Media Publishing (3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (15 credits)

- CSCI6731 Computer Networks (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)
- INFO3201 Human Computer interface (3 credits)
- INFO4844 Programming for the Internet or Concentration or Minor or IT Elective Course (3 credits)
- MATH2255 Discrete Structures (3 credits)


## 8th Semester (15 credits)

- CSCI6738 Cybersecurity (3 credits)
- INFO4201 Information Technology Needs Assessment and Management (3 credits)
- INFO4205 Information Technology Capstone Project (3 credits)
- Concentration or Minor or IT Elective Courses ( 6 credits)


## 9th Semester (12 credits)

- CSCI6747 Applied Cryptography ( 3 credits)
- CSCI6870 Penetration Testing and Vulnerability Analysis (3 credits)
- Graduate Electives (6 credits)


## 10th Semester (9 credits)

- CSCI6807 Cybersecurity and Information Assurance Graduate Capstone Project (3 credits)
- Graduate Electives (6 credits)
- May take CSCI8891 Internship/Work Experience (up to 3 credits) after completing the BS degree and 18 graduate credits.


## Concentration or Minor or IT Elective Requirements (12 credits)

The program offers three in-demand concentration areas: network and system administration, security and forensics and web-development technology. Each concentration is 15 credits. The program also offers a minor in computer forensics. The courses for the three concentrations and the minor are listed below.

## Network and System Administration Concentration

- CSCI3274 Linux System Administration (3 credits)
- CSCI6638 Operating Systems (3 credits)
- CSCI6731 Computer Networks (3 credits)
- CSCI6738 Cybersecurity ( 3 credits)
- INFO2101 Computer Programming for Information Technologists I (3 credits)


## Security and Forensics Concentration

- CRIM2218 Computer Technologies and Cyber Crime ( 3 credits)
- CRIM3327 File System Forensic Analysis and Investigation (3 credits)
- CRIM4010 Computer Forensic, Software and Hardware Applications (3 credits)
- CSCI3783 Information Security (3 credits)
- CSCI6638 Operating Systems (3 credits)


## Web-development Technology Concentration

- CGD1177 Introduction to Digital Media (3 credits)
- INFO2105 Internet and Web Applications (3 credits)
- INFO2106 Website Design and Management (3 credits)
- INFO3201 Human Computer Interface ( 3 credits)
- INFO4844 Programming for the Internet (3 credits)


## Computer Forensics Minor

## Required Courses (12 credits)

- CRIM2218 Computer Technologies and Cyber Crime (3 credits)
- CRIM3327 File System Forensic Analysis and Investigation (3 credits)
- INFO1101 Computer Concepts and Technology ( 3 credits)
- INFO4101 Data Communications and Computer Networks I (3 credits)


## Elective Course (3 credits)

- CRIM4010 Computer Forensic, Software and Hardware Applications (3 credits) or CSCI6738 Cybersecurity (3 credits)

All five required courses in the network and system administration are already included in the IT core requirements, so students automatically fulfill this concentration. Four out of the five courses in the webdevelopment technology concentration are also included in the IT core requirements, so students just need to take INFO4844 Programming for the Internet ( 3 credits) to complete this concentration. Moreover, one of the five required courses in the security and forensics concentration is also part of the IT core requirements, so students must take the remaining four courses if they want to complete this concentration.
The 15 -credit minor in computer forensics consists of 12 credits of four required courses and a 3-credit elective to be selected between two courses. Two of the required courses and one of the two elective courses are already included in the IT core requirements. Thus, IT majors only need to take the two remaining required courses, CRIM2218 Computer Technologies and Cyber Crime ( 3 credits) and CRIM3327 File System Forensic Analysis and Investigation (3 credits) in order to pursue the minor in computer forensics.
Students can do one of the following to complete the remaining four courses ( 12 credits):

- Take the remaining four courses in the security and forensics concentration to complete this concentration and the minor in computer forensics.
- Take INFO4844 Programming for the Internet to fulfill the web-development technology concentration and either
- Three 3-credit IT electives or
- CRIM2218 Computer Technologies and Cyber Crime andCRIM3327 File System Forensic Analysis and Investigation, the two remaining required courses - completing the minor in computer forensics- and one 3-credit IT elective course.
- Take CRIM2218 Computer Technologies and Cyber Crime and CRIM3327 File System Forensic Analysis and Investigation - completing the minor in computer forensics - and two 3-credit IT elective courses.
- Take four 3-credit IT electives.

Students must obtain prior approval from the GHSCSE academic adviser for any course selection. The required courses in the three concentrations are listed above. To take any course in the concentration, a student must meet all the prerequisites for that course. They must complete 15 credits of the required courses in the concentration to be eligible for a certificate in that area.

## Information Technology Electives

A list of recommended IT electives is provided below. Prerequisites for any courses selected must be met.

- COMM2215 Photoshop for Advertisement and Illustration (3 credits)
- COMM2648, COMM2649 Basic Video Editing Lecture and Laboratory (3 credits)
- CSCI3314 Mobile Application Development (3 credits)
- CSCI3317 Computer Game Programming (3 credits)
- CSCI3331 Advanced Database (3 credits)
- CSCI3345 Firewalls and Intrusion Detection Systems (3 credits)
- CSCI3380 UNIX Shell Programming ( 3 credits)
- CSCI3420 Cryptography (3 credits)
- CSCI3460 Data Warehouse and Data Mining (3 credits)
- CSCI3485 Big Data Analytics (3 credits)
- CSCI4380 Systems Development with Java (3 credits)
- EGTE3288 Microprocessor System Design II (3 credits)


## Graduate Elective Courses (12 credits)

Students are encouraged to take three courses ( 9 credits) from one of the following two focus areas and one more course ( 3 credits) from the list of approved electives as provided below. Alternatively, students can also take any four courses ( 12 credits) from the approved electives based on their interests and needs. Students have the option of registering for CSCI8891 Internship/Work Experience (3 credits) after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective.

## Electives for Network Security Administration Focus

- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)


## Electives for Secure Software Development Focus

- CSCI6620 Software Engineering (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)


## Approved Electives

- CSCI6620 Software Engineering (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6751 Artificial Intelligence (3 credits)
- CSCI6753 Machine Learning (3 credits)
- CSCI6811 Advanced Special Projects (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)
- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)
- CSCI7783 Information Security (3 credits)
- CSCI7870 Linux System Administration (3 credits)
- CSCI8891 Internship/Work Experience (3 credits)


## For Information

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## Liberal Arts AA

The Associate in Arts (AA) in liberal arts degree is a 60-credit, undergraduate degree offered entirely online. The AA degree is ideally suited to students, including adult learners, with little or no previous
college credit. The program offers a timely and cost-effective way to earn an associate's degree as either a terminal degree or as a stepping stone to a bachelor's degree.
The AA in liberal arts program is offered by the Maxwell Becton College of Arts and Sciences online.

## Admission Requirements

- Completed online application. There is no fee to apply.
- Proof of a high-school diploma (official transcript) or GED.
- Official transcripts from all previously attended colleges or universities (if applicable).
- No SAT or ACT scores required.

The AA is designed for those with few (up to 30) or no transfer credits and can eventually roll directly into the Bachelor of Arts Degree Completion Program.

## Online AA Enrollment

The online AA option consists of registration forms and processes that are particular to this modality. The following links contain forms to assist students with enrollment in online courses.

- Course registration form
- Course add/drop form
- Application for readmission
- AA Checksheet
- Online programs reference guide
- Billing and payment FAQs
- Corporate reimbursement deferred payment plan


## Degree Plan

## Communication, Mathematics and Computer Skills (12 credits)

The ability to use the English language, the ability to understand and use basic mathematical symbols and the mastery of basic computer skills are required of all students in the program.

- ENGL1111 Literature and Composition I
- ENGL1112 Literature and Composition II
- MATH1131 College Mathematics I or MATH1141 Introduction to Mathematical Methods
- MIS1135 Introduction to Computers


## Liberal Arts and Sciences (27 credits)

Students are exposed to social, scientific, aesthetic, moral and religious ideas.

## Humanities (18 credits)

Courses in four areas such as:

- Cultural Arts or Film
- Fine Arts
- Literature
- History
- Philosophy


## Social Sciences (6 credits)

Courses in two areas such as:

- Economics
- Psychology
- Sociology


## Natural Sciences (3 credits)

A course in one of the following areas:

- Life Sciences
- Earth and Planetary Sciences
- Physics


## University Core ( 6 credits)

- CORE2003 Cross-cultural Perspectives
- CORE3004 Global Issues


## Free Electives (15-18 credits)

Students should consult with their adviser for help in selecting from the many varied course offerings. Electives can be chosen to form a specialization in business or public service administration. Certain courses may be important in the development of an upper-division major. Students at Petrocelli Center for Continuing Studies are permitted to take select electives as part of the AA undergraduate program from varied course offerings including: cybersecurity, health and human resources, general science, data analytics, digital media, business, public administration, applied technology and more.

## AA For High School Graduates

- Leading to the Associate in Arts degree, this full-time program of study offers the personal support and attention of a smaller college environment.
- As an AA student, students can take full advantage of University resources and activities academic, social, cultural and recreational - that are available to FDU undergraduates.
- Upon successful completion of the program, students can transfer seamlessly into many of the nearly 100 undergraduate majors and concentrations offered at the University's Metropolitan Campus (Teaneck, New Jersey) or Florham Campus (Madison, New Jersey).
- As a graduate of the program, students will automatically receive an annually renewable $\mathbf{\$ 4 , 0 0 0}$ Alumni Award to continue their studies at FDU.


## For Information

Francisco Parra, Advising Counselor for Undergraduate Programs, Petrocelli Center for Continuing Studies fparra@fdu.edu 201-692-2740

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## Liberal Arts AA: HACER

The Associate in Arts (AA) in liberal arts degree is a 60-credit, undergraduate degree offered to students in the HACER (Hispanics Achieving College Education Recognition) program. The AA degree is ideally suited to Latinx students with little to no college experience who continue to need English as a Second Language support, or ESL, at the university level. HACER students are supported by bilingual staff and faculty who are committed to student success. The program offers a timely and cost-effective way to earn an associate's degree as either a terminal degree or as a stepping stone to a bachelor's degree.
The AA in liberal arts program is offered by the Maxwell Becton College of Arts and Sciences at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- Completed online application. There is no fee to apply.
- Proof of a high-school diploma (official transcript) or GED.
- Admissions interview.
- English Proficiency Exam.
- No SAT or ACT scores required.


## Degree Plan

## English as a Second Language (ESL) (noncredit)

Students take a placement test to determine in which ESL level they should be placed and then progress from there. There are seven ESL levels offered which cover the four domains of language: speaking, listening, writing and reading. Students may take the following:

- ESL0101 Speaking and Structure Practice
- ESL0102 Reading and Writing
- ESL0103 Guided Research
- ESL0104 Speaking/Structural Practice II
- ESL0105 Reading and Writing II
- ESL0106 Guided Research II
- ESL0107 Speaking/Structural Practice III


## Written Communication (6 credits required)

The ability to use the English language in written form is required of all students. The sequence is as follows:

- ENGL1003 Introduction to Academic Writing (elective) 3 credits
- ENGL1004 Introduction to Academic Writing II (elective) 3 credits
- WRIT1002 Composition I: Rhetoric and Inquiry (fulfills written communication requirement) 3 credits
- WRIT1003 Composition II: Research and Argument (fulfills written communication requirement) 3 credits

Students who place into ENGL1003 and ENGL1004 must take those courses in order to build their skills and successfully complete WRIT1002 and WRIT1003.

## Speech and Professional Communications (3 credits)

The ability to give oral presentations and to communicate professionally is required of all students. Students may take one of the following courses:

- COMM2101 Professional Communication (3 credits)
- SPCH1155 Public Speaking (3 credits)


## Quantitative Analysis (6 credits)

Students must be able to understand and use basic mathematical symbols and must also have mastery of basic computer skills. Students must take at least 3 credits in a college-level math course, including one of the following:

- DSCI1234 Math for Business Decisions (3 credits)
- MATH1131 College Math I (3 credits)
- MATH1105 College Algebra (4 credits)
- MATH1107 Precalculus (4 credits)
- PSYC2210 Psychological Statistics (3 credits)

An additional three credits may be taken as a second math or computer course from subjects CSCI, MATH, or MIS.

## Liberal Arts and Sciences (24 credits)

Students are exposed to social, scientific, aesthetic, moral and religious ideas:

## Humanities (12 credits)

Courses in six areas such as:

- Arts
- History
- Humanities
- Latino Studies
- Literature
- Spanish


## Ethical and Moral (3 credits)

## Courses in one of three areas:

- Organization
- Philosophy
- Religion


## Social Sciences (6 credits)

Courses in two areas such as:

- Accounting
- Communications
- Criminal Justice
- Economics
- Management
- Political Science
- Psychology

Natural Sciences (3 credits)
A course in one of the following areas:

- Biology
- Chemistry
- Environmental Science
- Marine Biology
- Physics


## Latino Leadership (4 credits)

Students are exposed to Latinx leaders and Latinx history, as well as issues facing the Latinx community in the U.S. They also put into practice-leadership and team-building theories. Students are required to take each of the following:

- PADM1115 Latino Leadership Seminar I
- PADM1116 Latino Leadership Seminar II
- PADM1117 Sophomore Latino Leadership Seminar I
- PADM1118 Sophomore Latino Leadership Seminar II


## University Core ( 8 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Free Electives (9 credits)

Students should consult with their adviser for help in selecting from the many varied course offerings, particularly as they consider their intended majors for their bachelor's degree.

## For Information

Irene Oujo, Executive Director, Hispanic Center

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## Liberal Arts AA: Latino Promise

The Associate in Arts (AA) in liberal arts degree is a 60 -credit, undergraduate degree offered to students in the Latino Promise program. The AA degree is ideally suited to Latinx students with little to no college experience. Latino Promise students are supported by bilingual staff and faculty who are committed to student success. The program offers a timely and cost-effective way to earn an associate's degree as either a terminal degree or as a stepping stone to a bachelor's degree.
The AA in liberal arts program is offered by the Maxwell Becton College of Arts and Sciences at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- Completed online application. There is no fee to apply.
- Proof of a high-school diploma (official transcript) or GED.
- Admissions interview
- No SAT or ACT scores required.


## Degree Plan

## Written Communication ( 6 credits required)

The ability to use the English language in written form is required of all students. The sequence is as follows:

- WRIT1000 Fundamentals of Writing (elective) 3 credits
- WRIT1001 Introduction to Composition (elective) 3 credits
- WRIT1002 Composition I: Rhetoric and Inquiry (fulfills written communication requirement) 3 credits
- WRIT1003 Composition II: Research and Argument (fulfills written communication requirement) 3 credits

Students who place into WRIT1000 and WRIT1001 must take those courses in order to build their skills and successfully complete WRIT1002 and WRIT1003.

## Speech and Professional Communications (3 credits)

The ability to give oral presentations and to communicate professionally is required of all students. Students may take one of the following courses:

- COMM2101 Professional Communication (3 credits)
- SPCH1155 Public Speaking (3 credits)


## Quantitative Analysis (6 credits)

Students must be able to understand and use basic mathematical symbols and must also have mastery of basic computer skills. Students must take at least 3 credits in a college-level math course, including one of the following:

- DSCI1234 Math for Business Decisions (3 credits)
- MATH1131 College Math I (3 credits)
- MATH1105 College Algebra (4 credits)
- MATH1107 Precalculus (4 credits)
- PSYC2210 Psychological Statistics (3 credits)

An additional three credits may be taken as a second math or computer course from subjects CSCI, MATH or MIS.

## Liberal Arts and Sciences (24 credits)

Students are exposed to social, scientific, aesthetic, moral and religious ideas:

## Humanities (12 credits)

Courses in six areas such as:

- Arts
- History
- Humanities
- Latino Studies
- Literature
- Spanish


## Ethical and Moral (3 credits)

Courses in one of three areas:

- Organization
- Philosophy
- Religion


## Social Sciences (6 credits)

Courses in two areas such as:

- Accounting
- Communications
- Criminal Justice
- Economics
- Management
- Political Science
- Psychology


## Natural Sciences (3 credits)

A course in one of the following areas:

- Biology
- Chemistry
- Environmental Science
- Marine Biology
- Physics


## Latino Leadership (4 credits)

Students are exposed to Latinx leaders and Latinx history, as well as issues facing the Latinx community in the U.S. They also put into practice leadership and team building theories. Students are required to take each of the following:

- PADM1115 Latino Leadership Seminar I
- PADM1116 Latino Leadership Seminar II
- PADM1117 Sophomore Latino Leadership Seminar I
- PADM1118 Sophomore Latino Leadership Seminar II


## University Core (8 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Free Electives (9 credits)

Students should consult with their adviser for help in selecting from the many varied course offerings, particularly as they consider their intended majors for their bachelor's degree.

## For Information

## Liberal Arts AA: Puerta AI Futuro

The Associate in Arts (AA) in liberal arts degree is a 60 -credit, undergraduate degree offered to students in the Puerta Al Futuro program. The AA degree is ideally suited to Latinx students with little to no college experience who continue to need English as a Second Language support, or ESL, at the university level. Puerta Al Futuro students are supported by a bilingual staff and faculty who are committed to student success. The program offers a timely and cost-effective way to earn an associate's degree as either a terminal degree or as a stepping stone to a bachelor's degree.
The AA in liberal arts program is offered by the Maxwell Becton College of Arts and Sciences at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- Completed online application. There is no fee to apply.
- ESL Proficiency Exam.
- Proof of a high-school diploma (official transcript) or GED.
- Official college-level transcripts, if applicable.


## Degree Plan

## English as a Second Language (ESL) (noncredit)

Students take a placement test to determine in which ESL level they should be placed and then progress from there. There are seven ESL levels offered which cover the four domains of language: speaking, listening, writing and reading. Students may take the following:

- ESL0101 Speaking and Structure Practice
- ESL0102 Reading and Writing
- ESL0103 Guided Research
- ESL0104 Speaking/Structural Practice II
- ESL0105 Reading and Writing II
- ESL0106 Guided Research II
- ESL0107 Speaking/Structural Practice III

Communication, Mathematics and Computer Skills (27 credits)

The ability to use the English language, the ability to understand and use basic mathematical symbols and the mastery of basic computer skills are required of all students in the program.

## Written Communication (12 credits required)

The ability to use the English language in written form is required of all students. The sequence is as follows:

- ENGL1003 Introduction to Academic Writing (elective) 3 credits
- ENGL1004 Introduction to Academic Writing II (elective) 3 credits
- WRIT1002 Composition I: Rhetoric and Inquiry (fulfills written communication requirement) 3 credits
- WRIT1003 Composition II: Research and Argument (fulfills written communication requirement) 3 credits

Students who place into ENGL1003 and ENGL1004 must take those courses in order to build their skills and successfully complete WRIT1002 and WRIT1003.

## Speech and Professional Communications (12 credits)

The ability to give oral presentations and to communicate professionally is required of all students. Students must take all three of the following courses:

- SPCH1111 Standard American Spoken English I (3 credits)
- SPCH1122 Standard American Spoken English II (3 credits)
- SPCH1155 Public Speaking (3 credits)


## Quantitative Analysis (3 credits)

Students must take the following course:

- MATH1131 College Math I


## Math, Technology, Statistics (3 credits)

Students must take the following course:

- CSCI1145 Computer Science Fundamentals


## Liberal Arts and Sciences (24 credits)

Students are exposed to social, scientific, aesthetic, moral and religious ideas.

## Ethical and Moral (3 credits)

- PHIL2255 Business Ethics


## Scientific Analysis (3 credits)

- BIOL1105 The Human Environment


## Social and Behavioral (6 credits)

- ECON1121 Macroeconomics (3 credits)
- PSYC1201 General Psychology (3 credits)


## Humanities (6 credits)

- HIST1150 World History to 1500 (3 credits)
- HIST1151 World History Since 1500 (3 credits)


## Arts (3 credits)

- ART1062 Latino Cultural Arts


## Business Management (3 credits)

- MGMT1111 Introduction to Business Management


## University Core (9 credits)

- EPS1301 Success Skills Adult Learners (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## For Information

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## Liberal Arts BAIS: Puerta AI Futuro

The Bachelor of Arts in Individualized Studies degree is a 120 -credit, undergraduate degree offered to students in the Puerta Al Futuro program. The BAIS degree is ideally suited to Latinx students with some college experience who continue to need English language support, or ESL, at the university level. Puerta Al Futuro students are supported by bilingual staff and faculty who are committed to student success.
The BAIS in liberal arts program is offered by the Maxwell Becton College of Arts and Sciences at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- Completed online application. There is no fee to apply.
- ESL Proficiency Exam.
- Proof of a high-school diploma (official transcript) or GED.
- Official college-level transcripts, if applicable.


## Degree Plan

## English as a Second Language (ESL) (noncredit)

Students take a placement test to determine in which ESL level they should be placed and then progress from there. There are seven ESL levels offered which cover the four domains of language: speaking, listening, writing and reading. Students may take the following:

- ESL0101 Speaking and Structure Practice
- ESL0102 Reading and Writing
- ESL0103 Guided Research
- ESL0104 Speaking/Structural Practice II
- ESL0105 Reading and Writing II
- ESL0106 Guided Research II
- ESL0107 Speaking/Structural Practice III


## Written and Speech/Professional Communication (24 credits required)

The ability to use the English language in written form is required of all students. The sequence is as follows:

- ENGL1003 Introduction to Academic Writing (elective) 3 credits
- ENGL1004 Introduction to Academic Writing II (elective) 3 credits
- WRIT1002 Composition I: Rhetoric and Inquiry (fulfills written communication requirement) 3 credits
- WRIT1003 Composition II: Research and Argument (fulfills written communication requirement) 3 credits

Students who place into ENGL1003 and ENGL1004 must take those courses in order to build their skills and successfully complete WRIT1002 and WRIT1003.
The ability to give oral presentations and to communicate professionally is required of all students. Students must take all three of the following courses:

- COMM2099 Professional Communications (3 credits)
- SPCH1111 Standard American Spoken English I (3 credits)
- SPCH1122 Standard American Spoken English II (3 credits)
- SPCH1155 Public Speaking (3 credits)


## Quantitative Analysis (6 credits)

Students must take the following course:

- MATH1131 College Math I

Students must also complete 3 credits from one of the following areas: Math, Technology or Statistics. Students must take one of the following:

- CSCI1145 Computer Science Fundamentals
- PHIL1101 Introduction to Logic (3 credits)
- PSYC2210 Statistics (3 credits)


## Liberal Arts and Sciences (27 credits)

Students are exposed to social, scientific, aesthetic, moral and religious ideas.

## Ethical and Moral (3 credits)

Students may take any PHIL course or one of the following:

- ACCT1133 Business Law I (3 credits)
- LAW2276 Business and the Law (3 credits)
- ORGS1100 Ethical Issues in Social Institutions (3 credits)


## Scientific Analysis (6 credits)

Students must earn 6 credits by taking two courses in the following areas: BIOL, CHEM, ENVR, PHYS or SUST. Please note that courses do not need to be from the same disciplines.

## Social and Behavioral ( 6 credits)

Students must earn 6 credits in the following disciplines: CRIM, COMM, ECON, GEOG, GOVT, ORGS, POLS, PSYC, SOCI or 1100 (Ethical Issues in Social Institutions). Three credits must be earned at the 2000-level or above.

## Humanities (6 credits)

Students must earn 6 credits from the following disciplines ARTH, CINE (not filmmaking), HIST, HUMN, LITS, PHIL or RELI. Courses may be in the same discipline, but 3 credits must be 2000 level or above.

## Arts (6 credits)

Students must earn 6 credits from the following disciplines: ART, DAN, FILM, MUSIC, SPAN or THEA.

## University Requirements (9 credits)

- EPS1301 Success Skills Adult Learners (3 credits)
- UNIV2001 Cross Cultural Perspectives ( 3 credits)
- UNIV2002 Global Issues (3 credits)


## International Perspective (3 credits)

Students must take 3 credits from one of the following disciplines: ACCT, BUSI, DAN, ECON, FILM, IBUS, PHIL or SOCI. Alternately, students may take 3 credits from one of the following:

- HIST2391 Political History of Latin America I (3 credits)
- HIST2392 Political History of Latin America II (3 credits)


## Free Electives (33 credits)

Students should consult with their adviser for help in selecting from the many varied course offerings. Students should take 21 free electives at the 3000 level or above; an additional 12 credits may be taken at any level.

## Undeclared Specialization (18 credits)

The Specialized Studies Area consists of 18 credits in a single discipline or combination of disciplines approved by an adviser and recognized as a cohesive concentration. A minimum of 9 credits must be taken at FDU and must be 3000 -level or above. Students must complete a specialization in order to graduate. Students may choose from one of the following specializations: Business, Psychology, Spanish, Technology.

## For Information

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## Literature BA

The most important skills that the study of literature teaches are analytic and synthetic skills. In learning to read carefully and analytically, students learn to ask hard questions both of the work and of themselves. And as students seek to discover the relationships between the ideas and images they uncover in a work, their ultimate goal is to see the whole - to see how the parts work together to make the piece what it is. In grappling with the complex and difficult ideas contained in literature, students learn to accept the multiple dimensions and ambiguity that are so often present in life.
Finally, the study of literature will also help develop the students' writing abilities as they come to value the written word and understand its power to communicate.
The Bachelor of Arts in literature is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.
Qualified students may complete part of their undergraduate degree requirements at Wroxton College in England.

## Required Major Courses (18 credits)

- LITS1000 Introduction to Literary Analysis
- LITS4001 Senior Seminar

Choose 1 from each pair below, plus one additional (4 courses total)

- LITS2101 British and European Literature I
- LITS2102 British and European Literature II
- LITS2201 World Literature I
- LITS2202 World Literature II
- LITS2301 American Literature I
- LITS2302 American Literature II


## Elective Courses (21 credits)

Electives should be LITS or ENGL (Wroxton) courses. HUMN or LANG courses may be appropriate to substitute with permission. At most, one 1000-level course can be counted here.
Minor is optional. Additional 15 credits of free electives will need to be taken in lieu of a minor.

## QUEST/MAT Options

- BA in Literature MAT/QUEST Preschool to Grade 3
- BA in Literature MAT/QUEST Elementary Education
- BA in Literature MAT/QUEST Secondary Education
- BA in Literature MAT/QUEST Preschool to Grade 3 - Teacher of Students with Disabilities
- BA in Literature MAT/QUEST Secondary Education - Teacher of Students with Disabilities
- BA in Literature MAT/QUEST Elementary Special Education
- BA in Literature MAT/QUEST ESL Program
- BA in Literature MAT/QUEST Elementary Education-ESL
- BA in Literature MAT/QUEST Secondary Education-ESL

The degree plan for QUEST is the same as above, except that instead of 21 credits of literature electives, the requirement is 15 credits of electives, plus:

- LITS2400 Children's Literature (for elementary education programs) or LITS2401 Young Adult Literature (for secondary education programs)
- A course on Shakespeare: options typically include LITS3213 Shakespeare I, LITS3214 Shakespeare II and (at Wroxton College) ENGL3422 "The Play's the Thing"
- LITS2030 English Grammar or LITS2031 The English Language


## General Education Requirements (Florham Campus)

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language (3 to 4 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- ___ 1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## General Education Requirements (Metropolitan Campus)

Students pursuing a Bachelor of Arts degree at the Metropolitan Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Florham Campus should consult the BA Major, Florham Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (6 to 7 credits)

Students must take a math placement test (developmental course work may be required).
Select one from the following:

- MATH1101 Comprehensive Mathematics
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I

For the second course, students take 3 credits at a higher level or in a different prefix than the first course taken for Quantitative Analysis. Students must fulfill any applicable prerequisites for a course before taking it. Select from following list of approved courses:

- CENG1205 Surveying I
- CENG1245 Construction Materials and Systems
- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I or Any CSCI course above1201
- EGTC1205 Surveying I
- EGTC1245 Construction Materials and Systems
- EGTC3261 Estimating I
- EGTM2232 Mechanical Measurement and Devices
- ENGR1301 Engineering Practices, Graphics and Design
- ENGR2286 Digital System Design
- ENGR3000 Modern Technologies: Principles, Applications and Impacts
- MATH1105 College Algebra
- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2243 Statistical Programming
- MATH2337 Applied Statistics I or PSYC2210 Psychological Statistics
- MENG2235 Manufacturing Processes
- Any Information Technology (INFO) course


## IV. Ethical and Moral Analysis (3 credits)

- Any 3-credit Philosophy (PHIL) or Religion (RELI) course or a course that has "ethics" in its title or a course designated as meeting the requirement within a major.


## V. Modern Language (3 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test.

- $\qquad$ 1102 (Introductory Level II)
- For students beginning a new language, Elementary II (1102) fulfills the language requirement.
- For students taking a language previously studied, successful completion of Intermediate I (2103) fulfills this requirement.
- Students who place above Intermediate I (2103) are excused from the language requirement and replace the 3 credits with free electives.


## VI. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline.

## VIII. Natural Sciences (8 credits)

Choose two, 4-credit laboratory science courses from the following disciplines: Biology (BIOL), Chemistry (CHEM), Environmental Sciences (ENVR), Marine Biology (MBIO) or Physics (PHYS). Students must also complete the corequisite lab.

## IX. Arts (6 credits)

Choose two, 3-credit courses from the following disciplines: Art (ART), Graphic Design (CGD), Creative Writing (CREW) or Theater (THEA).

# For Information 

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## Management BS

The BS in management is designed for students who wish to develop the interpersonal and management skills they can use starting with their first professional job, as well as developing a long-term perspective and value system, which will serve them their entire careers.
The BS in management is offered by the department of management and entrepreneurship, Silberman College of Business, at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey. The college is accredited by AACSB International.

The department's course offerings emphasize:

- An approach to classroom instruction that engages the student in the learning process,
- Concentration on knowledge and skill sets that are practical and useable,
- A global perspective that emphasizes ethics and long-term sustainable business practices and
- The use of team-based teaching and learning.


## Degree Plan

Students pursuing a BS in management will be required to choose a concentration in eitherhuman resources managementorleadership. To attain a BS in management, students must take four required management courses in addition to three courses from either concentration.
All students enrolled in the Bachelor of Science degree program must complete the University and Business Core Curriculum in addition to the major requirements listed below. Any student interested in pursuing a minor should refer to the list of business minors offered at the Silberman College of Business.

## Required Management Courses (12 credits)

- MGMT3100 Managerial Ethics
- MGMT3371 International Management
- MGMT3610 Leading Teams
- MGMT3700 Human Resources Management


## Human Resource Management Concentration

The Silberman College of Business human resource management students are equipped with a wide knowledge of various human resource management functions including recruitment, selection, training, performance evaluation, compensation and legal concerns.
Through discussion, hands-on learning and exposure to human resource (HR) professionals, students learn how to manage various HR functions and develop an understanding of how human resources plays a vital role in the sustainable strategic management of companies.
The career- and skills-related focus of this concentration helps students develop the skills needed for successful careers in human resource management.

## Required Courses

- MGMT3710 Strategic Staffing
- MGMT3720 Training, Development and Performance Management
- MGMT4730 Strategic Human Resource Management

MGMT4499 Internship in Human Resources may be used as a substitute for either MGMT3710 Strategic Staffing or MGMT3720 Training, Development and Performance Management.

## Leadership Concentration

Silberman College of Business' BS in management with a leadership concentration prepares students to effectively and ethically exercise leadership.
Students will be exposed to a variety of leadership perspectives and models. Self-assessments and guided exercises will provide students with insight into their leadership styles. As part of their major, students will engage in hands-on experiences of leadership and change management. They will develop the knowledge and capability to lead with attention to the "triple bottom line" of environmental stewardship, social equity and financial success.

## Required Courses (9 credits)

- MGMT4640 Managing Projects and Organizations

Select two of the following leadership courses

- MGMT3620 Leadership and Personal Development
- MGMT3400 Managing Sustainability in the Global Context
- MGMT4498 Internship in Management


## Business Core Curriculum

Silberman College's Business Core Curriculum features coursework in all business disciplines Accounting, Economics, Entrepreneurship, Finance, Information Systems and Decisions Sciences, International Business, Business Law, Management, Marketing, and Taxation, to provide you with essential business knowledge.
Silberman College of Business BS students must complete a minimum of $\mathbf{1 2 0}$ credits, distributed as follows:

- Business Core and Restricted Business Core (41 credits)
- Business Major Courses (21 credits)
- University Core (7 credits)
- General Education Requirements (36 credits)
- Free Electives (15 credits)


## TOTAL CREDITS - 120 credits

## Business Core (38 credits)

All courses are 3 credits except where indicated otherwise.

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CARR3000 Career Strategies (2 credits)
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Restricted Business Core (3 credits)

- ENTR2710 Fundamentals of Entrepreneurship (required for business administration, entrepreneurship, management and marketing majors)


## University Core (7 credits)

- UNIV1001 Transitioning to University Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## General Education Requirements (36 credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward Scientific Analysis or free elective credits.

## Free Electives (15 credits)

Can be used toward a minor, a second major or a concentration.

## For Information

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## Marine Biology BS

The marine biology curriculum fulfills basic requirements for admission into graduate and professional schools. It also may serve as a terminal degree, with which to enter the job market. The program includes a laboratory field experience. To participate in any field experience, a student must have earned a 2.25 in biology coursework and be in good academic standing.
The program is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

For matriculation in the marine biology curriculum, successful completion of secondary school courses in elementary algebra and plane geometry and a year of sciences are required.

## Degree Plan

All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements. [*Florham Campus students are required to take SPCH1 107 Fundamentals of Speech and PHIL1440 Biomedical Ethics as part of their general education requirements]

## Semesters 1 and 2

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- BIOL1233, BIOL1234 Introduction to Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation


## Semesters 3 and 4

- BIOL2300 Experimental Design
- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- ENVR2111, ENVR2112 Oceanography Lecture and Laboratory
- MBIO2209, MBIO2219 Introduction to Marine Biology Lecture and Laboratory


## Semesters 5 and 6

- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory
- MBIO3201 Aquatic Vegetation
- MBIO3401 Marine Invertebrates
- MBIO3701 Marine Ecology
- MBIO3901 Marine Vertebrates


## Semesters 7 and 8

- BIOL3380/BIOL3381 Animal Behavior Lecture and Laboratory
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar
- CHEM3281 Biochemistry I
- MBIO3650, MBIO3651 Physiology of Marine Animals Lecture and Laboratory
- Biology Elective


## Concentrations

Ecology and Environmental Biology Concentration

## Semesters 7 and 8

- BIOL3___/4__ Biology Elective I
- BIOL3___ 4 ___ Biology Elective II
- BIOL3___ 4 ___ Biology Elective III
- BIOL3 __ /4__ Biology Elective IV
- BIOL3___/4__ Biology Elective V
- BIOL4405 Ethics in Science
- BIOL4950 Biology Seminar


## Common Cognate Requirements

## Semesters 1 and 2

- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory


## Semesters 3 and 4

- CHEM2261, CHEM2263 Organic Chemistry I Lecture and Laboratory
- CHEM2262, CHEM2264 Organic Chemistry II Lecture and Laboratory


## Semesters 7 and 8

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory

A total of 15 marine biology credits are taken during the spring semester. A minimum of 120 credits is required for graduation.

## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus and MATH1201 Calculus I
- or
- MATH1201 Calculus I and MATH2202 Calculus II


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities ( 6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Marketing BS

Marketing majors are exposed to interdisciplinary courses that develop a broad range of business skills. The marketing curriculum is designed to prepare students for careers in sales, retailing, advertising, product management, direct marketing and research. This preparation is accomplished through course offerings in basic marketing concepts and supplemented by career specific courses. The learning process is enhanced with projects, case studies and internships.
The BS in marketing is offered by the department of marketing, information systems and decision sciences, Silberman College of Business, at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey. The college is accredited by AACSB International.

## Degree Plan

All students enrolled in the Bachelor of Science degree program must complete the University and Business Core Curriculum listed below. In addition to the major requirements listed below.

## Required Courses

- MKTG3344 Marketing Research
- MKTG4272 Consumer Behavior
- MKTG4405 Advanced Marketing Management


## Electives

Select four courses from the following:

- MKTG3341 Professional Sales and Sales Management
- MKTG3360 Digital Marketing
- MKTG3371 Principles of International Marketing
- MKTG3383 Social Media Marketing
- MKTG3501 Marketing for a Sustainable World
- MKTG4344 Public Relations
- MKTG4345 Sports and Events Marketing
- MKTG4365 Marketing Communications
- MKTG4498 Internship in Marketing Studies or MKTG4499 Internship in Marketing Studies


## Digital Marketing Concentration

With so many advances in technology, today's marketing arena is more complex than ever before. Marketers are struggling to keep up with information being shared and used by their customers on a variety of platforms. Marketing success lies in being able to understand these digital and social platforms, and in being able to seamlessly integrate a range of new capabilities with some of the more traditional ones.
A bachelor's degree in marketing with a concentration in digital marketing will prepare students for a career in this dynamic field and will equip them with the knowledge and skills to plan, design and manage a well-integrated marketing strategy.

## Requirements

The curriculum is designed to allow students achieve more substantive learning about the emerging area of digital marketing. Students wishing to pursue this concentration will be required to complete a total of 21 credits, which includes the following six required courses followed by an internship in the field of digital and/or social media marketing.

- MKTG3344 Marketing Research
- MKTG3360 Digital Marketing
- MKTG3383 Social Media Marketing
- MKTG4272 Consumer Behavior
- MKTG4365 Marketing Communications
- MKTG4405 Advanced Marketing Management
- MKTG4498 Internship in Marketing Studies in an area related to digital and/or social media. Students must meet the College's criteria for internships.

Students with specific questions about the major requirements should contact their adviser.

## Business Core Curriculum

Silberman College's Business Core Curriculum features coursework in all business disciplines accounting, economics, entrepreneurship, finance, information systems and decisions sciences, international business, business law, management, marketing and taxation, to provide students with essential business knowledge.

Silberman College of Business BS students must complete a minimum of $\mathbf{1 2 0}$ credits, distributed as follows:

- Business Core and Restricted Business Core (41 credits)
- Business Major Courses (21 credits)
- University Core (7 credits)
- General Education Requirements (36 credits)
- Free Electives ( 15 credits)


## TOTAL CREDITS - $\mathbf{1 2 0}$ credits

## Business Core (38 credits)

All courses are 3 credits except where indicated otherwise.

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CARR3000 Career Strategies (2 credits)
- DSCI2130 Business Statistics
- DSCI3152 Operations Management
- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MGMT4160 Strategic Management
- MIS2001 Management Information Systems
- MKTG2120 Principles of Marketing


## Restricted Business Core (3 credits)

- ENTR2710 Fundamentals of Entrepreneurship (required for business administration, entrepreneurship, management and marketing majors)


## University Core (7 credits)

- UNIV1001 Transitioning to University Life
- UNIV2001 Cross-cultural Perspectives
- UNIV2002 Global Issues


## General Education Requirements (36 credits)

- COMM2099 Professional Communications or COMM2101 Professional Communication
- DSCI1234 Mathematics for Business Decisions or DSCI1239 Calculus with Business Applications
- DSCI2029 Introduction to Statistics
- ORGS1100 Ethical Issues in Social Institutions
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- Behavioral and Social Sciences Electives (6 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Humanities Elective or Foreign Language Elective (3 credits)
- Scientific Analysis (6 credits)

All business students must take a proficiency exam for skills in Excel or choose to take MIS1045 Information Technology for Business. Students need to take MIS1045 if exam results indicate lack of Excel proficiency. MIS1045 will count toward Scientific Analysis or free elective credits.
See adviser for help in selection of courses.

## Free Electives (15 Credits)

Can be used toward a minor, a second major or a concentration.

## For Information

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## Mathematics BA (Florham)

Mathematics majors develop many skills including the ability to formulate and solve problems, logical and critical thinking, numerical computation and quantitative skills. These skills are crucial in many fields. Career opportunities include working as a mathematician, computer scientist, statistician, economist, actuary, cryptologist, biostatistician and college professor.
The Bachelor of Arts in mathematics is offered by the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements. Six credits from the major may be applied toward General Education Requirements.

## Required Courses ( 24 credits)

- MATH1203 Calculus I
- MATH2202 Calculus II
- MATH2204 Calculus III
- MATH2255 Discrete Structures
- MATH3220 Linear Algebra
- MATH3231 Introductory Analysis (or)
- MATH3225 Abstract Algebra (and)
- MATH3303 Probability
- MATH4999 Mathematics Assessment


## Major Elective Courses (15-18 credits)

At least 9 credits are to be selected from the MATH offerings above the level of MATH2255 Discrete Structures, or with permission of the department, from graduate offerings in math; up to 6 credits from 2000 (or higher-level) offerings in computer science may be substituted for math electives.
NOTE: Three credits in Internship experience may be used to fulfill major elective requirements in addition to the 15 credits minimum requirement.

## Cognate Requirement (3 credits)

- CSCI2205 Introduction to Computer Science I

6 credits from a minor may be applied toward General Education Requirements.

## Concentrations

The department offers three concentrations within the BA in mathematics program: actuarial science, computer science and financial mathematics.

## Actuarial Science Concentration

Actuarial science is the discipline that assesses risk in insurance, finance as well as other industries using mathematical and statistical methods. The concentration prepares students by building a strong foundation in mathematics, statistics and other areas of relevance to insurance and consulting industries.
Students planning to major in mathematics with a concentration in actuarial science should complete all requirements for the BA in mathematics with the selection of five elective courses in the major, which includes:

- MATH3300 Statistics I

To fulfill the general education requirements, they are required to take:

- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics


## Cognate Requirements (12 credits)

- ACCT2021 Introductory Financial Accounting
- CSCI2205 Introduction to Computer Science I
- FIN3250 Principles of Financial Analysis
- FIN3310 Intermediate Financial Analysis

The above requirements will assist students in preparing for actuarial exams 1 and 2 , which are jointly administered by the Society of Actuaries and the Casualty Actuarial Society.
Independent study courses are also available to further develop the fundamental mathematical/statistical concepts applicable to insurance problems. Specifically, the student may

- Study Mathematics of Finance to strengthen their preparation for exam 2 and/or
- Study Life Contingencies and Loss Models to begin preparation for exam 3.


## Computer Science Concentration

Students should complete all requirements for the BA degree in mathematics with the selection of the following courses:

- CSCI2205 Introduction to Computer Science I
- CSCI2216 Introduction to Computer Science II
- CSCI2233 Data Structures and Algorithms


## Major Elective Courses (15 credits)

Take 6 credits of MATH2255 Discrete Structures or higher, which includes MATH3300 Statistics I, or with permission of the department, from graduate offerings in math; and 9 credits are to be selected from 3000 (or higher-level) offerings in computer science

## Financial Mathematics Concentration

Financial mathematics - sometimes called computational finance or financial engineering - is a relatively new area of mathematics that provides the necessary theory and tools for financial analysts who are also known in the financial industry as quants. Financial analysts work for financial institutions, pension funds and insurance companies. They advise businesses and individuals on making investment decisions. They assess the performance of stocks, bonds and other types of investments.
Students planning to major in mathematics with a concentration in financial mathematicsshould complete all requirements for the BA in mathematicswith the selection of the following courses as electives in the major:

- MATH3300 Statistics I
- MATH3307 Mathematics of Finance
- MATH4007 Financial Mathematics II

To fulfill the general education requirements, they are required to take:

- ECON2001 Introduction to Microeconomics
- ECON2102 Introduction to Macroeconomics

Additional cognate requirements include:

- ACCT2021 Introductory Financial Accounting
- ACCT2022 Introductory Managerial Accounting
- CSCI2205 Introduction to Computer Science I
- FIN3250 Principles of Financial Analysis
- FIN3310 Intermediate Financial Analysis
- FIN4343 Securities and Investments
- FIN4405 Analytical Methods in Finance


## QUEST Options Available

- BA in Mathematics/MAT, Elementary Education Concentration
- BA in Mathematics/MAT, Secondary Education Concentration
- BA in Mathematics/MAT, Elementary Education and Special Education Concentration
- BA in Mathematics/MAT, Preschool Special Education Certification
- BA in Mathematics/MAT, Secondary Education and ESL


## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis ( 6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( $\mathbf{3}$ to $\mathbf{4}$ credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- $\qquad$ 1002 (Beginning Language II) (3 credits)
$\qquad$ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts ( $\mathbf{3}$ credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## For Information

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## Mathematics BA (Metro)

The Bachelor of Arts in mathematics program prepares students to work in industry, government, business or education, as well as for graduate study in mathematics, education, business and other closely related STEM fields, particularly in the interdisciplinary areas of artificial intelligence, computer science, cybersecurity, data science and machine learning. Students may choose elective courses in mathematics and related subjects that focus on methods used to solve problems in quantitative fields of study, more theoretical elective courses that focus on strengthening their knowledge of mathematical fundamentals or some combination of such electives. They are encouraged to complete a minor in computer science, which they can easily accomplish through the electives. In all cases, students are exposed via a highly flexible curriculum to the kind of rigorous analysis, logic and critical thinking that will help them succeed in their chosen careers and/or advanced studies. Students meet with a school-based adviser to discuss their course sequence and electives based on their goals and interests. The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE), at the Metropolitan Campus, Teaneck, New Jersey.
Students in the BA in mathematics program can also pursue one of the three accelerated combined fiveyear bachelor's and master's degree programs, thereby saving time and money and expanding their career opportunities. The three accelerated programs are as follows:

- BA in mathematics/MAT combined degree program (QUEST)
- BA in mathematics/MS in computer science combined degree program
- BA in mathematics/MS in cybersecurity and information assurance combined degree program


## Prerequisites:

- Elementary and intermediate algebra
- Plane geometry
- Trigonometry
- Two units of science, including one unit of physics

GHSCSE also offers a Bachelor of Science in mathematics at the Metropolitan Campus. The educational objectives of the BA and BS in mathematics programs are fundamentally the same except that the BA in mathematics program is built on a liberal arts foundation. The nonmathematics requirements for the two programs are different.

## Educational Objectives

The educational objectives of the BA in mathematics program define the skills, knowledge and attributes that will be needed and achieved by the graduates for a successful career and professional accomplishments three to four years after graduation. The program will produce graduates who:

1. Have an appropriate combination of theoretical knowledge and practical skills in mathematics to enter into and advance professionally in mathematics and related fields.
2. Have a well-rounded education that encourages and supports meaningful dialogue with individuals from other disciplines.
3. Are able to adapt to and succeed in a dynamic global environment.
4. Can engage effectively in oral, written and graphical communications in both interpersonal and public settings.
5. Are prepared to participate in lifelong learning opportunities.
6. Are prepared to continue formal education and obtain advanced degrees in mathematics or related fields.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Cooperative Education Option

Students in the BA in mathematics program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their electives. Note that these credits may not be substituted for any required coursework. The co-op experience provides students a real-world grounding - linking theory and practice, academic and work experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Employers will benefit from better-prepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.

## Degree Plan

The BA in mathematics program requires the successful completion of 120 credits with a minimum cumulative grade point ratio of 2.00 as described below.

## General Education Requirements (55 credits) College Competencies ( 26 credits)

- Written Communication (6 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Speech/Professional Communication (3 credits)
- ENGR2210 Technical Communications (3 credits)
- Quantitative Analysis (4 credits)
- MATH1201 Calculus I (4 credits)
- Mathematics or Technology or Statistics (4 credits)
- MATH2202 Calculus II (4 credits)
- Ethical and Moral Analysis (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- Scientific Analysis (6 credits)
- PHYS2203 University Physics I (3 credits)
- PHYS2204 University Physics II (3 credits)


## Liberal Arts Distribution (21 credits)

- Language (3 credits)
- If a student is beginning a new language, Elementary II (1102) is required to fulfill the 3credit language requirement. If the student is taking a language previously studied, successful completion of Intermediate I (2103) fulfills the requirement. The student taking a previously studied language must take the placement test. If the placement score is above the Intermediate I level, the student is excused from the language requirement and will need to replace those 3 language credits with a free elective. Students planning to do graduate work should take a 3-credit course in French, German or Russian.
- Social and Behavioral Sciences ( 6 credits)
- Students take ENGR4210 Managerial and Engineering Economic Analysis to fulfill the social science requirement. They also take another three credits of coursework in COMM (communication), CRIM (criminal justice), GOVT (government), PSYC (psychology) or SOCI (sociology).
- Arts (6 credits)
- Take 6 credits of coursework in ART (art), CGD (computer graphic design) or CREW (creative writing).
- Humanities (6 credits)
- Take 6 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages) not foreign language), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities) - one must be at the 2000 level or above.


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Major Requirements (36 credits)

Additional Mathematics Requirements (27 Credits)

- MATH2203 Calculus III (3 credits)
- MATH2210 Differential Equations (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH3220 Linear Algebra ( 3 credits)
- MATH3225 Abstract Algebra (3 credits)
- MATH3230 Analysis (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- MATH3341 Advanced Engineering Mathematics (3 credits)
- Mathematics Elective (3 credits)
- 3 credits to be chosen from courses numbered 3000 or higher, with the approval of an adviser.


## Computer Science Requirements (9 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2232 Data Structures (3 credits)


## Additional Science Requirements (2 credits)

- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2202 Physics Laboratory II (1 credit)


## Technical Electives (12 credits)

- Students must take 12 credits of technical electives, which include courses in computer science, engineering, engineering technology, information technology and/or mathematics at appropriate levels based on their interests. Students must obtain prior approval from the GHSCSE academic adviser for all course selections or substitutions.
- Mathematics courses must be at the 3000 - or higher level.
- A 3-credit course in a related discipline can be substituted for a 3-credit technical elective.
- Internship credits and honors courses can be used as technical electives.


## Minor Sequence in an Area Related to Mathematics (15 credits)

- A minor sequence of 15 credits is required in an area related to mathematics. An adviser will assist students in selecting the proper courses.


## For Information

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## Mathematics BA, Computer Science MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to earn a Bachelor of Arts (BA) degree in mathematics and a Master of Science (MS) degree in computer science with a course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6603 Computer Architecture (3 credits), CSCI6623 Database Systems (3 credits) and CSCI6638 Operating Systems ( 3 credits), when successfully completed under the combineddegree program, can be credited toward both the BA and the MS degrees. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
Students must register for this program by their junior year and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BA in mathematics degree, and a minimum of 141 credits is required for the combined B.A in mathematics/MS in computer science degrees. In addition, for degree completion, the BA in mathematics requires a minimum CGPR of 2.00 and the MS in computer science requires a CGPR of 2.75 .

## Cooperative Education Option

Students in the BA in mathematics program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## General Education Requirements (55 credits) College Competencies (26 credits)

- Written Communication (6 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Speech/Professional Communication (3 credits)
- ENGR2210 Technical Communications (3 credits)
- Quantitative Analysis (4 credits)
- MATH1201 Calculus I (4 credits)
- Mathematics or Technology or Statistics (4 credits)
- MATH2202 Calculus II (4 credits)
- Ethical and Moral Analysis (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- Scientific Analysis (6 credits)
- PHYS2203 University Physics I (3 credits)
- PHYS2204 University Physics II (3 credits)


## Liberal Arts Distribution (21 credits)

- Language (3 credits)
- If a student is beginning a new language, Elementary II (1102) is required to fulfill the 3credit language requirement. If the student is taking a language previously studied, successful completion of Intermediate I (2103) fulfills the requirement. The student taking a previously studied language must take the placement test. If the placement score is above the Intermediate I level, the student is excused from the language requirement and will need to replace those 3 language credits with a free elective. Students planning to do graduate work should take a 3-credit course in French, German or Russian.
- Social and Behavioral Sciences (6 credits)
- Students take ENGR4210 Managerial and Engineering Economic Analysis to fulfill the social science requirement. They also take another 3 credits of coursework in COMM (communication), CRIM (criminal justice), GOVT (government), PSYC (psychology) or SOCI (sociology).
- Arts (6 credits)
- Take 6 credits of coursework in ART (art), CGD (computer graphic design) or CREW (creative writing).
- Humanities (6 credits)
- Take 6 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities) - one must be at the 2000 level or above.


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Major Requirements (36 credits)

## Additional Mathematics Requirements (27 Credits)

- MATH2203 Calculus III (3 credits)
- MATH2210 Differential Equations (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3225 Abstract Algebra (3 credits)
- MATH3230 Analysis (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- MATH3341 Advanced Engineering Mathematics (3 credits)
- Mathematics Elective ( 3 credits)
- 3 credits to be chosen from courses numbered 3000 or higher, with the approval of an adviser.


## Computer Science Requirements (9 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCL2232 Data Structures (3 credits)


## Additional Science Requirements (2 credits)

- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2202 Physics Laboratory II (1 credit)


## Technical Electives (12 credits)

- Students must take 12 credits of technical electives, which include courses in computer science, engineering, engineering technology, information technology and/or mathematics at appropriate levels based on their interests. Students must obtain prior approval from the GHSCSE academic adviser for all course selections or substitutions.
- ENGR2286 Digital System Design (3 credits)
- Mathematics courses must be at the 3000 - or higher level.
- A 3-credit course in a related discipline can be substituted for a 3-credit technical elective.
- Internship credits and honors courses can be used as technical electives.


## Minor Sequence in an Area Related to Mathematics (15 credits)

- CSCI2215 Introduction to Computer Science ( 3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- CSCI6603 Computer Architecture (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6638 Operating Systems (3 credits)


## Additional Graduate Courses (21 credits)

Computer Science Graduate Core Courses ( 6 credits)

- CSCI6620 Software Engineering (3 credits)
- CSCI7645 Systems Programming (3 credits)


## Computer Science Graduate Elective Courses (15 Credits)

- Graduate elective courses in computer science are listed with CSCI-prefixed course numbers ranging from CSCI6617 to CSCI8891. Students may register for CSCI8891 Internship/Work Experience ( 3 credits) only after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective. Students may also take up to six credits of EENGprefixed courses (EENG6600 level or above). Any prerequisites for the electives must be fulfilled before the electives are taken. Students must consult an academic adviser for additional details regarding electives and their prerequisites, if any, or check the FDU Graduate Studies catalog.


## For Information

## Mathematics BA, Cybersecurity and Information Assurance MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to earn a Bachelor of Arts (BA) degree in mathematics and a Master of Science (MS) degree in cybersecurity and information assurance with a course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6731 Computer Networks ( 3 credits), CSCI6738 Cybersecurity ( 3 credits) and CSCI6747 Applied Cryptography ( 3 credits), when successfully completed under the combined-degree program, can be credited toward both the BA and the MS degrees. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
Students must register for this program by their junior year and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BA in mathematics degree, and a minimum of 141 credits is required for the combined B.A in mathematics/MS in cybersecurity and information assurance degrees. In addition, for degree completion, the BA in mathematics requires a minimum CGPR of 2.00 and the MS in cybersecurity and information assurance requires a CGPR of 2.75.

## Cooperative Education Option

Students in the BA in mathematics program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## College Competencies (26 credits)

Written Communication (6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)


## Speech/Professional Communication (3 credits)

- ENGR2210 Technical Communications (3 credits)


## Quantitative Analysis (4 credits)

- MATH1201 Calculus I (4 credits)


## Mathematics or Technology or Statistics (4 credits)

- MATH2202 Calculus II (4 credits)


## Ethical and Moral Analysis (3 credits)

- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)


## Scientific Analysis (6 credits)

- PHYS2203 University Physics I (3 credits)
- PHYS2204 University Physics II (3 credits)


## Liberal Arts Distribution (21 credits)

## Language (3 credits)

- If a student is beginning a new language, Elementary II (1102) is required to fulfill the 3-credit language requirement. If the student is taking a language previously studied, successful completion of Intermediate I (2103) fulfills the requirement. The student taking a previously studied language must take the placement test. If the placement score is above the Intermediate I level, the student is excused from the language requirement and will need to replace those 3 language credits with a free elective. Students planning to do graduate work should take a 3-credit course in French, German or Russian.


## Social and Behavioral Sciences (6 credits)

- Students take ENGR4210 Managerial and Engineering Economic Analysis to fulfill the social science requirement. They also take another 3 credits of coursework in COMM (communication), CRIM (criminal justice), GOVT (government), PSYC (psychology) or SOCI (sociology).


## Arts (6 credits)

- Take 6 credits of coursework in ART (art), CGD (computer graphic design) or CREW (creative writing).


## Humanities (6 credits)

- Take 6 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL
(philosophy), RELI (religion) or THEAH (theater humanities) — one must be at the 2000 level or above.


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Major Requirements (36 credits)

Additional Mathematics Requirements (27 Credits)

- MATH2203 Calculus III (3 credits)
- MATH2210 Differential Equations (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3225 Abstract Algebra (3 credits)
- MATH3230 Analysis (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- MATH3341 Advanced Engineering Mathematics (3 credits)
- Mathematics Elective (3 credits)
- 3 credits to be chosen from courses numbered 3000 or higher, with the approval of an adviser.


## Computer Science Requirements ( 9 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2232 Data Structures (3 credits)


## Additional Science Requirements (2 credits)

- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2202 Physics Laboratory II (1 credit)


## Technical Electives (12 credits)

- Students must take 12 credits of technical electives, which include courses in computer science, engineering, engineering technology, information technology and/or mathematics at appropriate levels based on their interests. Students must obtain prior approval from the GHSCSE academic adviser for all course selections or substitutions.
- ENGR2286 Digital System Design (3 credits)
- Mathematics courses must be at the 3000- or higher level.
- A 3-credit course in a related discipline can be substituted for a 3-credit technical elective.
- Internship credits and honors courses can be used as technical electives.


## Minor Sequence in an Area Related to Mathematics (15 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- CSCI6731 Computer Networks (3 credits)
- CSCI6738 Cybersecurity (3 credits)
- CSCI6747 Applied Cryptography (3 credits)


## Additional Graduate Courses (21 credits) <br> Cybersecurity and Information Assurance Graduate Core Courses (6 credits)

- CSCI6638 Operating Systems (3 credits)
- CSCI6870 Penetration Testing and Vulnerability Analysis (3 credits)


## Cybersecurity and Information Assurance Graduate Project (3 credits)

- CSCI6807 Cybersecurity and Information Assurance Graduate Capstone Project (3 credits)


## Cybersecurity and Information Assurance Graduate Elective Courses (12 Credits)

Students are encouraged to take three courses ( 9 credits) from one of the following two focus areas and one more course ( 3 credits) from the list of approved electives as provided below. Alternatively, students can also take any four courses ( 12 credits) from the approved electives based on their interests and needs. Students have the option of registering for CSCI8891 Internship/Work Experience (3 credits) after completing the BA degree and 18 graduate credits. The internship will count as a one-course elective.
Electives for Network Security Administration Focus (9 credits)

- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)


## Electives for Secure Software Development Focus (9 credits)

- CSCI6620 Software Engineering (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)


## Approved Electives

- CSCI6620 Software Engineering (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6811 Advanced Special Projects (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)
- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)
- CSCI7783 Information Security (3 credits)
- CSCI7870 Linux System Administration (3 credits)
- CSCI8891 Internship/Work Experience (3 credits)


## For Information

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## Mathematics BS

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a BS in mathematics program at the Metropolitan Campus, Teaneck, New Jersey. The program has three concentrations:

- Applied Mathematics
- Pure Mathematics
- Pharmaceutical Biostatistics

Each concentration prepares students to work in industry, government, business or education, as well as for graduate study in mathematics, education, business and other closely related STEM fields, particularly in the interdisciplinary areas of artificial intelligence, computer science, cybersecurity, data science and machine learning. Students are encouraged to complete a minor in computer science, which they can easily accomplish through the electives.

Students who choose the applied mathematics concentration typically take elective courses in mathematics and related subjects, focusing on methods used to solve problems in quantitative fields of study. Those who choose the pure mathematics concentration typically take more theoretical elective courses, which focus on strengthening their knowledge of mathematical fundamentals. In both the applied and pure mathematics concentrations, students are exposed via a highly flexible curriculum to the kind of rigorous analysis, logic and critical thinking that will help them to succeed in their chosen careers and/or advanced studies. For these two concentrations, students meet with a school-based adviser to discuss their course sequence and electives of the concentration based on their goals and interests.

The pharmaceutical biostatistics concentration specifically prepares students to enter the pharmaceutical industry as an entry-level biostatistician or statistical programmer, or to enter a graduate program in statistics or public health, in addition to preparing them for the general areas mentioned earlier. The market for pharmaceutical statisticians and statistical programmers continues to be very strong. During the junior and senior years, students are given a firm background in statistical methods and models, experimental design and statistical programming.
Students in the BS in mathematics program can also pursue one of the three accelerated combined fiveyear bachelor's and master's degree programs, thereby saving time and money and expanding their career opportunities. The three accelerated programs are as follows:

- BS in mathematics/MAT combined degree program (QUEST)
- BS in mathematics/MS in computer science combined degree program
- BS in mathematics/MS in cybersecurity and information assurance combined degree program

GHSCSE also offers a BA in mathematics at the Metropolitan Campus. The educational objectives of the BA and BS in mathematics programs are fundamentally the same except that the BA in mathematics program is built on a liberal arts foundation. The non-mathematics requirements for the two programs are different.

## Educational Objectives

The educational objectives of the BS in mathematics program define the skills, knowledge and attributes that will be needed and achieved by the graduates for a successful career and professional accomplishments three to four years after graduation. The program will produce graduates who:

1. Have an appropriate combination of theoretical knowledge and practical skills in mathematics to enter into and advance professionally in mathematics and related fields.
2. Have a well-rounded education that encourages and supports meaningful dialogue with individuals from other disciplines.
3. Are able to adapt to and succeed in a dynamic global environment.
4. Can engage effectively in oral, written and graphical communications in both interpersonal and public settings.
5. Are prepared to participate in lifelong learning opportunities.
6. Are prepared to continue formal education and obtain advanced degrees in mathematics or related fields.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty.

## Cooperative Education Option

Students in the BS in mathematics program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their electives. Note that these credits may not be substituted for any required course work. The co-op experience provides students a real-world grounding - linking theory and practice, academic and work experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Employers will benefit from better-prepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.

## Degree Plan

Students must choose a concentration in applied mathematics, pure mathematics or pharmaceutical biostatistics. Regardless of the concentration, the BS in mathematics program requires the successful completion of 120 credits with a minimum cumulative grade point ratio of 2.00 (CGPR) as described below.

## Applied Mathematics or Pure Mathematics Concentration

Students must meet with their advisers to discuss the course sequence for either one of the two concentrations.

## Mathematics Requirements (35 credits)

- MATH1201 Calculus I (4 credits)
- MATH2202 Calculus II (4 credits)
- MATH2203 Calculus III (4 credits)
- MATH2210 Differential Equations (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3225 Abstract Algebra (3 credits)
- MATH3230 Analysis (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- MATH3341 Advanced Engineering Mathematics (3 credits)
- Mathematics Elective (3 credits)
- A 3-credit course to be chosen from mathematics courses numbered 3000 or higher, with the approval of an adviser.


## Minor Sequence in an Area Related to Mathematics (15 credits)

A minor sequence of 15 credits is required in an area related to mathematics. An adviser will assist students in selecting the proper courses.

## Science Requirements (8 credits)

- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2203 University Physics I (3 credits)
- PHYS2204 University Physics II (3 credits)


## Science Electives (11 credits)

The 11 credits of science electives are to be distributed as follows:
Eight credits of science electives must be a one-year sequence with laboratory:

- Laboratory Science I (3 credits)
- Laboratory Science I Lab (1 credit)
- Laboratory Science II (3 credits)
- Laboratory Science II Lab (1 credit)

The remaining 3 credits must be a 2000- or higher-level course in electrical engineering, computer science, chemistry or biology

## Computer Science Requirements ( 9 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2234 Data Structures and Algorithms (3 credits)


## General Education Requirements (24 credits)

- ENGR2210 Technical Communications (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Humanities Elective (3 credits)

Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)

- Social Elective (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Behavioral Science Elective (3 credits)
- Creative and Expressive Art Elective (3 credits)


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Technical Electives (10 credits)

Students must take 10 credits of technical electives, which include courses in computer science, engineering, engineering technology, information technology and/or mathematics at appropriate levels
based on their interests. Students must obtain prior approval from the GHSCSE academic adviser for all course selections or substitutions.

- Mathematics courses must be at the 3000 - or higher level.
- A 1 -credit free elective can be substituted for the 1 -credit technical elective
- A 3-credit course in a related discipline can be substituted for a 3-credit technical elective.
- Internship credits and honors courses can be used as technical electives.


## Pharmaceutical Biostatistics Concentration

## Mathematics Requirements ( 35 credits)

- MATH1201 Calculus I (4 credits)
- MATH2202 Calculus II (4 credits)
- MATH2203 Calculus III (3 credits)
- MATH2243 Statistical Programming ( 3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH2337 Applied Statistics I (3 credits)
- MATH2338 Applied Statistics II (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3237 Probability and Statistics I ( 3 credits)
- MATH3238 Probability and Statistics II (3 credits)
- Mathematics Elective (3 credits)
- A 3-credit course to be chosen from mathematics courses numbered 3000 or higher, with the approval of an adviser.


## Minor Sequence in an Area Related to Mathematics or Technical Electives (15 credits)

- Take a minor sequence of 15 credits in an area related to mathematics. An adviser will assist students in selecting the proper courses.
or
- Take 15 credits of technical electives, which include courses in computer science, engineering, engineering technology, information technology and/or mathematics at appropriate levels based on their interests. Students must obtain prior approval from the GHSCSE academic adviser for all course selections or substitutions.
- Mathematics courses must be at the 3000- or higher level.
- A 3-credit course in a related discipline can be substituted for a 3-credit technical elective.
- Internship credits and honors courses can be used as technical electives.


## Science Requirements (16 credits)

- BIOL1221 Biological Diversity (3 credits)
- BIOL1222 Lab: Biological Diversity (1 credit)
- BIOL1233 Molecules, Cells and Genes (3 credits)
- BIOL1234 Lab: Molecules, Cells and Genes (1 credit)
- CHEM1201 General Chemistry I (3 credits)
- CHEM1202 General Chemistry II (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- CHEM1204 General Chemistry Laboratory II (1 credit)


## Science Elective (8 credits)

A one-year sequence in advanced biology or chemistry (epidemiology, organic chemistry, microbiology, etc.) is recommended.

## Computer Science Requirements (12 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2215 Introduction to Computer Science (3 credits)
- CSCI2234 Data Structures and Algorithms (3 credits)


## General Education Requirements ( 24 credits)

- ENGR2210 Technical Communications (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Humanities Elective (3 credits)

Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)

- Social Elective (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Behavioral Science Elective (3 credits)
- Creative and Expressive Art Elective (3 credits)


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Free Electives (2 credits)

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## Program Coordinator

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## Mathematics BS, Computer Science MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to earn a Bachelor of Arts (BA) degree in mathematics and a Master of Science (MS) degree in computer science with a course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6603 Computer Architecture ( 3 credits), CSCI6623 Database Systems (3 credits) and CSCI6638 Operating Systems ( 3 credits), when successfully completed under the combineddegree program, can be credited toward both the BA and the MS degrees. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
Students must register for this program by their junior year and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BA in mathematics degree, and a minimum of 141 credits is required for the combined B.A in mathematics/MS in computer science degrees. In addition, for degree completion, the BA in mathematics requires a minimum CGPR of 2.00 and the MS in computer science requires a CGPR of 2.75.

## Cooperative Education Option

Students in the BA in mathematics program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The total degree requirement for the combined degree program is 141 credits. The course distribution is provided below.

## General Education Requirements (55 credits) College Competencies (26 credits)

- Written Communication (6 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Speech/Professional Communication (3 credits)
- ENGR2210 Technical Communications (3 credits)
- Quantitative Analysis (4 credits)
- MATH1201 Calculus I (4 credits)
- Mathematics or Technology or Statistics (4 credits)
- MATH2202 Calculus II (4 credits)
- Ethical and Moral Analysis (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- Scientific Analysis (6 credits)
- PHYS2203 University Physics I (3 credits)
- PHYS2204 University Physics II (3 credits)


## Liberal Arts Distribution (21 credits)

- Language (3 credits)
- If a student is beginning a new language, Elementary II (1102) is required to fulfill the 3credit language requirement. If the student is taking a language previously studied, successful completion of Intermediate I (2103) fulfills the requirement. The student taking a previously studied language must take the placement test. If the placement score is above the Intermediate I level, the student is excused from the language requirement and will need to replace those 3 language credits with a free elective. Students planning to do graduate work should take a 3-credit course in French, German or Russian.
- Social and Behavioral Sciences (6 credits)
- Students take ENGR4210 Managerial and Engineering Economic Analysis to fulfill the social science requirement. They also take another 3 credits of coursework in COMM (communication), CRIM (criminal justice), GOVT (government), PSYC (psychology) or SOCI (sociology).
- Arts (6 credits)
- Take 6 credits of coursework in ART (art), CGD (computer graphic design) or CREW (creative writing).
- Humanities (6 credits)
- Take 6 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities) - one must be at the 2000 level or above.


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues ( 3 credits)


## Major Requirements (36 credits)

## Additional Mathematics Requirements (27 Credits)

- MATH2203 Calculus III (3 credits)
- MATH2210 Differential Equations (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3225 Abstract Algebra (3 credits)
- MATH3230 Analysis (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- MATH3341 Advanced Engineering Mathematics (3 credits)
- Mathematics Elective (3 credits)
- 3 credits to be chosen from courses numbered 3000 or higher, with the approval of an adviser.


## Computer Science Requirements (9 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2232 Data Structures (3 credits)


## Additional Science Requirements (2 credits)

- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2202 Physics Laboratory II (1 credit)


## Technical Electives (12 credits)

- Students must take 12 credits of technical electives, which include courses in computer science, engineering, engineering technology, information technology and/or mathematics at appropriate levels based on their interests. Students must obtain prior approval from the GHSCSE academic adviser for all course selections or substitutions.
- ENGR2286 Digital System Design (3 credits)
- Mathematics courses must be at the 3000- or higher level.
- A 3-credit course in a related discipline can be substituted for a 3-credit technical elective.
- Internship credits and honors courses can be used as technical electives.


## Minor Sequence in an Area Related to Mathematics (15 credits)

- CSCL2215 Introduction to Computer Science (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- CSCI6603 Computer Architecture ( 3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6638 Operating Systems (3 credits)


## Additional Graduate Courses (21 credits)

Computer Science Graduate Core Courses ( 6 credits)

- CSCI6620 Software Engineering (3 credits)
- CSCI7645 Systems Programming ( 3 credits)

Computer Science Graduate Elective Courses (15 Credits)

- Graduate elective courses in computer science are listed with CSCI-prefixed course numbers ranging from CSCI6617 to CSCI8891. Students may register for CSCI8891 Internship/Work Experience ( 3 credits) only after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective. Students may also take up to six credits of EENGprefixed courses (EENG6600 level or above). Any prerequisites for the electives must be fulfilled before the electives are taken. Students must consult an academic adviser for additional details regarding electives and their prerequisites, if any, or check the FDU Graduate Studies catalog.


## For Information

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## Mathematics BS, Cybersecurity and Information Assurance MS Combined Degree (Metro)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) offers a five-year combined-degree program that allows qualified students to earn a Bachelor of Science (BS) degree in mathematics and a Master of Science (MS) degree in cybersecurity and information assurance with a course load that is 9 credits less than that of the separate degrees, enabling students to save time and money. In particular, three graduate courses: CSCI6731 Computer Networks (3 credits), CSCI6738 Cybersecurity ( 3 credits) and CSCI6747 Applied Cryptography ( 3 credits), when successfully completed
under the combined-degree program, can be credited toward both the BS and the MS degrees. This combined-degree program is offered by GHSCSE at the Metropolitan Campus, Teaneck, New Jersey.
Students must register for this program by their junior year and must have achieved a cumulative grade point ratio (CGPR) of at least 2.75. A minimum of 120 credits is required for the BS in mathematics degree, and a minimum of 141 credits is required for the combined BS in mathematics/MS in cybersecurity and information assurance degrees. In addition, for degree completion, the BS in mathematics requires a minimum CGPR of 2.00 and the MS in cybersecurity and information assurance requires a CGPR of 2.75 .

## Cooperative Education Option

Students in the BS in mathematics program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

## Degree Plan

The BS in mathematics program has three concentrations: applied mathematics, pharmaceutical biostatistics and pure mathematics. The curricula for the combined-degree program with the three concentrations are described below. The total degree requirement for the combined-degree program for each concentration is 141 credits.

## Applied or Pure Mathematics Concentrations

## Mathematics Requirements ( 35 credits)

- MATH1201 Calculus I (4 credits)
- MATH2202 Calculus II (4 credits)
- MATH2203 Calculus III (3 credits)
- MATH2210 Differential Equations (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3225 Abstract Algebra (3 credits)
- MATH3230 Analysis (3 credits)
- MATH3237 Probability and Statistics I ( 3 credits)
- MATH3341 Advanced Engineering Mathematics (3 credits)
- Mathematics Elective (3 credits)
- A three-credit course to be chosen from mathematics courses numbered 3000 or higher, with the approval of an adviser.


## Minor Sequence in an Area Related to Mathematics (15 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- CSCI6731 Computer Networks (3 credits)
- CSCI6738 Cybersecurity ( 3 credits)
- CSCI6747 Applied Cryptography (3 credits)


## Science Requirements (8 credits)

- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2202 Physics II Laboratory II (1 credit)
- PHYS2203 University Physics I (3 credits)
- PHYS2204 University Physics II (3 credits)


## Science Electives (11 credits)

The 11 credits of science electives are to be distributed as follows:

- Eight credits of science electives must be a one-year sequence with laboratory:
- Laboratory Science I (3 credits)
- Laboratory Science I Lab (1 credit)
- Laboratory Science II (3 credits)
- Laboratory Science II Lab (1 credit)
- The remaining three (3) credits must be a 2000- or higher-level course in electrical engineering, computer science, chemistry or biology.
- Take ENGR2286 Digital System Design (3 credits).


## Computer Science Requirements (9 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2234 Data Structures and Algorithms (3 credits)


## General Education Requirements ( $\mathbf{2 4}$ credits)

- ENGR2210 Technical Communications (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Humanities Elective (3 credits)
- Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)
- Social Elective (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Behavioral Science Elective (3 credits)
- Creative and Expressive Art Elective (3 credits)


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Technical Electives (10 credits)

Students must take 10 credits of technical electives, which include courses in computer science, engineering, engineering technology, information technology and/or mathematics at appropriate levels based on their interests. Students must obtain prior approval from the GHSCSE academic adviser for all course selections or substitutions.

- Mathematics courses must be at the 3000- or higher level.
- A 1 -credit free elective can be substituted for the 1 -credit technical elective
- A 3-credit course in a related discipline can be substituted for a 3-credit technical elective.
- Internship credits and honors courses can be used as technical electives.


## Additional Graduate Courses (21 credits)

Cybersecurity and Information Assurance Graduate Core Courses (6 credits)

- CSCI6638 Operating Systems (3 credits)
- CSCI6870 Penetration Testing and Vulnerability Analysis (3 credits)


## Cybersecurity and Information Assurance Graduate Project (3 credits)

- CSCI6807 Cybersecurity and Information Assurance Graduate Capstone Project (3 credits)


## Cybersecurity and Information Assurance Graduate Elective Courses (12 Credits)

Students are encouraged to take three courses ( 9 credits) from one of the following two focus areas and one more course ( 3 credits) from the list of approved electives as provided below. Alternatively, students can also take any four courses ( 12 credits) from the approved electives based on their interests and needs. Students have the option of registering for CSCI8891 Internship/Work Experience ( 3 credits) after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective.

## Electives for Network Security Administration Focus

- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)

Electives for Secure Software Development Focus

- CSCI6620 Software Engineering (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)


## Approved Electives

- CSCI6620 Software Engineering (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6811 Advanced Special Projects (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)
- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)
- CSCI7783 Information Security (3 credits)
- CSCI7870 Linux System Administration (3 credits)
- CSCI8891 Internship/Work Experience (3 credits)


## Pharmaceutical Biostatistics Concentration

Mathematics Requirements (35 credits)

- MATH1201 Calculus I (4 credits)
- MATH2202 Calculus II (4 credits)
- MATH2203 Calculus III (3 credits)
- MATH2243 Statistical Programming (3 credits)
- MATH2255 Discrete Structures (3 credits)
- MATH2337 Applied Statistics I (3 credits)
- MATH2338 Applied Statistics II (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MATH3237 Probability and Statistics I (3 credits)
- MATH3238 Probability and Statistics II (3 credits)
- Mathematics Elective (3 credits)
- A 3-credit course to be chosen from Mathematics courses numbered 3000 or higher, with the approval of an adviser.


## Minor Sequence in an Area Related to Mathematics (15 credits)

- CSCI2235 Survey of Computing Security (3 credits)
- CSCI2247 Assembly Language Programming (3 credits)
- CSCI6731 Computer Networks (3 credits)
- CSCI6738 Cybersecurity (3 credits)
- CSCI6747 Applied Cryptography (3 credits)


## Science Requirements (16 credits)

- BIOL1221 Biological Diversity (3 credits)
- BIOL1222 Biological Diversity Lab (1 credit)
- BIOL1233 Molecules, Cells and Genes (3 credits)
- BIOL1234 Lab: Molecules, Cells and Genes (1 credit)
- CHEM1201 General Chemistry I (3 credits)
- CHEM1202 General Chemistry II (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- CHEM1204 General Chemistry Laboratory II (1 credit)


## Science Electives (8 credits)

A one-year sequence in advanced biology or chemistry (epidemiology, organic chemistry, microbiology, etc.) is recommended.

## Computer Science Requirements (12 credits)

- CSCI1201 Computer Programming I (3 credits)
- CSCI1202 Computer Programming II (3 credits)
- CSCI2215 Introduction to Computer Science (3 credits)
- CSCI2234 Data Structures and Algorithms (3 credits)


## General Education Requirements ( 24 credits)

- ENGR2210 Technical Communications (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)
- WRIT1003 Composition II: Research and Argument (3 credits)
- Humanities Elective (3 credits)
- Take 3 credits of coursework in ARTH (art history), CINE (cinema studies), CGDH (computer graphic design humanities), DANH (dance humanities), HIST (history), HUMN (humanities), LANG (languages [not foreign language]), LITS (literature), MUSIH (music humanities), PHIL (philosophy), RELI (religion) or THEAH (theater humanities)
- Social Elective (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- Behavioral Science Elective (3 credits)
- Creative and Expressive Art Elective (3 credits)


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- UNIV2001 Cross Cultural Perspectives (3 credits)
- UNIV2002 Global Issues (3 credits)


## Technical Electives (3 credits)

- Take ENGR2286 Digital System Design (3 credits).


## Additional Graduate Courses (21 credits)

## Cybersecurity and Information Assurance Graduate Core Courses (6 credits)

- CSCI6638 Operating Systems (3 credits)
- CSCI6870 Penetration Testing and Vulnerability Analysis (3 credits)


## Cybersecurity and Information Assurance Graduate Project (3 credits)

- CSCI6807 Cybersecurity and Information Assurance Graduate Capstone Project (3 credits)


## Cybersecurity and Information Assurance Graduate Elective Courses (12 Credits)

Students are encouraged to take three courses ( 9 credits) from one of the following two focus areas and one more course ( 3 credits) from the list of approved electives as provided below. Alternatively, students can also take any four courses ( 12 credits) from the approved electives based on their interests and needs. Students have the option of registering for CSCI8891 Internship/Work Experience (3 credits) after completing the BS degree and 18 graduate credits. The internship will count as a one-course elective.
Electives for Network Security AdministrationFocus (9 credits)

- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)


## Electives forSecure Software DevelopmentFocus (9 credits)

- CSCI6620 Software Engineering (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)


## Approved Electives

- CSCI6620 Software Engineering (3 credits)
- CSCI6623 Database Systems (3 credits)
- CSCI6811 Advanced Special Projects (3 credits)
- CSCI6836 Computer Algorithms (3 credits)
- CSCI6860 Secure Software Development and Analysis (3 credits)
- CSCI6863 Supply Chain Security and Systems Certification (3 credits)
- CSCI6869 Network Security (3 credits)
- CSCI6873 Firewalls and Intrusion-detection Systems (3 credits)
- CSCI7783 Information Security (3 credits)
- CSCI7870 Linux System Administration (3 credits)
- CSCI8891 Internship/Work Experience (3 credits)

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## Mechanical Engineering BSME

Mechanical engineering is one of the largest, broadest and most diverse engineering disciplines. Mechanical engineers are employed in many industries, including manufacturing, power, automotive, aerospace, rail, marine, utilities, materials, defense, HVAC, construction and health. They account for many engineering jobs. As the nation's infrastructure ages and its population continues to grow, more mechanical engineers will be needed to maintain, repair, upgrade or expand utility infrastructure, transportation systems and public and private facilities, as well as to build new ones. Contributing to environmental sustainability and energy conservation, mechanical engineers help build and maintain green transportation, buildings and cities, as well as manage renewable-energy projects, including building solar farms, wind turbines and wave-energy converters, in addition to hydroelectric and geothermal plants. They also develop cutting-edge technologies such as autonomous vehicles, electric cars, hybrid cars, unmanned aerial vehicles, autonomous underwater vehicles, robots, advanced manufacturing, prostheses and nanotechnology. Moreover, mechanical engineers will help revive the advanced, domestic manufacturing industry as promoted by the federal and state governments. The mechanical engineering profession is consistently ranked among the top earners. It has substantial career opportunities, excellent average starting salary, very good median long-term salary, robust job growth and great career fulfillment. The demand for mechanical engineers will further increase as the $\$ 1$-trillion Infrastructure Investment and Jobs Act is implemented over the next eight years.
The Bachelor of Science in Mechanical Engineering (BSME) degree program prepares graduates for entrance into the high-demand profession of mechanical engineering or graduate study. Graduates will work in industry as mechanical engineers, typically specializing as machine-design engineers, manufacturing engineers, power engineers, electromechanical engineers or automotive engineers. They
may also hold other job titles, including marine engineers, acoustics and vibration engineers, HVAC engineers, facilities engineers, robotics engineers, tool engineers, piping engineers, lubrication engineers, project engineers and systems engineers.
The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in Mechanical Engineering program has applied for initial accreditation review with the Engineering Accreditation Commission of ABET (https://www.abet.org).
The BSME curriculum provides students with a varied and balanced educational experience through an appropriate combination of theoretical concepts and practical applications. It also provides students with an engineering-design experience that expands in breadth and depth as they progress through their studies. A stimulating course of study is maintained by offering students a reasonable variety of focus areas and contemporary courses. The engineering laboratory experience is fully integrated with coursework. Students work in many state-of-the-art laboratories.
In particular, the program focuses on four key areas of mechanical engineering: mechanical design, electromechanical devices and controls, advanced manufacturing and thermal-fluid sciences. Students learn to analyze, design, build, test, operate and maintain mechanical components, devices, systems, processes and facilities; estimate costs; and manage projects. Working on alternative-energy training systems, students also learn to utilize renewable-energy sources and technologies, energy-saving materials and devices, thereby protecting the environment and sustaining scarce resources. Moreover, through courses in process control, industrial automation, manufacturing processes and trainers such as reconfigurable manufacturing systems, industrial robots, computer numerical control (CNC) machines, 3D printers and programmable-logic-controller-based systems, students are trained to develop, configure and program manufacturing and electromechanical systems. Students will be able to intern or find employment with mechanical engineering, mechanical contracting and manufacturing companies; public utilities; municipalities; and other government agencies within the state and nearby states.

## Educational Objectives

The educational objectives of the BS in Mechanical Engineering program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Enter into and advance in the profession of mechanical engineering, particularly in the areas of mechanical design, electromechanical devices and controls, advanced manufacturing and thermal-fluid sciences.
2. Continue their formal education and obtain advanced degrees such as MS degree in mechanical engineering or other related fields.
3. Become responsible professionals and global citizens who are aware of ethical issues and societal needs and problems.
These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

The BS in Mechanical Engineering program has adopted the student outcomes of the Engineering Accreditation Commission (EAC) of ABET as its own student outcomes, which define the attributes, skills and knowledge that the graduates are expected to possess upon or before graduation. Each
mechanical engineering graduate will demonstrate the following attributes and achievements as required by the EAC of ABET upon or before graduation:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

## Cooperative Education Option

Students in the BSME program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives. Note that these credits may not be substituted for any required coursework. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. Industry benefits from better-prepared graduates with real and relevant work experience saving time and money by reducing the training period for new employees.

## Degree Plan

The program requires the successful completion of 131 credits with a minimum cumulative grade point ratio (CGPR) of 2.00. The credit distribution is as follows:

- Mathematics and Science Requirements (36 credits)
- Liberal Arts Requirements (20 credits)
- Mechanical Engineering Core Requirements (75 credits)


## 1st Semester (15 credits)

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- PHYS2203 University Physics I (3 credits)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (17 credits)

- ENGR1223 Introduction to CAD (2 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)
- MATH2202 Calculus II (4 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- PHYS2204 University Physics II (3 credits)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition: Research and Argument (3 credits)


## 3rd Semester (16 credits)

- CHEM1201 General Chemistry I (3 credits)
- CHEM1203 General Chemistry I Laboratory (1 credit)
- ENGR2221 Statics (3 credits)
- MATH2210 Differential Equations (3 credits)
- MENG2232 Mechanical Measurement and Devices (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 4th Semester (18 credits)

- ENGR1204 Programming Languages in Engineering (3 credits)
- ENGR2228 Strength of Materials (3 credits)
- ENGR3351 Applied Thermodynamics (3 credits)
- ENGR3431 Dynamics (3 credits)
- MATH3220 Linear Algebra (3 credits)
- MENG2235 Manufacturing Processes (3 credits)


## 5th Semester (17 credits)

- EENG2221 Signals and Systems I (4 credits)
- ENGR4254 Fluid Mechanics (3 credits)
- MATH2203 Calculus III (3 credits)
- MENG3155 Heat Transfer (3 credits)
- Science Elective (4 credits)


## 6th Semester (18 credits)

- ENGR2210 Technical Communications (3 credits)
- ENGR4210 Managerial and Engineering Economic Analysis (3 credits)
- ENGR4221 Engineering Statistics and Reliability (3 credits)
- MENG3160 Thermal Systems Analysis and Design (3 credits)
- MENG3230 Computer Aided Design and Manufacturing (3 credits)
- UNIV2002 Global Issues (3 credits)


## 7th Semester (16 credits)

- ENGR3211 Engineering Materials I (3 credits)
- MENG4248 Mechanical Engineering Design I (3 credits)
- MENG4355 Analog and Digital Control (3 credits)
- MENG4375 Electrical Energy Conversion (3 credits)
- MENG4384 Preparation for Senior Design Project (3 credits)
- Technical Elective (3 credits)


## 8th Semester (14 credits)

- MENG4356 Stress and Vibration Analysis (3 credits)
- MENG4360 Industrial Automation (3 credits)
- MENG4386 Senior Design Project (2 credits)
- Technical Electives (6 credits)


## Science Elective

The student must take 4 credits of a science elective, to be chosen from the following list:

- BIOL1251 General Biology I ( 3 credits) and BIOL1253 Laboratory: General Biology I (1 credit)
- BIOL2203 Human Anatomy and Physiology I (3 credits) and BIOL2223 Lab: Human Anatomy and Physiology I (1 credit)
- CHEM1202 General Chemistry II (3 credits) and CHEM1204 General Chemistry Laboratory II (1 credit)
- PHYS3205 Modern Physics (3 credits) and PHYS4430 Selected Studies in Physics (1 credit)


## Technical Electives

The student must take 9 credits of technical electives, to be chosen from the following list:

- CENG3261 Estimating I (3 credits)
- EENG2222 Signals and Systems II (3 credits)
- EENG3265 Electronics I (3 credits)
- ENGR2286 Digital System Design (3 credits)
- ENGR4001 FE/EIT Exam Preparation I (2 credits) and ENGR4002 FE/EIT Exam Preparation II (1 credit)
- ENGR4263 Project Management in Engineering and Technology (3 credits)
- MENG3288 Microcontroller System Design (3 credits)
- MENG4040 Heating, Ventilation and Air Conditioning (3 credits)
- MENG4041 Heating, Ventilation, Air Conditioning and Refrigeration Controls (3 credits)
- MENG4250 Mechanical Engineering Design II (3 credits)
- MENG4365 Advanced Fluid Mechanics (3 credits)

Other technical electives may be taken with prior approval from a program adviser. In addition, students may undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives.

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## Mechanical Engineering Technology BSMET

The Bachelor of Science in Mechanical Engineering Technology (BSMET) program educates and trains students for industrial positions requiring a sophisticated, applied technical orientation in the design, manufacturing, operation and maintenance of mechanical devices, systems and processes. The curriculum consists of an integrated sequence of undergraduate courses emphasizing the application of engineering and scientific knowledge, methods, technology and management and technical skills appropriate to the mechanical engineering technology discipline. The program graduates are capable of solving design and applied engineering problems, as well as performing managerial, business and sales functions. Employment opportunities for the program graduates are in power generation, process control, production supervision, plant operation, manufacturing, quality assurance and reliability testing, test and field services, automotive industry, heating, ventilating and air conditioning. Job responsibilities would include design, development, liaison, cost estimation, supervision, installation, testing, maintenance, services or sales. The mechanical engineering technology profession has substantial career opportunities, excellent average starting salary, very good median long-term salary, robust job growth and great career fulfillment. The demand for the program graduates will further increase when the $\$ 1$-trillion Infrastructure Investment and Jobs Act is implemented over the next eight years.

The program is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering (GHSCSE) at the Metropolitan Campus, Teaneck, New Jersey. The BS in Mechanical Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET (https://www.abet.org).
The faculty members maintain excellent communication with industry and encourage students to gain industrial experience through cooperative education. Laboratory and industry-oriented project assignments complement the lectures and recitations throughout the program to provide students with these learning opportunities that are crucial to their success in the workplace. Students work in state-of-the-art laboratories. A capstone project based on an approved written proposal is required in the eighth semester for all students.
GHSCSE offers a mechanical engineering technology minor for nonmechanical engineering technology and nonmechanical engineering majors.

## Educational Objectives

The educational objectives of the BS in Mechanical Engineering Technology program define the career and professional accomplishments that the graduates are being prepared to achieve three to four years after graduation. The program will produce graduates who:

1. Enter into and advance their careers in the analysis, applied design, development, implementation and management of mechanical systems and processes, including those used in fields such as mechanical design, electromechanical devices and controls, manufacturing processes or applied thermal-fluid sciences.
2. Continue their formal education leading to professional licensures or advanced degrees in science, technology or business.
3. Continue to conduct themselves as both responsible professionals and global citizens who are aware of and who understand ethical issues and societal needs and problems.

These objectives are consistent with the mission of Fairleigh Dickinson University to educate and prepare students as world citizens through global education. They also fulfill the needs of the program constituencies, which include students, alumni, employers, faculty and the Industrial Advisory Board.

## Student Outcomes

Each mechanical engineering technology graduate will demonstrate the following attributes and achievements as required by the ETAC of ABET upon or before graduation:

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering and technology to solve broadly defined engineering problems appropriate to the discipline;
2. An ability to design systems, components or processes meeting specified needs for broadly defined engineering problems appropriate to the discipline;
3. An ability to apply written, oral and graphical communication in broadly defined technical and nontechnical environments; and an ability to identify and use appropriate technical literature;
4. An ability to conduct standard tests, measurements and experiments and to analyze and interpret the results to improve processes; and
5. An ability to function effectively as a member as well as a leader on technical teams.

## Cooperative Education or Work Experience Option

Students in the BS in Mechanical Engineering Technology program have the option to undertake a cooperative education experience and earn a total of 6 academic credits toward their technical electives. The co-op experience provides students a real-world grounding - linking theory and practice, academic and industrial experiences and college education and lifelong learning. It better prepares students for jobs, gives them a competitive edge in the job market, helps them develop networking skills and professional contacts and allows them to experience career fields before graduation. The industry benefits from betterprepared graduates with real and relevant work experience - saving time and money by reducing the training period for new employees.
Instead of undertaking cooperative education, students may earn up to 6 academic credits for appropriately documented industrial experience (work experience) counted toward their technical electives. Note that credits earned from industrial experience and/or cooperative education may not be substituted for any required coursework and that they altogether may not exceed a total of 6 credits. Students must have successfully completed the course EGTG2210 Technical Communications before the application for work-experience credits can be considered. The application form and directions for submission of necessary documents in support of the application may be obtained from GHSCSE.

## Degree Plan

The program requires the successful completion of 128 credits with a minimum cumulative grade point ratio (CGPR) of 2.00 as described below.

## 1st Semester (15 credits)

- ENGR1301 Engineering Practices, Graphics and Design (3 credits)
- MATH1107 Precalculus (4 credits)
- PHYS2101 General Physics I (3 credits)
- PHYS2201 Physics Laboratory I (1 credit)
- UNIV1001 Transitioning to University Life (1 credit)
- WRIT1002 Composition I: Rhetoric and Inquiry (3 credits)


## 2nd Semester (14 credits)

- EGTC1223 Introduction to CAD (2 credits)
- MATH1201 Calculus I (4 credits)
- PHYS2102 General Physics II (3 credits)
- PHYS2202 Physics Laboratory II (1 credit)
- UNIV1002 Preparing for Professional Life (1 credit)
- WRIT1003 Composition II: Research and Argument (3 credits)


## 3rd Semester (17 credits)

- CHEM1201 General Chemistry I (3 credits)
- CHEM1203 General Chemistry Laboratory I (1 credit)
- EGTG2210 Technical Communications (3 credits)
- EGTG2215 Circuits I (3 credits)
- EGTG2221 Statics (3 credits)
- MATH2202 Calculus II (4 credits)


## 4th Semester (18 credits)

- EGTE2216 Circuits II (3 credits)
- EGTG2228 Strength of Materials (3 credits)
- EGTG2286 Digital System Design (3 credits)
- EGTG4221 Engineering Statistics and Reliability (3 credits)
- ENGR1204 Programming Languages in Engineering (3 credits)
- UNIV2001 Cross Cultural Perspectives (3 credits)


## 5th Semester (18 credits)

- EENG4375 Electrical Energy Conversion (3 credits)
- EGTC3261 Estimating I (3 credits)
- EGTG2265 Electronics I (3 credits)
- EGTG3211 Materials Technology I (3 credits)
- EGTG4254 Fluid Mechanics (3 credits)
- EGTM2232 Mechanical Measurement and Devices (3 credits)


## 6th Semester (15 credits)

- EGTG3223 Instrumentation (3 credits)
- EGTG3351 Applied Thermodynamics (3 credits)
- EGTG3431 Dynamics (3 credits)
- EGTM2235 Manufacturing Processes (3 credits)
- ENGR3000 Modern Technologies: Principles, Applications and Impacts (3 credits)


## 7th Semester (15 credits)

- EGTC4263 Project Management and Control I (3 credits)
- EGTG4224 Process and Electro/Mechanical Control Systems Technology (3 credits)
- EGTG4269 Management and Engineering Economics (3 credits)
- EGTM3248 Mechanical Technology Design I (3 credits)
- UNIV2002 Global Issues (3 credits)


## 8th Semester (16 credits)

- EGTG4225 Industrial Automation (3 credits)
- EGTM3250 Mechanical Technology Design II (3 credits)
- EGTM4356 Stress and Vibration Analyses (3 credits)
- EGTM4386 Mechanical Technology Design Project (1 credit)
- Technical Electives (6 credits)


## Technical Electives

The student must take 6 credits of technical electives, to be chosen from the following:

- CHEM1202 General Chemistry II (3 credits) and CHEM1204 General Chemistry Laboratory II (1 credit)
- EGTC3262 Estimating II (3 credits)
- EGTC4260 Contracts and Specifications (3 credits)
- EGTC4264 Project Management \& Control II (3 credits)
- EGTE4047 Optical Technology I (3 credits)
- EGTE4049 Optical Technology II (3 credits)
- EGTG4340 Manufacturing Systems (3 credits)
- EGTM4040 Heating, Ventilation, Air Conditioning (3 credits)
- EGTM4041 Heating, Ventilation, Air Conditioning and Refrigeration Controls (3 credits)

Other technical electives may be taken with prior approval from a program adviser. Up to 6 credits for work experience or cooperative education experience but not both may be used in place of technical electives.

## For Information

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## Medical Imaging Science BSMIS

The Bachelor of Science in Medical Imaging Science (BSMIS) is offered by the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey.

The BSMIS program is designed to prepare graduates with a concentration in diagnostic medical sonography or cardiovascular sonography awarded jointly between FDU and Rutgers School of Health Professions. Students must complete 92 preprofessional credits during their first three years at FDU before applying for acceptance to the professional component at Rutgers School of Health Professions for their senior year.
Completion of this program will result in a Bachelor of Science in Medical Imaging Science awarded jointly between:

- Fairleigh Dickinson University and
- Rutgers School of Health Professions


## Admission Requirements

## Admission to FDU

- Graduation from an accredited secondary school with a record indicating potential to succeed in college.
- A separate application to Rutgers School of Health Professions will be filled out in the fall.
- Admission decisions for the professional component are made in accordance with criteria, policies and procedures established by a joint Committee on Admissions and Academic Status and cannot be guaranteed by FDU.


## Admission to Rutgers School of Health Professions

- A separate application in the fall of the junior year.
- Admission decisions for the professional component are made in accordance with criteria, policies and procedures established by a joint Committee on Admissions and Academic Status and cannot be guaranteed by FDU.
- Students admitted to the BS in medical imaging science program must maintain a minimum Grade Point Ratio (GPR) of 2.85 in their preprofessional coursework.


## Degree Plan

Students must complete 92 preprofessional credits during their first three years at FDU before applying for acceptance to the professional component at our partner university for their final 12 to 13 months of study. A minimum of 120 credits is required for graduation.
Graduates will be eligible for national certification and state licensure, where applicable.
Students must choose one of the following areas of concentration.

- Cardiovascular Sonography
- Diagnostic Medical Sonography


## Diagnostic Medical Sonography Concentration

Diagnostic medical sonographers provide patient services using diagnostic ultrasound under the supervision of a licensed physician. Sonographers look for subtle differences between health and pathological areas and decide what images to include in their report. The sonographer may provide this service in a variety of medical settings when the physician is responsible for the use and interpretation of ultrasound procedures.

## Cardiovascular Sonography Concentration

The cardiac sonography concentration prepares cardiovascular sonographers to be an integral part of the medical management team. The 15 -month cardiac sonography program has a proven record of success as measured by retention rates, credentialing achievements and post-graduation employment. As highly skilled professionals working under the supervision of a licensed physician, FDU's cardiac sonography graduates are valued members of the health care team whose diagnostic skills help guide patients to the appropriate path of treatment.

## 1st Semester (16 credits)

- BIOL1221/BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- CHEM1201 General Chemistry I
- CHEM1203 General Chemistry Laboratory I
- CHEM1211 Recitation: General Chemistry I
- MATH1107 Precalculus
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## 2nd Semester (16 credits)

- BIOL1233/BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation
- CHEM1202 General Chemistry II
- CHEM1204 Lab: General Chemistry II
- CHEM1212 Recitation: General Chemistry II
- MATH1201 Calculus I
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument


## 3rd Semester (17 credits)

- BIOL2203/BIOL2223 Human Anatomy and Physiology I Lecture and Laboratory
- CHEM2261 Organic Chemistry I
- CHEM2263 Lab: Organic Chemistry I
- CSCI1105 Survey of Computers and Computer Software
- SPCH1155 Public Speaking
- UNIV2001 Cross Cultural Perspectives


## 4th Semester ( 15 credits)

- BIOL2204/BIOL2224 Human Anatomy and Physiology II Lecture and Laboratory
- BIOL2125/BIOL2126 Microbiology for the Health Sciences Lecture and Laboratory
- CHEM2262 Organic Chemistry II
- CHEM2264 Lab: Organic Chemistry II
- UNIV2002 Global Issues


## 5th Semester (13 credits)

- CHEM3281 Biochemistry I
- MEDT1130 Bioethics
- PHYS2201 Lab: Physics I
- PHYS2203 University Physics I
- PSYC1201 General Psychology


## 6th Semester (13 credits)

- MEDT4308 Management Principles for Healthcare Professionals
- PHIL1000 The Life of the Mind
- PHYS2202 Lab: Physics II
- PHYS2204 University Physics II
- PSYC2210 Psychological Statistics


## For Information

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## Medical Technology BS

The Bachelor of Science in medical technology will prepare graduates to become medical technologists and be eligible to sit for the Board of Registry of the American Society of Clinical Pathology.
Medical technologists play a critical role in patient care, providing key laboratory data for the diagnosis of diseases, management of patient therapy and health maintenance. They perform complicated chemical, biological, hematological, microscopic and bacteriological tests. For example, medical technologists microscopically examine blood and other body fluids, make cultures of fluid, or tissues the samples, use computers to verify and organize lab data and analyze the samples for chemical content or reaction. They require skills in using state-of-the-art technology and instrumentation, as well as excellent organizational, problem-solving and communication skills.
The degree is offered through the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey.

## Degree Plan

## 1st Semester (16 credits)

- BIOL1221, BIOL1222 Biological Diversity Lecture and Laboratory
- BIOL1223 Biological Diversity Recitation
- CHEM1201 General Chemistry I
- CHEM1203 General Chemistry Laboratory I
- CHEM1211 Recitation: General Chemistry I
- MATH1107 Precalculus
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## 2nd Semester (18 credits)

- BIOL1233, BIOL1234 Molecules, Cells and Genes Lecture and Laboratory
- BIOL1235 Molecules, Cells and Genes Recitation
- CHEM1202 General Chemistry II
- CHEM1204 Lab: General Chemistry II
- CHEM1212 Recitation: General Chemistry II
- CSCI1105 Survey of Computers and Computer Software
- MATH1201 Calculus I
- WRIT1003 Composition II: Research and Argument


## 3rd Semester (12 credits)

- BIOL3238, BIOL3239 Human Structure and Function I Lecture and Laboratory
- CHEM2261 Organic Chemistry I
- CHEM2263 Lab: Organic Chemistry I
- PSYC1201 General Psychology
- UNIV1002 Preparing for Professional Life


## 4th Semester (14 credits)

- BIOL4240, BIOL4241 Molecular Cell Biology Lecture and Laboratory
- CHEM2262 Organic Chemistry II
- CHEM2264 Lab: Organic Chemistry II
- PSYC2210 Psychological Statistics
- UNIV2001 Cross Cultural Perspectives


## 5th Semester (17 credits)

- BIOL3100, BIOL3101 Genetics Lecture and Laboratory
- BIOL3225, BIOL3226 General Microbiology Lecture and Laboratory
- CHEM3281 Biochemistry I
- MEDT1130 Bioethics
- UNIV2002 Global Issues


## 6th Semester (15 credits)

- BIOL5306 Immunology
- MEDT1201 Introduction to Medical Technology
- MEDT4308 Management Principles for Healthcare Professionals
- NURS4430 Critique/Use of Research
- SPCH1155 Public Speaking


## 7th and 8th Semesters (12 months at an approved hospital) (32 credits)

- MEDT4205 Clinical Lab Education I
- MEDT4206 Clinical Lab Education II

A minimum of 126 credits is required for graduation.

## Special Information

This major is offered at the Metropolitan Campus of Fairleigh Dickinson University. A total of 120 credits is required for the degree, which includes course work in medical technology, mathematics, biology, chemistry, English and the humanities. Sample courses in the major include: Introduction to Medical Technology; Clinical Chemistry; Coagulation; Clinical Microbiology; Clinical Physiology; Organic chemistry, Clinical Microscopy; Medical Microbiology; Hematology; Immunohematology/Blood Banking; Immunology/Serology; Instrumentation; and Laboratory Management.

## Clinical Laboratory Experience

- Six semesters of college work are required for admission to this hospital program. At the end of the sixth semester, students may apply to a program of medical technology approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).
- Students will select their laboratory affiliations in consultation with the faculty adviser.
- A clinical training program is required of students who wish to qualify for the examination given by the Board of Registry of the American Society for Clinical Pathology (ASC.P.) for the certification as a clinical laboratory scientist.
- Admission to the clinical internship is competitive.
- For students who are not selected for hospital internship during the fourth year, an option to continue for a BS in Science or a BS in Health Studies - science track may be chosen.

Upon completion of the BS degree, students may again apply for clinical internship.

Students report to the laboratory five days a week. A two-week vacation period is suggested by the ASC.P. and is customary. Students should expect to work under supervision and to have reference books available. MEDT4205 and MEDT4206 Clinical Lab Education I, II carry a course fee for fall and spring.

## For Information

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## Nursing Accelerated ABSN

The Accelerated Bachelor of Science in Nursing (ABSN) welcomes individuals who have baccalaureate degrees in fields other than nursing. The program honors their diverse education and degrees and provides the opportunity to enter the nursing profession in a concentrated timeframe. The ABSN program offers two tracks: a one-year, full-time program and an 18-month program.
The intensive curriculum prepares the student for the NCLEX-RN, licensing examination and to become a competent professional nurse. The classes and clinical rotations offer a stimulating educational pathway for the second-degree students. Classes are small, encouraging participation and involvement.
The ABSN program is offered by the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- An earned baccalaureate degree from a regionally accredited college or university
- An undergraduate Cumulative Grade Point Ratio (CGPR) of 3.00 or higher
- Completion of the following academic prerequisites on a college level with a minimum grade of B:
- Human Anatomy and Physiology (8 credits, with lab)
- General Chemistry (4 credits, with lab) - Note: Introductory Chemistry is not accepted
- Microbiology (4 credits, with lab)
- Statistics (3 credits) - course must include inferential and descriptive statistics
- Microeconomics or Macroeconomics (3 credits) [Required prerequisite for 12-month program; taken as corequisite for 18-month program only]
- Bioethics/Medical Ethics (3 credits) [Required prerequisite for 12-month program; taken as corequisite for 18 -month program only]
- Students with a graduating GPR of 3.70 or higher are exempt from the Kaplan Admission Test (KAT).

NOTE: Human Anatomy and Physiology, General Chemistry and Microbiology must be taken within the last 10 years and online science courses are not accepted.

## Degree Plan

An ABSN student may choose to complete the program in either 12 months or 18 months.

## 12-month Accelerated BSN Program

Students entering the accelerated nursing program must have at least a 3.00 CGPR for their earned bachelor's degree from a regionally accredited college or university. The Accelerated Baccalaureate 12month program consists of: 36 blanket credits for previous degree, 25 credits for prerequisite courses and 59 nursing credits.
In addition, the following prerequisites also are required with a minimum grade of B :

## Summer Semester I (Freshman-level Courses, 13 credits)

All courses are three credits except where indicated otherwise.

- NURS2005 Professional Communication Skills: Individual, Family and Groups
- NURS2007 Pharmacotherapeutics
- NURS2500, NURS2501 Foundations of Nursing I Lecture and Laboratory
- NURS2550, NURS2551 Comprehensive Health Assessment Lecture and Laboratory (4 credits)


## Summer Semester II (Sophomore-level Courses, 6 credits)

- NURS2210 Pathophysiology
- NURS2600, NURS2601 Foundations of Nursing II Lecture and Laboratory


## Fall Semester (Junior-level Courses, 20 credits)

- NURS3500, NURS3501 Nursing Management of Adults I Lecture and Laboratory
- NURS3550, NURS3551 Nursing Management of Psychosocial Problems Lecture and Laboratory
- NURS3600, NURS3601 Nursing Management of Women, Newborn and Families Lecture and Laboratory
- NURS3650, NURS3651 Nursing Management of Children and Families Lecture and Laboratory


## Spring Semester (Senior-level Courses, 20 credits)

All courses are three credits except where indicated otherwise.

- NURS4420 Health Care Management
- NURS4430 Critique/Use of Research
- NURS4460 Preparation for Success (1 credit)
- NURS4500, NURS4501 Nursing Management of Populations Lecture and Laboratory (5 credits)
- NURS4600, NURS4601 Nursing Management of Adults II Lecture and Laboratory (8 credits)


## 18-month Accelerated BSN Program

Students entering the accelerated nursing program must have at least a 3.00 Cumulative Grade Point Ratio (CGPR) for their earned bachelor's degree from a regionally accredited college or university. The

Accelerated Baccalaureate 18-month program consists of 36 blanket credits for previous degree, 19 credits for prerequisite courses and 65 nursing credits.
In addition, the following prerequisites also are required with a minimum grade of B:

## Fall Semester (Freshman-level Courses, 13 credits)

All courses are three credits except where indicated otherwise.

- NURS2005 Professional Communication Skills: Individual, Family and Groups
- NURS2007 Pharmacotherapeutics
- NURS2500, NURS2501 Foundations of Nursing I Lecture and Laboratory
- NURS2550, NURS2551 Comprehensive Health Assessment Lecture and Laboratory (4 credits)


## Spring Semester (Sophomore-level Courses, 14 credits)

All courses are three credits except where indicated otherwise.

- NURS2210 Pathophysiology
- NURS2600, NURS2601 Foundations of Nursing II Lecture and Laboratory
- NURS3208 Introduction to Health Care Economics
- NURS3550, NURS3551 Nursing Management of Psychosocial Problems Lecture and Laboratory (5 credits)


## Summer Semester (Junior-level Courses, 8 credits)

- NURS3209 Bioethics
- NURS3500, NURS3501 Nursing Management of Adults I Lecture and Laboratory


## Fall Semester (Junior-level Courses, 13 credits)

All courses are five credits except where indicated otherwise.

- NURS3600, NURS3601 Nursing Management of Women, Newborn and Families Lecture and Laboratory
- NURS3650, NURS3651 Nursing Management of Children and Families Lecture and Laboratory
- NURS4420 Health Care Management (3 credits)


## Spring Semester I (Senior-level Courses, 17 credits)

- NURS4500, NURS4501 Nursing Management of Populations Lecture and Laboratory (5 credits)
- NURS4430 Critique/Use of Research (3 credits)
- NURS4600, NURS4601 Nursing Management of Adults II Lecture and Laboratory (8 credits)
- NURS4460 Preparation for Success (1 credit)


## For Information

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## Nursing BSN

The Bachelor of Science in Nursing program prepares professional nurses to provide comprehensive nursing care to persons and families in all environments where health care is required. Students are prepared to have critical-thinking and problem-solving skills in caring for their patients. Graduates of the program are eligible and prepared to take the NCLEX-RN for licensure as a registered nurse (NCLEXRN passing rates are 90 to 95 percent in the last three years.).
The baccalaureate degree program in nursing/master's degree program in nursing/Doctor of Nursing Practice program and/or post-graduate APRN certificate program at Fairleigh Dickinson University are accredited by the Commission on Collegiate Nursing Education.
The BS in Nursing is offered by the Henry P. Becton School of Nursing and Allied Health at the Florham Campus, Madison, New Jersey, and Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- Graduation from an accredited secondary school with a record indicating potential to succeed in college.
- Completion of the following high school studies: 4 units of English, 1 unit of chemistry with lab, 2 units of history, 1 unit of biology with lab, 2 units of college preparatory mathematics.
- Recommended courses: 1 unit of physics, 2 units of foreign language.
- A minimum of 16 high school academic units is required for admission.
- Scholastic Aptitude Test (SAT) - Composition 1100, Math 530
- American College Test (ACT) - Composite 22
- Grade Point Ratio (GPR) of 3.00 or higher
- Must pass Kaplan Admission Test (KAT) - Applies to transfer students and incoming freshmen who did not submit SAT or ACT test scores with their application for admission.


## Transfer Students

The nursing program will begin in the fall semester of the sophomore year for transfer students. They can apply or process the change of major form after meeting the following requirements:

- Completion of all first-year courses in sciences, mathematics, English and University Core (see list below)
- GPR of 3.00
- GPR of 3.00 in science and mathematics courses
- Repeated any science and mathematics course only once with a grade of "B"
- Acceptable score in the Kaplan Admission Test (KAT)


## Notes:

- The KAT can only be taken once per academic year. Students with a GPR of 3.70 or higher are exempt from the KAT requirement
- Only a four-credit College Algebra, Precalculus or Calculus course can transfer into the nursing program as MATH1105. If a student has three transfer credits for College Algebra it will transfer in as free electives or excess credits and the student is not required to take the math placement test and can register for MATH1105.
- A four-credit General Chemistry I with lab or a higher-level chemistry course with a lab, with an earned grade of $\mathbf{B}$ or higher in both the lecture and lab can substitute for Chemistry for Health Sciences with Lab (CHEM1107, CHEM1117). The School of Nursing and Allied Health will not accept Introduction to Chemistry for Chemistry for Health Sciences and Lab (CHEM1107, CHEM1117).
- Statistics (PSYC2201) can only transfer into the nursing program if the course is inferential and descriptive. Courses such as QUANT2029 Introduction to Statistics cannot substitute for PSYC2201.


## Degree Plan

## 1st Semester (15-16 credits)

All courses are 3 credits except where indicated otherwise.

- CSCI1105 Survey of Computers and Computer Software or CSCI1145 Computers and Computing
- BIOL2203, BIOL2223 Human Anatomy and Physiology I and Lab, 4 credits (must pass)
- CHEM1107, CHEM1117 Chemistry for Health Sciences and Lab, 4 credits (must pass)
- PHED___ Physical Education Elective (Metropolitan Campus only), 1 credit
- UNIV1001 Transitioning To University Life, 1 credit
- WRIT1002 Composition I: Rhetoric and Inquiry


## 2nd Semester (18 credits)

All courses are 3 credits except where indicated otherwise.

- BIOL2125, BIOL2126 Microbiology for the Health Sciences and Lab, 4 credits (must pass)
- BIOL2204, BIOL2224 Human Anatomy and Physiology II and Lab, 4 credits (must pass)
- MATH1105 College Algebra, 4 credits (must pass)
- NURS1101 A Preview of Professional Nursing, 2 credits
- UNIV1002 Preparing for Professional Life, 1 credit
- WRIT1003 Composition II: Research and Argument


## 3rd Semester (16 credits)

All courses are 3 credits except where indicated otherwise.

- NURS2210 Pathophysiology
- NURS2500, NURS2501 Foundations of Nursing I and Lab
- NURS2550, NURS2551 Comprehensive Health Assessment and Lab, 4 credits
- PSYC1201 General Psychology I
- UNIV2001 Cross Cultural Perspectives


## 4th Semester (15 credits)

All courses are 3 credits except where indicated otherwise.

- NURS2005 Professional Communication Skills: Individual, Family and Groups
- NURS2007 Pharmacotherapeutics
- NURS2600, NURS2601 Foundations of Nursing II and Lab
- SPCH1155 Public Speaking (Metropolitan Campus) or SPCH1107 Fundamentals of Speech (Florham Campus)
- UNIV2002 Global Issues


## 5th Semester (16 credits)

All courses are 3 credits except where indicated otherwise.

- NURS3208 Introduction to Health Care Economics
- NURS3209 Bioethics
- NURS3500, NURS3501 Nursing Management of Adults I
- NURS3550, NURS3551 Nursing Management of Psychosocial Problems and Lab, 5 credits


## 6th Semester (13-14 credits)

- NURS3600 Nursing Management of Women, Newborn and Families, 5 credits
- NURS3650 Nursing Management of Children and Families, 5 credits
- PSYC2210 Psychological Statistics, 3 credits (Metropolitan Campus), 4 credits (Florham Campus)


## 7th Semester (14 credits)

All courses are 3 credits except where indicated otherwise.

- NURS4420 Health Care Management
- NURS4430 Critique/Use of Research
- NURS4500, NURS4501 Nursing Management of Populations and Lab, 5 credits
- SPAN1111 Spanish for Health Personnel I


## 8th Semester (12 credits)

- NURS4460 Preparation for Success, 1 credit
- NURS4600, NURS4601 Nursing Management of Adults II and Lab, 8 credits
- Free Elective, 3 credits


## For Information

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## Nursing RN to BSN (with Associate Degree)

The Henry P. Becton School of Nursing and Allied Health offers an RN to BSN for students who have completed an associate degree. The program is available at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

Upon the completion of an associate degree and passing the NCLEX-RN examination, FDU's Henry P. Becton School of Nursing and Allied Health on the Metropolitan Campus will award a minimum of 84 credits toward the Bachelor of Science in Nursing (BSN) degree. These credits will satisfy the lowerdivision requirements of the University's BSN degree. The remaining courses needed to complete the degree requirement are outlined below.

## Degree Plan

## University Requirements (6 credits)

- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Major Requirements (36 credits)

All courses are 3 credits except where indicated otherwise.

- NURS2550, NURS2551 Comprehensive Health Assessment Lecture and Laboratory (4 credits)
- NURS3208 Introduction to Health Care Economics
- NURS3209 Bioethics
- NURS3371 The Professional Nurse in the 21st Century
- NURS4420 Health Care Management
- NURS4430 Critique/Use of Research
- NURS4500, NURS4501 Nursing Management of Populations Lecture and Laboratory (5 credits)
- NURS6600 Introduction to Advanced Nursing: Philosophies and Theories
- NURS7702 Advanced Pathophysiology
- NURS $\qquad$ Nursing Elective
- NURS $\qquad$ Nursing Elective

A minimum of 120 credits, including up to 66 transfer credits, is required for graduation.

## For Information

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## Nursing RN to BSN (without Associate Degree)

The Henry P. Becton School of Nursing and Allied Health offers an RN to BSN for students without an associate degree. The program is available at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

Upon the completion of a diploma and passing the NCLEX-RN, FDU's Henry P. Becton School of Nursing and Allied Health will award a minimum of 30 credits toward the Bachelor of Science in Nursing (BSN) degree. These credits will satisfy the lower-division requirements of Fairleigh Dickinson University's BSN degree. The remaining courses needed to complete the degree requirement are outlined below.

## Degree Requirements

General Education Requirements
College Requirements ( 32 credits)

- CSCI1105 Survey of Computers and Computer Software
- ENGL1003 Introduction to Academic Writing
- PSYC1201 General Psychology
- PSYC2210 Psychological Statistics
- SOCI1201 Introduction to Sociology
- SPCH1155 Public Speaking
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument
- ART $\qquad$ Art Elective
- HIST $\qquad$ History Elective
- PHED $\qquad$ Physical Education Elective
- PHED $\qquad$ Physical Education Elective


## Sciences (16 credits)

- BIOL2125, BIOL2126 Microbiology for the Health Sciences Lecture and Laboratory
- BIOL2203, BIOL2223 Human Anatomy and Physiology I Lecture and Laboratory
- BIOL2204, BIOL2224 Human Anatomy and Physiology II Lecture and Laboratory
- CHEM1107, CHEM1117 Chemistry for the Health Sciences Lecture and Laboratory


## University Requirements (6 credits)

- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Major Requirements (36 credits)

All courses are 3 credits except where indicated otherwise.

- NURS2007 Pharmacotherapeutics
- NURS2550, NURS2551 Comprehensive Health Assessment Lecture and Laboratory (4 credits)
- NURS3208 Introduction to Health Care Economics
- NURS3209 Bioethics
- NURS3371 The Professional Nurse in the 21st Century
- NURS4500, NURS4501 Nursing Management of Populations Lecture and Laboratory (5 credits)
- NURS4420 Health Care Management
- NURS4430 Critique/Use of Research
- NURS6600 Introduction to Advanced Nursing: Philosophies and Theories
- NURS7702 Advanced Pathophysiology
- NURS $\qquad$ Nursing Elective


## For Information

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## Philosophy BA

As the traditional liberal arts discipline that emphasizes questioning, reasoning, and inquiring into all human values, philosophy provides a rich undergraduate major that can lead students to a variety of career choices. Because students of philosophy develop high degrees of critical-thinking skills, they may pursue careers in law, business and other fields as well as in the traditional career paths for philosophy students in teaching and research.
The BA in philosophy is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor degree requirements.

## Major Requirements (30-45 credits)

6 credits from the major may be applied towards General Education Requirements.

## Required Major Courses (9 credits)

- PHIL1101 Introduction to Logic
- PHIL1102 Introduction to Philosophy
- PHIL4401 Philosophy Seminar


## Major Electives (21-36 credits)

The student must see the Undergraduate Studies catalog or consult with his/her adviser for distribution recommendations

Note: Three credits in Internship experience may be used to fulfill a major elective requirement.
6 credits from the minor may be applied towards General Education Requirements.

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language ( $\mathbf{3}$ to $\mathbf{4}$ credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- $\qquad$ 1002 (Beginning Language II) (3 credits)
- ___ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities (6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000 -level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)


## For Information

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## Psychology BA

The School of Psychology and Counseling offers a four-year BA in psychology at both the Metropolitan Campus, Teaneck, New Jersey, and the Florham Campus, Madison, New Jersey. It offers optional tracks in

- Behavioral Neuroscience
- Consumer Psychology
- Forensic Psychology
- Mental Health

The school also offers five-year accelerated BA/MA programs in

- Forensic Psychology
- General/Theoretical Psychology
- Industrial/Organizational Psychology
and a combined BA in psychology (clinical social work track) and a Master's in Social Work in conjunction with New York University's School of Social Work.
The QUEST (Quality in Education, Schools and Teaching) program is open to students who want to be certified to teach at the elementary- or secondary-school levels. There are also three QUEST options that allow students to complete their BA and Master of Arts in Teaching (MAT) in five years with a psychology major:
- BA in psychology MAT/QUEST Elementary
- BA in psychology MAT/QUEST Elementary and Special Education
- BA in psychology MAT/QUEST P-3 Certification Program
- BA in psychology MAT/QUEST ESL Program
- BA in psychology MAT/QUEST Elementary Education-ESL
- BA in psychology: Neuroscience MAT/QUEST P-3 Certification Program

All psychology programs offer a wide range of courses at both introductory and advanced levels in areas such as developmental, social, abnormal, personality and experimental psychology, and in special topic areas such as techniques of psychotherapy, drugs and behavior, health psychology, sport psychology, psychology and the law and current issues in psychology.

## Degree Plan

The curriculum and courses, which will serve as preparation for graduate studies required for work in various fields of professional psychology, are designed to help all students develop a scientific understanding of human behavior. They are particularly useful as an undergraduate background for those who will later enter such professions as law, social work, medicine, nursing and teaching, or for those who will move into managerial positions in industry or government.

## Psychology Major (No Track) (38 Credits)

## Required Major Courses (14 credits)

- PSYC1201 General Psychology
- PSYC2210 Statistics
- PSYC2211 Research Methods
- PSYC4500 Senior Seminar in Psychology or PSYC4501 Advanced Senior Seminar in Psychology or PSYC4291 History and Systems in Psychology


## Learning/Cognition/Psychological Domain (1 course [3 credits] needed)

Courses that satisfy domain

- PSYC3032 Physiological Psychology
- PSYC3331 Theories of Learning
- PSYC3333 Sensation and Perception
- PSYC3335 Cognitive Psychology
- PSYC4130 Behavioral Neuroscience Methods
- PSYC4447 Medical Psychology


## Social/Personality Domain (1 course [3 credits] needed)

Courses that satisfy domain

- PSYC2234 Social Psychology
- PSYC3015 Theories of Personality


# Clinical/Developmental Domain (1 course [3 credits] needed) 

Courses that satisfy domain

- PSYC2204 Child Development
- PSYC3115 Abnormal Psychology
- PSYC3305 Adolescent Growth and Development
- PSYC3306 Psychology of Aging


## Applications of Psychology Domain (1 course [3 credits] needed)

Courses that satisfy domain

- PSYC3322 Industrial Psychology
- PSYC3308 Educational Psychology
- PSYC4309 Advanced Social Psychology
- PSYC4398 Computer Applications for Data Analysis
- PSYC4435 Selected Studies: Psychology of Financial Decision Making


## Major Psychology Electives (4 courses [12 total credits])

Courses that satisfy domain: any psychology course

## Tracks

The behavioral neuroscience track is designed for students wishing to earn a baccalaureate degree with an emphasis on the physiological basis of behavior. Undergraduate course requirements provide for the integrated understanding of the pharmacology of drug action and brain function as they relate to the discipline of behavioral neuroscience.
The consumer psychology track is ideal for students who want an applied business-oriented focus (with a marketing emphasis) to their training, but do not want to be business majors. Students in this track will take the required core psychology courses along with courses from the marketing department. This track will provide students with an understanding of human responses to product- and service-related information and experiences and will prepare them to work in private industry, nonprofit and government agencies in positions related to marketing research, advertising, designing/evaluating community-wide interventions, public health campaigns, social marketing, etc.
The forensic psychology track affords students an introduction to the dynamic fields of criminal justice and forensic psychology; integration of forensic science disciplines with criminal investigations; and training in psychological theory, research methods and the application of psychological principles to specific areas of the legal system. At the same time, students enrolled in this track may receive "handson" experience at a practicum site of their choice to help facilitate the integration of theory and practice, and will come away with an interdisciplinary background appropriate for careers in psychology, social work, law enforcement or other criminal-justice professions.
The mental health track provides specialized coursework and practical experience that will make one more attractive to employers (e.g., mental health services, child care, casework) immediately after graduation. This track also provides a competitive edge when seeking admission to applied graduate programs (e.g.,clinical and school psychology; social work). The coursework gives an in-depth analysis of psychopathology and permits a greater understanding of the various therapeutic approaches. At the same time, students receive "hands-on" experience at a practicum site of their choice to help facilitate the integration of theory and practice.

## Behavioral Neuroscience Track (12 Credits)

Select 4 courses from the following:

- PSYC3032 Physiological Psychology [required course]
- PSYC3331 Theories of Learning
- PSYC3333 Sensation and Perception [required course]
- PSYC3334 Psychopharmacology [required course]
- PSYC3335 Cognitive Psychology
- PSYC4130 Behavioral Neuroscience Methods
- PSYC4447 Medical Psychology


## Consumer Psychology Track Courses (12 credits)

Select 4 courses from the following:

- MKTG2120 Principles of Marketing [required]
- MKTG3344 Marketing Research
- MKTG4272 Consumer Behavior
- MKTG4365 Marketing Communications
- MKTG4405 Advanced Marketing Management


## Forensic Psychology Track Courses (12 credits)

Select 4 courses from the following:

- CRIM1101 Introduction to Criminal Justice [required]
- CRIM2204 Juvenile Justice and Delinquency [required]
- PSYC3317 Psychology and the Law [required]
- PSYC3421 Psychology of Criminal Behavior
- PSYC3381 Field Placement
- PSYC4800/PSYC4890/PSYC4891 Independent Study in Psychology


## Mental Health Track Courses (12 credits)

Select 4 courses from the following:

- PSYC3305 Adolescent Growth and Development or PSYC3306 Psychology of Aging
- PSYC3381 Field Placement
- PSYC3393 Child Behavior Disorders
- PSYC4376 Advanced Abnormal Psychology or PSYC4391 Techniques of Psychotherapy


## For Information

Benjamin Freer, Director, School of Psychology and Counseling
Associate Professor of Psychology

## Psychology BA, Psychology MA Combined Degree

The $4+1$ BA/MA programs in general/theoretical psychology, forensic psychology and industrial organizational psychology combine the undergraduate BA in psychology and graduate (MA) degrees in these areas. These programs allow students to complete both degrees in just five years. The savings in time and tuition are accomplished through a process of cross-crediting 15 undergraduate and graduate credits. Within the undergraduate portion of the program, it is possible to complete one of the specialized undergraduate tracks described above, without incurring additional undergraduate credits.
The programs are offered by the School of Psychology and Counseling at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements for Graduate Components of Combined Degree

## General/Theoretical Psychology Master's Program

Students can enter the program as incoming freshmen or as students already enrolled in an undergraduate program at Fairleigh Dickinson University (or incoming transfer students). Current undergraduate students must first complete a minimum of 12 credits in psychology. Students' academic and work experiences should reflect a strong potential for successfully completing the academic requirements of the accelerated BA/MA program. Academic potential for either incoming freshmen or current undergraduate students will be determined by the School of Psychology and Counseling on the basis of the following:

- Academic transcripts,
- A minimum of two letters of recommendation and
- A personal statement regarding academic and career goals.

Students will be allowed to continue in the graduate component of the five-year degree program upon evaluation of performance in the undergraduate component of the program. This evaluation will be performed by a committee of psychology faculty at the end of each student's fourth year. With regard to credits earned in graduate courses, students are required to maintain a minimum cumulative grade point ratio (CGPR) of 2.75 and must not earn more than two B-level grades throughout their graduate coursework. Students who receive two or more grades below a B- in core courses will not be permitted to continue in the program. Students in this circumstance who are not permitted to continue in the graduate program will receive the BA in psychology upon successful completion of their undergraduate curriculum (a total of 120 credits).

A written comprehensive examination of the candidate's knowledge of general psychology or a master's thesis is required at the end of the graduate component of the program. The comprehensive examination may be taken only twice. Failure to pass the comprehensive examination will result in dismissal from the program.

## Degree Plan

The following BA in psychology degree requirements apply to the general/theoretical and forensic psychology programs.

## Required Major Courses (14 credits)

- PSYC1201 General Psychology
- PSYC2210 Statistics
- PSYC2211 Research Methods
- PSYC4500 Senior Seminar in Psychology or PSYC4501 Advanced Senior Seminar or PSYC4291 History and Systems of Psychology


## Learning/Cognition/Psychological Domain (1 course [3 credits] needed)

Courses that satisfy domain include:

- PSYC3032 Physiological Psychology
- PSYC3331 Theories of Learning
- PSYC3333 Sensation and Perception
- PSYC3335 Cognitive Psychology
- PSYC4130 Behavioral Neuroscience Methods
- PSYC4447 Medical Psychology


## Social/Personality Domain (1 course [3 credits] needed)

Courses that satisfy domain include:

- PSYC2234 Social Psychology
- PSYC3015 Theories of Personality


## Clinical/Developmental Domain (1 course [3 credits] needed)

Courses that satisfy domain include:

- PSYC2204 Child Development
- PSYC3305 Adolescent Growth and Development
- PSYC3306 Psychology of Aging
- PSYC3315 Abnormal Psychology


## Applications of Psychology Domain (1 course [3 credits] needed)

Courses that satisfy domain include:

- PSYC3308 Educational Psychology
- PSYC3322 Industrial Psychology
- PSYC4309 Advanced Social Psychology
- PSYC4398 Computer Applications for Data Analysis
- PSYC4435 Selected Studies in Psychology


## Major Psychology Electives (4 courses [12 total credits])

Courses that satisfy domain: any psychology course

## General/Theoretical (36 credits)

## Graduate Core Courses (6 credits)

- PSYC6121 Statistics and Research Methods
- PSYC6129 Research Methods and Psychometrics


## Required Graduate Psychology Courses (5 courses [15 credits])

Courses that satisfy domain include:

- PSYC6109 Social Psychological Applications
- PSYC6111 Theories of Personality
- PSYC6114 Psychopathology
- PSYC6128 Computer Applications and Scientific Report Writing
- PSYC7122 Developmental Psychology
- PSYC7133 Learning, Cognition and Emotion
- PSYC7130 Biological Bases of Behavior

PLUS Five Psychology Graduate Elective Courses (15 credits)

## Forensic Psychology Master's Program (38 credits) Admission Requirements

- Interested applicants must apply during the spring semester of their sophomore year. They will be notified by the end of that semester whether they are accepted into the program. Students should not submit their applications through Ellucian; please see instructions below.
- Accepted students must NOT register for the following fall semester of their junior year until they have met with the program advisers. There will be an orientation for all incoming $4+1$ students before registration.


## Prerequisites to Apply

- Students cannot be beyond their sophomore year,
- Cumulative GPR of 3.60 or higher and
- Completion of or currently enrolled in PSYC2210 Statistics (with a grade of at least B).


## Application Requirements

1. Interested students must submit the following materials by March 31:

- Unofficial FDU transcripts (and other colleges/universities/community colleges attended, if applicable) and
- Personal statement explaining students' fit for the program, their interests in forensic psychology and career goals.

2. Only eligible students will be contacted by the program to complete the remaining application requirements by May 1 :

- Official FDU transcript (and other colleges/universities/community colleges attended, if applicable),
- Two letters of recommendation (preferably from instructors, although one may be submitted from a supervisor from a practicum or internship) and
- An interview with a forensic psychology faculty member.

Application materials must be emailed directly to fduforensicpsychma@gmail.com. Students should not submit their application through Ellucian. If recommenders prefer to send their letters directly, they may certainly do so; the student should instruct the recommenders to email their letter to the same address above (provided by the student to the recommender). Any questions should be directed toward the graduate assistants at fduforensicpsychma@gmail.com.
Students accepted into the $4+1$ program will be required to follow this course schedule for their graduate level coursework ( 36 credits total). This includes completion of a 300-hour externship placement during the fall semester of their graduate year and passing their two comprehensive exams during their final semester. Students must complete all their undergraduate requirements by the end of their senior year. Their fifth year is exclusively graduate-level work.

## Fall Junior Year

- PSYC6114 Psychopathology
- PSYC6230 Introduction to Forensic Psychology


## Spring Junior Year

- Graduate Elective (from approved list)


## Fall Senior Year

- PSYC6109 Social Psychological Applications
- PSYC6231 Psychological Bases of Criminal Behavior


## Spring Senior Year

- PSYC6130 Interviewing Techniques


## Summer Session I

- PSYC6227 Criminal Practice in Forensic Context


## Fall Graduate Year

- PSYC6121 Statistics and Research Methods
- PSYC7234 Ethical Issues in Forensic Practice
- PSYC7240 Externship in Forensic Psychology


## Spring Graduate Year

- PSYC7230 Forensic Assessment and Prediction
- PSYC7235 Criminal Responsibility and Competency
- Comprehensive Exams


## Industrial/Organizational Master's Program (41 credits)

The specialization in industrial/organizational psychology is designed to equip the graduate with a working knowledge of practices and procedures in applying psychology in a variety of organizational settings.
Students must have completed a minimum of 60 undergraduate credits in an accredited two-year or fouryear college or university, with a minimum of 9 credits in psychology. A minimum grade point ratio of 3.00 overall and 3.30 in psychology courses is required to apply. A course in general psychology, statistics and industrial psychology must be completed before applying. If students are transferring into the University, they must have completed at least 9 credits at FDU before they can apply for admission to the combined-degree program.
Students' academic and work experiences should reflect a strong potential for successfully completing the academic requirements of the accelerated BA/MA program. Academic potential will be determined by the Graduate Admissions Committee of the School of Psychology and Counseling on the basis of the following:

- Completed application,
- Academic transcripts,
- Three letters of recommendation,
- A résumé indicating prior work and life experience,
- A personal statement regarding academic and career goals and
- A personal interview.

The decision to accept applicants will be made on the basis of the foregoing data.

## Required Undergraduate Major Courses (26 credits)

- PSYC1201 General Psychology
- PSYC2210 Statistics
- PSYC2211 Research Methods
- PSCY2221 Applied Statistics Lab
- PSYC2234 Social Psychology
- PSYC3315 Abnormal Psychology
- PSYC3322 Industrial Psychology
- PSYC4291 History and Systems of Psychology


## Undergraduate Major Electives (1 course [3 credits] needed)

- PSYC3032 Physiological Psychology
- PSYC3331 Theories of Learning
- PSYC3333 Sensation and Perception
- PSYC3335 Cognitive Psychology
- PSYC4130 Behavioral Neuroscience Methods
- PSYC4447 Medical Psychology


## Required Graduate Courses (15 credits; 3.00 GPR required)

( 15 dual credits to be used to complete BA degree)

- PSYC6300 Psychological Statistics
- PSYC6301 Group Dynamics and Team Leadership
- PSYC6303 Research Methods and Design
- PSYC6304 Personnel Selection
- PSYC6305 Psychometrics

The BA degree ( 120 credits) must be completed before the additional graduate courses may be taken for the MA degree.

## Required Graduate Courses (21 credits; 3.00 GPR required)

- COUN7706 Lifestyle and Career Counseling
- PSYC6302 Organizational Psychology
- PSYC6306 Behavioral Consulting in Organizations
- PSYC6308 Human Resources Development
- PSYC7700 Industrial/Organizational Internship


## Graduate Thesis or Electives (6 credits)

Choose from one of the following pairs:

- Pair 1: PSYC7803 Research and Thesis I and PSYC7804 Research and Thesis II
- Pair 2: PSYC6307 Techniques of Interviewing and PSYC7745 Leadership Studies


## Research Opportunities

Students are encouraged to work with faculty on research. A variety of opportunities are available to help students understand the research process and learn how to conduct their own research studies. The following opportunities are available to students:

- Work on Fairleigh Dickinson's own Journal of Psychology and the Behavioral Sciences, which publishes student research. Students can submit their own research, review submissions, edit accepted articles and/or help format articles for publication.
- Optional thesis research project as part of the MA program.
- Work with faculty on their ongoing research projects. This could entail a variety of activities such as preparing materials for presentations, searching for related published research in databases,
data entry, preparation of tables and charts, data collection and analysis and assisting in the writing and editing of articles.


## For Information

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## Psychology Postbaccalaureate Respecialization Program

The postbaccalaureate respecialization program in psychology is an 18-credit certificate designed for individuals trained in other professions (e.g., law, business or natural sciences) who are now interested in pursuing careers in mental health and/or applied areas of psychology. The goal of the program is to provide individuals with the necessary coursework (e.g., statistics, research methods, area-specific courses) for applying to graduate school in psychology. The coursework includes undergraduate and graduate offerings and can be tailored to meet the students' interests. The program is offered by the School of Psychology and Counseling at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

- Proof of an undergraduate baccalaureate degree (diploma or undergraduate transcript from an accredited college or university) with a minimum undergraduate cumulative grade point ratio (CGPR) of 2.50 is required for admission to the certificate program.
- Two letters of recommendation and a personal statement detailing the applicant's reasons for respecialization and his/her interests in the field of psychology specifically are also required for consideration of admission.


## Fast-track Application Process

Application materials are kept to a minimum so that students can apply at any time. Students simply need to complete a short application form with a personal statement and arrange for letters of recommendation and undergraduate transcripts to be sent to the School of Psychology and Counseling. Graduate Record Examination (GRE) scores are not necessary for acceptance into the certificate program. Once application materials are complete, admissions decisions typically occur within two weeks. Once admitted to the track, students may begin coursework at the start of the fall or spring semester.

## Personalized Advisement

Upon acceptance into the certificate program, students will be assigned a personal faculty adviser who will monitor their progress and provide guidance regarding specific areas of study and careers in psychology.
Upon completion of 18 credits of prescribed psychology courses, students are eligible to apply to graduate programs. Their personal adviser will assist in the application process in two ways. First, the adviser will offer guidance regarding selection of graduate programs most likely to match the student's academic and/or personal background and interests. Second, the adviser will oversee the student's completion of application materials (e.g. GRE scores, personal statement and letters of recommendation).
Note: Although the GREs are not necessary for application to the certificate program, both the general and subject (psychology) GRE examinations are required for most master's and doctoral programs in psychology.

## Typical Course Sequence

If the typical course sequence is followed (see example below), students will be in a position to apply to master's and doctoral programs within one year of admission to the certificate program. However, if students choose to enroll in the program on a part-time basis, registration for at least one course per semester is required.

## Fall Semester Courses

- General Psychology (Undergraduate/3 credits) (Students who have taken general psychology already can substitute a different undergraduate course.),
- Statistics (Undergraduate/3 credits) and
- Graduate Elective (3 credits) (MA-level courses such as Theories of Personality, Psychopathology and Social Psychology [this list is not exhaustive]).


## Spring Semester Courses

- Experimental Psychology (Undergraduate/3 credits),
- Graduate Elective (3 credits) (MA-level courses such as Theories of Personality, Psychopathology and Social Psychology [this list is not exhaustive]) and
- Graduate Elective (3 credits) (MA-level courses such as Theories of Personality, Psychopathology and Social Psychology [this list is not exhaustive]).


## Transfer of Credits

Upon acceptance to any of the School of Psychology and Counseling's graduate degree programs, students may transfer up to 9 graduate credits from the certificate program. Transfer of credits will be awarded as long as a grade of B or better is earned in each graduate course. Transfer of credits to other universities may be possible, but will be at the discretion of the individual institution to which the student applies.

## For Information

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## QUEST BA/BS, Early Childhood Education P-3 MAT Combined Degree

Teachers of young children must be trained in research-based best practices that support quality teaching and learning. Fairleigh Dickinson University's Peter Sammartino School of Education (SOE) offers a QUEST track leading to New Jersey certification in Preschool-Grade 3 (P-3). This program is accredited by the Council for the Accreditation of Educator Preparation.
Candidates earn a BA or BS degree in a liberal arts/science major. They begin their graduate studies toward their $\mathrm{P}-3$ certification in their third year and continue with graduate-level advanced coursework to complete both their BA/BS in the chosen major (content area) and a Master of Arts in Teaching (MAT) degree.
Candidates may also earn a second certification in special education through the QUEST dualcertification program. The dual-certification program must be started no later than the sophomore (second) year of the QUEST program.

The BA/BS-MAT (QUEST) Early Childhood Education P-3 program is offered by the Peter Sammartino School of Education at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

Freshmen entering the QUEST program are required to have a high-school grade point ratio (GPR) of 3.00 or greater and a minimum of 1080 on the SAT (combined verbal and math). Sophomores and juniors requesting admission to the QUEST program must have a college/university cumulative GPR (CGPR) of 3.00 or greater.

Students entering the QUEST program are not formally matriculated into QUEST until they meet the following requirements:

- 60 earned credits,
- CGPR of 3.00 or greater and
- Pass the new Praxis CORE Battery, which consists of three tests in basic skills as follows:

|  | Code Number | Minimum Passing Score |
| :--- | :--- | :--- |
| Core Academic Skills for Educators: Mathematics | 5733 | 150 |
| Core Academic Skills for Educators: Reading | 5713 | 156 |
| Core Academic Skills for Educators: Writing | 5723 | 162 |

Candidates are required to take the CORE Battery by the end of their sophomore year to continue in the QUEST program. Juniors seeking admission to QUEST must take the CORE Battery their first semester in the program. Candidates must pass all three Praxis exams to become matriculated. Students who do not pass all three exams may be restricted in taking education courses.
Candidates may be exempted from the CORE Battery if they meet one of the following alternatives:

- SAT: Math 570, Evidence-based Reading and Writing 610 or Reading Section 30
- ACT: 23

Candidates will be advised when to take their Content Knowledge Praxis II exams. Students will be advised as to the current exam(s) required for the certification sought. The Praxis II exam is needed to obtain New Jersey State certification.
Information about the CORE Battery including study guides and registration can be accessed here.

- Reading
- Writing
- Math


## Praxis II Requirement (For Licensure)

The correct Praxis II exam for Early Childhood in New Jersey is \#5025. This is the licensure exam and must be passed before the candidate does his/her student teaching. The school requires candidates to take this exam at the beginning of their fourth year, prior to Field Experience IV.
For further information on the exam, please go to Praxis $®$ Tests.

## QUEST Preschool-Grade 3 (P-3) New Jersey Initial Certification

## Program Outline

- Candidates in the QUEST program must major in a liberal arts/science discipline. Candidates in the QUEST program must satisfy all general education requirements, and specific departmental requirements for their liberal arts/science major in order to be eligible for a BA or BS degree in their area of specialization. They must also complete the requirements for the School of Education. No more than 15 credits in education courses, taken at the graduate level in the junior and senior years, may be applied as dual undergraduate and graduate credit.
- At the end of four years, students who have met all requirements will be eligible for a BA or BS degree and will have up to 15 credits toward their Master of Arts in Teaching degree (which requires a total of 36 graduate credits). Student Teaching occurs in the fifth year.
- The state of New Jersey requires two semesters of student teaching: the first semester is part-time and is called Advanced Clinical Practice; the second semester is full-time and is called Apprenticeship Teaching. Upon completion of the Apprenticeship Teaching, students will have met eligibility requirements for teacher certification. Completion of the master's degree is not required for certification in New Jersey.
- New Jersey teacher certification requires that 6 credits be taken in behavioral sciences (sociology, anthropology or psychology) and 3 credits be taken in biology, physiology or health. The courses also may be taken to satisfy college core (general education) requirements, the liberal arts /science required courses or electives.
- Eligibility for entrance to the QUEST program requires a 3.00 CGPR. The 3.00 CGPR must be maintained throughout the program. Additionally, all candidates must pass the Core Academic Skills for Educators exams by the time they complete 60 credits in their program.
- In order to complete the Master of Arts in Teaching program in five years, students may need to take courses in summer and winter sessions in years three through five, depending upon their particular liberal arts/science program requirements.
- Dual certification requires an additional six (6) graduate-level credits as noted below.
- For those interested in the dual-certification program, special education is a "second certificate" in the state of New Jersey. Teachers must first (or concurrently) earn their elementary certificate.


## Degree Plan

## General Education Requirements

As per University Requirements (see below)

## Major Requirements

As per requirements for specific major

## QUEST (EDUC) Requirements

## Year 1

- EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community
- EDUC2202 Child and Adolescent Development (dual certification only)
- EDUC2401 Field Experience I


## Year 2

- EDUC2207 Introduction to Special Education Including Autism (dual certification only)
- EDUC2208 Classroom Management and Positive Behavior (dual certification only)
- EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders)
- EDUC2402 Field Experience II
- EDUC3309 Seminar in Professional Practice III: The Functions of Teaching)


## Year 3

- EDUC3403 Field Experience III
- EDUC6818 Language Development and Literacy I (course given credit for both undergraduate and graduate degrees)
- EDUC6819 Language Development and Literacy II (course given credit for both undergraduate and graduate degrees)
- EDUC6820 Problem-based Strategies for Elementary Mathematics (course given credit for both undergraduate and graduate degrees)


## Year 4

- EDUC3404 Field Experience IV
- EDUC6792 Assistive Technology in the Inclusive Classroom (dual certification only) (course only used toward the MAT degree)
- EDUC6797 Multisensory Mathematics Instruction for Students with Disabilities (dual certification only) (course only used toward the MAT degree)
- EDUC6852 P-3 Curriculum and Assessment (course given credit for both undergraduate and graduate degrees)
- EDUC6853 Family and Community in Education (course given credit for both undergraduate and graduate degrees)


## Year 5

- EDUC6575 Apprenticeship Teaching
- EDUC6583 Advanced Clinical Practice
- EDUC6584 Computer as a Teacher's Aid: Curriculum and Instruction) (course for candidates not in dual certification) ( $\mathrm{P}-3$ only certification)
- EDUC6740 Introduction to Students with Disabilities and Autistic Spectrum Disorders (course for candidates not in dual certification) ( $\mathrm{P}-3$ only certification)
- EDUC6747 Multisensory Reading for Students with Reading Disabilities (dual certification only)
- EDUC6750 Teaching in the Inclusive Classroom (dual certification only)
- EDUC6793 Education of Students with Moderate to Severe Disabilities (dual certification only)
- EDUC6825 Apprenticeship Teaching Seminar
- EDUC7812 Final Project
- Approved EDUC Graduate Elective (course for candidates not in dual certification) ( $\mathrm{P}-3$ only certification)


## General Education Requirements

## I. Written Communication ( 6 credits)

II. Quantitative Analysis (6-7 credits)

## III. Speech/ Professional Communication (3 credits)

IV. Ethical and Moral Analysis ( $\mathbf{3}$ credits)

- EDUC3601 Equity, Ethics and Education (unless the student's program requires a major-specific course)


## V. Modern Language (3 to 4 credits). <br> (Waived for BS in computer science majors)

## VI. Humanities ( 6 credits)

## VII. Social/Behavioral Sciences ( 6 credits)

## VIII. Natural Sciences (7 credits)

- PHYS2003, PHYS2013 General Physics with Calculus I


## IX. Creative and Expressive Arts (3 credits)

## X. Global and Comparative Studies (3 credits) (Waived for all BS majors)

## For Information

Kathryn Spence, Interim Director of Peter Sammartino School of Education; Director of QUEST/BAMAT
Associate Professor of Education
kathryn_spence@fdu.edu
Miriam Singer, Deputy Director of Peter Sammartino School of Education and Director of MAT Program Associate Professor of Education miriam_singer@fdu.edu

## QUEST BA/BS, Elementary Education K-6 MAT Combined Degree

In the state of New Jersey, all teachers are required to complete a BA or BS in a content area. Education is not considered to be a major. At Fairleigh Dickinson, it is considered to be a "concentration." The University offers a QUEST track leading to New Jersey certification in Elementary Education (K-6). This program is accredited by the Council for the Accreditation of Educator Preparation.
The BA/BS-MAT (QUEST) Elementary Education (K-6) program is offered by the Peter Sammartino School of Education at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
Candidates in the QUEST program may major in a variety of different areas including

- Art
- Biology
- Chemistry
- Creative Writing (Florham Campus only)
- Government and Politics
- History (Florham Campus only)
- Humanities
- Literature
- Mathematics (BA or BS)
- Psychology
- Science (BS [Metropolitan Campus only])
- Social Studies
- Theater Arts (Florham Campus only)

For those interested in the dual-certification program, special education is a "second certificate" in the state of New Jersey. Teachers must first (or concurrently) earn their early childhood, elementary or secondary certificate.
Candidates in the elementary track may also be able to earn a middle school, content-specific certificate, if they meet content course requirements.

## Admission Requirements

Freshmen entering the QUEST program are required to have a high-school cumulative grade point ratio (CGPR) of 3.00 or greater and a minimum of 1080 on the SAT (combined verbal and math). Sophomores and juniors requesting admission to the QUEST program must have a college/university CGPR of 3.00 or greater.
Students entering the QUEST program are not formally matriculated into QUEST until they have met the following requirements:

- 60 earned credits
- CGPR 3.00 or greater and
- Pass the new Praxis CORE Battery which consists of 3 tests in basic skills as follows:

|  | Code Number | Minimum Passing Score |
| :--- | :--- | :--- |
| Core Academic Skills for Educators: Mathematics | 5733 | 150 |
| Core Academic Skills for Educators: Reading | 5713 | 156 |
| Core Academic Skills for Educators: Writing | 5723 | 162 |

Candidates are required to take the CORE Battery by the end of their sophomore year to continue in the QUEST program. Juniors seeking admission to QUEST must take the CORE Battery their first semester in the program. Candidates must pass all three Praxis exams to become matriculated. Students who do not pass all three exams may be restricted in taking education courses.
Candidates may be exempted from the CORE Battery if they meet one of the following alternatives:

- SAT: Math 570, Evidence-based Reading and Writing 610 or Reading Section 30
- ACT: 23

Candidates will be advised when to take their Content Knowledge Praxis II exams. Students will be advised as to the current exam(s) required for the certification sought. The Praxis II exam is needed to obtain New Jersey State certification.
Information about the CORE Battery including study guides and registration can be accessed here.

- Reading
- Writing
- Math


## Praxis II Requirement (for Licensure)

The correct Praxis II exams for Elementary Education are shown below. There are four subtests (content area exams). These licensure exams must all be passed before the candidate does his/her student
teaching. The school requires candidates to take this exam at the beginning of their fourth year, prior to Field Experience IV.

- Reading/Language Arts Subtest \#5002
- Mathematics Subtest \#5003
- Social Studies Subtest \#5004
- Science Subtest \#5005
[To pass the Elementary Education: Multiple Subjects test, students must receive a passing score on each subtest. If students wish to take all four subtests ( $\# 5002, \# 5003, \# 5004$ and $\# 5005$ ) at the same time, select Elementary Education: Multiple Subjects (5001) when registering. If students wish to take or retake an individual subtest, they may register to take just that subtest.]
At this time, there is no required Praxis II for Special Education.
For further information on the Praxis exams, please go to ets.org.


## QUEST Program Elementary (K-6) Education

Students must complete 120 credits for a BA or BS in a liberal arts or science major appropriate for the area of teacher certification. This includes at least 30 credits in education courses required for elementary or secondary certification - of which a maximum of 15 credits may be applied as dual undergraduate and graduate credit to both the BA/BS and MAT degrees - plus 15 credits in graduate-level educational methodology courses.
Candidates who complete the required 120 credits for the BA/BS and the required education courses and pass the Praxis in their area of certification become eligible to take their two-semester student teaching (Advanced Clinical Practice and Apprenticeship Teaching). After completing their apprenticeships, candidates become eligible for their New Jersey State Teaching Certificate. The candidates become eligible for the MAT degree upon completion of the required 36 graduate credits.
NOTE: Both campuses currently offer the dual certification (elementary and special education) program for all elementary majors. The dual-certification program requires 6 more total credits than the elementary certification program. For details on this program, the students should meet with the director of the QUEST program.
Candidates can simultaneously earn an elementary teaching certificate and a second certification in special education through the QUEST dual-certification program. The dual-certification program must be started no later than the sophomore (second) year of the QUEST program.

## Program Outline

- Candidates in the QUEST program must major in a liberal arts/science discipline. Candidates in the QUEST program must satisfy all general education requirements and specific departmental requirements for their liberal arts/science major in order to be eligible for a BA or BS degree in their area of specialization. They must also complete the requirements for the Peter Sammartino School of Education. No more than 15 credits in education courses, taken at the graduate level in the junior and senior years, may be applied as dual undergraduate and graduate credit.
- At the end of four years, students who have met all requirements will be eligible for a BA or BS degree and will have up to 15 credits toward their Master of Arts in Teaching degree (which requires a total of 36 graduate credits). Student teaching occurs in the fifth year.
- The state of New Jersey requires two semesters of student teaching: the first semester is part-time and is called Advanced Clinical Practice; the second semester is full-time and is called

Apprenticeship Teaching. Upon completion of the Apprenticeship Teaching, students will have met eligibility requirements for teacher certification. Completion of the master's degree is not required for certification in New Jersey.

- New Jersey teacher certification requires that 6 credits be taken in behavioral sciences (sociology, anthropology or psychology); and 3 credits be taken in biology, physiology or health. The courses also may be taken to satisfy college core requirements (foundations and disciplinary perspectives) or the liberal arts /science required courses or electives.
- Eligibility for entrance to the QUEST program requires a 3.00 cumulative grade point ratio (CGPR). The 3.00 CGPR must be maintained throughout the program. Additionally, all candidates must pass the Core Academic Skills for Educators exams by the time they complete 60 credits in their program.
- In order to complete the Master of Arts in Teaching program in five years, students may need to take courses in summer and winter sessions in years three through five, depending upon their particular liberal arts/science program requirements.


## Degree Plan

## General Education Requirements

As per University Requirements (see below)

## Major Requirements

As per requirements for specific major

## QUEST (EDUC) Requirements

## Year 1

- EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community
- EDUC2202 Child and Adolescent Development (course for dual certification only)
- EDUC2401 Field Experience I


## Year 2

- EDUC2207 Introduction to Special Education Including Autism (dual certification only)
- EDUC2208 Classroom Management and Positive Behavior (dual certification only)
- EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders)
- EDUC2402 Field Experience II
- EDUC3309 Seminar in Professional Practice III: The Functions of Teaching)


## Year 3

- EDUC3403 Field Experience III
- EDUC6818 Language Development and Literacy I (course given credit for both undergraduate and graduate degrees)
- EDUC6819 Language Development and Literacy II (course given credit for both undergraduate and graduate degrees)
- EDUC6820 Problem-Based Strategies in Elementary Mathematics (course given credit for both undergraduate and graduate degrees)


## Year 4

- EDUC3404 Field Experience IV
- EDUC6792 Assistive Technology in the Inclusive Classroom (dual certification only) (course only used toward the MAT degree)
- EDUC6797 Multisensory Mathematics Instruction for Students with Disabilities (dual certification only) (course only used toward the MAT degree)
- EDUC6893 Evaluation and Measurement in Education (course given credit for both undergraduate and graduate degrees)
- EDUC7763 Human Relations and Conflict Resolution for Educators (course given credit for both undergraduate and graduate degrees)


## Year 5

- EDUC6575 Apprenticeship Teaching
- EDUC6583 Advanced Clinical Practice
- EDUC6584 Computer as a Teacher's Aid: Curriculum and Instruction (for candidates not in dual certification) (K-6 only certification)
- EDUC6740 Introduction to Students with Disabilities and Autistic Spectrum Disorders (course for candidates not in dual certification) (K-6 only certification)
- EDUC6747 Multisensory Reading Instruction for Students with Reading Disabilities (course for dual certification only)
- EDUC6750 Teaching in the Inclusive Classroom (course for dual certification only)
- EDUC6793 Education of Students with Moderate to Severe Disabilities (course for dual certification only)
- EDUC6825 Apprenticeship Teaching Seminar
- EDUC7812 Final Project
- EDUCXXXX Approved Graduate Elective (course for candidates not in dual certification) (K-6 only certification)

Note: All candidates must complete, submit and pass the appropriate edTPA during their Apprenticeship Teaching in order to be recommended for New Jersey State Teaching Certification.

## General Education Requirements

## I. Written Communication ( 6 credits)

## II. Quantitative Analysis (6-7 credits)

III. Speech/ Professional Communication (3 credits)
IV. Ethical and Moral Analysis (3 credits)

- EDUC3601 Equity, Ethics and Education (unless the student's program requires a major-specific course)


# V. Modern Language (3 to 4 credits). (Waived for BS in computer science majors) <br> VI. Humanities ( 6 credits) <br> VII. Social/Behavioral Sciences ( 6 credits) <br> VIII. Natural Sciences (7 credits) <br> - PHYS2003, PHYS2013 General Physics with Calculus I <br> IX. Creative and Expressive Arts ( 3 credits) <br> X. Global and Comparative Studies (3 credits) (Waived for all BS majors) 

## For Information

Kathryn Spence, Interim Director of Peter Sammartino School of Education; Director of QUEST/BAMAT
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Miriam Singer, Deputy Director of Peter Sammartino School of Education and Director of MAT Program Associate Professor of Education miriam singer@fdu.edu

## QUEST BA/BS, English as a Second Language (ESL) MAT Combined Degree

In the State of New Jersey, all teachers are required to complete a BA or BS in a content area. Education is not considered to be a major. At Fairleigh Dickinson University, it is considered to be a "concentration." The University offers a QUEST track leading to New Jersey certification in English as a second language (ESL). This program is accredited by the Council for the Accreditation of Educator Preparation.
The BA/BS-MAT (QUEST) English as second language program is offered by the Peter Sammartino School of Education at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
Candidates in the QUEST program may major in a variety of different areas including:

- Biology
- Chemistry
- Creative Writing (Florham Campus only)
- Government and Politics
- History (Florham Campus only)
- Humanities
- Literature
- Mathematics (BA or BS)
- Psychology
- Science (Metropolitan Campus only)
- Social Studies
- Theater Arts (Florham Campus only)

For those interested in the dual-certification program, special education is a "second certificate" in the state of New Jersey. Teachers must first (or concurrently) earn their elementary certificate.

## Admission Requirements

Freshmen entering the QUEST program are required to have a high school grade point ratio (GPR) of 3.00 or greater and a minimum of 1080 on the SAT (combined verbal and math). Sophomores and juniors requesting admission to the QUEST program must have a college/university cumulative grade point ratio GPR (CGPR) of 3.00 or greater.
Students entering the QUEST program are not formally matriculated into QUEST until they meet the following requirements:

- 60 earned credits,
- CGPR 3.00 or greater and
- Pass the new Praxis CORE Battery, which consists of three tests in basic skills as follows:

|  | Code Number | Minimum Passing Score |
| :--- | :--- | :--- |
| Core Academic Skills for Educators: Mathematics | 5733 | 150 |
| Core Academic Skills for Educators: Reading | 5713 | 156 |
| Core Academic Skills for Educators: Writing | 5723 | 162 |

Candidates are required to take the CORE Battery by the end of their sophomore year to continue in the QUEST program. Juniors seeking admission to QUEST must take the CORE Battery their first semester in the program. Candidates must pass all three exams to become matriculated. Students who do not pass all three exams may be restricted in taking education courses.
Candidates may be exempted from the CORE Battery if they meet one of the following alternatives:

- SAT: Math 570, Evidence-based Reading and Writing 610 or Reading Section 30
- ACT: 23

Information about the CORE Battery including study guides and registration can be accessed here.

- Reading
- Writing
- Mathematics


## Praxis II Requirement (For Licensure) - OPI/WPT

At this time, there is no Praxis II required for ESL certification. However, ESL teachers must take and pass the Oral Proficiency Inventory (OPI) and the Written Proficiency Test (WPT) in English. The QUEST/ESL adviser will give students further information on these exams. Note: Passing the CORE exam in writing will exempt candidates from the WPT. Those with high SAT/ACT scores may still need to take the WPT.

## Program Outline

Students must complete 120 credits for a BA or BS in a liberal arts or science major appropriate for the area of teacher certification. This includes at least 30 credits in education courses required for elementary or secondary certification - of which a maximum of 15 credits may be applied as dual undergraduate and graduate credit to both the BA/BS and MAT degrees - plus 15 credits in graduate-level educational methodology courses.
Candidates who complete the required 120 credits for the $\mathrm{BA} / \mathrm{BS}$ and the required education courses and pass the Praxis in their area of certification become eligible to take their two-semester student teaching (Advanced Clinical Practice and Apprenticeship Teaching). (Note: There is no specific Praxis II for ESL at this time. The OPI and WPT serve as the licensure exam.) After completing their apprenticeships, candidates become eligible for their New Jersey State Teaching Certificate. The candidate becomes eligible for the MAT degree upon completion of the required 36 graduate credits.

- Candidates in the QUEST program must major in a liberal arts/science discipline. Candidates in the QUEST program must satisfy all general education requirements, and specific departmental requirements for their liberal arts/science major in order to be eligible for a BA or BS degree in their area of specialization. They must also complete the requirements for the Peter Sammartino School of Education. No more than 15 credits in education courses, taken at the graduate level in the junior and senior years, may be applied as dual undergraduate and graduate credit.
- At the end of four years, students who have met all requirements will be eligible for a BA or BS degree and will have up to 15 credits toward their Master of Arts in Teaching degree (which requires a total of 36 graduate credits). Student teaching occurs in the fifth year.
- The state of New Jersey requires two semesters of student teaching: the first semester is part-time and is called Advanced Clinical Practice; the second semester is full-time and is called Apprenticeship Teaching. Upon completion of the Apprenticeship Teaching, students will have met eligibility requirements for teacher certification. Completion of the master's degree is not required for certification in New Jersey.
- New Jersey teacher certification requires that 6 credits be taken in behavioral sciences (sociology, anthropology or psychology); and 3 credits be taken in biology, physiology or health. The courses also may be taken to satisfy college core requirements (foundations and disciplinary perspectives) or the liberal arts /science required courses or electives.
- Eligibility for entrance to the QUEST program requires a 3.00 cumulative grade point ratio (CGPR). The 3.00 CGPR must be maintained throughout the program. Additionally, all candidates must pass the Core Academic Skills for Educators exams by the time they complete 60 credits in their program.
- In order to complete the Master of Arts in Teaching program in five years, students may need to take courses in summer and winter sessions in years three through five, depending upon their particular liberal arts/science program requirements.


## Degree Plan

## General Education Requirements

As per University Requirements (see below)

## Major Requirements

As per requirements for specific major

## QUEST (EDUC) Requirements

## Year 1

- EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community
- EDUC2401 Field Experience I


## Year 2

- EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders
- EDUC2402 Field Experience II
- EDUC3309 Seminar in Professional Practice III: The Functions of Teaching


## Year 3

- EDUC3403 Field Experience III
- EDUC6565 Second-language Acquisition: Methods and Curriculum
- EDUC6654 Literacy Development for Second-language Learners


## Year 4

- EDUC3404 Field Experience IV
- EDUC6574 Applied Linguistics for Language Teachers
- EDUC6631 Assessment in the Second-language Classroom
- EDUC7763 Human Relations and Conflict Resolution for Educators (course given credit for both undergraduate and graduate degrees)


## Year 5

- EDUC6575 Apprenticeship Teaching
- EDUC6583 Advanced Clinical Practice
- EDUC6584 Computer as a Teacher's Aid: Curriculum and Instruction
- EDUC6661 The Multicultural Classroom
- EDUC6740 Introduction to Students with Disabilities and Autistic Spectrum Disorders
- EDUC6825 Apprenticeship Teaching Seminar
- EDUC7812 Final Project
- EDUC Approved Graduate Elective (1 credit optional)


## General Education Requirements

## I. Written Communication ( 6 credits)

II. Quantitative Analysis (6-7 credits)
III. Speech/ Professional Communication (3 credits)
IV. Ethical and Moral Analysis (3 credits)

- EDUC3601 Equity, Ethics and Education (unless the student's program requires a major-specific course)


## V. Modern Language (3 to 4 credits).

(Waived for BS in computer science majors)
VI. Humanities ( 6 credits)
VII. Social/Behavioral Sciences (6 credits)
VIII. Natural Sciences (7 credits)

- PHYS2003, PHYS2013 General Physics with Calculus I
IX. Creative and Expressive Arts (3 credits)


## X. Global and Comparative Studies (3 credits)

(Waived for all BS majors)

## For Information

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Miriam Singer, Deputy Director of Peter Sammartino School of Education and Director of MAT Program Associate Professor of Education miriam singer@fdu.edu

## QUEST BA/BS, Secondary Education K-12 MAT Combined Degree

In the state of New Jersey, all teachers are required to complete a BA or BS in a content area. Education is not considered to be a major. At Fairleigh Dickinson University, it is considered to be a "concentration." The University offers a QUEST track leading to New Jersey certification in secondary education ( $\mathrm{K}-12$ ).
The BA/BS-MAT (QUEST) Secondary Education (K-12) program is offered by the Peter Sammartino School of Education at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
Candidates in the QUEST program may major in a variety of different areas including:

- Art
- Biology
- Chemistry
- Creative Writing (Florham Campus only)
- Literature
- History (Florham Campus only)
- Mathematics (BA or BS)
- Physics
- Science (Metropolitan Campus only)
- Social Studies (Metropolitan Campus only)

Licensure in secondary education allows the program completer to teach in the content area from K-12. More importantly, the candidate will be able to teach at the middle-school or high-school level using the same certification.
Special education is a "second certificate" in the State of New Jersey and, at the secondary level, it follows the content of the first certification. Dual certification requires an additional 6 graduate credits as noted below.

## Admission Requirements

Freshmen entering the QUEST program are required to have a high-school cumulative grade point ratio (CGPR) of 3.00 or greater and a minimum of 1080 on the SAT (combined verbal and math). Sophomores and juniors requesting admission to the QUEST program must have a college/university CGPR of 3.00 or greater.
Students entering the QUEST program are not formally matriculated into QUEST until they have met the following requirements:

- 60 earned credits
- CGPR 3.00 or greater and
- Pass the new Praxis CORE Battery which consists of three tests in basic skills as follows:

|  | Code Number | Minimum Passing Score |
| :--- | :--- | :--- |


| Core Academic Skills for Educators: Mathematics | 5733 | 150 |
| :--- | :--- | :--- |
| Core Academic Skills for Educators: Reading | 5713 | 156 |
| Core Academic Skills for Educators: Writing | 5723 | 162 |

Candidates are required to take the CORE Battery by the end of their sophomore year to continue in the QUEST program. Juniors seeking admission to QUEST must take the CORE Battery their first semester in the program. Candidates must pass all three exams to become matriculated. Students who do not pass all three exams may be restricted in taking education courses.
Candidates may be exempted from the CORE Battery if they meet one of the following alternatives:

- SAT: Math 570, 610 Evidence-based Reading and Writing or 30 Reading Section
- ACT: 23

Candidates will be advised when to take their Content Knowledge Praxis II exams. Students will be advised as to the current exam(s) required for the certification sought. The Praxis II exam is needed to obtain New Jersey State certification.
Information about the CORE Battery including study guides and registration can be accessed here.

- Reading
- Writing
- Mathematics


## Praxis II Requirement (For Licensure)

The correct Praxis II exams for Secondary Education are subject specific. For information about the correct exam(s), candidates should check with their School of Education adviser and for further information on the exam, go to ets.org. The school requires candidates to take their Praxis II exam at the beginning of their fourth year, prior to Field Experience IV.
At this time, there is no required Praxis II for Special Education.

## QUEST Program Secondary Education K-12

Candidates must complete 120 credits for a BA or BS in a liberal arts or science major appropriate for the area of teacher certification. This includes at least 30 credits in education courses required for elementary or secondary certification - of which a maximum of 15 credits may be applied as dual undergraduate and graduate credit to both the BA/BS and MAT degrees - plus 15 credits in graduate-level educational methodology courses.
Candidates who complete the required 120 credits for the $\mathrm{BA} / \mathrm{BS}$ and the required education courses and pass the Praxis in their area of certification become eligible to take their two-semester student teaching (Advanced Clinical Practice and Apprenticeship Teaching). After completing their apprenticeships, candidates become eligible for their New Jersey State Teaching Certificates. The candidates become eligible for the MAT degree upon completion of the required 36 graduate credits.
NOTE: Both campuses currently offer the dual certification (secondary and special education) program for all secondary majors. The dual-certification program requires 6 more total credits than the secondary certification program. For details on this program, the students should meet with the director of the QUEST program.
Candidates may also earn a second certification in special education through the QUEST dualcertification program. The dual-certification program must be started no later than the sophomore (second) year of the QUEST program.

## Program Outline

- Candidates in the QUEST program must major in a liberal arts/science discipline. Candidates in the QUEST program must satisfy all general education requirements and specific departmental requirements for their liberal arts/science major in order to be eligible for a BA or BS degree in their area of specialization. They must also complete the requirements for the School of Education. No more than 15 credits in education courses, taken at the graduate level in the junior and senior years, may be applied as dual undergraduate and graduate credit.
- At the end of four years, students who have met all requirements will be eligible for a BA or BS degree and will have up to 15 credits toward their Master of Arts in Teaching degree (which requires a total of 36 graduate credits). Student Teaching occurs in the fifth year.
- The state of New Jersey requires two semesters of student teaching: the first semester is part-time and is called Advanced Clinical Practice; the second semester is full-time and is called Apprenticeship Teaching. Upon completion of the Apprenticeship Teaching, students will have met eligibility requirements for teacher certification. Completion of the master's degree is not required for certification in New Jersey.
- New Jersey teacher certification requires that 6 credits be taken in behavioral sciences (sociology, anthropology or psychology) and 3 credits be taken in biology, physiology or health. The courses also may be taken to satisfy college core requirements (foundations and disciplinary perspectives) or the liberal arts/science required courses or electives.
- Eligibility for entrance to the QUEST program requires a 3.00 cumulative grade point ratio (CGPR). The 3.00 CGPR must be maintained throughout the program. Additionally, all candidates must pass the Core Academic Skills for Educators exams by the time they complete 60 credits in their program.
- In order to complete the Master of Arts in Teaching program in five years, students may need to take courses in summer and winter sessions in years three through five, depending upon their particular liberal arts/science program requirements.


## Degree Plan

## General Education Requirements

As per University Requirements (see below)

## Major Requirements

As per requirements for specific major

## QUEST (EDUC) Requirements

## Year 1

- EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community)
- EDUC2202 Child and Adolescent Development (dual certification ONLY)
- EDUC2401 Field Experience I


## Year 2

- EDUC2207 Introduction to Special Education Including Autism (dual certification ONLY) EDUC2208 Classroom Management and Positive Behavior (dual certification ONLY)
- EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders
- EDUC2402 Field Experience II
- EDUC3309 Seminar in Professional Practice III: The Functions of Teaching


## Year 3

- EDUC3403 Field Experience III
- EDUC6651 Effective Reading Instruction (course given credit for both undergraduate and graduate degrees)
- EDUC65XX Appropriate Secondary Methodology (see below) (course given credit for both undergraduate and graduate degrees)
- EDUC6584 Computer as a Teacher's Aid: Curriculum and Instruction (for candidates NOT in dual certification) (K-12 only certification)


## Year 4

- EDUC3404 Field Experience IV
- EDUC6790 Methods for Students with Disabilities in the Secondary Classroom (dual certification ONLY) (course only used toward the MAT degree)
- EDUC6792 Assistive Technology in the Inclusive Classroom (dual certification ONLY) (course only used toward the MAT degree)
- EDUC6893 Evaluation and Measurement in Education (course given credit for both undergraduate and graduate degrees)
- EDUC7763 Human Relations and Conflict Resolution for Educators (course given credit for both undergraduate and graduate degrees)


## Year 5

- EDUC6575 Apprenticeship Teaching
- EDUC6583 Advanced Clinical Practice
- EDUC6740 Introduction to Students with Disabilities and Autistic Spectrum Disorders (course for candidates NOT in dual certification) (K-12 only certification)
- EDUC6747 Multisensory Reading Instruction for Students with Reading Disabilities (dual certification ONLY)
- EDUC6750 Teaching in the Inclusive Classroom (dual certification ONLY)
- EDUC6793 Education of Students with Moderate to Severe Disabilities (dual certification ONLY)
- EDUC6825 Apprenticeship Teaching Seminar
- EDUC7812 Final Project
- EDUC Approved Graduate Elective (course for candidates NOT in Dual Certification)(K-12 only certification)
- EDUC Second Approved Graduate Elective (course for candidates NOT in Dual Certification) ( $\mathrm{K}-12$ only certification)

Note: All candidates must complete, submit and pass the appropriate edTPA during their Apprenticeship Teaching in order to be recommended for New Jersey State Teaching Certification.

## Secondary Methodology Courses

- EDUC6562 Standards-based Curriculum and Methodology: Secondary English (English) EDUC6565 Second Language Acquisition: Methods and Curriculum (All Foreign Languages)
- EDUC6566 Standards-based Curriculum and Methodology: Secondary Science (All Sciences)
- EDUC6568 Standards-based Curriculum and Methodology: Secondary Social Studies (History/Social Studies)
- EDUC6569 Standards-based Curriculum and Methodology: Visual Arts (Art)
- EDUC6570 Standards-based Curriculum and Methodology: Secondary Mathematics (Mathematics)


## General Education Requirements

## I. Written Communication ( 6 credits)

II. Quantitative Analysis (6-7 credits)
III. Speech/ Professional Communication (3 credits)
IV. Ethical and Moral Analysis (3 credits)

- EDUC3601 Equity, Ethics and Education (unless the student's program requires a major-specific course)
V. Modern Language ( 3 to 4 credits). (Waived for BS in computer science majors)
VI. Humanities (6 credits)
VII. Social/Behavioral Sciences (6 credits)
VIII. Natural Sciences (7 credits)
- PHYS2003, PHYS2013 General Physics with Calculus I


## IX. Creative and Expressive Arts (3 credits)

X. Global and Comparative Studies (3 credits) (Waived for all BS majors)

## For Information

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## Radiography AS

The Associate in Science in radiography prepares students to become radiographers who produce images of the human body for diagnostic purposes under the supervision of a physician. The 24 -month education program prepares the student for the certification examination in radiography.
The degree is offered through the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey.
This is a joint program with The Valley Hospital School of Radiography and Fairleigh Dickinson University. The Valley Hospital School of Radiography is the primary clinical site for the program.

## Admission Requirements

Candidates applying for admission to the radiography program must have:

- Completed application packet submitted to The Valley Hospital School of Radiography
- High-school diploma or GED
- High-school Grade Point Ratio (GPR) of 2.75 or higher on a 4.00 scale
- SAT or ACT scores
- All official transcripts from institutions of higher learning
- Prerequisites: Human Anatomy and Physiology I with Laboratory (4 credits), Human Anatomy and Physiology II with Laboratory (4 credits) with a minimum grade of B
- Evidence of interest and knowledge of the field demonstrated in the student's essay
- Two letters of recommendations and a personal interview

All remedial courses must be completed, prior to admission to the radiography program. High-school algebra and at least one laboratory science course are recommended.
Students must be accepted by both The Valley Hospital School of Radiology and Fairleigh Dickinson University.

## Degree Plan

The radiography program offers the student radiographer didactic and clinical education and courses in liberal arts and sciences. This unique affiliation between a hospital-sponsored radiography program and Fairleigh Dickinson University supports the development of knowledge, well-rounded and competent entry-level radiographers.
The curriculum consists of 77 credits, which are completed in two full-time years of study. The 77 credits consist of 27 credits of liberal arts and science courses and 50 credits of core radiography courses. Students participate in clinical education during the fall, winter, spring and summer sessions.

## 1st Semester ( 15 credits)

- RADT1101 Introduction to Radiography and Protection
- RADT1105 Radiographic Procedures I
- RADT1110 Clinical Practicum I
- RADT1131 Principles of Radiographic Exposure I
- RADT1150 Fundamentals of Patient Care
- UNIV1001 Transitioning to University Life


## Winter Session (1 credit)

- RADT1120 Clinical Practicum II


## 2nd Semester (17 credits)

- MATH1105 College Algebra
- RADT1130 Clinical Practicum III
- RADT1135 Radiographic Procedures II
- RADT2251 Advanced Principles of Radiographic Exposure II
- UNIV1002 Preparing for Professional Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## Summer Session I (7 credits)

- RADT1140 Clinical Practicum IV
- WRIT1003 Composition II:Research and Argument


## 3rd Semester (17 credits)

- CSCI1105 Survey of Computers and Computer Software
- PHYS1114 Physics for Radiography
- RADT2250 Clinical Practicum V
- RADT2255 Radiographic Procedures III
- RADT2252 Radiation Biology and Safety
- UNIV2001 Cross Cultural Perspectives


## 4th Semester (16 credits)

- PSYC1201 General Psychology
- RADT2254 Radiographic Imaging Equipment and Quality Management
- RADT2270 Clinical Practicum VII
- RADT2271 Radiographic Pathology
- RADT2275 Radiographic Procedures IV
- UNIV2002 Global Issues


## Summer Session (4 credits)

- RADT2280 Clinical Practicum VIII

A minimum of 77 credits is required for graduation.

## For Information

## Radiologic Technology BS

The Bachelor of Science in radiologic technology is an advanced-standing program designed for the registered radiologic technologists. The program provides educational opportunities for graduates of accredited programs in radiography and are certified to practice. The program offers career mobility and educational articulation for the students.
Registered radiological technologists who are graduates from an accredited two-year, hospital-based program may receive up to 54 transfer credits toward the Bachelor of Science degree, depending on the evaluation of the hospital training transcript. Additional transfer credits may be granted for courses taken at accredited collegiate institutions. Associate degree applicants may receive up to 60 transfer credits.
The BS in radiologic technology is offered by the Henry P. Becton School of Nursing and Allied Health at the Metropolitan Campus, Teaneck, New Jersey.
The program is offered on a part-time or full-time basis. Graduates of FDU's Associate in Science degree in radiography who take 12 to 15 credits per year may complete the program in four years. Radiographers with certificates or associate degrees who carry 12 to 17 credits per year can complete the curriculum in five years. The curriculum is interdisciplinary in structure with courses in the liberal arts and sciences.

## Admission Requirements

- Satisfactory Scholastic Aptitude Test (SAT) or American College Testing (ACT) scores
- Transcripts from all prior institutions, a minimum Cumulative Grade Point Ratio (CGPR) of 2.50
- Two letters of recommendation that attest to the candidate's character and ability to succeed academically and proof of license/certification as a radiographer.


## Degree Plan

## BS Radiologic Technology (Students with a Hospital-based Radiology Program)

Upon the completion of a hospital-based program in radiography and passing a licensure/credentialing examination, Fairleigh Dickinson University will award up to $\mathbf{5 4}$ credits towards a Bachelor of Science in
radiologic technology. These transfer credits satisfy the lower division BS degree requirements. The remaining credits needed for the BS in radiologic technology are listed below:

## Core Requirements ( 36 credits)

## Foundation Courses (28 credits)

- CSCI1105 Survey of Computers and Computer Software
- MATH1107 Precalculus
- MEDT1130 Bioethics
- PSYC1201 General Psychology
- PSYC2210 Psychological Statistics
- SPAN1111 Spanish for Health Personnel I
- SPCH1155 Public Speaking
- WRIT1002 Composition I: Rhetoric and Inquiry
- WRIT1003 Composition II: Research and Argument


## University Requirements (8 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life
- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Major Requirements (30 credits)

- MEDT4301 American Health Care
- MEDT4302 Health Care Law and Policy
- MEDT4420 Fundamentals of Health Care Management
- MEDT4430 Introduction to Research
- MGMT2600 Organizational Behavior
- MGMT3700 Human Resource Management
- NURS2210 Pathophysiology
- NURS3208 Introduction to Health Care Economics
- RADT4002 Advanced Radiological Science I
- RADT4003 Advanced Radiological Science II

A minimum of 120 credits is required for graduation.

## BS Radiologic Technology (Students with an Associate Degree)

Upon the completion of an associate degree program in radiology and passing a licensure/credentialing examination, Fairleigh Dickinson University will award up to $\mathbf{6 0}$ credits toward a Bachelor of Science in radiologic technology. These transfer credits will satisfy the lower division BS degree requirements. The remaining credits needed for the BS in radiologic technology are listed below.

## Core Requirements (28 credits)

## General Education Courses (22 credits)

- CSCI1105 Survey of Computers and Computer Software
- MATH1107 Precalculus
- PSYC1201 General Psychology
- PSYC2210 Psychological Statistics
- SPAN1111 Spanish for Health Personnel I
- SPCH1155 Public Speaking
- ENGL $\qquad$ English Literature Elective


## University Requirements (6 credits)

- UNIV2001 Cross Cultural Perspectives
- UNIV2002 Global Issues


## Major Requirements (33 credits)

- MEDT1130 Bioethics
- MEDT4301 American Health Care
- MEDT4302 Health Care Law and Policy
- MEDT4308 Management Principles for Healthcare Professionals
- MGMT2600 Organizational Behavior
- MGMT3700 Human Resource Management
- NURS2210 Pathophysiology
- NURS3208 Introduction to Health Care Economics
- NURS4430 Critique/Use of Research
- RADT4002 Advanced Radiological Science I
- RADT4003 Advanced Radiological Science II

A minimum of 120 credits is required for graduation.

## For Information

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## Science BS

Students seeking a baccalaureate degree, with a thorough grounding in the sciences, and desiring choice should consider the Bachelor of Science degree in science. The program is multidisciplinary, offering student maximum flexibility. The study of mathematics, for example, may be adjusted to meet students' academic objectives. The curriculum can meet the entrance requirements for medical or dental school.

The BS in science is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

For matriculation in the science curriculum, successful completion of secondary-school courses in elementary algebra and plane geometry and a year of science are required. Candidates for the Bachelor of Science degree must complete the courses outlined under Degree Plan.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor's degree requirements.

## Science Core Requirements ( 24 credits)

- BIOL1221 Biological Diversity
- BIOL1222 Lab: Biological Diversity
- BIOL1233 Molecules, Cells and Genes
- BIOL1234 Lab: Molecules, Cells and Genes
- CHEM1201 General Chemistry I
- CHEM1203 Lab: General Chemistry I
- CHEM1202 General Chemistry II
- CHEM1204 Lab: General Chemistry II
- PHYS2201 Lab: Physics I
- PHYS2202 Lab: Physics II
- PHYS2203 University Physics I
- PHYS2204 University Physics II


## Major Requirements

## Mathematics/Computer Science Requirements (15 credits)

- MATH1107 Precalculus
- MATH1201 Calculus I
- MATH2202 Calculus II
- Mathematics Elective
- 16 credits of upper-division courses in a single science. Sciences other than physics, chemistry or biological sciences require the chair's approval


## Science Electives (12 credits)

- An additional 12 credits of upper-division courses in any science outside the concentration.


## Free Electives (24 credits)

- A minimum of 24 credits of courses in any area

A minimum of 120 credits is required for graduation.

## QUEST Options available

- BS in Science/MAT, Secondary Education and Special Education Concentration
- BS in Science/MAT, Elementary Education Concentration
- BS in Science/MAT, Secondary Education Concentration
- BS in Science/MAT, Elementary Education and Special Education Concentration
- BS in Science/MAT, P-3 Certification
- BS in Science/MAT, Secondary Education and ESL


## General Education Requirements

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENWR1001)
- WRIT1003 Composition II: Research and Argument (formerly ENWR1002)


## II. Oral Communication (3 credits)

- Any 3-credit Speech (SPCH) course


## III. Quantitative Analysis (8 credits)

- MATH1107 Precalculus
- MATH1201 Calculus I


## IV. Ethical and Moral Analysis (3 credits)

- BIOL4405 Ethics in Science


## V. Humanities (6 credits)

Choose two, 3-credit courses from the following disciplines: Art History (ARTH), Cinema Studies (CINE), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Language/Culture (LANG not foreign language), Philosophy (PHIL), Religion (RELI) or Theater Arts - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VI. Social/Behavioral Sciences (3 credits)

Choose two, 3-credit courses from the following disciplines: Communication Studies (COMM), Criminal Justice (CRIM), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI).

## VII. Natural Sciences (8 credits)

- CHEM1201, CHEM1203 General Chemistry I (Lecture and Laboratory)
- CHEM1202, CHEM1204 General Chemistry II (Lecture and Laboratory)


## VIII. Cross-cultural Understanding (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## IX. Knowledge of Global Issues (3 credits)

Students should consult their academic adviser for a complete list of approved courses. Courses completed for the major or other General Education categories cannot be used to fulfill this requirement.

## X. First-year Seminar Courses (2 credits)

- UNIV1001 Transitioning to University Life
- UNIV1002 Preparing for Professional Life


## For Information

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## Sociology BA

When claims are made that the family is disintegrating, that America is a middle class society, that Blacks are making economic progress, that women have come a long way, that the mass media provide audiences with what they want to see and hear, do you know how to evaluate these arguments? Sociology students learn how to assess such statements. They learn not only the facts of social life, but also the methods for analyzing various claims about society.
A sociology education develops the kind of social sophistication that goes beyond mere cynicism. Students are trained to ask: how do we know what is true? From what perspective does this claim or that
policy recommendation make sense? Is this a valid study? What techniques or data would provide more reliable results? The sociological perspective enhances one's understanding of both interpersonal relations - group processes, family dynamics, gender roles, racial and ethnic differences - and larger social institutions - the corporation, the social class system, the criminal justice system, the mass media.
The Bachelor of Arts in sociology is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Degree Plan

NOTE: All students are required to complete the General Education Requirements of their campus in fulfillment of their bachelor's degree requirements.
Major Requirements (30-42 credits)
6 credits from the major can be applied toward General Education Requirements.

## Required Major Courses ( 9 credits)

- SOCI1201 Introduction to Sociology
- SOCI2203 Methods in Social Research
- SOCI3021 Classic Sociological Theory or SOCI3022 Contemporary Social Theory


## Major Elective Courses (21-33 credits)

Select from SOCI2000, 3000 and 4000 series.
Note: Three credits in Internship Experience may be used to fulfill a major elective requirement.

- SOCI4498 Internship in Sociology

6 credits from the Sociology major can be applied toward General Education Requirements.

## General Education Requirements

Students pursuing a Bachelor of Arts degree at the Florham Campus must complete 30-45 credits of required major courses depending on the major. A minimum of 120 credits is required for graduation. Up to 6 credits from the major and 6 credits from the optional minor will be applied toward the General Education Requirements. Students pursuing a Bachelor of Arts at the Metropolitan Campus should consult the BA Major, Metropolitan Campus General Education Requirements.

## I. Written Communication ( 6 credits)

- WRIT1002 Composition I: Rhetoric and Inquiry (formerly ENGW1001 and ENGW1101)
- WRIT1003 Composition II: Research and Argument (formerly ENGW1002 and ENGW1102)


## II. Quantitative Analysis (6 to $\mathbf{7}$ credits)

One from the following (all courses are 3 credits except where indicated otherwise):

- MATH1107 Precalculus (4 credits)
- MATH1126 Contemporary Mathematics
- MATH1128 Mathematical Methods

The second course should be selected from the following list of approved courses (all courses are 3 credits except where indicated otherwise):

- CMLGY2203 Research Methods in Criminology
- CMLGY4844/ECON4844/GOVT4551 Game Theory
- CSCI1205 Introduction to Computer Programming
- CSCI2100 Mobile App Development
- CSCI2255 Discrete Structures
- CSCI3294 Data Analysis and Visualization
- CSCI3371 Modeling and Simulation
- MATH1130 Invitation to Mathematics
- MATH1133 Applied Statistics
- MATH1155 Mathematical Ideas
- MATH2202 Calculus II (4 credits)
- MATH2255 Discrete Structures
- MATH3371 Modeling and Simulation I
- PHIL2777 Formal Logic
- PHIL3302 Symbolic Logic
- PSYC2210 Psychological Statistics
- SOCI2203 Methods in Social Research

Exception: All majors within the School of the Arts are required to take MKTG2120 Principles of Marketing to fulfill this requirement.

## III. Speech/ Professional Communication (3 credits)

## Choose one from the following:

- COMM2099 Professional Communications
- SPCH1107 Fundamentals of Speech


## IV. Ethical and Moral Analysis (3 credits)

Select one from the list of approved courses below:

- COMM3838 Media Ethics
- GOVT2400 Political Ethics
- PHIL1103 Ethics
- PHIL1111 Business Ethics
- PHIL1333 Environmental Ethics
- PHIL1440 Bio-Medical Ethics
- PHIL2008 Ethical Issues in the Movies


## V. Modern Language (3 to 4 credits)

Students continuing a language previously studied or who are heritage speakers must take a languageplacement test. The following courses in the foreign language of choice complete the requirement:

- $\qquad$ 1002 (Beginning Language II) (3 credits)
- $\qquad$ 1008 (Beginning Language II) Practicum (1 credit)


## VI. Humanities ( 6 credits)

Choose two courses from the following disciplines: Animation (ANIMH), Art History (ARTH), Cinema Studies (CINE), Dance - Humanities (DANH), Graphic Design - Humanities (CGDH), History (HIST), Humanities (HUMN), Literature (LITS), Music - Humanities (MUSIH), Philosophy (PHIL) and Theater - Humanities (THEAH). One course must be at the 2000-level or above and may be within the same discipline. The Wroxton course ART3415 The Development of British Painting in Britain and North America may also be taken.

## VII. Social/Behavioral Sciences (6 credits)

Choose two courses from the following disciplines: African American Studies (AFAM), Anthropology (ANTH), Criminal Justice (CRIM), Communication Studies (COMM), Criminology (CMLGY), Economics (ECON), Geography (GEOG), Government and Law (GOVT, formerly Political Science), Psychology (PSYC) or Sociology (SOCI). One course must be at the 2000-level or above and may be within the same discipline. The following Wroxton courses may also be taken: POLS3450 British Government and Politics, POLS3454 British Foreign Policy or POLS3456 The British Prime Minister.

## VIII. Natural Sciences (7 credits)

Choose two courses from the following disciplines: Biology (BIOL), Chemistry (CHEM) or Physics (PHYS). One of the two, which may be in the same discipline, must include a mandatory laboratory component.
Select one 4-credit course from:

- BIOL1005, BIOL1006 Current Topics in Biology (Lecture and Laboratory)
- BIOL1007, BIOL1017 Animal Biology (Lecture and Laboratory)
- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory)
- BIOL1080, BIOL1081 Structure and Function of the Human Body (Lecture and Laboratory)
- BIOL1090, BIOL1091 Medical and Pathological Terminology (Lecture and Laboratory)
- BIOL1201, BIOL1203 Biological Diversity (Lecture and Laboratory) - Major Course
- BIOL1400, BIOL1401 Introduction to Microbes (Lecture and Laboratory)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory)
- CHEM1201 General Chemistry I (Lecture and Laboratory)
- PHYS1006, PHYS1015 Basic Electronics with Applications (Lecture and Laboratory)
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory)
- PHYS2101, PHYS2201 General Physics I (Lecture and Laboratory)
- PHYS2102, PHYS2202 General Physics II (Lecture and Laboratory)
- PHYS2203, PHYS2201 University Physics I (Lecture and Laboratory)
- PHYS2204, PHYS2202 University Physics II (Lecture and Laboratory)

Select one 3-credit course from:

- BIOL1002, BIOL1012 Plants and Society (Lecture and Laboratory)
- PHYS1125, PHYS1025 Astronomy (Lecture and Laboratory)
- PHYS1201, PHYS1202 Physics for the Global Citizen (Lecture and Laboratory)

These following courses do not have a laboratory component:

- BIOL1010 Human Sexuality I
- BIOL1024 Advanced Topics in Biology
- BIOL1041 Tropical Biology
- BIOL1170 Introduction to Ocean Life
- BIOL1180 Climate Change Biology
- BIOL1190 Exploring the Biology Behind the American Museum of Natural History
- CHEM1022 Chemistry of Nutrition
- CHEM1051 Chemistry and the Crime Scene


## IX. Creative and Expressive Arts (3 credits)

Choose one course from the following disciplines: Animation (ANIM), Art (ART), Graphic Design (CGD), Creative Writing (CREW), Dance (DAN), Music (MUSIC), Filmmaking (FILM), Radio Broadcasting (RDIO), Theater (THEA) or Video/Electronic Film (VDEO).
Exception: All majors within the School of the Arts are required to take SOAC3001 Career Path to the Arts to fulfill this requirement.

## X. Global and Comparative Studies (3 credits)

Select one from the following approved courses

- ANTH2335 African Peoples and Culture
- ANTH2338 Israeli Society and Culture
- ANTH2430 Anthropology of Law
- ANTH2440 Sustainability and Anthropology
- ANTH3102 Anthropology of Children and Childhood
- ANTH3349 War and Crime (formerly Anthropology of War)
- ANTH3351 Folklore and the Media
- ANTH3353 Folklore and Food
- ARTH3825 Exploring the Great Museums of England
- CGDH2020 History of Graphic Design (formerly CGD2020)
- CINE2207 East Asian Cinema (formerly FILM2207)
- CINE3215 Introduction to World Cinema (formerly FILM3215)
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3251 Crime and Punishment in Latin America
- CMLGY3349 War and Crime
- CMLGY3404 International Criminal Law
- CMLGY3424 Terrorism and Counterterrorism
- COMM3019 Global Communication
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG2700 Environmental Geography: Nature, Power and Society
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration
- GOVT3121 Nationalism and Ethnic Violence (formerly POLS3421)
- GOVT3122 Rebels and Revolutionaries (formerly POLS3422)
- GOVT3150 Terrorism and Counterterrorism (formerly POLS3423)
- HIST2400 Indian Ocean
- HIST2401 Pacific Worlds
- HIST2402 Atlantic Worlds
- HIST2403 Mediterranean Worlds
- HIST2502 Modern Latin America
- HIST3317 America and Cold War: 1945-1991
- HIST3352 U.S. as a Global Power (1898-1945)
- INTER3430 The Anatomy of Contemporary Britain
- JAPN3015 Japanese Culture Through Film
- LITS2008 Literary Perspectives on Global Cultures
- LITS2050 Voices of India
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS3061 Contemporary World Literature
- LITS3071 Contemporary African Literature and Culture
- LITS3125 International Short Story
- LITS3303 World Folk Literature
- LITS3321 Post-Modern Literature
- LITS3323 Colonial and Postcolonial Literature
- LITS3351 Literary Perspectives on the Environment
- PSYC3361 Cross-cultural Psychology
- SOCI2248 Globalization, Culture and Identity
- SOCI2901 World on the Move: Contemporary Migration
- SOCI3030 Gender in the Contemporary World
- SOCI3344 Schools and Society
- SOCI3365 Sociology of Religion
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin-American Culture and Civilization
- THEAH3337 Night at the Theater (formerly THEA3337)
- THEAH3339 The London Theater Experience (formerly THEA3339)

For Information
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## Sport Management BA

The Bachelor of Arts in sport management program provides undergraduate-level studies for traditional and nontraditional students seeking a career in sport management, including in the areas of recreation, youth, collegiate and professional leagues.
The program provides students with a unique academic experience: a strong background in the fundamental aspects of sport management (law, finance, marketing and fundraising) as well as a specialization in a particular area of sport (coaching, fitness and facilities, among others). It supports the success of students in the educational process and prepares them to be world citizens through global education, while encouraging the development of applied research for practitioners in the field of sports and recreation management.
The program is offered by the International School of Hospitality, Sports, and Tourism Management at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey, in the traditional on-campus format. It is also available off-campus (weeknights and Saturdays) and online.

## Admissions Requirements

- Please submit an application to FDU Admissions for the program via the Common Application or the FDU application.
- Standardized test scores are optional for students with a 3.30 grade point ratio (GPR) (on a 4.00 scale) or higher, or 88 numerical average or higher except for applicants to nursing, pharmacy, physical therapy and education (QUEST program). If a student's GPR is below 3.30, standardized test scores are required. FDU accepts both the SAT and ACT.
- High school transcripts or their equivalent are required for admission and will be used to evaluate admission.


## Degree Plan

The program of study varies depending on the student's campus, transfer credits and other factors. Prior to registering for classes, students must consult with their assigned academic adviser to establish their unique program of study.
Courses have been developed based on the need and demand of the students. All courses are 3-credit courses.

## Florham Campus Curriculum (Including General Education Requirements)

First Year, 1st Term (16 credits)

- MATH1126 Contemporary Mathematics or MATH1128 Mathematical Methods
- Humanities
- Social Behavior
- SPAD2004 Introduction to Sport Management
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry

First Year, 2nd Term (16 credits)

- Humanities
- Social Behavior
- MIS1045 Information Technology for Business
- SPAD2014 Ethical Issues in Sports
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument

Second Year, 3rd Term (16 credits)

- COMM Course 2000 or above
- ECON2001 Microeconomics
- SPAD Section B
- SPAD Section C
- SPAD3010 Job-search Strategies
- UNIV2001 Cross Cultural Perspectives


## Second Year, 4th Term (16 credits)

- ECON2102 Macroeconomics
- Foreign Language (1002-level course) (4 credits)
- SPAD Section C
- UNIV2002 Global Issues
- Free Elective

Third Year, 5th Term (16 credits)

- Any science course with lab (4 credits)
- SPAD2025 Global Perspectives in Sports
- SPAD Section B
- SPAD Section B
- SPAD Section C

Third Year, 6th Term (15 credits)

- Any 3-credit science course
- SPAD4000 International Sports Administration
- SPAD Section B
- SPAD Section C
- Free Elective


## Fourth Year, 7th Term (13 credits)

- Creative and expressive arts course or course approved by adviser
- SPAD Section B
- SPAD Section C (1 credit)
- SPAD Section C
- Free Elective


## Fourth Year, 8th Term (12 credits)

- SPAD2018 Sports Internship I
- SPAD Section B
- Free Elective
- Free Elective

Students will be required to complete the following:

## Section B (18 credits must be completed)

- SPAD2010 Legal Aspects in Sports Administration
- SPAD2015 Team Development
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2020 Fundraising in Sports
- SPAD2022 Facility Management
- SPAD2025 Global Perspectives in Sports
- SPAD3000 Fiscal Concepts in Sports
- SPAD3003 Sports and Society
- SPAD3024 Special Topics in Sports Industries
- SPAD3030 Human Resource Administration in Sports
- SPAD4001 Sports Internship II


## Section C (16 credits must be completed)

- ACCT2021 Introduction to Financial Accounting
- ACCT2022 Introduction to Managerial Accounting
- COMM course 2000 or above
- LAW2276 Business and the Law
- Any Physical Education course
- SPAD2007 Introduction to Esports
- SPAD2012 Nutrition and Wellness
- SPAD2013 Exercise Physiology
- SPAD2016 Stress Management
- SPAD2017 Safety, First Aid and Prevention of Injuries
- SPAD2021 Strength and Conditioning
- SPAD2088 Esports Live Event and Operations
- SPAD3001 Theory, Philosophy and Principles of Coaching
- SPAD3002 Human Kinesiology
- SPAD3004 Youth Program Administration
- SPAD3005 Management in Athletic Training, Athletics and Health
- SPAD3015 Introduction to Sports Analytics
- SPCH1107 Fundamentals of Speech


## Free Electives (15 credits)

## Metropolitan Campus Curriculum (Including General Education Requirements) <br> 1st Term (Fall) (16 credits)

- MATH1101 Comprehensive Mathematics or MATH1131 College Mathematics I
- Humanities
- Social and Behavioral Science
- SPAD2004 Introduction to Sport Management
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## 2nd Term (Spring) (16 credits)

- Humanities (2000 level or above)
- Social and Behavioral Science (2000 level or above)
- MIS1045 Information Technology for Business or MIS1135 Introduction to Computers
- SPAD2014 Ethical Issues in Sports
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument


## 3rd Term (Fall) (16 Credits)

- COMM Course 2000 or above
- ECON2001 Microeconomics
- SPAD Section B
- SPAD Section C
- SPAD3010 Job-search Strategies
- UNIV2001 Cross Cultural Perspectives


## 4th Term (Spring) (15 credtis)

- ECON2102 Macroeconomics
- Foreign Language
- Free Elective
- SPAD Section C
- UNIV2002 Global Issues


## 5th Term (Fall) (15 credits)

- PHYS1126, PHYS1026 Earth Physics Lecture and Laboratory
- SPAD2025 Global Perspectives in Sports
- SPAD Section B
- SPAD Section B
- SPAD Section C


## 6th Term (Spring) (15 credits)

- BIOL1105 The Human Environment or BIOL1180 Climate Change Biology or Approval by academic adviser
- SPAD4000 International Sports Administration
- SPAD Section B
- SPAD Section C
- Free Elective


## 7th Term (Fall) (15 credits)

- ART1151 General Drawing I or ART1153 Life Drawing I or ART1161 Painting I or Approval from academic adviser
- SPAD Section B
- SPAD Section C
- SPAD Section C
- Free Elective


## 8th Term (Spring) (12 credits)

- SPAD2018 Sports Internship I
- SPAD Section B
- Free Elective
- Free Elective

Students will be required to complete the following:

## Section B (18 credits must be completed)

- SPAD2010 Legal Aspects in Sports Administration
- SPAD2015 Team Development
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2020 Fundraising in Sports
- SPAD2022 Facility Management
- SPAD2025 Global Perspectives in Sports
- SPAD3000 Fiscal Concepts in Sports
- SPAD3003 Sports and Society
- SPAD3024 Special Topics in Sports industries
- SPAD3030 Human Resource Administration in Sports
- SPAD4001 Sports Internship II


## Section C (18 credits must be completed)

- ACCT2021 Introduction to Financial Accounting
- ACCT2022 Introduction to Managerial Accounting
- COMM course 2000 or above
- LAW2276 Business and the Law
- SPAD2007 Introduction to Esports
- SPAD2012 Nutrition and Wellness
- SPAD2013 Exercise Physiology
- SPAD2016 Stress Management
- SPAD2017 Safety, First Aid and Prevention of Injuries
- SPAD2021 Strength and Conditioning
- SPAD2088 Esports Live Event and Operations
- SPAD3001 Theory, Philosophy and Principles of Coaching
- SPAD3002 Human Kinesiology
- SPAD3004 Youth Program Administration
- SPAD3005 Management in Athletic Training, Athletics and Health
- SPAD3015 Introduction to Sports Analytics
- SPCH1107 Fundamentals of Speech


## Study Abroad at Wroxton

The BA in sport management has a study-abroad class built into its curriculum. Any sport management student (MSM, BA/MSM or BA) can take the 3-credit course.

- SPAD4000 International SportsAdministration or MSA6630 Global Sports

This includes eight days in England and sites to be visited include, but are not limited, to:

- Wimbledon Lawn Tennis Museum 7 Tour
- Queen Elizabeth Olympic Park Stadium
- Villa Park, home of the Aston Villa Football Club
- The World Rugby Museum
- Silverstone Motor Racing Circuit
- River and Rowing Museum


## For Information

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609-432-7297

## Sport Management BA, Sport Management MSM Combined Degree

The BA in sport management and Master of Sport Management (BA/MSM) five-year combined degree program allows students to turn their passion for sports into a career. The sports industry is one of the largest areas of commerce in the United States, producing more than $\$ 213$ billion annually. Each year, there's a growing demand among employers for knowledgeable and skilled professionals in this exciting and competitive field.

In this interdisciplinary program, students take sports-related courses plus classes that sharpen their business, information systems and communications abilities. Courses prepare students for leadership responsibilities in such areas as professional sports administration, facility and event management, sports marketing and communications, athletic administration, advertising and promotion and coaching.
The combined-degree program is offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Admission Requirements

Students interested in enrolling in the combined BA/MSM program should contact FDU's Office of Undergraduate Admissions at 1-800-338-8803 or at admissions@fdu.edu.

## Degree Plan

## Florham Campus Curriculum (Including General Education Requirements)

## First Year, 1st Term (16 credits)

- MATH1126 Contemporary Mathematics or MATH1128 Mathematical Methods
- Humanities
- Social Behavior
- SPAD2004 Introduction to Sport Management
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## First Year, 2nd Term (16 credits)

- Humanities
- Social Behavior
- MIS1045 Information Technology for Business
- SPAD2014 Ethical Issues in Sports
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument


## Second Year, 3rd Term (16 credits)

- COMM Course 2000 or above
- ECON2001 Microeconomics
- SPAD Section B
- SPAD Section C
- SPAD3010 Job-search Strategies
- UNIV2001 Cross Cultural Perspectives


## Second Year, 4th Term (16 credits)

- ECON2102 Macroeconomics
- Foreign Language (1002-level course) (4 credits)
- SPAD2025 Global Perspectives in Sports
- SPAD Section B
- UNIV2002 Global Issues


## Third Year, 5th Term (16 credits)

- Any science course with lab (4 credits)
- Free Elective
- Free Elective
- SPAD Section B
- SPAD Section C


## Third Year, 6th Term (15 credits)

- Any 3-credit science course
- Creative and expressive arts course or course approved by adviser
- Free Elective
- Free Elective
- Free Elective


## Fourth Year, 7th Term (12 credits)

- MSA6602 Facility Administration, Planning
- MSA6607 Human Resources Administration
- MSA6703 Financial Administration
- SPAD2018 Sports Internship I


## Fourth Year, 8th Term (13 credits)

- MSA6603 Sports Marketing and Promotion
- MSA6701 Legal Issues - Domestic and International
- MSA6702 Sports Administration Research and Policy Analysis
- SPAD4000 International Sports Administration (every two years) or SPAD Section B
- SPAD Section C or Free Elective

Fifth Year, 9th Term (9 credits)

- MSA Elective
- MSA Elective
- MSA Elective


## Fifth Year, 10th Term (9 credits)

- MSA6704 Internship
- MSA6705 Strategic Planning, Implementation and Evaluation
- MSA Elective

Students will be required to complete the following:

## Section B (9 credits must be completed)

- SPAD2010 Legal Aspects in Sports Administration
- SPAD2015 Team Development
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2020 Fundraising in Sports
- SPAD2022 Facility Management
- SPAD2025 Global Perspectives in Sports
- SPAD3000 Fiscal Concepts in Sports
- SPAD3003 Sports and Society
- SPAD3024 Special Topics in Sports Industries
- SPAD3030 Human Resource Administration in Sports
- SPAD4001 Sports Internship II


## Section C (7 credits must be completed)

- ACCT2021 Introduction to Financial Accounting
- ACCT2022 Introduction to Managerial Accounting
- COMM course 2000 or above
- LAW2276 Business and the Law
- Any Physical Education course
- SPAD2007 Introduction to Esports
- SPAD2012 Nutrition and Wellness
- SPAD2013 Exercise Physiology
- SPAD2016 Stress Management
- SPAD2017 Safety, First Aid and Prevention of Injuries
- SPAD2021 Strength and Conditioning
- SPAD2088 Esports Live Event and Operations
- SPAD3001 Theory, Philosophy and Principles of Coaching
- SPAD3002 Human Kinesiology
- SPAD3004 Youth Program Administration
- SPAD3005 Management in Athletic Training, Athletics and Health
- SPAD3015 Introduction to Sports Analytics
- SPCH1107 Fundamentals of Speech


## Free Electives (15 credits)

## Metropolitan Campus Curriculum (Including General Education Requirements) <br> 1st Term (Fall) (16 credits)

- MATH1101 Comprehensive Mathematics or MATH1131 College Mathematics I
- Humanities
- Social and Behavioral Science
- SPAD2004 Introduction to Sport Management
- UNIV1001 Transitioning to University Life
- WRIT1002 Composition I: Rhetoric and Inquiry


## 2nd Term (Spring) (16 credits)

- Humanities (2000 level or above)
- Social and Behavioral Science (2000 level or above)
- MIS1045 Information Technology for Business or MIS1135 Introduction to Computers
- SPAD2014 Ethical Issues in Sports
- UNIV1002 Preparing for Professional Life
- WRIT1003 Composition II: Research and Argument


## 3rd Term (Fall) (16 Credits)

- COMM Course 2000 or above
- ECON2001 Microeconomics
- SPAD Section B
- SPAD Section C
- SPAD3010 Job-search Strategies
- UNIV2001 Cross Cultural Perspectives


## 4th Term (Spring) (15 credtis)

- ECON2102 Macroeconomics
- Foreign Language
- Free Elective
- SPAD Section C
- UNIV2002 Global Issues

5th Term (Fall) (15 credits)

- PHYS1126, PHYS1026 Earth Physics Lecture and Laboratory
- SPAD2025 Global Perspectives in Sports
- SPAD Section B
- SPAD Section B
- SPAD Section C


## 6th Term (Spring) (15 credits)

- BIOL1105 The Human Environment or BIOL1180 Climate Change Biology or Approval by academic adviser
- Free Elective
- Free Elective
- SPAD2018 Sports Internship I
- SPAD4000 International Sports Administration


## 7th Term (Fall) (15 credits)

- ART1151 General Drawing I or ART1153 Life Drawing I or ART1161 Painting I or Approval from academic adviser
- Free Elective
- MSA6602 Facility Management
- MSA6702 Sport Administration Research and Policy Analysis
- MSA6703 Financial Administration


## 8th Term (Spring) (12 credits)

- Free Elective
- MSA6603 Sports Marketing and Promotion
- MSA6607 Human Resources Administration
- MSA6701 Legal Issues - Domestic and International


## 9th Term (Fall) (9 credits)

- MSA Elective
- MSA Elective
- MSA Elective


## 10th Term (Spring) (9 credits)

- MSA6704 Internship
- MSA6705 Strategic Planning, Implementation and Evaluation
- MSA Elective

Students will be required to complete the following:

## Section B (9 credits must be completed)

- SPAD2010 Legal Aspects in Sports Administration
- SPAD2015 Team Development
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2020 Fundraising in Sports
- SPAD2022 Facility Management
- SPAD2025 Global Perspectives in Sports
- SPAD3000 Fiscal Concepts in Sports
- SPAD3003 Sports and Society
- SPAD3024 Special Topics in Sports industries
- SPAD3030 Human Resource Administration in Sports
- SPAD4001 Sports Internship II


## Section C ( 9 credits must be completed)

- ACCT2021 Introduction to Financial Accounting
- ACCT2022 Introduction to Managerial Accounting
- COMM course 2000 or above
- LAW2276 Business and the Law
- SPAD2007 Introduction to Esports
- SPAD2012 Nutrition and Wellness
- SPAD2013 Exercise Physiology
- SPAD2016 Stress Management
- SPAD2017 Safety, First Aid and Prevention of Injuries
- SPAD2021 Strength and Conditioning
- SPAD2088 Esports Live Event and Operations
- SPAD3001 Theory, Philosophy and Principles of Coaching
- SPAD3002 Human Kinesiology
- SPAD3004 Youth Program Administration
- SPAD3005 Management in Athletic Training, Athletics and Health
- SPAD3015 Introduction to Sports Analytics
- SPCH1107 Fundamentals of Speech


## For Information

Robyn Lubisco, Director of the Sport Management Program (Florham Campus)
International School of Hospitality, Sports, and Tourism Management Associate Professor of Sport Management
lubisco@fdu.edu
Jong-Chae (J.C.) Kim, Director of the Sport Management Program (Metropolitan Campus), International School of Hospitality, Sports, and Tourism Management

# Teaching BA/BS, Teaching MAT (QUEST) Combined Degree 

The QUEST Teacher Preparation Program, an accelerated, combined-degree program, has received widespread recognition for its five-year combined (BA/MAT) degree design. This unique program provides students the opportunity to pursue professional studies for teacher preparation leading to state teacher licensure while earning a bachelor's degree in a liberal arts or science major and a Master of Arts in Teaching (MAT) degree. This program is accredited by the Council for the Accreditation of Educator Preparation.
The program is open to students who wish to be certified to teach at the early childhood, elementary- or secondary-school level or in English as a Second Language. Secondary certification generally matches with the candidates' content majors. All tracks result in the BA or BS degree in a liberal arts/science major with graduate-level advanced coursework toward an MAT degree.
Candidates may also earn a second certification in special education through the QUEST dualcertification program. The dual-certification program must be started no later than the sophomore (2nd) year of the QUEST program.
As future teachers who will be responsible for preparing future generations to live and work in a global society and economy, QUEST students explore diversity through their formal studies, projects and fieldbased (clinical) experiences in a wide range of school and community settings. Throughout the curriculum they are exposed to and examine issues related to diversity in language, culture, race and ethnicity, lifestyles and other mitigating factors, which contribute to student learning and success. Candidates explore their own values, attitudes and behaviors and consider the implications for their roles as teachers.
The BA/BS-MAT program is offered by the Peter Sammartino School of Education at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
The QUEST program produces teaching candidates who are:

- Qualified to teach subject matter.
- Competent in pedagogy,
- Caring professionals,
- Technologically proficient,
- Culturally responsive to the needs of diverse learners,
- Reflective practitioners who embrace the concept of lifelong learning,
- Prepared to move from undergraduate courses in education into the MAT graduate-level courses in education and
- Prepared to obtain their instructional certification from the New Jersey Department of Education.


## Admission Requirements

## As a Freshman

- High-school grade point ratio (GPR) of 3.00
- 1080 or better on SATs (verbal and math)
- If SAT was taken after $3 / 1 / 16$, the following scores Reading 610 , Math 570 will exempt students from the Praxis CORE Battery.
- ACT of 23 will exempt students from the Praxis CORE Battery.
- Enrollment inWRIT1002Composition I: Rhetoric and Inquiry


## As a Sophomore

- University GPR of 3.00
- Completion ofWRIT1002Composition I: Rhetoric and Inquiry
- Cumulative GPRof 3.00 required for certification


## For Those Who Have Not Taken the SAT or ACT

- High-school GPR of 3.00


## For All Students

- Required to take the CORE Battery before reaching 45 credits.
- Must pass all three subtests by the time you reach 60 credits
- Begin to take the CORE exams at any time after the junior year inhigh school.

| To Be <br> Certified in | You Need to Take | Test <br> Code | Qualifying <br> Score |
| :--- | :--- | :--- | :--- |
| Admission to <br> an educator <br> preparation <br> program | Core Academic Skills for Educators: Reading | 5713 | 156 |
|  | and | Core Academic Skills for Educators: Writing | 5723 |


| To Be <br> Certified in | You Need to Take | Test <br> Code | Qualifying <br> Score |
| :--- | :--- | :---: | :---: |
|  | Educators Combined Test (5752) when registering. Scores will be reported by <br> individual test (5713, 5723, 5733). |  |  |

Core Battery information can be found at:https://www.ets.org/praxis

## Degree Plan

General Education Requirements
As per University Requirements (see below)

## Major Requirements

As per requirements for specific major

## QUEST (EDUC) Requirements

Common/foundation courses listed below. Specific track requirements listed on program page.

## Year 1

- EDUC1108Seminar in Professional Practice I: The Teacher's Role in School and Community
- EDUC2401Field Experience I


## Year 2

- EDUC2209Seminar in Professional Practice II: Teachers as Educational Leaders
- EDUC2402Field Experience II
- EDUC3309Seminar in Professional Practice III: The Functions of Teaching


## Tracks

- Early Childhood (P-3) Education
- Elementary (K-6) Education
- Secondary (subject specific) Education
- English as a Second Language (ESL)
- Dual Certification ( $\underline{\mathrm{P}-3}$,elementary, secondary with special education)

NOTE: Both campuses currently offer the dual certification (elementary and special education) program for all elementary majors.
The dual-certification program requires 6 more total credits than the elementary certification program.
For details on thisprogram, the students should meet with the director of the QUEST Program.

## General Education Requirements

## I. Written Communication ( 6 credits)

II. Quantitative Analysis (6-7 credits)

## III. Speech/ Professional Communication (3 credits)

IV. Ethical and Moral Analysis (3 credits)

EDUC3601Equity, Ethics and Education (unless the student's program requires a major-specific course)

## V. Modern Language ( 3 to 4 credits). (Waived for BS in computer science majors)

## VI. Humanities ( 6 credits)

## VII. Social/Behavioral Sciences (6 credits)

VIII. Natural Sciences (7 credits)

PHYS2003,PHYS2013General Physics with Calculus I
IX. Creative and Expressive Arts (3 credits)

## X. Global and Comparative Studies (3 credits) (Waived for all BS majors)

## For Information

Kathryn Spence, Interim Director of Peter Sammartino School of Education; Director of QUEST/BAMAT
Associate Professor of Education
kathryn spence@fdu.edu
Miriam Singer, Deputy Director of Peter Sammartino School of Education and Director of MAT Program Associate Professor of Education miriam_singer@fdu.edu

## Back to Top

## Theater Arts BA

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a Bachelor of Arts (BA) in theater arts at the Florham Campus, Madison, New Jersey.
Students may choose from among five concentrations: acting, design and technical theater, directing, musical theater or theater studies.

All theater arts concentrations feature practical learning experiences, a highly credentialed faculty, mentorship and advising by accomplished theater professionals. The theater arts program boasts two theaters and produces about seven musicals and plays each year in addition to recitals and other projects - all directed and designed by professional faculty and guest artists.

In their junior year, students have the opportunity to study abroad in England through FDU at the Royal Shakespeare Company (RSC), an exclusive program that allows FDU theater arts students to live at FDU's Wroxton College and to study and train at the famed RSC.

In their senior year, students have the chance to perform in a Senior Showcase assisted by New Yorkbased agents and casting directors.
Students may earn credit for interning with a casting director, theatrical agent, regional theater or offBroadway theater company in New York City. Madison's proximity to New York City enables students to take advantage of the many opportunities available in the "theater capital of the world," such as seeing professional productions in the Night at the Theater class. In addition to working closely with professional faculty, students also have the chance to participate in master classes and guest-artist workshops.

## Admissions Requirements

Admission to the acting and musical theater concentrations requires an audition. Admission to any of the other concentrations requires an interview.
Interviews and auditions are scheduled at the time of application and can be accessed on the website at Theater Program Auditions and Scholarships.

Talent scholarships are available based on a student's potential. Auditions take place throughout the year and dates and times can be obtained from the Admissions Office at 973-443-8900 or Theater Program Auditions and Scholarships.

## Degree Plan

The theater arts program offers concentrations in acting, design and technical theater, directing, musical theater and theater studies.

## Acting Concentration

## Foundation Courses ( 36 credits)

All courses are 3 credits except where indicated otherwise.

- THEA1203 Basic Acting
- THEA2005 Directing I
- THEA2204 Intermediate Acting
- THEA2209 Stagecraft I
- THEA3336 Acting for Film and Television
- THEA3358 Acting Shakespeare
- THEA3361 Stage Production and Crew I (1 credit)
- THEA3362 Stage Production and Crew II (1 credit)
- THEA3363 Stage Production and Crew III (1 credit)
- THEA4420 Advanced Acting
- THEA4421 Advanced Acting II
- THEAH1201 Development of the Theater: Ancient to Elizabethan
- THEAH1202 Development of the Theater II: Restoration Through Today
- THEAH2255 Playwriting and Dramatic Structure


## Cognate Requirements (12 credits)

- DAN2506 Movement for the Actor
- SOAC3001 Career Path to the Arts
- SOAC4006 Professional Practice: Theater
- SPCH2004 Speech and Diction


## Major Electives (9 credits)

Choose from this list. All courses are 3 credits except where indicated otherwise.

- DAN1320 Beginning Dance
- DAN2020 Basic Tap
- DAN2021 Ballet I
- DAN2022 Ballet II
- DAN2023 Ballet III (1 credit)
- DAN2024 IV (1 credit)
- DAN2505 Dance II
- DAN2507 Choreography
- DAN2509 Chamber Dance Group (1 credit)
- DAN2510 Chamber Dance II (1 credit)
- DAN2600 Theater Dance
- DAN2601 Modern Dance Technique
- DAN2700 Hip Hop
- DAN3020 Advanced Tap
- DAN3316 Stage Combat I (1 credit)
- DAN3500 Dance Study at New Jersey School of Ballet (NJSB) I
- DANH1322 Dance History and Appreciation
- MUSIC1020 Chorus I (1 credit)
- MUSIC1022 Chorus II (1 credit)
- MUSIC1023 Chorus III (1 credit)
- MUSIC1024 Chorus IV (1 credit)
- MUSIC1025 Chorus V (1 credit)
- MUSIC1026 Chorus VI (1 credit)
- MUSIC1027 Chorus VII (1 credit)
- MUSIC1028 Chorus VIII (1 credit)
- MUSIC1376 Private Instruction in Voice I (1 credit)
- MUSIC1380 Private Instruction in Voice II (1 credit)
- MUSIC1401 Private Instruction in Voice III (1 credit)
- MUSIC1402 Private Instruction in Voice IV (1 credit)
- MUSIC1405 Private Instruction in Voice V (1 credit)
- MUSIC1406 Private Instruction in Voice VI (1 credit)
- MUSIC1407 Private Instruction in Voice VII (1 credit)
- MUSIC1408 Private Instruction in Voice VIII (1 credit)
- MUSIC2221 Fundamentals of Music Theory
- MUSIH2212 Survey of Music: 1800 to Today
- THEA1005 Makeup for the Stage (1 credit)
- THEA1015 Basic Vocal Technique
- THEA2001 Advanced Makeup for the Stage (1 credit)
- THEA2215 Set Design I
- THEA2216 Set Design II
- THEA2310 Stage Management
- THEA2311 Children's Theater
- THEA2312 Children's Theater II
- THEA2339 Musical Theater Workshop
- THEA2340 Advanced Musical Theater Workshop
- THEA2400 Production Management
- THEA3110 Stagecraft II
- THEA3112 Lighting for the Stage
- THEA3114 Design Studio
- THEA3313 Scene Painting I
- THEA3357 Audio Design Concepts
- THEA3364 Stage Production and Crew IV (1 credit)
- THEA3365 Stage Production and Crew V (1 credit)
- THEA3366 Stage Production and Crew VI (1 credit)
- THEA3800 Fundamentals of Teaching Acting
- THEA4800 Fundamentals of Teaching Acting Film and TV


## Design and Technical Theater Concentration Foundation Courses ( 30 credits)

All courses are 3 credits except where indicated otherwise.

- THEA2005 Directing I
- THEA2209 Stagecraft I
- THEA2215 Set Design I
- THEA2310 Stage Management
- THEA3110 Stagecraft II or THEA1010 Vectorworks for Entertainment
- THEA3112 Lighting for the Stage
- THEA3361 Stage Production and Crew I (1 credit)
- THEA3362 Stage Production and Crew II (1 credit)
- THEA3363 Stage Production and Crew III (1 credit)
- THEA3364 Stage Production and Crew IV (1 credit)
- THEA3365 Stage Production and Crew V (1 credit)
- THEA3366 Stage Production and Crew VI (1 credit)
- THEAH1201 Development of the Theater: Ancient to Elizabethan
- THEAH1202 Development of the Theater II: Restoration Through Today
- THEAH2255 Playwriting and Dramatic Structure
- THEAH3337 Night at the Theater or THEAH3339 The London Theater Experience


## Cognate Requirements (6 credits)

- SOAC3001 Career Path to the Arts
- SOAC4006 Professional Practice: Theater


## Major Electives (15 credits)

All courses are 3 credits except where indicated otherwise.

- ANIM1850 3D Computer Modeling
- ART1201 Drawing I
- ART1202 Drawing II
- ART1225 Painting I
- ART1315 Ceramics I
- CGD1313 Creative Imagery with Photoshop
- CGD1314 Illustrator Graphics and Design
- DANH1322 Dance History and Appreciation
- MUSIC1015 Basic Vocal Technique
- MUSIC1020 Chorus (1 credit)
- MUSIC2221 Fundamentals of Music Theory
- MUSIH2212 Survey of Music: 1800 to Today
- THEA1005 Makeup for the Stage (1 credit)
- THEA1010 Vectorworks for Entertainment
- THEA1110 Introduction to Acting
- THEA2001 Advanced Makeup for the Stage (1 credit)
- THEA2216 Set Design II
- THEA2311 Children's Theater
- THEA2312 Children's Theater II
- THEA2400 Production Management
- THEA3006 Directing II
- THEA3110 Stagecraft II
- THEA3112 Lighting for the Stage
- THEA3114 Design Studio
- THEA3313 Scene Painting I
- THEA3325 Stagecraft III
- THEA3357 Audio Design Concepts
- THEA4410 Stagecraft IV
- THEA4416 Rendering and Drafting for the Theater
- THEA4803 Senior Independent Study (1-3 credits)
- THEAH3344 History of the Musical
- THEAH3339 The London Theater Experience


## Directing Concentration

## Foundation Courses (45 credits)

All courses are 3 credits except where indicated otherwise.

- THEA1110 Introduction to Acting
- THEA2005 Directing I
- THEA2209 Stagecraft I
- THEA2215 Set Design I
- THEA2310 Stage Management
- THEA3006 Directing II or THEA2400 Production Management or THEA3114 Design Studio
- THEA3112 Lighting for the Stage
- THEA3358 Acting Shakespeare
- THEA3361 Stage Production and Crew I (1 credit)
- THEA3362 Stage Production and Crew II (1 credit)
- THEA3363 Stage Production and Crew III (1 credit)


## Cognate Requirements (6 credits)

- SOAC3001 Career Path to the Arts
- SOAC4006 Professional Practice: Theater


## Major Electives (6 credits)

All courses are 3 credits except where indicated otherwise.

- DAN1320 Beginning Dance
- DAN2020 Basic Tap
- DAN2021 Ballet I
- DAN2022 Ballet II
- DAN2023 Ballet III (1 credit)
- DAN2024 IV (1 credit)
- DAN2506 Movement for the Actor
- DAN2507 Choreography
- DAN2509 Chamber Dance Group (1 credit)
- DAN2510 Chamber Dance II (1 credit)
- DAN2601 Modern Dance Technique
- DAN2700 Hip Hop
- DAN3020 Advanced Tap
- DAN3316 Stage Combat I (1 credit)
- DAN3500 Dance Study at New Jersey School of Ballet (NJSB) I
- MUSIC1020 Chorus I (1 credit)
- MUSIC1022 Chorus II (1 credit)
- MUSIC1023 Chorus III (1 credit)
- MUSIC1024 Chorus IV (1 credit)
- MUSIC1025 Chorus V (1 credit)
- MUSIC1026 Chorus VI (1 credit)
- MUSIC1027 Chorus VII (1 credit)
- MUSIC1028 Chorus VIII (1 credit)
- MUSIC1376 Private Instruction in Voice I (1 credit)
- MUSIC1380 Private Instruction in Voice II (1 credit)
- MUSIC1401 Private Instruction in Voice III (1 credit)
- MUSIC2221 Fundamentals of Music Theory
- MUSIH2212 Survey of Music: 1800 to Today
- SPCH2004 Speech and Diction
- THEA1005 Makeup for the Stage (1 credit)
- THEA1010 Vectorworks for Entertainment
- THEA1015 Basic Vocal Technique
- THEA1111 Introduction to Acting II
- THEA2001 Advanced Makeup for the Stage (1 credit)
- THEA2216 Set Design II
- THEA2311 Children's Theater
- THEA2312 Children's Theater II
- THEA2400 Production Management
- THEA3006 Directing II
- THEA3110 Stagecraft II
- THEA3112 Lighting for the Stage
- THEA3114 Design Studio
- THEA3313 Scene Painting I
- THEA3325 Stagecraft III
- THEA3336 Acting for Film and Television
- THEA3357 Audio Design Concepts
- THEA3364 Stage Production and Crew IV (1 credit)
- THEA3365 Stage Production and Crew V (1 credit)
- THEA3366 Stage Production and Crew VI (1 credit)
- THEA3800 Fundamentals of Teaching Acting
- THEA4420 Advanced Acting
- THEA4800 Fundamentals of Teaching Acting Film and TV


## Musical Theater Concentration

## Foundation Courses (33 credits)

- DAN2600 Theater Dance
- MUSIC1015 Basic Vocal Technique or MUSIC1376 Private Instruction in Voice I (1 credit)
MUSIC1380 Private Instruction in Voice II (1 credit)
MUSIC1401 Private Instruction in Voice III (1 credit)
- THEA1203 Basic Acting
- THEA2204 Intermediate Acting
- THEA2209 Stagecraft I
- THEA2339 Musical Theater Workshop
- THEA2340 Advanced Musical Theater Workshop
- THEA3361 Stage Production and Crew I (1 credit)
- THEA3362 Stage Production and Crew II (1 credit)
- THEA3363 Stage Production and Crew III (1 credit)
- THEA4420 Advanced Acting
- THEAH1201 Development of the Theater: Ancient to Elizabethan
- THEAH1202 Development of the Theater II: Restoration Through Today
- THEAH3344 History of the Musical


## Cognate Requirements (6 credits)

Choose two courses from the following:

- DAN2020 Basic Tap
- DAN2021 Ballet I and
- SOAC3001 Career Path to the Arts
- SOAC4006 Professional Practice: Theater
- MUSIC2221 Fundamentals of Music Theory
- SPCH2004 Speech and Diction


## Major Electives (12 credits)

All courses are 3 credits except where indicated otherwise.

- DAN2020 Basic Tap
- DAN2021 Ballet I
- DAN2022 Ballet II
- DAN2023 Ballet III (1 credit)
- DAN2024 IV (1 credit)
- DAN2506 Movement for the Actor
- DAN2507 Choreography
- DAN2509, DAN2510 Chamber Dance Group I, II (1 credit each)
- DAN2601 Modern Dance Technique
- DAN2700 Hip Hop
- DAN3020 Advanced Tap
- DAN3316 Stage Combat I (1 credit)
- DAN3500 Dance Study at New Jersey School of Ballet (NJSB) I
- DANH1322 Dance History and Appreciation
- MUSIC1020 Chorus I (1 credit)
- MUSIC1022 Chorus II (1 credit)
- MUSIC1023 Chorus III (1 credit)
- MUSIC1024 Chorus IV (1 credit)
- MUSIC1025 Chorus V (1 credit)
- MUSIC1026 Chorus VI (1 credit)
- MUSIC1027 Chorus VII (1 credit)
- MUSIC1028 Chorus VIII (1 credit)
- MUSIC1376 Private Instruction in Voice I (1 credit)
- MUSIC1380 Private Instruction in Voice II (1 credit)
- MUSIC1401 Private Instruction in Voice III (1 credit)
- MUSIC1402 Private Instruction in Voice IV (1 credit)
- MUSIC1405 Private Instruction in Voice V (1 credit)
- MUSIC1406 Private Instruction in Voice VI (1 credit)
- MUSIC1407 Private Instruction in Voice VII (1 credit)
- MUSIC1408 Private Instruction in Voice VIII (1 credit)
- THEA1005 Makeup for the Stage (1 credit)
- THEA2001 Advanced Makeup for the Stage (1 credit)
- THEA2005 Directing I
- THEA2215 Set Design I
- THEA2310 Stage Management
- THEA2311 Children's Theater
- THEA2400 Production Management
- THEA3110 Stagecraft II
- THEA3112 Lighting for the Stage
- THEA3114 Design Studio
- THEA3313 Scene Painting I
- THEA3336 Acting for Film and Television
- THEA3364 Stage Production and Crew IV (1 credit)
- THEA3365 Stage Production and Crew V (1 credit)
- THEA3366 Stage Production and Crew VI (1 credit)
- THEA3800 Fundamentals of Teaching Acting
- THEA4421 Advanced Acting II
- THEA4800 Fundamentals of Teaching Acting Film and TV
- THEAH2255 Playwriting and Dramatic Structure
- THEAH3337 Night at the Theater
- THEAH3339 The London Theater Experience


## Theater Studies Concentration

## Foundation Courses (29 credits)

All courses are 3 credits except where indicated otherwise.

- DAN2506 Movement for the Actor
- DAN3316 Stage Combat I (1 credit)
- THEA1110 Introduction to Acting
- THEA2005 Directing I
- THEA2209 Stagecraft I
- THEA2310 Stage Management
- THEA3351 Production and Crew I (1 credit)
- THEAH1201 Development of the Theater: Ancient to Elizabethan
- THEAH1202 Development of the Theater II: Restoration Through Today
- THEAH2255 Playwriting and Dramatic Structure
- THEAH3337 Night at the Theater


## Cognate Requirements (6 credits)

- SOAC3001 Career Path to the Arts
- SOAC4006 Professional Practice: Theater


## Major Elective Courses (16 credits)

All courses are 3 credits except where indicated otherwise.

- DAN1320 Beginning Dance
- DAN2020 Basic Tap
- DAN2021 Ballet I
- DAN2022 Ballet II
- DAN2023 Ballet III (1 credit)
- DAN2024 IV (1 credit)
- DAN2507 Choreography
- DAN2509 Chamber Dance Group (1 credit)
- DAN2510 Chamber Dance II (1 credit)
- DAN2600 Theater Dance
- DAN2601 Modern Dance Technique
- DAN2700 Hip Hop
- DAN3020 Advanced Tap
- DAN3321 Stage Combat II (1 credit)
- DAN3500 Dance Study at New Jersey School of Ballet (NJSB) I
- DANH1322 Dance History and Appreciation
- MUSIC1020 Chorus I (1 credit)
- MUSIC1022 Chorus II (1 credit)
- MUSIC1023 Chorus III (1 credit)
- MUSIC1024 Chorus IV (1 credit)
- MUSIC1025 Chorus V (1 credit)
- MUSIC1026 Chorus VI (1 credit)
- MUSIC1027 Chorus VII (1 credit)
- MUSIC1028 Chorus VIII (1 credit)
- MUSIC1376 Private Instruction in Voice I (1 credit)
- MUSIC1380 Private Instruction in Voice II (1 credit)
- MUSIC1401 Private Instruction in Voice III (1 credit)
- MUSIC2221 Fundamentals of Music Theory
- MUSIH2212 Survey of Music: 1800 to Today
- THEA1005 Makeup for the Stage (1 credit)
- THEA1015 Basic Vocal Technique
- THEA1111 Introduction to Acting II
- THEA2001 Advanced Makeup for the Stage (1 credit)
- THEA2215 Set Design I
- THEA2216 Set Design II
- THEA2311 Children's Theater
- THEA2312 Children's Theater II
- THEA2339 Musical Theater Workshop
- THEA2340 Advanced Musical Theater Workshop
- THEA2400 Production Management
- THEA3110 Stagecraft II
- THEA3112 Lighting for the Stage
- THEA3114 Design Studio
- THEA3313 Scene Painting I
- THEA3325 Stagecraft III
- THEA3357 Audio Design Concepts
- THEA3361 Stage Production and Crew I (1 credit)
- THEA3362 Stage Production and Crew II (1 credit)
- THEA3363 Stage Production and Crew III (1 credit)
- THEA3364 Stage Production and Crew IV (1 credit)
- THEA3365 Stage Production and Crew V (1 credit)
- THEA3366 Stage Production and Crew VI (1 credit)
- THEA3800 Fundamentals of Teaching Acting
- THEA4800 Fundamentals of Teaching Acting Film and TV
- THEAH3344 History of the Musical
- THEAH3339 The London Theater Experience


## For Information

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## Minors

## 3D Video Game Animation Minor

With the advancement of 3D accelerated graphics, video games now go far beyond the sprite-based 2D graphics to display visuals that are more realistic and lifelike. In the 15 -credit 3 D video game animation
minor, students learn how to create optimized 3D graphics and animations that will respond well for the player, and then apply interactivity to those pieces using industry-standard game-creation platforms. Both first-person (rendered from the perspective of the player's character) and third-person (shown from a distance away from the player's character) games are explored.
The 3D video game animation minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (9 credits)

- ANIM2240 Low Poly 3D Modeling
- ANIM2500 3D Computer Animation
- CGD1313 Creative Imagery with Photoshop


## Elective Courses (6 credits)

Select two of the following courses:

- ANIM1650 Game Design
- ANIM3350 3D Game Creation Using Unreal
- ANIM3450 3D Game Creation Using Unity


## For Information

Robin Barkley, Director of Animation and Video Game Animation Programs, School of the Arts, Maxwell Becton College of Arts and Sciences
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## Accounting Minor

Accounting is the language of business. Whether students are interested in starting their own small businesses or working for a Fortune 500 company, knowledge of the basics of accounting and financial reporting will provide a deeper understanding of the tools used in running a business.
The accounting minor is offered only for business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major,
who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.

## Requirements

- ACCT3241 Intermediate Financial Accounting I
- ACCT3242 Intermediate Financial Accounting II
- ACCT3243 Cost Accounting: Measurement and Control
- ACCT3390 Accounting Information Systems


## For Information

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## Acting Minor

The acting minor offers a foundation in the diverse aspects of contemporary theater. The minor focuses on the collaborative approach to theatrical production, allowing students to study both the practical and academic aspects of the discipline. Students taking the minor are also encouraged to audition for or to crew departmental productions in either of FDU's theaters: Dreyfuss Theater or the Barn Theater. Between these spaces, the School of the Arts mounts a full season of musicals, classics and contemporary productions each year, providing opportunities for hands-on application of classroom learning.
The acting minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (15 credits)

- THEA1110 Introduction to Acting
- THEA2005 Directing I or THEA2255 Playwriting and Dramatic Structure
- THEA2209 Stagecraft I
- THEA2220 Introduction to Acting 11
- THEAH1201 Development of the Theater I or

THEAH1202 Development of the Theater II

## For Information

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## Advertising Minor (Florham)

The 15 -credit advertising minor is designed for students interested in studying the theoretical, practical and creative elements that go into the creation of compelling and successful advertisements and advertising campaigns. The philosophy behind the minor builds on the recognition that the professional domain of advertising draws from many varied disciplines.
First, students must develop a foundational understanding of the concepts and theories included in the areas of advertising and marketing.
Then they must develop and polish their theoretical understanding and professional skills in the areas of computer graphics, desktop publishing and basic video making - they need to understand all the theoretical and creative elements that go into the creation of both print ads and commercials.
Finally, students should be given the opportunity to develop their skills with courses that will enhance their knowledge regarding account management, campaign planning, implementation, and evaluation.
In order to fulfill the advertising minor, students must select no more than 9 credits in their major discipline. This policy is meant to ensure that students are taking full advantage of the interdisciplinary nature of the minor.
The advertising minor is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.
An advertising minor - with different requirements - is also offered by the department of communication at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (9 credits)

- CGD1313 Creative Imagery with Photoshop
- CGD1314 Illustrator Graphics and Design
- COMM2221 Advertising Principles


## Elective Courses (6 Credits)

Choose two from the following:

- CGD2370 Print Layout
- CGD3215 Editorial Design (prerequisite is CGD2370 Print Layout)
- COMM2210 Popular Culture and the Media
- COMM3005 Social Media, Communication and Community
- COMM3248 Writing for Broadcast and Podcast
- FILM1005 Filmmaking I: Basic Production
- MKTG2120 Principles of Marketing
- MKTG4272 Consumer Behavior
- MKTG4365 Marketing Communications


## For Information

Gary Radford, Chair, Department of Communication, Maxwell Becton College of Arts and Sciences Professor of Communication gary radford@fdu.edu 973-443-8648

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## Advertising Minor (Metro)

The 15 -credit advertising minor for non-communication majors is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.
An advertising minor - with different requirements - is also offered by the department of communication at the Florham Campus, Madison, New Jersey.

## Requirements

The following are all 3-credit courses.

- COMM2321 Advertising Principles
- COMM3444 Public Relations
- MKTG2120 Principles of Marketing
- COMM3345 Advertising Copywriting or COMM3362 Advertising Campaigns
- COMM4001 Communication Internship I or COMM3010 Advertising and Social Media or COMM3348 Broadcast Advertising


## African-American Studies Minor

The minor in African-American studies exposes students to a program of study concerning AfricanAmerican culture, life and history in the United States. By exposing students to an interdisciplinary study of African-Americans (encompassing history, political science, sociology, literature, music and anthropology), the minor is intended to educate students on how African-Americans helped shape American history and culture and continue to transform it today. The minor also emphasizes the relevance of Africa in understanding the attitudes, circumstances and experiences of African-Americans. The core course AFAM1100 Introduction to African-American Studies will ground students in the fundamentals of interdisciplinary study. In the electives, the students will learn that the African-American experience is not only an integral part of the United States experience but also integral to understanding the world at large.
The African-American studies minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Course ( 3 credits)

- AFAM1100 Introduction to African-American Studies


## Select Elective Courses (12 credits)

Choose four of the 3-credit courses below to include at least one each from history, literature and sociology.

## History

- HIST2350 Colonial and Revolutionary America
- HIST2351 The United States in the Early Republic
- HIST2352 Civil War and Reconstruction


## Literature

- LITS2140 African-American Literature
- LITS3202 American Writers: Race in B \& W
- LITS3203 Contemporary Black Literature


## Music

- MUSIC1021 Popular Music and Jazz


## Sociology

- AFAM3357 Sociology of the African-American Family
- AFAM3358 Sociology of the Black Church
- AFAM3359 Sociology of Race, Rap and Religion


## Related Elective Courses (3 credits)

Choose any one of the 3 -credit courses below:

- ANTH2335 African Peoples and Cultures
- COMM2866 Women and Minorities in Media
- HIST2202 Introduction to African History
- HIST2402 Atlantic Worlds
- HIST4205 Seminar: Race and Empire
- LITS3071 Contemporary African Literature and Culture


## For Information

Matthieu Boyd, Chair, Department of Literature, Languages, Writing and Humanities, Maxwell Becton
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## Animation Minor

Animation is the process of creating the illusion of motion through a variety of techniques. The 15 -credit minor in animation prepares students to understand the various types of digital 2D motion graphics (which focus on image manipulation) and 3D computer animation (which takes place in virtual worlds) and their uses. The flexibility of this minor allows students to target their area of interest whether it is commercial-style motion graphics, special effects or 3D character animation.
The animation minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses ( 9 credits)

- CGD1313 Creative Imagery with Photoshop
- ANIM1850 3D Computer Modeling
- ANIM2500 3D Computer Animation


## Elective Courses ( 6 credits)

Select two of the following courses:

- ANIM1750 Motion Graphics with After Effects
- ANIM2243 Advanced After Effects
- ANIM3250 3D Particle Animation and Effects
- ANIM3331 Logo and Product Animation
- ANIM3341 Character Animation Using CAT


## For Information

Robin Barkley, Director of Animation and Video Game Animation Programs, School of the Arts, Maxwell Becton College of Arts and Sciences
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## Anthropology Minor

The anthropology minor is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required (3 credits)

- ANTH1202 Cultural Anthropology


## Electives (12 credits)

- Four (4) additional courses in anthropology (ANTH)


## For Information

## Art History Minor

The minor in art history is designed for students interested in studying the history of visual art as an academic discipline. Courses for the minor have been selected to prepare students in the fundamentals of this discipline and to cover a range of historical periods - spanning prehistoric to contemporary - as well as a variety of media. One studio art class is included to enhance the students' appreciation of the creative process, and to strengthen their ability to write accurately about art.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (9 credits)

- ARTH1205 Art History: Prehistoric Through Medieval
- ARTH1206 Art History: Renaissance Through Today
- ARTH2218 20th-century Art


## Two Elective Courses (6 credits)

## Art History Elective (3 credits)

Select one of the following courses:

- ARTH1402 Museums of New York
- ARTH1803 Modern Art in the New York Museum
- ARTH2265 History of Photography
- ARTH3423 Women Artists or


## Studio Art Elective (3 credits)

Select one of the following courses:

- ART1201 Drawing I
- ART1225 Painting I
- ART1231 2-Dimensional Design I
- ART1235 Sculpture I
- ART1315 Ceramics I
- ART2233 3-Dimensional Design


## For Information

Douglas Cochrane, Fine Arts Program Director, School of the Arts, Maxwell Becton College of Arts and Sciences
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Judith Moonelis, Fine Arts Program Director, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Fine Arts and Studio Art
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## Biology Minor

The department of biological sciences of the Maxwell Becton College of Arts and Sciences offers biology minors at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey.

## Metropolitan Campus

The 15 -credit biology minor is for nonscience majors.

## Requirements

## Required Courses (15 credits)

- BIOL1001, BIOL1011 Principles of Modern Biology Lecture and Laboratory Fall/Spring
- BIOL1060, BIOL1061 Genetics and Society Lecture and Laboratory Fall/Spring
- BIOL1105, BIOL1115 The Human Environment Lecture and Laboratory Fall/Spring
- BIOL1106, BIOL1116 Over-the-Counter Drugs Lecture and Laboratory Fall/Spring
- CHEM1118, CHEM1119 Forensic Science Lecture and Laboratory Fall/Spring


## Florham Campus

The minor is optional at the Florham Campus.
The biology minor is for students NOT majoring in biology. It consists of five courses with laboratory that will provide students a broad foundation in the subject. Students interested in environmental areas
should select the ecology and genetics cluster while those interested in health-related areas should select the anatomy and physiology cluster.

## Requirements

## Required Courses (20 credits)

- BIOL1221, BIOL1222, BIOL1223 Biological Diversity Lecture, Laboratory and Recitation (4 credits)
- BIOL1233, BIOL1234, BIOL1235 Molecules, Cells and Genes Lecture, Laboratory and Recitation (4 credits)
- BIOL3050, BIOL3051 Molecular Cell Biology Lecture and Laboratory (4 credits)


## Plus one of the following clusters:

- BIOL2250, BIOL2251 Ecology and Field Biology Lecture and Laboratory (4 credits) and BIOL3100, BIOL3101 Genetics Lecture and Laboratory (4 credits)
or
- BIOL1205, BIOL1207 Anatomy and Physiology I Lecture and Laboratory (4 credits) and BIOL1206, BIOL1208 Anatomy and Physiology II Lecture and Laboratory (4 credits)


## For Information

Marion McClary, Chair, Department of Biological Sciences, Maxwell Becton College of Arts and Sciences
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201-692-2606
James Salierno, Deputy Chair, Department of Biological Sciences, Maxwell Becton College of Arts and Sciences
Associate Professor of Biological and Allied Health Sciences
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## British Studies Minor

The 15 -credit British studies minor is designed to offer Maxwell Becton College of Arts and Sciences students who study for the fall/spring semester at Wroxton College the opportunity to earn a minor that recognizes Wroxton.
The British studies minor is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements <br> Wroxton College Courses

Choose any 15 credits of British-centered curriculum taken during a fall or spring semester to qualify for the minor, but excluding UNIV2001 Cross Cultural Perspectives and UNIV2002 Global Issues.

## Becton College/Wroxton College Summer Courses

Choose either 3 or 6 of the following 3-credit courses, a program offered jointly every odd year with course sessions at Becton College followed by two weeks at Wroxton College with site tours in England and France. Students can also use an authorized substitute course from another Wroxton summer program.

- HIST2424 Western Front in World War I
- HIST2425 Western Front in World War II


## Becton College Courses

Choose any 3 of the following 3-credit courses beyond the 12 to 15 relevant credits taken at Wroxton College. Students can also use an authorized substitute course.

- LITS2031 The English Language
- LITS3020 18th-century British Literature
- LITS3021 Victorian Age
- LITS3054 Romanticism
- LITS3073 Irish Literature
- LITS3201 British Writers
- LITS3212 Chaucer
- LITS3213 Shakespeare I
- LITS3214 Shakespeare II
- LITS3230 Jane Austen: Fiction and Film
- HIST3350 U.S. as a Continental Power: 1607-1898

Total Credits 15

## For Information

Gary Darden, Chair, Department of Social Sciences and History, Maxwell Becton College of Arts and Sciences
Associate Professor of History and Coordinator of British Studies Minor
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## Broadcasting Minor

The 15 -credit broadcasting minor is designed for students interested in studying the theoretical, practical and creative elements within the radio and television industries. The philosophy behind the minor builds on the recognition that the professional domain of broadcasting draws from many, varied disciplines. First, students must develop a foundational understanding of the concepts and theories included in the areas of radio and television. Then students can choose to further develop their skills in one or more of the areas through their selection of elective courses. Students are encouraged to take at least one approved broadcasting Internship in the field of their choice, as prospective employers look for practical field experience from students.
Note: In order to fulfill the broadcasting minor, students must select no more than 9 credits in their major discipline. This policy is meant to ensure that students are taking full advantage of the interdisciplinary nature of the minor.
The broadcasting minor is offered by the department of communication, School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses ( 9 credits)

- COMM2012 Introduction to Television and Digital Journalism (formerly COMM3349)
- COMM2214 Introduction to Radio and Digital Journalism
- FILM1005 Filmmaking I: Basic Production


## Elective Courses (6 credits)

Choose two courses from the following:

- COMM3060 Television News and Digital Journalism
- COMM3248 Writing for Broadcast and Podcast
- COMM3341 Radio Management and Digital Journalism
- FILM1501 Cinematic Storytelling
- FILM2208 Filmmaking II: The Professional Crew
- FILM2210 Postproduction I
- FILM4461 Documentary Filmmaking
- CREW1002 Introduction to Fiction Writing
- CREW2250 Screenwriting I
- THEA2005 Directing I
- THEA3336 Acting for Film and TV
- VDEO2203 TV Writing and Screenwriting


## For Information

Gary Radford, Chair, Department of Communication, Maxwell Becton College of Arts and Sciences Professor of Communication

## Business Administration Minor

The Silberman College of Business offers a business administration minor only for non-business majors at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey. This 18 -credit minor is intended to provide a basic foundation in business for non-business students.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.
Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- ACCT2021 Introductory Financial Accounting
- ECON2001 Introduction to Microeconomics
- FIN3250 Principles of Financial Analysis
- LAW2276 Business and the Law
- MGMT2600 Organizational Behavior
- MKTG2120 Principles of Marketing


## For Information

Florham Campus Advisers
973-443-8800
Metropolitan Campus Advisers
201-692-7206

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## Chemistry Minor

The chemistry minor is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.
The chemistry minor consists of 19-20 credits distributed as follows:

## Requirements

## Required Courses (16 credits)

- CHEM1201, CHEM1202 General Chemistry I, II
- CHEM1203, CHEM1204 Lab: General Chemistry I, II
- CHEM2261, CHEM2262 Organic Chemistry I, II
- CHEM2263, CHEM2264 Lab: Organic Chemistry I, II


## Elective (3-4 credits)

- One 2000 - or 3000 -level chemistry course


## For Information

James Dougherty, Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences
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201-692-2487
Mohammed Elshaer, Deputy Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences
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## Children's Studies Minor

The children's studies minor provides students with a multidisciplinary understanding of childhood in human society. Using the disciplinary perspectives of literature, psychology, sociology and anthropology, the minor grounds students in an understanding of childhood as preparation for employment in child services and advocacy, or advanced study in the fields of education, literature, psychology, sociology and anthropology.

The minor is offered jointly by the department of literatures, languages, writing and humanities; the department of communication; and the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Students select five 3-credit courses from the list below, making selections from at least three different disciplines.

## Anthropology

- ANTH3102 Anthropology of Children and Childhood


## Communication

- COMM3014 Family Communication


## Literature

- LITS3303 World Folk Literature
- LITS2400 Children's Literature
- LITS2401 Young Adult Literature


## Psychology

- PSYC2204 Child Development
- PSYC3305 Adolescent Growth and Development


## Sociology

- SOCI2316 Sociology of the Family
- SOCI2317 Children and Society
- SOCI2318 Law and the Family
- SOCI3310 Juvenile Delinquency
- SOCI3344 Schools and Society


## For Information

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## Cinema Studies Minor

The 15 -credit cinema studies minor (previously called the film studies minor) is designed for students interested in studying movie as texts and as popular culture. Traditionally, students of this discipline study the history, production processes and the aesthetics of film as well as the theories that analyze the ways in which film, culture and audience interact to negotiate and construct meaning.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.
The two required courses provide the foundations for these four areas of investigation (history, production, aesthetics, theory). The electives offer an opportunity for a wider breadth of experience or a more tightly focused study.

## Requirements

- CINE1501 Cinematic Storytelling
- CINE3350 Twentieth-century Cinema


## Non-American Film Course (3 credits)

Select one from the following:

- CINE2005 French Cinema (cross-listed with FREN2005 French Film)
- CINE2015 Italian Cinema
- CINE2207 East Asian Cinema
- CINE3015 Japanese Culture Through Film (cross-listed with JAPN3015 Japanese Culture Through Film)
- CINE3215 Introduction to World Cinema
- SPAN2515 Spanish Film


## Auteur Course (3 credits)

Three credits of study on a director, such as:

- CINE2010 Films of Spike Lee
- CINE2350 The American Film Director
- CINE2404 Films of Alfred Hitchcock
- CINE2406 Films of Clint Eastwood
- CINE2408 The Films of Woody Allen
- CINE3345 Films of Steven Spielberg


## Cinema Studies Course(3 credits)

Three credits of cinema survey, such as:

- CINE2205 Blondes and Bombshells
- CINE2405 American Film Comedy
- CINE3010 Film Noir: The Dark Side of Cinema
- CINE3335 The American Film

NOTE: New courses focusing on international and U.S. cinema are added frequently, and can be substituted when appropriate in all the areas above.

## For Information

Howard Libov, Chair, School of the Arts, and Director, MFA in Film, Maxwell Becton College of Arts and Sciences
Professor of Film howard libov@fdu.edu 973-443-8646

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## Clinical Social Work Minor

The clinical social work minor is for nonpsychology majors. Students who are majoring in psychology are not permitted to enroll in this minor. Psychology majors may elect to complete the clinical social work track within their major, and must complete a minor in another area.
The clinical social work minor is offered by the School of Psychology and Counseling at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Foundation Course (9 credits)

- PSYC1125 Introduction to Social Service Advocacy (Cross-listed with CRIM1125 Introduction to Social Service Advocacy)
- PSYC3381 Field Placement
- PSYC4391 Techniques of Psychotherapy


## Criminal Justice Courses (6 credits)

Select two courses from the following:

- CRIM1130 Working with Children and Families
- CRIM2204 Juvenile Justice and Delinquency
- CRIM2208 Victimology
- CRIM2246 Selected Studies in Criminal Justice
- CRIM3307 Domestic Violence
- CRIM3320 Interviewing and Counseling Strategies
- CRIM3322 Negotiation and Conflict Management
- CRIM3324 Community Resource Management
- CRIM3326 Rehabilitative Strategies

For Information
Benjamin Freer, Director, School of Psychology and Counseling
Associate Professor of Psychology
benjamin freer@fdu.edu
201-692-2300

## Communication Minor

The communication minor is for non-communication majors. It is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Course (3 credits)

- COMM2204 Introduction to Human Communication


## Elective Courses (12 credits)

Choose four COMM courses at the 2000-level or above. (Students cannot take `COMM4001
Communication Internship I as part of the minor.)

## For Information

Gary Radford, Chair, Department of Communication, Maxwell Becton College of Arts and Sciences Professor of Communication

## Computer Animation Art Minor

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit computer animation art minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.
Students who desire a computer animation art minor, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required.

## Requirements

- ANIM1750 Motion Graphics with After Effects
- ANIM1800 Vector Animation Using Animate CC
- ANIM1850 3D Computer Modeling
- ANIM2500 3D Computer Animation
- ART1153 General Life Drawing I


## For Information

Yelena Aronson
Professor of Computer Graphics, School of the Arts, Maxwell Becton College of Arts and Sciences lena@fdu.edu
201-692-2168

## Computer Forensics Minor

Computer forensics involves the identification, preservation, extraction, interpretation and the documentation of digital evidence in criminal and civil investigations. The computer forensics minor is an interdisciplinary minor developed and administered jointly by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering and the department of criminology and criminal justice, Maxwell Becton College of Arts and Sciences. It is offered at the Metropolitan Campus, Teaneck, New Jersey.This

15 -credit minor is designed to provide students with a strong foundation in the knowledge, understanding and competencies sought by prospective employers in the area of computer forensics.

## Requirements

## Required Courses (12 credits)

- CRIM2218 Computer Technologies and Cyber Crime
- CRIM3327 File System Forensic Analysis and Investigation
- INFO1101 Computer Concepts and Technology
- INFO4101 Data Communications and Computer Networks I


## Elective Course (3 credits)

One course must be chosen from the following:

- CRIM4010 Computer Forensic, Software and Hardware Applications
- INFO4410 Foundations of Cybersecurity


## For Information

Amy Shlosberg, Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Associate Professor of Criminology
amy shlosberg@fdu.edu
973-443-8721
Elizabeth Panuccio, Deputy Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Assistant Professor of Criminal Justice
elizabeth387 panuccio@fdu.edu
201-692-2577
Kalyan Mondal, Director of Center for Cybersecurity and Information Assurance, Coordinator of BS in Information Technology Program, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering
Professor of Electrical Engineering
mondal@fdu.edu
201-692-2123
Susan Seed
Director, Student Advisement and Retention, Lee Gildart and Oswald Haase School of Computer
Sciences and Engineering
susan804 seed@fdu.edu
201-692-2284

## Computer Graphics Art Minor

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit computer graphics art minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.
Students who desire a computer graphics art minor, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required.

## Requirements

- ART1843 Design for the Web
- CGD1177 Introduction to Digital Media
- CGD1178 Multimedia on the Internet
- CGD2294 3D Multimedia or CGD2274 3D Visualization
- CGD3179 Digital Illustration and Design


## For Information

Yelena Aronson
Professor of Computer Graphics, School of the Arts, Maxwell Becton College of Arts and Sciences lena@fdu.edu
201-692-2168

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## Computer Science K-12 Minor

The 15 -credit computer science $\mathrm{K}-12$ teacher certification minor prepares QUEST students to teach computer science in grades $\mathrm{K}-12$ and to add a computer science certification as a second endorsementl. The minor is offered by the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (12 credits)

- CSCI1145 Computer Science Fundamentals
- CSCI1204 Computer Programming Using C\#
- CSCL2104 Computer Programming Using Python
- CSCI2244 Computational Thinking


## Elective (3 credits)

Choose one from the following courses:

- CSCI1109 Computer Ethics
- CSCL2100 Mobile App Development
- CSCI2205 Introduction to Computer Science I
- CSCI3294 Data Analysis and Visualization
- CSCI3388 Introduction to Game Development
- CSCI3389 Introduction to Human-Computer Interaction
- CSCI3392 Introduction to Unreal Game Programming


## For Information

Laila Khreisat, Chair, Department of Mathematics and Computer Science, Maxwell Becton College of Arts and Sciences
Professor of Computer Science
khreisat@fdu.edu
973-443-8680

## Computer Science Minor (for students in BSEE-MSEE combined degree program)

The Lee Gildart and Oswald Haase School of Computer Sciences and Engineering is offering a computer science minor for students in the BS in Electrical Engineering and Master of Science in Electrical Engineering combined-degree program at the Metropolitan Campus, Teaneck, New Jersey. BSEE-MSEE students need to consult their academic adviser. Students may be allowed to take the graduate-level version of a computer science class.

This minor in computer science consists of 15 credits and is available to qualified students. This minor provides students with a basic foundation in computer science that complements their majors and enhances their employment opportunities and career options. The problem-solving and critical-thinking skills acquired through this minor are essential skills needed to be successful in life and in the workplace.

## Requirements

Required Courses (9 Credits)

- CSCI2232 Data Structures or CSCI3278 Operating Systems (BSEE technical elective)
- CSCI3268 Database Systems (BSEE technical elective)
- ENGR1204 Programming Languages (BSEE degree requirement)


## Two courses must be chosen from the following:

- CSCI2234 Data Structures (BSEE technical elective)
- CSCI3240 Computer Networks
- CSCI3249 Computer Organization
- CSCI3278 Operating Systems
- EENG2287 Microprocessor System Design I (BSEE degree requirement)
- ENGR2286 Digital System Design (BSEE degree requirement)
- ENGR3200 Advanced Engineering Programming (BSEE degree requirement)
- MATH2255 Discrete Structures

BSEE students should check with their academic advisers regarding technical electives for the BSEE degree program. Out of the four required technical electives, students will be required to take at least two EENG technical electives.

To take any course in the minor, a student must meet all the prerequisites for that course.

## For Information

Alfredo Tan, Director, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering Professor of Electrical Engineering and Gregory Olsen Endowed Chair tan@fdu.edu 201-692-2324
Susan Seed
Director, Student Advisement and Retention, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering
srseed@fdu.edu
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## Computer Science Minor (Florham)

The department of mathematics and computer science, Maxwell Becton College of Arts and Science, is offering a computer science minor at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (12 credits)

- CSCI1205 Introduction to Computer Programming
- CSCI2205 Introduction to Computer Science I
- CSCI2216 Introduction to Computer Science II
- CSCI2255 Discrete Structures


## Elective Course (3 credits)

One additional course in computer science to be selected from the 2000- or higher-level CSCI course offerings.

## For Information

Laila Khreisat, Chair, Department of Mathematics and Computer Science, Maxwell Becton College of Arts and Sciences
Professor of Computer Science
khreisat@fdu.edu
973-443-8680

## Computer Science Minor (Metro)

The computer science minor consists of 15 credits and is available to qualified students who are noncomputer science majors. This minor provides students with a foundation in computer science that complements their majors and enhances their employment opportunities and career options. The problemsolving and critical-thinking skills acquired through this minor are essential skills needed to be successful in life and in the workplace.

The computer science minor is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (9 Credits)

- CSCI1201 Computer Programming I
- CSCI2215 Introduction to Computer Science
- CSCI3268 Database Systems


## Elective Courses (6 Credits)

Two courses must be chosen from the following:

- CSCI1202 Computer Programming II
- CSCI2234 Data Structures and Algorithms
- CSCI2247 Assembly Language Programming
- CSCI3240 Computer Networks
- CSCI3249 Computer Organization
- CSCI3278 Operating Systems
- ENGR2286 Digital System Design
- MATH2255 Discrete Structures

To take any course in the minor, a student must meet all the prerequisites for that course. With the approval of the academic adviser, students may take other higher-level CSCI courses as electives. Students intending to pursue an MS in computer science or an MS in management information systems must see an adviser for the proper selection of electives.

## For Information

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201-692-2324
Susan Seed
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## Convergent Journalism Minor

The 15 -credit convergent journalism minor builds on a foundation of basic skills in the three primary platforms of the modern media industry - print, broadcast and the internet - and offers a range of free electives that allows students to further explore areas of specific interest.
This minor is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (9 credits)

- CGD1177 Introduction to Digital Media (formerly COMM1177/ART1177 Introduction to Digital Media)
- CGD2174 Digital Publishing (formerly COMM1174/ART1174 Desktop Publishing)
- COMM2833 News Reporting


## Elective Courses (6 credits)

Choose one from the following ( 3 credits):

- CGD1178 Multimedia on the Internet (formerly ART1178 Multimedia on the Internet)
- COMM2558 Basic Radio Station Engineering
- COMM2835 Feature Article Writing
- VDEO2310 Postproduction I (formerly COMM2648 Basic Video Editing)

Choose one from the following ( 3 credits):

- COMM3665 International News: The Views Beyond Our Borders
- COMM3668 TV News: The Big Issues
- COMM3834 Advanced News Reporting
- COMM4470 The Television Newsroom


## For Information

Gary Radford, Chair, Department of Communication, Maxwell Becton College of Arts and Sciences Professor of Communication
gary radford@fdu.edu
973-443-8648

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## Creative Writing Minor

The creative writing minor is flexible and may be a useful and productive complement to many majors. Creative writing helps students develop their writing and creative skills, discover their unique voices and further general communication skills.
The 15 -credit creative writing minor is for students not majoring in creative writing. It is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Course (3 credits)

- CREW1001 Introduction to Creative Writing


## Elective Courses (12 credits)

Two to three of the following courses:

- CREW1002 Creative Writing I (Fiction)
- CREW2002 Creative Writing II (Fiction) (Substitutions of other2000- and 3000-level LITS courses may be possible; see minor adviser.)
- CREW2003 Creative Writing I (Poetry) (Substitutions of other2000- and 3000-level LITS courses may be possible; see minor adviser.)
- CREW2250 Screenwriting I (Cross-listed as FILM2250 Screenwriting I)

One to two of the following courses:

- LITS2101 British and European Literature I
- LITS2102 British and European Literature II
- LITS2201 World Literature I
- LITS2202 World Literature II
- LITS2301 American Literature I
- LITS2302 American Literature II


## For Information

René Steinke, Director, MFA in Creative Writing Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Creative Writing
rene_steinke@fdu.edu
973-443-8823

## Criminal Justice Minor

A criminal justice minor is available to noncriminal justice majors. It is being offered by the department of criminology and criminal justice, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

Required Courses (6 credits)

- CRIM1101 Introduction to Criminal Justice
- CRIM1102 Criminology and Social Theory

Select any three criminal justice (CRIM) courses (9 credits)

## For Information

Amy Shlosberg, Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Associate Professor of Criminology
amy shlosberg@fdu.edu

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## Criminology Minor

The department of social sciences and history, Maxwell Becton College of Arts and Sciences, offers a criminology minor for noncriminology majors at the Florham Campus, Madison, New Jersey.
The minor in criminology enables students to examine the following as they relate to race, class, gender and sexuality:

- Nature and causes of crime,
- Deviant and criminal behavior and
- Aspects of the criminal justice system (e.g. police, courts, prison, etc.).


## Requirements

## Required Course (3 credits)

- CMLGY1306 Introduction to Crime and Criminology


## Elective Courses (12 credits)

Select four from the following:

- CMLGY1201 Introduction to Sociology
- CMLGY2203 Research Methods in Criminology
- CMLGY2204 Qualitative Research Methods
- CMLGY2211 Economics of Crime
- CMLGY2300 Wrongful Convictions
- CMLGY2307 Deviance and Social Control
- CMLGY2309 Major Works in Crime and Criminology
- CMLGY2310 Social Problems
- CMLGY2317 Probation and Parole
- CMLGY2333 Criminal Law
- CMLGY2360 Victimology
- CMLGY2431 Anthropology of Crime
- CMLGY2701 Penology
- CMLGY2990 Crime in the City
- CMLGY3005 Abnormal Psychology
- CMLGY3012 Crisis Intervention
- CMLGY3030 Surveillance and Security
- CMLGY3040 Capture and Control
- CMLGY3207 Offender Reentry and Reintegration
- CMLGY3301 Women and Crime
- CMLGY3307 Civil Liberties and Civil Rights
- CMLGY3308 Law and Society
- CMLGY3309 Policy Analysis
- CMLGY3310 Juvenile Delinquency
- CMLGY3316 Global Terrorism
- CMLGY3348 Torture, Interrogation and the State
- CMLGY3349 War and Crime
- CMLGY3360 Forensic Psychology
- CMLGY3404 International Criminal Law
- CMLGY3997 Internship in Criminology


## For Information

Amy Shlosberg, Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Associate Professor of Criminology
amy shlosberg@fdu.edu
973-443-8721
Elizabeth Panuccio, Deputy Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Assistant Professor of Criminal Justice
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## Dance Studies Minor

The dance studies minor provides a comprehensive overview of dance as an art form through technique, dance history, dance appreciation and choreographic practice. The minor develops a dancer's technical skills, exposes students to the diverse history of the art form and provides the study of choreographic principles and practice.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses ( 6 credits)

- DAN1322 Dance History and Appreciation
- DAN2507 Choreography


## Elective Courses (9 credits)

Select three of the following:

- DAN1320 Beginning Dance
- DAN2020 Basic Tap
- DAN2021 Ballet I
- DAN2022 Ballet II
- DAN2505 Dance II
- DAN2506 Movement for the Actor
- DAN2600 Theater Dance
- DAN3020 Advanced Tap
- DAN3500 Dance Study at New Jersey School of Ballet I


## For Information

Cynthia Loewus
Assistant Professor of Dance, School of the Arts, Maxwell Becton College of Arts and Sciences cynthia loewus@fdu.edu 973-443-8394

## Data Science (Business) Minor

The 15 -credit data science minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.
Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- DSCI2029 Introduction to Statistics
- DSCI3272 Introduction to Data Mining
- DSCI3301 Statistical Methods


## Electives

- DSCI3319 Decision Analysis
- DSCI4600 Capstone Project - Data Science


## For Information

Florham Campus Advisers
973-443-8800
Metropolitan Campus Advisers
201-692-7206

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## Data Science Minor

The department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, is offering a data science minor at the Florham Campus, Madison, New Jersey. The minor is a joint collaboration with the department of marketing, information systems and decision sciences of the Silberman College of Business.

## Requirements

Required Courses (12 credits)

- MATH3269 Introduction to Data Mining
- MATH3300 Statistics I
- MATH3301 Statistical Methods


## Elective Courses (6 credits)

Two additional courses to be selected from the following list:

- CSCI3268 Database Systems
- CSCI3270 Introduction to Machine Learning
- MATH3319 Decision Analysis
- MATH4600 Capstone Project - Data Science


## For Silberman College Students

## Required Courses (12 credits)

- DSCI2029 Introduction to Statistics
- DSCI3301 Statistical Methods
- MATH3269 Introduction to Data Mining


## Elective Courses (6 credits)

Two additional courses to be selected from the following list:

- CSCI3268 Database Systems
- CSCI3270 Introduction to Machine Learning
- DSCI3319 Decision Analysis
- DSCI4600 Capstone Project - Data Science


## For Information

Laila Khreisat, Chair, Department of Mathematics and Computer Science, Maxwell Becton College of Arts and Science
Professor of Computer Science
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For Silberman College Students
Jennifer Page, Senior Advising Counselor for Undergraduate Programs, Silberman College of Business jenmpage@fdu.edu

## Design and Technical Theater Minor

The 15 -credit design and technical theater minor will offer students interested in studying the design and technical aspects of theater, a comprehensive exposure to all relevant areas. This minor is available to non-theater arts majors only.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses ( 6 credits)

- THEA2209 Stagecraft I or THEA3110 Stagecraft II
- THEA2310 Stage Management


## Select three of the following (9 credits)

- THEA1010 Vectorworks for Entertainment
- THEA2215 Set Design I
- THEA3112 Lighting for the Stage
- THEA3357 Audio Design Concepts


## For Information

Stacie Lents, Director of Theater Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Theater
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973-443-8397

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## Digital Marketing Minor

The 15 -credit digital marketing minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.

Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- MKTG2120 Principles of Marketing
- MKGT3360 Digital Marketing
- MKTG3383 Social Media Marketing
- MKTG4272 Consumer Behavior
- MKTG4499 Internship in Marketing Studies (digitally focused)


## For Information

Florham Campus Advisers
973-443-8800
Metropolitan Campus Advisers
201-692-7206

## Digital Media for Advertising Art Minor

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit digital media for advertising art minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.
Students who desire a digital media for advertising art minor, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required.

## Requirements

- ART1843 Design for the Web
- CGD1178 Multimedia on the Internet
- CGD1313 Creative Imagery with Photoshop
- CGD2174 Digital Publishing
- COMM1170 Advertising Design


## For Information

## Digital Tools for Social Media Art Minor

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit digital tools for social media art minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.
Students who desire a digital tools for social media art minor, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required.

## Requirements

- ART1843 Design for the Web
- CGD1177 Introduction to Digital Media
- CGD1178 Multimedia on the Internet
- COMM2050 Digital Storytelling
- COMM3444 Public Relations


## For Information

Yelena Aronson
Professor of Computer Graphics, School of the Arts, Maxwell Becton College of Arts and Sciences lena@fdu.edu
201-692-2168

## Dramatic Literature and Performance Minor

The 15 -credit dramatic literature and performance minor provides grounding in theatrical history, dramatic literature, theory and performance practices. This minor is recommended for cultural enrichment, as preparation for advanced study or in preparation for employment in the arts. This minor is also an excellent choice for those interested in dramaturgy.
This minor is offered jointly by the department of literature, languages, writing and humanities and the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Required Courses

## Shakespeare (3 credits)

- LITS3213 Shakespeare I or LITS3214 Shakespeare II


## Developmental Theater (3 credits)

- THEAH1201 Development of the Theater I: Ancient to Elizabethan or THEAH1202 Development of the Theater II: Restoration Through Today


## Elective Courses (9 credits) <br> Literature Electives (3 credits)

Select one course from the following:

- LITS3101 Greek and Roman Drama
- LITS3103 Modern Drama: 1880-1930
- LITS3104 Contemporary American Drama
- LITS3105 Contemporary European Drama
- LITS3106 Contemporary World Drama
- LITS3213 Shakespeare I or

LITS3214 Shakespeare II

## Dance and Theater Electives (6 credits)

Select two courses from the following:

- DAN1320 Beginning Dance
- THEA1110 Introduction to Acting
- THEA2005 Directing I
- THEA2255 Playwriting and Dramatic Structure
- THEA2339 Musical Theater Workshop
- THEA3336 Acting for Film and Television (if prerequisite is met/by permission of instructor)
- THEAH1201 Development of the Theater I: Ancient to Elizabethan or THEAH1202 Development of the Theater II: Restoration Through Today
(In addition to the 3 credits selected from Development of Theater required above)


## For Information

Matthieu Boyd, Chair, Department of Literature, Languages, Writing and Humanities, Maxwell Becton
College of Arts and Sciences
Associate Professor of Literature
mwboyd@fdu.edu
973-443-8719
Stacie Lents, Director of Theater Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Theater
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## Economics Minor

The economics minor introduces students to the basic concepts, theories, modeling approaches and methods of economics. The 15 -credit minor consists of two required field courses, a required methodology course, a modeling course that can be satisfied by taking one of two courses and an elective from economics or finance.
The economics minor is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (12 credits)

- ECON2001 Introduction to Micreconomics
- ECON2102 Introduction to Macroeconomics
- ECON2250 Economic Methods
- ECON4844 Game Theory or ECON4845 Agents in the Matrix: Creating and Analyzing Agent-based Models


## Elective Course (3 credits)

One course to be selected from the 2000- or higher-level offerings in economics (ECON) or finance (FIN).

## For Information

Gary Darden, Chair, Department of Social Sciences and History, Maxwell Becton College of Arts and Sciences
Associate Professor of History

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## Education Minor

The 15 -credit minor in education is offered by the Peter Sammartino School of Education at the Metropolitan Campus, Teaneck, New Jersey, and at the Florham Campus, Madison, New Jersey. Courses are the same on both campuses for all EDUC courses.
Any student with a minor in education must have an adviser from the Sammartino School of Education sign his/her registration form.
Acceptance into the education minor does not imply acceptance into the QUEST Program.

## Requirements

## Required Course

- EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community (fall semester only)


## Students must take at least two of the following courses:

- EDUC2202 Development of Children with and without Disabilities (spring semester only) (EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community is a prerequisite)
- EDUC2207 Introduction to Special Education and Students with Disabilities Including Autism Spectrum Disorder (fall semester only) (EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community and EDUC2202 Development of Children with and without Disabilities are prerequisites)
- EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders (fall semester only) (EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community is a prerequisite)
- EDUC3309 Seminar in Professional Practice III: The Functions of Teaching (spring semester only) (EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community and EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders are prerequisites)


## Electives

Students may select additional courses from this list to complete 15 or more credits for the minor. All courses are 3 credits except where indicated otherwise.

- EDUC2401 Field Experience I (spring semester only) (EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community is a prerequisite) (1 credit)
- EDUC2402 Field Experience II (spring semester only) (EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders is a prerequisite) (1 credit)
- PSYC2204 Child Development or

PSYC3305 Adolescent Growth and Development (Only one of these courses may be used for the minor. Psychology majors may not use either course for this minor.)

- PSYC3308 Educational Psychology (Psychology majors may not use this course for their minor.)
- EDUC3601 Equity, Ethics and Education

If the student is in a five-year accelerated program, other courses may be selected with the approval of his/her School of Education adviser.

## For Information

Kathryn Spence, Interim Director of Peter Sammartino School of Education; Director of QUEST/BAMAT
Associate Professor of Education
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## Electrical Engineering Minor

The minor in electrical engineering is for non-electrical engineering majors and consists of 16 credits and is relevant to students with appropriate mathematics and science backgrounds. This minor provides students with a foundation in electrical engineering, and it can bring them additional employment opportunities and career options.
The electrical engineering minor is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (16 credits)

- EENG2221 Signals and Systems I
- EENG2222 Signals and Systems II
- EENG2287 Microprocessor System Design I
- EENG3265 Electronics I
- ENGR2286 Digital System Design

To take any course in the minor, a student must meet all the prerequisites for that course.

## For Information

## Electrical Engineering Technology Minor

The 15 -credit minor in electrical engineering technology is available to qualified students who are nonelectrical engineering technology or non-electrical engineering majors. The minor provides students with a foundation in electrical engineering technology, and it can enhance their employment opportunities and career options.
The electrical engineering technology minor is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (9 Credits)

- EGTG2215 Circuits I
- EGTE2216 Circuits II
- EGTG2286 Digital System Design


## Elective Courses (6 Credits)

Two courses must be chosen from the following:

- EGTE2287 Microprocessor System Design I
- EGTE3266 Electronics II
- EGTE3288 Microprocessor System Design II
- EGTE4381 Computer-aided Analysis and Design
- EGTG2265 Electronics I
- EGTG3223 Instrumentation

To take any course in the minor, a student must meet all prerequisites for that course. With the approval of the academic adviser, students may take higher-level EGTE courses as electives.

## For Information

Alfredo Tan, Director, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering Professor of Electrical Engineering and Gregory Olsen Endowed Chair tan@.fdu.edu
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Susan Seed
Director, Student Advisement and Retention, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering srseed@fdu.edu
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## Entrepreneurship Minor

The 15 -credit entrepreneurship minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.

Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- ENTR2710 Fundamentals of Entrepreneurship and Innovation (offered as a business core)
- ENTR3710 The Lean LaunchPad: From Idea to Launch
- ENTR4600 Managing Growing Ventures

Select two electives:

- ENTR3101 Small Business Management: Entrepreneurial Perspective
- ENTR3202 Family Business Management
- ENTR3300 E-Business for Entrepreneurs (online)
- ENTR3601 Women as Entrepreneurs (online)
- MGMT3400 Managing Sustainability in the Global Context
- MKTG3341 Professional Sales and Sales Management


## For Information

Florham Campus Advisers
973-443-8800

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## Entertainment Business and Management Minor

The entertainment business and management interdisciplinary minor allows the student to focus on the unique requirements of developing a product for the entertainment and/or communication industries. Aspects of production management and communication are addressed in this minor, and the student will learn about the business role of the producer - from acquiring a product through production and distribution. Skills involved and developed include leadership, communication, marketing and accounting.
The minor is composed of 15 credits in specified film, entrepreneurship, marketing, business and/or communication courses, designed to introduce students to the business and management side of entertainment.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (9 credits)

- ENTR2710 Fundamentals of Entrepreneurship and Innovation or ENTR3160 Launching New Ventures
- FILM3426 Producing Movies
- FILM3427 Distributing Movies and Media


## Elective Courses (6 credits)

For students in the minor who are majoring in communication or who are at the Silberman College of Business, the occasional prerequisite seen below, will not pose a problem in completing the minor. Most of the courses listed here do not have prerequisites.
Choose two courses from the following:

- BUSI1000 Foundations of Business
- COMM2002 Small Group Communication
- COMM2099 Professional Communications
- COMM3004 Organizational Communication
- COMM3030 Events Planning (prerequisite is COMM2004 Public Relations Principles)
- ENTR3101 Small Business Management: Entrepreneurial Perspectives (blended course)
- ENTR3300 E-business for Entrepreneurs (online)
- ENTR3601 Women As Entrepreneurs (online)
- MGMT2600 Organizational Behavior
- MKTG3360 Digital Marketing (prerequisite is MKTG2120 Principles of Marketing, which is required of all School of the Arts students)


## For Information

Howard Libov, Chair, School of the Arts, and Director, MFA in Film, Maxwell Becton College of Arts and Sciences
Professor of Film
howard libov@fdu.edu
973-443-8646

## Environmental Science Minor

The 15 -credit minor in environmental science is for nonscience majors. It is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (15 credits)

- BIOL1105, BIOL1115 The Human Environment Lecture and Laboratory (fall and spring semesters)
- ENVR1101, ENVR1102 Physical Geology Lecture and Laboratory (fall semester)
- ENVR2111, ENVR2112 Oceanography Lecture and Laboratory (spring semester)
- PHYS1125, PHYS1025 Astronomy Lecture and Laboratory (spring semester)
- PHYS1126, PHYS1026 Earth Physics Lecture and Laboratory (fall semester)


## For Information

Marion McClary, Chair, Department of Biological Sciences, Maxwell Becton College of Arts and Sciences
Professor of Biological Sciences

## Environmental Studies Minor

This 16-17 credit interdisciplinary minor is designed for students interested in investigating the intersection of the environment and sustainability across natural science, social science and business contexts.
It is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (10 credits)

All courses are 3 credits except where otherwise indicated.

- BIOL1070, BIOL1071 Ecosystem and Environmental Science (Lecture and Laboratory) (4 credits)
- GEOG2700 Environmental Geography: Nature, Power and Society
- MGMT3400 Managing Sustainability in the Global Context or MKTG3501 Marketing for a Sustainable World


## Elective Courses (6-7 credits)

Students must complete two additional courses from the approved list below; at least one course must be an additional science (biology [BIOL], chemistry [CHEM] or physics [PHYS]). An approved 3-credit internship can also be applied toward the minor.
All courses are 3 credits except where otherwise indicated.

- BIOL1140 Environmental Pollution
- BIOL1180 Climate Change Biology
- CHEM1027, CHEM1028 Chemistry for the Global Citizen (Lecture and Laboratory) (4 credits)
- CHEM1150 Environmental Chemistry
- LITS3351 Literary Perspectives on the Environment
- MGMT3400 Managing Sustainability in the Global Context
- MKTG3501 Marketing for a Sustainable World
- PHYS1010, PHYS1020 Physics of Sustainable Energy (Lecture and Laboratory) (4 credits)
- Approved Internship


## For Information

James Salierno, Deputy Chair, Department of Biological Sciences, Maxwell Becton College of Arts and Sciences
Professor of Biology
salierno@fdu.edu
973-443-8776

## Esports Minor

The objective of the 15 -credit esports minor is to expose interested candidates to the growing sector of esports and competitive gaming and provide career pathways to the industry.
The minor is offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and online.

## Requirements

## Required Courses (15 credits)

- ANIM1650 Game Design
- SPAD2007 Introduction to Esports
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2088 Esports Live Event and Operations
- SPAD3015 Introduction to Sports Analytics

NOTE: An internship in Esports (SPAD2018) can be a substitute for any of the courses above.

## For Information

Robyn Lubisco, Director of the Sport Management Program (Florham Campus), International School of Hospitality, Sports, and Tourism Management
Associate Professor of Sport Management
lubisco@fdu.edu
Donald Hoover, Associate Director of Enrollment, International School of Hospitality, Sports, and Tourism Management
Senior Lecturer of Hospitality Management

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## Event Planning Minor

A 15 -credit minor in event planning is being offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
The minor is for those interested in designing a social or corporate event from inception to completion. Students will learn the various processes in achieving this by examining budgeting, site selection, menu creation, beverage planning, etc. The minor is also for those interested in developing a comprehensive understanding of the event from point of sale through its conclusion via proven industry standards and technology.
The minor was created in modules and is intended to be flexible to accommodate busy work schedules and can be completed in one year.
The school also offers a certificate in event planning, which is fully transferable to the minor.

## Admission Requirements

## Transfer Students and Advanced Standing

Transfer students will have completed 24 or more college-credit hours at an accredited post-secondary institution. Official transcripts from all colleges and universities attended must be submitted. A highschool transcript need not be submitted unless requested by the admissions office. Applicants with less than 24 credits earned are considered students with advanced standing, and must submit their official high-school transcript and SAT or ACT test scores in addition to college transcripts.

## Evaluation of Previous Academic Work

Students with an Associate of Applied Science (AAS) degree can transfer in a maximum of 64 credits. Students from other two- and four-year institutions can transfer in up to 90 credits on a case-by-case basis. Coursework with earned grades of A through C will be considered for transfer credit. Any transfer student who has earned an AA or AS degree at a New York or New Jersey community college, and is applying to a Bachelor of Arts program, is able to fulfill their General Education requirements at FDU. Some exceptions may apply.

## Community College Transfer Students

FDU Policy - Transfer Students and General Education Credits
All incoming students with a completed AA/AS degree from a community college in New Jersey/New York will have all of their General Education requirements waived.
Students arriving from any community college or four-year institution without an AA/AS degree will have their incoming credits applied course for course.

If a student from a four-year institution in New Jersey or New York has with them an AA/AS degree from that same institution, then they will be considered to have met the General Education requirements with the same caveat that applies to those coming from New Jersey or New York community colleges.
Students are responsible for making certain their transcripts are submitted in a timely manner so that they can be evaluated for full credit.
Fairleigh Dickinson University has articulation agreements with most New Jersey community colleges. Prospective community-college transfer students are encouraged to contact the transfer counselor at their community college for more information or call the FDU Admissions Office at 800-338-8803. More information about transferring courses from a community college to a four-year college or university in New Jersey is also available at NJ Transfer.

## Requirements (15 credits)

Courses include:

- HRTM1103 Introduction to Event Planning
- HRTM2234 Meetings, Conventions and Trade Show Management
- HRTM3214 Special Events and Festival Management
- HRTM3254 Global Event Etiquette
- HRTM4240 Global Events Technology and Innovation


## For Information

Donald Hoover, Associate Director of Enrollment, International School of Hospitality, Sports, and Tourism Management
Senior Lecturer of Hospitality Management
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609-432-7297

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## Film Production Minor

The 15 -credit minor in film production will provide students with an introduction to the language of filmmaking. Upon completion of the minor, students will better understand the filmmaking process, be able to analyze the strengths of different genres in the medium and be able to create short films in digital format.
The film production minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Required Courses (12 credits)

- FILM1005 Filmmaking I: Basic Production
- FILM2208 Filmmaking II: The Professional Crew
- FILM2250 Screenwriting I
- FILM2310 Postproduction I


## Elective Course (3 credits)

- Any Survey course (films linked by a theme; a national cinema or subject) or Any Auteur course (a course which considers the work of one filmmaker)


## For Information

Howard Libov, Chair, School of the Arts, and Director, MFA in Film, Maxwell Becton College of Arts and Sciences
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## Finance Minor

The finance minor is offered only for business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.

## Requirements

- FIN3310 Intermediate Financial Analysis
- FIN4341 Financial Markets and Institutions
- FIN4343 Securities and Investments
- FIN4405 Analytical Methods in Finance


## For Information

Florham Campus Advisers
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Metropolitan Campus Advisers
201-692-7206

## Financial Planning and Wealth Management Minor

The 15 -credit financial planning and wealth management minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.
Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- WMA4265 Personal Tax Planning (accounting majors must take ACCT4267 Fundamentals of Federal Taxation instead, which will count toward the major and this minor)
- WMA3335 Personal Financial Management or FIN3330 Personal Financial Management
- WMA4350 Investment Planning (finance majors must take FIN4343 Securities and Investment instead, which will count toward the major and this minor)
- WMA4380 Client Relations in Financial Management

Select one elective:

- WMA4267 Retirement Planning
- WMA4370 Personal Estate and Gift Planning
- WMA4375 Risk Management and Insurance


## For Information

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## Fine Art Techniques Art Minor

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit fine art techniques art minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.
Students who desire a fine art techniques art minor, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required.

## Requirements

- ART1144 Color Theory I
- ART1151 General Drawing I
- ART1157 Printmaking I
- ART1161 General Painting I
- ART1169 General Watercolor Painting I or ART1841 General Pastel Drawing I


## For Information

Marie Roberts

Professor of Fine Arts, School of the Arts, Maxwell Becton College of Arts and Sciences marie roberts@fdu.edu
201-692-2801

## Forensic Psychology Minor

The forensic psychology minor is not available to psychology majors. It is offered by the School of Psychology and Counseling at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

Metropolitan Campus

Students who are majoring in psychology are not permitted to enroll in this minor. Psychology majors may elect to complete the forensic psychology track within their major and must complete a minor in another area.

## Required Foundation Course (3 credits)

- PSYC1201 General Psychology


## Required Major Courses ( 6 credits)

Select two from the following:

- PSYC2204 Child Development
- PSYC2210 Statistics
- PSYC2211 Research Methods (Prerequisite: PSYC2210 Statistics or equivalent in major [e.g., DSCI2130 Business Statistics])
- PSYC2234 Social Psychology
- PSYC3015 Theories of Personality
- PSYC3315 Abnormal Psychology


## Forensic Psychology Track Courses (6 credits)

Select two from the following:

- PSYC3305 Adolescent Growth and Development
- PSYC3317 Psychology and the Law
- PSYC3319 The World of the Psychopath or an approved CRIM course
- PSYC3421 Psychology of Criminal Behavior (Prerequisite: PSYC3315 Abnormal Psychology)


## Florham Campus

An interdisciplinary forensics minor is available at the Florham Campus. This minor consists of courses in psychology, criminology, sociology and biology. It is not a psychology-specific minor.
Minors are optional at the Florham Campus.

## For Information

Benjamin Freer, Director, School of Psychology and Counseling
Associate Professor of Psychology
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## Forensics Minor

The forensics interdisciplinary minor is a 16 -credit minor designed for students who are interested in how physical and psychological evidence resolve issues involving criminal behavior, crime scenes and criminal investigations. This highly popular field spans across many disciplines, drawing from psychology, sociology, criminology, political science, chemistry, biology and philosophy.
The forensics minor is offered by the School of Psychology and Counseling at the Florham Campus, Madison, New Jersey.

## Requirements

Students are required to take PSYC3317 Psychology and the Law course and an introductory science course with a forensics component ( 4 credits). Students can then select the remaining 9 credits from a broad array of elective courses in multiple disciplines.
In order to fulfill the minor, students are required to take no more than 3 credits of their elective courses in any single discipline.

## Required Courses (7 credits)

- BIOL1202 Introduction to Molecules, Cells and Genes (includes DNA analysis information and forensic science laboratory exercise) or BIOL1005 Current Topics in Biology (includes forensics component)
- PSYC3317 Psychology and the Law


## Elective Courses (9 credits)

Select 3 courses from following courses, with no more than 3 credits within a single discipline:

- BIOL1205 Anatomy and Physiology I
- BIOL1206 Anatomy and Physiology II
- BIOL2003 Cell Biology
- BIOL3009 Microbiology
- BIOL3256 Genetics
- BIOL3332 Immunology
- CHEM1201 General Chemistry I
- CHEM2221 Analytical Chemistry
- CHEM3281 Biochemistry I
- CMLGY1306 Introduction to Crime and Criminology
- CMLGY2300 Wrongful Convictions
- CMLGY2307 Deviance and Social Control
- CMLGY2333 Criminal Law
- CMLGY2360 Victimology
- CMLGY2701 Penology
- CMLGY3301 Women and Crime
- CMLGY3308 Law and Society
- CMLGY3309 Policy Analysis
- CMLGY3310 Juvenile Delinquency
- PHIL1101 Introduction to Logic
- POLS3304 Criminal Justice
- PSYC2234 Social Psychology
- PSYC3032 Physiological Psychology
- PSYC3305 Adolescent Growth and Development
- PSYC3315 Abnormal Psychology
- PSYC3334 Psychopharmacology
- PSYC4291 History and Systems of Psychology
- SOCI2318 Law and the Family
- SOCI3327 Crime and the Media
- SOCI3347 Sociology of Violence


## For Information

Benjamin Freer, Director, School of Psychology and Counseling
Associate Professor of Psychology
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201-692-2300

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## French Minor

The 15 -credit minor in French is comprised of the sequence of language courses indicated below. This ensures that the student who has completed this minor will be reasonably fluent in the language and capable of reading and appreciating written and oral communication in French while also having a fair grasp of French literature and culture.
Students who are assessed as sufficiently advanced in the language to place out of one or more of the required language courses may choose from the array of French courses, with work done in the target language. The student who takes all four language courses is left with one additional course needed to complete the minor; this course can also be selected from the available French courses that are offered regularly, with work done in the target language. At most, one course may be taken in English.
The French minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (up to $\mathbf{1 2}$ credits)

- FREN1001 Beginning French I (corequisite FREN1007 French Practicum I)
- FREN1002 Beginning French II (corequisite FREN1008 French Practicum II)
- FREN2003 French Conversation I
- FREN2004 French Conversation II

Practica, although required for language classes, do not count toward the minor.

## Elective Courses

- FREN2005 French Film
- FREN2008 Writing in French
- FREN3010 Advanced French Grammar
- FREN3051 Sex and Politics in French Literature
- FREN3551 Topics in French Literature I
- FREN3552 Topics in French Literature II

Other credits may be earned through independent studies at FDU, study abroad or courses taken at Drew University or Saint Elizabeth University under the reciprocity agreement.

## For Information

Matthieu Boyd, Chair, Department of Literature, Languages, Writing and Humanities, Maxwell Becton College of Arts and Sciences
Associate Professor of Literature
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973-443-8719

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## Gender and Sexuality Studies Minor

This interdisciplinary gender and sexuality studies minor is for students who wish to explore gender and its relation to other axes of power: race, class, ethnicity and sexuality. These concepts will be used to analyze human experience in its bodily, political, economic and cultural dimensions.
The minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

The minor consists of five elective courses to be chosen from the following list; no more than two courses can be take in the same discipline (course prefix):

- CRIM1112 Minorities, Women and the Criminal Justice System
- CRIM1135 Social Justice and Structural Inequality
- CRIM2216 Sex, Deviance and the Law
- CRIM3307 Domestic Violence
- HIST3103 Gender in U.S. History
- HIST3109 Selected Studies: Gender and Globalization
- HUMN2255/RELI2255 Person, Gender and Sexuality: Judaism, Christianity and Islam
- HUMN2439 Radical Political Thought
- HUMN2440/PHIL2440 Human Rights
- HUMN3307/PHIL3307 Slavery and Global Ethics
- HUMN4490 Selected Studies: Politics and Culture
- LANG3322 Latin-American Women Authors
- LITS2070 Sex and Politics in French Literature
- LITS2121 Women Writers
- LITS2122 LGBTQ+ Literature
- LITS2269 Sex and Violence in the Middle Ages
- LITS2701 Health and Healing: Telling the Stories
- LITS3221 Medieval and Renaissance Women Writers
- LITS3305 Scribbling Women and Mad Men
- LITS3343 Theories of Gender/Sexuality
- LITS3666 Witches and Warlocks in the West
- PHIL2105 Current Moral and Social Issues
- POLS2206 American Minority Politics
- POLS3011 Human Rights in Global Environment
- POLS3327 Civil Rights and Liberties
- POLS4320 Women's America
- PSYC3311 Psychology of Love and Interpersonal Relations
- PSYC3325 Psychology of Women
- PSYC3370 Psychology of Men
- PSYC3015 Theories of Personality

Relevant ENGL courses taken prior to 2020-21 are considered the same discipline as the LITS prefix.

## For Information

Matthieu Boyd, Chair, Department of Literatures, Language, Writing and Humanities, Maxwell Becton College of Arts and Sciences
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mwboyd@fdu.edu
973-443-8719

## Gender Studies Minor

The 15 -credit gender studies minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Students must select courses, out of 15 total required credits, from at least three different disciplines that are represented in the minor. At least nine credits in the minor must be at the 3000 or 4000 level.

## Rotating Topical Courses

- AFAM2500 Black Male Experiences
- AFAM2501 Black Female Experiences
- ARTH3423 Women Artists
- CMLGY3301 Women and Crime
- COMM2866 Women and Minorities in Media
- COMM3051 Communication and Gender
- LITS2070 Sex and Politics in French Literature
- LITS2121 Women Writers
- LITS2122 LGBTQ+ Literature
- LITS2269 Sex and Violence in the Middle Ages
- LITS2701 Health and Healing: Telling the Stories
- LITS3221 Medieval and Renaissance Women Writers
- LITS3305 Scribbling Women and Mad Men
- LITS3343 Theories of Gender/Sexuality
- LITS3666 Witches and Warlocks in the West
- POLS2207 Women and Politics
- POLS2310 Women and American Politics
- POLS3402 Politics of Reproduction
- PSYC3325 Psychology of Women
- PSYC3430 Psychology of Gender
- SOCI3030 Gender in the Contemporary World
- SOCI3314 Sociology of Gender
- SOCI3440 Women and Race in Modern Britain
- SPAN4005 Latin American Women Writers
- WOMEN2312 Gender and Public Policy
- WOMEN4467 Women Detective Writers


## For Information

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## Generalist Art Minor

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit generalist art minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.
Students who desire a minor in art, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required. No specific courses are required.

## For Information

Marie Roberts
Professor of Fine Arts, School of the Arts, Maxwell Becton College of Arts and Sciences marie roberts@fdu.edu
201-692-2801

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## Geography Minor

The geography minor is designed to offer students 15 credits of relevant geography classes from 1000-, 2000- and 3000-level course offerings.
The minor is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Course (3 credits)

- GEOG1102 Geography and World Issues


## Electives (12 credits)

- GEOG1111 Economic Geography
- GEOG2500 Global Development: Geographies of Wealth and Poverty
- GEOG2600 Urban Geography
- GEOG3030 Surveillance and Security
- GEOG3040 Capture and Control: Geographies of Detention and Incarceration

Additional courses will be added to this list as additional course offerings become available.

## For Information

Gary Darden, Chair, Department of Social Sciences and History, Maxwell Becton College of Arts and Sciences
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## German Minor

The minor in German is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Fifteen credits of approved coursework.
The following (up to 6 credits) may be taken to fulfill part of this requirement:

- GERM1001 Beginning German (corequisite GERM1007 German Practicum I)
- GERM1002 Beginning German II (corequisite GERM1008 German Practicum II)

Practica, although required for language classes, do not count toward the minor.
Other credits may be earned through independent studies at FDU, study abroad or courses taken at Drew University or Saint Elizabeth University under the reciprocity agreement.

## For Information

## Global Studies Minor

The globalization and society minor provides students with an understanding of the complex phenomenon of globalization. By using the disciplinary perspectives of anthropology, communication, economics, literature and sociology, the minor provides students with two things. One, it expands their disciplinary and interdisciplinary knowledge. Second, it makes them better prepared for employment opportunities in an inter-connected world.
The minor is offered jointly by the department of literature, languages, writing and humanities and the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Since most theorization of globalization is rooted within the sociological perspective, students are required to take SOCI2248 Globalization, Culture and Identity and five other courses from the following list, making selection from at least two different disciplines.

## Anthropology

- ANTH1202 Cultural Anthropology
- ANTH2001 Kinship and Geneology
- ANTH3349 War and Crime


## Communication

- COMM3019 Global Communication


## Economics

- ECON3310 Current Economic Problems


## English

- ENGL3070 Women Writers
- LITS2141 Nobel Literature
- LITS2331 Myths and Sacred Texts
- LITS2400 Children's Literature
- LITS3061 Contemporary World Literature
- LITS3303 World Folk Literature
- LITS3351 Literary Perspectives on the Environment


## History

- HIST1201 Ancient Civilizations
- HIST1202 Medieval World
- HIST2368 Survey of India
- HIST3137 Vietnam Conflict
- HIST3322 The Roman Empire
- HIST3326 Islam and Christianity in Africa
- HIST3343 20th-century Revolutions
- HIST3347 History of Modern China
- HIST3349 Modern Middle East
- HIST3366 Modern Japan: Perry to Pearl Harbor


## Philosophy

- PHIL2205 Social and Political Philosophy


## Political Science

- POLS1220 Comparative Government
- POLS2223 Conflict Resolution in the Middle East
- POLS2230 International Relations
- POLS2313 Intergovernmental Relations
- POLS3320 Chinese Politics
- POLS3321 Russian Politics
- POLS3323 Middle East Politics
- POLS3329 Japanese Politics
- POLS3336 War, Peace and Arms
- POLS3337 Low-intensity Warfare
- POLS3338 India and its Neighbors


## Sociology

- SOCI2248 Globalization, Culture and Identity
- SOCI2319 Nationalism and Ethnicity
- SOCI2950 Identity Puzzle
- SOCI3001 Minorities in the Middle East
- SOCI3337 Social Movements and Social Change
- SOCI3354 Conflict in Social and Cultural Perspectives
- SOCI3501 Globalization and World Citizenship
- SOCI3365 Sociology of Religion


## For Information

Matthieu Boyd, Chair, Department of Literature, Languages, Writing and Humanities, Maxwell Becton College of Arts and Sciences
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## Government and Law Minor

The 15 -credit government and law minor is for students not majoring in government politics. It is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Students minoring in government and law must take five courses in this area (GOVT), selecting from the following courses:

- GOVT1000 American Government and Politics
- GOVT1100 Global Politics
- GOVT1120 Comparative Government
- GOVT1200 Introduction to Law
- GOVT1850 Playing Politics
- GOVT2010 The Congress
- GOVT2015 Campaigns and Elections
- GOVT2020 The American Presidency
- GOVT2030 The Supreme Court
- GOVT2045 Public Opinion
- GOVT2050 President and Congress
- GOVT2070 Women and American Politics
- GOVT2071 Gender and Public Policy
- GOVT2120 Globalization and Its Impact on the State
- GOVT2130 International Relations
- GOVT2300 Citizenship, Service and Civic Engagement
- GOVT2400 Political Ethics
- GOVT2500 Social Analysis
- GOVT2520 Qualitative Research Methods
- GOVT2526 Polls and Surveys
- GOVT2810 Gender, Film and History
- GOVT3015 Political Parties/Interest Groups
- GOVT3040 Politics and the Media
- GOVT3060 Political Behavior
- GOVT3120 Dictators and Democrats
- GOVT3121 Nationalism and Ethnic Violence
- GOVT3122 Rebels and Revolutionaries
- GOVT3150 Terrorism and Counterterrorism
- GOVT3200 American Constitutional Law
- GOVT3210 Civil Liberties and Civil Rights
- GOVT3220 Criminal Law
- GOVT3230 International Criminal Law
- GOVT3240 Law and Society
- GOVT3801 Current Events Seminar
- GOVT3841 Torture
- GOVT3851 Monsters and Bad States
- GOVT4200 The Constitution
- GOVT4220 Advanced Criminal Law
- GOVT4498 Internship in Government and Law
- GOVT4499 Internship in Government and Law
- GOVT4551 Game Theory
- GOVT4552 Agents in the Matrix
- GOVT4700 Washington Center Internship
- GOVT4900 Faculty Research
- GOVT4901 Faculty Research
- GOVT4902 Faculty Research
- GOVT4800 Independent Study in Government and Law
- GOVT4801 Independent Study in Government and Law
- GOVT4999 Senior Thesis


## For Information

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## Graphic Design Minor

The 15 -credit minor in graphic design (previously called computer graphics minor) will prepare students to understand, formulate and create design solutions for a variety of visual communication problems in print, the web and other two-dimensional design contexts.
To achieve this goal, the courses in this minor seek to instill in students the conceptual foundations for understanding design, the desire to develop visual sensitivity and the requisite traditional and software skills necessary to confront real-world design situations competitively.
The graphic design minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses

- CGD1313 Creative Imagery with Photoshop
- CGD1314 Illustrator Graphics and Design
- CGD2213 Visual Principles in Design
- CGD2370 Print Layout
- CGD3303 Web Design


## For Information

Janet O'Neil, Director, Graphic Design Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Graphic Design
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973-443-8470
John Cinco, School of the Arts, Maxwell Becton College of Arts and Sciences

## History Minor

The 15 -credit history minor is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey

## Requirements

The history minor consists of any 15 credits in history (HIST) courses for which prerequisites have been met.

## For Information

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## Hotel and Restaurant Franchising Minor

A 15-credit certificate in hospital and restaurant franchising is being offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
The certificate is designed for candidates interested in the entrepreneurial side of the leisure and hospitality sector leveraging the opportunities offered by franchising. The program prepares students for careers as franchisors or franchisees recognizing the unique opportunities franchising companies can offer to talented educated individuals. Offered in modules, it is intended to be flexible to accommodate busy work schedules and can be completed in one year. According to FRANdata, there will be more than 26,000 new franchised businesses opening in 2021.

The school also offers a minor in hotel and restaurant franchising. The certificate is fully transferable to the minor.

## Admission Requirements <br> Transfer Students and Advanced Standing

Transfer students will have completed 24 or more college-credit hours at an accredited post-secondary institution. Official transcripts from all colleges and universities attended must be submitted. A highschool transcript need not be submitted unless requested by the admissions office. Applicants with less than 24 credits earned are considered students with advanced standing, and must submit their official high-school transcript and SAT or ACT test scores in addition to college transcripts.

## Evaluation of Previous Academic Work

Students with an Associate of Applied Science (AAS) degree can transfer in a maximum of 64 credits. Students from other two- and four-year institutions can transfer in up to 90 credits on a case-by-case basis. Coursework with earned grades of A through C will be considered for transfer credit. Any transfer student who has earned an AA or AS degree at a New York or New Jersey community college, and is applying to a Bachelor of Arts program, is able to fulfill their General Education requirements at FDU. Some exceptions may apply.

## Community College Transfer Students FDU Policy - Transfer Students and General Education Credits

All incoming students with a completed AA/AS degree from a community college in New Jersey/New York will arrive with all of their General Education requirements fulfilled (including UNIV core [or University Core courses]) - with the exception of any specific courses and prerequisites required for any given major or minor.
Students arriving from any community college or four-year institution without an AA/AS degree will have their incoming credits applied course for course.
If a student from a four-year institution in New Jersey or New York has with them an AA/AS degree from that same institution, then they will be considered to have met the General Education requirements with the same caveat that applies to those coming from New Jersey or New York community colleges.
Students are responsible for making certain their transcripts are submitted in a timely manner so that they can be evaluated for full credit.
Fairleigh Dickinson University has articulation agreements with most New Jersey community colleges. Prospective community-college transfer students are encouraged to contact the transfer counselor at their community college for more information or call the FDU Admissions Office at 800-338-8803. More information about transferring courses from a community college to a four-year college or university in New Jersey is also available at NJ Transfer.

## Requirements (15 credits)

Courses include:

- HRTM2238 Franchising Principles
- HRTM3258 Franchise Finance
- HRTM3259 Operations
- HRTM4282 Franchising Capstone
- Elective or Transfer Credits


## For Information

Donald Hoover, Associate Director of Enrollment, International School of Hospitality, Sports, and Tourism Management
Senior Lecturer of Hospitality Management
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609-432-7297

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## Human Resources Management Minor

The 15 -credit human resources management minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.
Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- MGMT2600 Organizational Behavior
- MGMT3700 Human Resources Management
- MGMT3710 Strategic Staffing
- MGMT3720 Training, Development and Performance Management
- MGMT4730 Strategic Human Resource Management

A student taking MGMT4499 Internship in Human Resources may substitute this class in place of either MGMT3710 Strategic Staffing or MGMT3720 Training, Development and Performance Management.

## For Information

Florham Campus Advisers
973-443-8800

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## Humanities Minor

The 15 -credit humanities minor takes an interdisciplinary and multidisciplinary approach, drawing from the traditional humanities disciplines - philosophy, history, literature - and the theoretical arts. The student minoring in humanities will acquire comprehensive knowledge about influential ideas and worldviews, theories and methodologies; thorough understanding of historical trends; and discernment of overarching connections across viewpoints, cultures and historical periods. The skills cultivated and reinforced by the minor include reading comprehension of demanding and intricate texts; critical thinking and problem solving; ability to locate events and developments in space and time and to trace historical changes and interconnections of theoretical outlooks; and aesthetic appreciation of works of art.
The humanities minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

- HUMN1100 Introduction to Methods in the Humanities or LITS4100 Senior Capstone (3 credits)

Students can take both, and count one toward another requirement for the minor.

- One course in HIST (history), HUMN (humanities), LITS (literature), PHIL (philosophy) or RELI (religion) - any level (3 credits)
- One course in HIST (history), HUMN (humanities), LITS (literature), PHIL (philosophy) or RELI (religion) - 2000-level or above ( 3 credits)
- One course in HIST (history), HUMN (humanities), LITS (literature), PHIL (philosophy) or RELI (religion) - 3000-level or above ( 3 credits)
- Any course with a humanities or arts prefix ( 3 credits):
- ART (Studio Art)
- ARTH (Art History/Appreciation)
- CINE (Cinema Studies)
- CREW (Creative Writing)
- DAN (Dance)
- ENGL (English [Wroxton and formerly at Metropolitan Campus])
- FILM (Filmmaking)
- HIST (History)
- HUMN (Humanities)
- LANG (except language courses)
- LITS (Literature, which replaces the former ENGL [English at Metropolitan Campus])
- MUSIC (Musical Performance)
- MUSIH (Music - Humanities/Appreciation)
- PHIL (Philosophy)
- RELI (Religion)
- THEA (Theater)
- THEAH (Theater - Humanities/Appreciation)or other course by approval.


## For Information

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## Information Technology Minor

The 15 -credit minor in information technology (IT) is for non-IT majors. This minor is relevant for students of all majors, and it will provide them with a foundation in IT that complements their majors, enhances their employment opportunities and career options and helps them gain a competitive advantage in the ever-increasing technological demands required for a variety of professions. The problem-solving, critical-thinking and hands-on skills acquired through this minor are essential to be successful in life and in the workplace. The minor is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (12 credits)

- CSCI1105 Survey of Computers and Computer Software
- CSCI3268 Database Systems
- INFO2101 Computer Programming for Information Technologists I
- INFO2105 Internet and Web Applications


## Elective Course (3 credits)

One course must be chosen from the following:

- CSCI2235 Survey of Computing Security
- ENGR2286 Digital System Design
- INFO3201 Human Computer Interface
- INFO4101 Data Communication and Computer Networks I
- INFO4201 Information technology Needs Assessment and Management

To take any course in the minor, a student must meet all the prerequisites for that course.

## For Information

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Susan Seed, Director, Student Advisement and Retention, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering
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## International Studies Minor

The international studies minor is for nongovernment and politics majors. It is being offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required courses ( 15 credits)

- GOVT1102 Geography and World Issues
- GOVT2130 International Relations
- GOVT2211 International Organizations
- GOVT2212 International Law
- GOVT2231 Comparative Government and Politics


## For Information

Gary Darden, Chair, Department of Social Sciences and History, Maxwell Becton College of Arts and Sciences
Associate Professor of History

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## Italian Minor

The 15 -credit minor in Italian is composed of the sequence of language courses indicated below. This ensures that the student who has completed this minor will be reasonably fluent in the language and capable of reading and appreciating written and oral communication in Italian while also having a fair grasp of Italian literature and culture.
The Italian minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Students who are assessed as sufficiently advanced in the language to place out of one or more of the required language courses may choose from the array of Italian courses, with work done in the target language. The student who takes all four language courses is left with one additional course needed to complete the minor. This course can also be selected from the available Italian courses that are offered regularly, with work done in the target language. At most, one course may be taken in English.

## Required Courses

- ITAL1001 Beginning Italian I (corequisite ITAL1007 Italian Practicum I)
- ITAL1002 Beginning Italian II (corequisite ITAL1008 Italian Practicum II)
- ITAL2003 Italian Conversation I
- ITAL2004 Italian Conversation II

Practice, although required for language classes, does not count toward the minor.

## Elective Courses

- CINE2015 Italian Cinema
- CINE2017 Contemporary Italian Cinema
- ITAL2501 Italian Culture and Civilization: Make in Italy
- HIST2016 Italian History through Film
- LITS3055/HIST3055 The Italian-American Experience
- LITS3056/HIST3056 Italy: Land of Migrations
- LITS3390 Italian Mafia in Literature and Film


## University of Bergamo (Italy) Courses

Students will receive credit for relevant courses approved by the department in Italian-centered curriculum or advanced language.

## For Information

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## Italian Studies Minor

The Italian studies minor is designed especially for Maxwell Becton College of Arts and Sciences students who will study at the University of Bergamo in Italy for the fall/spring semester or for summer session. It will give them the opportunity to earn a minor that recognizes Bergamo's unique Italiancentered curriculum. Students take select courses at Becton College and University of Bergamo in order to fulfill the required 15 credit hours for the minor.
The minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Choose up to 15 credits, but selection must include 9 credits in language and literature as well as 6 credits in history and social sciences.
Students must take Italian language through the Intermediate level but may earn credit for advancedlanguage courses at University of Bergamo or at Becton College.

## Required Courses (3-6 credits)

- ITAL1002 Beginning Italian II (corequisite ITAL1008 Italian Practicum II)
- ITAL2003 Italian Conversation I or

ITAL2004 Italian Conversation II

## Language and Literature Electives (3-6 credits)

- CINE2015 Italian Cinema
- CINE2017 Contemporary Italian Cinema
- LITS3390 Italian Mafia in Literature and Film
- LITS3055 The Italian-American Experience
- LITS3056 Italy: Land of Migrations


## History and Social Science Electives (6 credits)

- HIST2016 Italian History through Film
- HIST2223 Renaissance and Reformation
- HIST3055 The Italian-American Experience
- HIST3056 Italy: Land of Migrations
- HIST3321 The Roman Republic or HIST3322 The Roman Empire
- ITAL2501 Italian Culture and Civilization: Make in Italy


## University of Bergamo Courses

Students will receive credit for relevant courses approved by the department in Italian-centered curriculum.

Additional courses will be added to this list as additional course offerings become available.
For Information
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## For Italian Language Placement

Gloria Pastorino
Professor of Italian and French
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## Japanese Studies Minor

The 15-credit Japanese studies interdisciplinary minor provides students with an overview of Japanese language and culture. The minor includes instruction in beginning and intermediate Japanese and coursework in Japanese culture.
The minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Required Courses (up to 6 credits)

- JAPN1001 Beginning Japanese I (corequisite JAPN1007 Japanese Practicum I)
- JAPN1002 Beginning Japanese II (corequisite JAPN1008 Japanese Practicum II)

Practica, although required for language classes, do not count toward the minor.

## Electives (9 or more credits)

- JAPN2001 Intermediate Japanese I
- JAPN2002 Intermediate Japanese II
- JAPN2003 Japanese Conversation I
- JAPN2004 Japanese Conversation II
- JAPN3001 Advanced Japanese I
- JAPN2506 Japanese Culture and Civilization
- JAPN3015 Japanese Culture Through Film


## For Information

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## Journalism Minor

The 15 -credit journalism minor is intended for students who seek to develop a richer understanding of broadcast, online and print media. The purpose of the minor is to offer students the opportunity to build a skill set suitable for the professional field of news media. Students can choose from a variety of courses, such as news writing, news editing and article writing. They can also gain newsroom experience through the practicum course or the completion of a department-approved Internship.
The minor is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (9 credits)

- COMM2011 Introduction to Journalism
- COMM3012 Newswriting
- COMM3016 News Editing


## Electives (6 credits)

Select two courses from the following:

- COMM2214 Introduction to Radio and Digital Journalism
- COMM2345 Journalism Practicum
- COMM3013 Feature Writing
- COMM3015 Political Reporting
- COMM3248 Writing for Broadcast and Podcast
- COMM3432 Sports Journalism
- COMM3838 Media Ethics
- COMM4444 Multimedia Journalism


## For Information

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## Latin American Studies Minor

The Latin American studies minor is a 15 -credit cultural studies program designed to offer students an interdisciplinary minor that incorporates Latin American-centered curriculum to include Spanish language as well as literature and history. Students can also earn credit through courses linked to short-term studyabroad in Latin America regularly offered at the Maxwell Becton College of Arts and Sciences, while they can also earn credit from a full-semester, study-abroad program in Latin America.
The minor is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

From the 15 credits available:

- Students need a minimum of 6 credits in language and literature and 6 credits in history.
- The remaining 3 credits can be in either language and literature or history.


## Language and Literature Courses

Required Language and Literature Courses (3-6 credits)

- SPAN1002 Beginning Spanish II (corequisite: SPAN1008 Spanish Practicum II)
- SPAN2003 Spanish Conversation I or SPAN2103 Intermediate Spanish I
- SPAN2004 Spanish Conversation II or SPAN2104 Intermediate Spanish II
- SPAN2009 Spanish for Professions
- SPAN3411 Latin-American Culture and Civilization (Spanish)

Practica, although required for language classes, do not count toward the minor.

## Elective Language and Literature Courses (0-6 credits)

- SPAN2006 Music in Spanish: Writing and Conversation
- SPAN2007 Hispanic Current Events: Writing and Conversation
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2507 Latin American Culture and Civilization (English)
- SPAN2530 Latin American Film
- SPAN3310 Latin-American Women Writers
- SPAN3441 Latin-American Theater
- SPAN3463 The Hispanic Essay
- SPAN4440 The Hispanic Novel
- SPAN4498 Internship
- SPAN4800 Senior Independent Study - Spanish


## History Courses

## Available History Courses (6-9 credits)

- HIST2501 Colonial Latin America
- HIST2502 Modern Latin America
- HIST2503 Indigenous Peoples of Latin America
- HIST2504 Gender and Race in Latin America
- HIST2506 Pre-Columbian Americas
- HIST3251 Crime and Punishment in Latin America

OR in conjunction with:
Study Abroad: Short-term of 3-6 credits or full-semester study-abroad of up to 15 credits is highly recommended. Students will receive credit for relevant courses approved by the department of social sciences and history for Latin American- and/or Spanish-centered curriculum.
Additional courses will be added to this list as additional course offerings become available.

## For Information

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## Leadership Minor

The 15 -credit leadership minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.
Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- MGMT2600 Organizational Behavior
- MGMT3100 Managerial Ethics
- MGMT3610 Leading Teams
- MGMT3620 Leadership and Personal Development
- MGMT4640 Managing Projects and Organizations


## For Information

Florham Campus Advisers
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Metropolitan Campus Advisers
201-692-7206

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## Legal Studies Minor

The legal studies minor is offered by the department of criminology and criminal justice, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (9 credits)

- CRIM1120 Introduction to Jurisprudence
- CRIM3319 Courts and Judicial Process
- CRIM3890 Legal and Analytical Reasoning


## Elective Courses (6 credits)

Select two from the following:

- CRIM1103 Criminal Law
- CRIM2100 Professional and Legal Writing
- CRIM2214 Criminal Procedure Law
- GOVT1000 American Government and Politics
- GOVT2212 International Law
- GOVT2254 Public Policy
- GOVT3200 American Constitutional Law
- GOVT3210 Civil Liberties and Civil Rights


## For Information

Amy Shlosberg, Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Associate Professor of Criminology
amy shlosberg@fdu.edu 973-443-8721

Elizabeth Panuccio, Deputy Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
Assistant Professor of Criminal Justice
elizabeth387 panuccio@fdu.edu
201-692-2577

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## Literature Minor

The literature minor is for students who are not majoring in literature.
Perhaps the most important skills that the study of literature teaches are analytic and synthetic skills. In learning to read carefully and analytically, students learn to ask hard questions both of the work and of ourselves. And as they seek to discover the relationships between the ideas and images they uncover in a work, their ultimate goal is to see the whole - to see how the parts work together to make the piece what it is. In grappling with the complex and difficult ideas contained in literature, students learn to accept the multiple dimensions and ambiguity that are so often present in life. Finally, the study of literature will also help students develop their writing abilities as they come to value the written word and understand its power to communicate.
The minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

- LITS1100 Introduction to Literary Analysis or LITS4001 Senior Seminar

Students can take both and count one toward another requirement for the minor.
Any two of the following:

- LITS2101 British and European Literature I
- LITS2102 British and European Literature II
- LITS2201 World Literature I
- LITS2202 World Literature II
- LITS2301 American Literature I
- LITS2302 American Literature II

Any other LITS or ENGL (Wroxton) course at any level (3 credits)
Any other LITS or ENGL (Wroxton) course, 3000-level or above (3 credits)

## For Information

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973-443-8719

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## Marketing Minor

The 15 -credit marketing minor is offered only for business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.

## Requirements

- MKTG2120 Principles of Marketing
- MKTG3344 Marketing Research
- MKTG4272 Consumer Behavior
- MKTG4405 Advanced Marketing Management

Select one elective:

- MKTG3341 Professional Sales and Sales Management
- MKGT3360 Digital Marketing
- MKTG3371 Principles of International Marketing
- MKTG3383 Social Media Marketing
- MKTG3501 Marketing for a Sustainable World
- MKTG4344 Public Relations
- MKTG4345 Sports and Events Marketing
- MKTG4365 Marketing Communications
- MKTG4498 Internship in Marketing Studies or MKTG4499 Internship in Marketing Studies


## For Information

Florham Campus Advisers
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Metropolitan Campus Advisers
201-692-7206

## Marine Biology Minor

The marine biology minor is offered by the department of biological sciences, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey, and is also available at the Florham Campus, Madison, New Jersey, and at offsite or partner locations.

## Requirements

Students are required to take the following courses. All courses are 4 credits except where indicated otherwise.

- MBIO1118, MBIO1128 Beach Ecology Lecture and Laboratory (3)
- MBIO3201 Aquatic Vegetation
- MBIO3401 Marine Invertebrates
- MBIO3901 Marine Vertebrates


## For Information

Marion McClary, Chair, Department of Biological Sciences, Maxwell Becton College of Arts and Sciences
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Associate Professor of Biological and Allied Health Sciences
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## Mathematical Statistics Minor

The 15 -credit mathematical statistics minor is for Silberman College students and Maxwell Becton College of Arts and Sciences students.
It is offered by the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses

All courses are 4 credits except where indicated otherwise.

- MATH1203 Calculus I
- MATH2202 Calculus II
- MATH3300 Statistics I (3 credits)
- MATH3303 Probability ( 3 credits); Corequisite MATH3313 Probability Practicum ( 0 credits)


## For Information

Laila Khreisat, Chair, Department of Mathematics and Computer Science, Maxwell Becton College of Arts and Sciences
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973-443-8680

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## Mathematics for Cybersecurity Minor

The 16 -credit mathematics for cybersecurity minor is for noncomputer science majors.
It is offered by the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses

All courses are 3 credits except where indicated otherwise.

- CSCI1205 Introduction to Computer Programming
- MATH1133 Applied Statistics
- MATH1203 Calculus I (4 credits)
- MATH2255 Discrete Structures
- MATH3335 Introduction to Cryptography


## For Information

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## Mathematics for the Business World Minor

The mathematics for the business world minor is offered by the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses

All courses are 4 credits except where indicated otherwise.

- MATH1203 Calculus I
- MATH2202 Calculus II
- MATH3303 Probability ( 3 credits); Corequisite: MATH3313 Probability Practicum (0 credits)
- MATH3371 Modeling and Simulation (3 credits) or
- MATH3307 Mathematics of Finance (3 credits) or

MATH3305 Advanced Probability and Statistics (3 credits)

## For Information

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## Mathematics Minor (Florham)

The mathematics minor is for students not majoring in mathematics. It is offered by the department of mathematics and computer science, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Required Courses (11 credits)

- MATH1203 Calculus I (4 credits)
- MATH2202 Calculus II (4 credits)
- MATH3220 Linear Algebra (3 credits)


## Electives (7 credits)

Seven credits of additional coursework to be selected from the 2000- or higher-level offerings in mathematics (MATH).

## For Information

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## Mathematics Minor (Metro)

The minor in mathematics is for non-BA and non-BS mathematics majors. It consists of 17 credits and is relevant to students in all majors. Mathematics is needed in every aspect of one's daily life and in every profession. Students who complete this minor will possess strong mathematical knowledge and problemsolving skills that are useful in thecontemporaryworkplace and in graduate studies, including those in business, natural sciences, computer science, education, engineering and technology.

The mathematics minor is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (8 Credits)

- MATH1201 Calculus I
- MATH2202 Calculus II


## Elective Courses (9 credits)

Three courses must be chosen from the following:

- MATH2203 Calculus III
- MATH2210 Differential Equations
- MATH2255 Discrete Structures
- MATH3220 Linear Algebra
- MATH3237 Probability and Statistics I
- MATH3341 Advanced Engineering Mathematics

To take any course in the minor, a student must meet all prerequisites for that course.

## For Information

Alfredo Tan, Director, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering Professor of Electrical Engineering and Gregory Olsen Endowed Chair tan@fdu.edu
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Susan Seed
Director, Student Advisement and Retention, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering srseed@fdu.edu
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## Mechanical Engineering Technology Minor

The minor in mechanical engineering technology is for nonmechanical engineering technology majors. It consists of 15 credits and is relevant to students with appropriate mathematics and science backgrounds. This minor provides students with the fundamental aspects of mechanical engineering technology, and it can bring them additional employment opportunities and career options.

The minor is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (12 Credits)

- EGTM2232 Mechanical Measurement and Devices
- EGTM2235 Manufacturing Processes
- EGTM3248 Mechanical Technology Design I
- EGTM3250 Mechanical Technology Design II


## Elective Courses (3 Credits)

One course must be chosen from the following:

- EGTG2221 Statics
- EGTG2228 Strength of Materials
- EGTG3351 Applied Thermodynamics
- EGTG3431 Dynamics
- EGTG4224 Process and Electro/Mechanical Control Systems Technology
- EGTG4225 Industrial Automation
- EGTG4254 Fluid Mechanics
- EGTM4356 Stress and Vibration Analyses

To take any course in the minor, a student must meet all prerequisites for that course. With the approval of the academic adviser, students may take other higher-level EGTG or EGTM courses as an elective.

## For Information

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## Music Minor

The 15 -credit music minor gives students a basic grounding in music history and theory. In addition to the required courses noted below, students can study a range of subjects such as surveys of special music genres (theater music, film music, popular music, world music and so on); performance in vocal and instrumental ensembles; and private lessons in voice, a wide variety of instruments and composition. The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (9 credits)

- MUSIC2221 Fundamentals of Music Theory
- MUSIH2211 Survey of Music: Ancient to 1800
- MUSIH2212 Survey of Music: 1800 to Today


## Electives (6 credits)

All courses are 3 credits except where indicated otherwise.

- MUSIC1015 Basic Vocal Technique
- MUSIC1020, MUSIC1022, MUSIC1023, MUSIC1024, MUSIC1025, MUSIC1026, MUSIC1027, MUSIC1028 Chorus I-VIII (1 credit each)
- MUSIC1021 Popular Music and Jazz
- MUSIC1050, MUSIC1052, MUSIC1053, MUSIC1054, MUSIC1055, MUSIC1056, MUSIC1057, MUSIC1058 Band I-VIII (1 credit each)
- MUSIC1361, MUSIC1362, MUSIC1363, MUSIC1364, MUSIC1365, MUSIC1366, MUSIC1367, MUSIC1368 Private Instruction in Bass I-VIII (1 credit each)
- MUSIC1375, MUSIC1386, MUSIC1387, MUSIC1388, MUSIC1425, MUSIC1426, MUSIC1427, MUSIC1428 Private instruction in Piano I-VIII (1 credit each)
- MUSIC1376, MUSIC1380, MUSIC1401, MUSIC1402, MUSIC1405, MUSIC1406, MUSIC1407, MUSIC1408 Private instruction in Voice I-VIII (1 credit each)
- MUSIC1377, MUSIC1378, MUSIC1379, MUSIC1381, MUSIC1435, MUSIC1436, MUSIC1437, MUSIC1438 Private instruction in Woodwinds I-VIII (1 credit each)
- MUSIC1391, MUSIC1392, MUSIC1393, MUSIC1394, MUSIC1415, MUSIC1416, MUSIC1417, MUSIC1418 Private instruction in Guitar I-VIII (1 credit each)
- MUSIC1396, MUSIC1397, MUSIC1398, MUSIC1399, MUSIC1411, MUSIC1412, MUSIC1413, MUSIC1414 Private Instruction in Violin I-VIII (1 credit each)
- MUSIC1441, MUSIC1442, MUSIC1443, MUSIC1444, MUSIC1445, MUSIC1446, MUSIC1447, MUSIC1448 Private Instruction in Strings I-VIII (1 credit each)
- MUSIC2015 Vocal Technique II
- MUSIC2205 Music for the Movies
- MUSIC2339 Musical Theater Workshop
- MUSIC3344 History of the Musical
- MUSIC4800 Independent Study in Music ( $1-3$ credits)


## For Information

Allen Cohen, Director of Music, School of the Arts, Maxwell Becton College of Arts and Sciences Professor of Music
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## Musical Theater Minor

The 15 -credit musical theater minor enables students interested in this subject to take a series of basic courses in acting, singing and dance, followed by choices in a more specific area of dance or musical theater. This minor is available to non-theater arts students. Students electing the minor are encouraged to audition for musical productions.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (9 credits)

- DAN1320 Beginning Dance (more advanced dancers may substitute an alternative dance course by permission of the program director.) or DAN2505 Dance 11
- THEA1015 Basic Vocal Technique or MUSIC1015 Basic Vocal Technique (Students may substitute three semesters of private voice for Basic Vocal Technique by permission of the program director.)
- THEA1110 Introduction to Acting


## Choose two other courses from the following (6 credits)

- DAN2020 Basic Tap
- DAN2021 Ballet I
- DAN2506 Movement for the Actor
- MUSIC2221 Fundamentals of Music Theory
- THEAH3344 History of the Musical


## For Information

Stacie Lents, Director of Theater Program, School of the Arts, Maxwell Becton College of Arts and Sciences
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lents@fdu.edu
973-443-8397

## Philosophy Minor

The philosophy minor is for students not majoring in philosophy. It is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

Required Courses ( 6 credits)

- PHIL1101 Introduction to Logic
- PHIL1102 Introduction to Philosophy

The remaining 9 credits should be selected from the following courses:

- PHIL1103 Ethics
- PHIL1106 Ideas of Happiness
- PHIL1107 Dreams and the Imagination
- PHIL1112 Critical Thinking for College and Life
- PHIL1114 Philosophy Through Movies
- PHIL1119 Legal Issues from a Philosophic Perspective
- PHIL1120 Language and Communication
- PHIL1440 Bio-Medical Ethics
- PHIL2005 Nietzsche: Philosopher as Psychologist
- PHIL2008 Ethical Issues in the Movies
- PHIL2102 Space and Time
- PHIL2201 Ancient Philosophy
- PHIL2202 Modern Philosophy
- PHIL2203 Contemporary Philosophy
- PHIL2205 Social and Political Philosophy
- PHIL2207 Philosophy of Religion
- PHIL2208 Crime and Punishment
- PHIL2210 What is Radical Politics?
- PHIL2828 Immortality and Reincarnation
- PHIL3005 War and Philosophy
- PHIL3306 The Problem of Evil


## For Information

Matthieu Boyd, Chair, Department of Literature, Languages, Writing and Humanities, Maxwell Becton College of Arts and Sciences
Associate Professor of Literature
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## Physics Minor

The department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Sciences, offers a minor in physics at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus,

Teaneck, New Jersey. A wide range of physics courses for science and nonscience majors is also available.
The emphasis for the physics minor is on fundamental concepts, analytical methods and critical-thinking skills. The physics minor is an excellent addition to any liberal arts major in which the goal is to produce a well-rounded person with the knowledge and skills to succeed in any field. If a student is interested in becoming more knowledgeable in physics and loves learning for its own sake, the physics minor is an outstanding way to begin to do so, while at the same time gaining valuable transferable skills and ways of thinking.
The $18-20$ credit physics minor is designed for students who enjoy physics and are interested in gaining a broader exposure to physics concepts, experimental techniques and computational paradigms, while at the same time gaining transferable skills and ways of thinking applicable to jobs within their primary fields of interest.

## Requirements

## Required Courses (12 credits)

- PHYS2203, PHYS2201 University Physics I Lecture and Laboratory
- PHYS2204, PHYS2202 University Physics II Lecture and Laboratory
- PHYS3206, PHYS3216 Modern Physics Lecture and Laboratory


## Elective Courses (6-8 credits)

Take 6-8 credits from PHYS at the 2250 level or above. All courses are 3 credits except where indicated otherwise.

- PHYS2250, PHYS2251 Electronics I Lecture and Laboratory
- PHYS2800 Sophomore Independent Study (1-6 credits)
- PHYS3210 Advanced Mechanics
- PHYS3220 Mathematical Methods for Physics
- PHYS3240, PHYS3241 Optics Lecture and Laboratory (4 credits)
- PHYS3250 Thermodynamics
- PHYS3277 Solid State Physics
- PHYS3530 Electricity and Magnetism I
- PHYS3800 Junior Independent Study (1-6 credits)
- PHYS4401 Physics Seminar
- PHYS4250 Quantum Mechanics I
- PHYS4430 Selected Studies in Physics
- PHYS4800 Senior Independent Study (1-6 credits)


## For Information

James Dougherty, Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences
Professor of Chemistry

Mohammed Elshaer, Deputy Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences
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## Playwriting Minor

The 15-credit playwriting minor offers a hands-on introduction to playwriting within its theatrical context. The minor is available to non-theater arts majors. It is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey. Students taking the minor are also encouraged to work on departmental productions in either of FDU's two theaters: Dreyfuss Theater or the Barn Theater.

## Requirements

## Required Courses (15 credits)

- THEA1110 Introduction to Acting
- THEA2005 Directing I or FILM2250 Screenwriting I
- THEAH1201 Development of the Theater I: Ancient to Elizabethan or THEAH1202 Development of the Theater II: Restoration to Today
- THEAH2255 Playwriting and Dramatic Structure
- THEAH3337 Night at the Theater


## For Information

Stacie Lents, Director of Theater Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Theater
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973-443-8397

## Political Communication Minor

The 15 -credit political communication minor exposes students to an array of academic skills, substantive knowledge and professional experiences that will help them analyze, understand and deploy political discourse in a variety of forms including campaign materials, media coverage, rhetoric, advertisements, constituent communications, persuasive writing and more technical communication and correspondence. The minor addresses issues such as public-opinion formation, strategic communication, press-state relations, communication between publics, political participation and international relations.
The minor is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses ( 6 credits)

If one of these courses is selected as a required course it cannot also be selected as an elective course

- COMM2204 Introduction to Human Communication
- GOVT2045 Public Opinion or

GOVT2526 Polls and Surveys or GOVT3040 Politics and the Media*

## Elective Courses (9 credits)

At least one course from communication and one from government and politics must be selected from the following:

- COMM3011 Introduction to Journalism
- COMM3012 Newswriting
- COMM3015 Political Reporting
- COMM3016 News Editing
- COMM3838 Media Ethics
- GOVT1000 American Government and Politics
- GOVT2015 Campaigns and Elections
- GOVT2045 Public Opinion
- GOVT2070 Women and American Politics
- GOVT2216 Current Events in Politics
- GOVT2300 Citizenship, Service and Civic Engagement
- GOVT2400 Political Ethics
- GOVT2500 Social Analysis
- GOVT2526 Polls and Surveys
- GOVT3040 Politics and the Media
- GOVT3801 Current Events Seminar
- GOVT4498 Internship in Government and Law


## For Information

Gary Radford, Chair, Department of Communication, Maxwell Becton College of Arts and Sciences Professor of Communication gary_radford@fdu.edu
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## Political Science Minor

The 15-credit political science minor is for nongovernment and politics majors. It is offered by the department of social sciences and history, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (15 credits)

- GOVT1000 American Government and Politics
- GOVT1101 Introduction to Political Science
- GOVT1102 Geography and World Issues
- GOVT2130 International Relations
- GOVT2231 Comparative Government and Politics


## For Information

Gary Darden, Chair, Department of Social Sciences and History, Maxwell Becton College of Arts and Sciences
Associate Professor of History
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## Prelaw Minor

The 15 -credit prelaw minor provides students with the substantive background and specific skills for success in law school as well as basic exposure to legal systems and concepts. The prelaw minor targets these areas for development:

- Clear, concise, organized writing
- Logic and reasoning skills
- Oral argument and advocacy
- Effective argument construction and assessment
- Exposure to legal thinking and terminology

The minor is offered by the department of criminology and criminal justice, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Course (3 credits)

- GOVT1200 Introduction to Law or GOVT3240 Law and Society


## Electives (12 credits)

- AFAM2100 The New Jim Crow
- ANTH2431 Anthropology of Crime
- ANTH3349 War and Crime
- CMLGY1306 Introduction to Crime and Criminology
- CMLGY2317 Probation and Parole: Theory and Practice
- CMLGY2503 Crime and Media
- CMLGY2701 Penology
- GOVT2030 The Supreme Court
- GOVT2230 Judicial Process
- GOVT2281, GOVT2282, GOVT2283, GOVT2284 Mock Trial I-IV
- GOVT3307 Civil Liberties and Civil Rights
- GOVT3220 Criminal Law
- GOVT3230 International Criminal Law
- GOVT3240 Law and Society
- GOVT4220 Advanced Criminal Law
- HIST3250 Crime and Punishment in South Africa
- HIST3251 Crime and Punishment in Latin America
- LAW2276 Business and the Law
- PHIL2432 Philosophy of Law
- WOMEN2312 Gender and Public Policy

Other courses may be accepted upon petitioning to the director of the prelaw minor. These substitutes may include relevant faculty/student research, internships or senior thesis credits.

## For Information

Bruce Peabody
Professor of Government and Politics, Maxwell Becton College of Arts and Sciences
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Madelyn Ferrans
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## Printmaking Art Minor

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit printmaking art minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.

Students who desire a printmaking art minor, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required.

## Requirements

- ART1144 Color Theory I
- ART1151 General Drawing I
- ART1157 Printmaking I
- ART1158 Silk-screen Printing I
- ART1159 Monotype Printmaking


## For Information

Marie Roberts<br>Professor of Fine Arts, School of the Arts, Maxwell Becton College of Arts and Sciences marie roberts@fdu.edu<br>201-692-2801

## Professional Selling and Sales Management Minor

The 15 -credit professional selling and sales management minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.

Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- MGMT2600 Organizational Behavior
- MKTG3341 Professional Sales and Sales Management (MKTG2120 Principles of Marketing is a prerequisite for this course.)
- WMA4380 Client Relations in Financial Management or MGMT4380 Client Relations and Financial Management

Select two electives:

- MGMT3620 Leadership and Personal Development
- MGMT3700 Human Resources Management
- MKTG4272 Consumer Behavior
- WMA3335 Personal Financial Management


## For Information

Florham Campus Advisers
973-443-8800
Metropolitan Campus Advisers
201-692-7206

## Psychology Minor

The psychology minor is for nonpsychology majors. It is offered by the School of Psychology and Counseling at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Course (3 credits)

- PSYC1201 General Psychology

Plus any four psychology courses (12 additional credits) of the students' choice.

## For Information

Benjamin Freer, Director, School of Psychology and Counseling
Associate Professor of Psychology
benjamin_freer@fdu.edu
201-692-2300

## Public Relations Minor

The 15 -credit public relations minor is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (6 credits)

- COMM2004 Public Relations Principles
- COMM3035 Public Relations Writing


## Elective Courses (9 credits)

Select three courses from the following:

- COMM3004 Organizational Communication
- COMM3030 Events Planning
- COMM3244 Public Relations Campaigns
- COMM4480 Crisis Communication in a PR Context
- FILM1501 Cinematic Storytelling
- PSYC1201 General Psychology
- PSYC2234 Social Psychology
- PSYC3318 Psychology of Everyday Persuasion (Wroxton option)


## For Information

Gary Radford, Chair, Department of Communication, Maxwell Becton College of Arts and Sciences Professor of Communication
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## Restaurant Entrepreneurship Minor

A 15-credit minor in restaurant entrepreneurship is being offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
The minor is designed to set a solid business and commercial foundation for those interested in building and/or operating in the leisure and hospitality sector. The focus is given to creating new business models, engaging venues that offer exiting product mixes while making deliberate choices aimed at growing a sustainable business. The minor was created in modules and is intended to be flexible to accommodate busy work schedules and can be completed in one year.

The school also offers a certificate in restaurant entrepreneurship.

## Admission Requirements

## Transfer Students and Advanced Standing

Transfer students will have completed 24 or more college-credit hours at an accredited post-secondary institution. Official transcripts from all colleges and universities attended must be submitted. A highschool transcript need not be submitted unless requested by the admissions office. Applicants with less than 24 credits earned are considered students with advanced standing, and must submit their official high-school transcript and SAT or ACT test scores in addition to college transcripts.

## Evaluation of Previous Academic Work

Students with an Associate of Applied Science (AAS) degree can transfer in a maximum of 64 credits. Students from other two- and four-year institutions can transfer in up to 90 credits on a case-by-case basis. Coursework with earned grades of A through C will be considered for transfer credit. Any transfer student who has earned an AA or AS degree at a New York or New Jersey community college, and is applying to a Bachelor of Arts program, is able to fulfill their General Education requirements at FDU. Some exceptions may apply.

## Community College Transfer Students

FDU Policy - Transfer Students and General Education Credits

All incoming students with a completed AA/AS degree from a community college in New Jersey/New York will have all of their General Education requirements waived.
Students arriving from any community college or four-year institution without an AA/AS degree will have their incoming credits applied course for course.
If a student from a four-year institution in New Jersey or New York has with them an AA/AS degree from that same institution, then they will be considered to have met the General Education requirements with the same caveat that applies to those coming from New Jersey or New York community colleges.
Students are responsible for making certain their transcripts are submitted in a timely manner so that they can be evaluated for full credit.

Fairleigh Dickinson University has articulation agreements with most New Jersey community colleges. Prospective community-college transfer students are encouraged to contact the transfer counselor at their community college for more information or call the FDU Admissions Office at 800-338-8803. More information about transferring courses from a community college to a four-year college or university in New Jersey is also available at NJ Transfer.

## Requirements (15 credits)

Courses include:

- ENTR2710 Fundamentals of Entrepreneurship and Innovation
- ENTR3101 Small Business Management
- HRTM3203 Food and Beverage Management
- HRTM3256 Developing Your Restaurant's Team Culture
- HRTM3257 Analyzing and Leveraging Food Trends


## For Information

Donald Hoover, Associate Director of Enrollment, International School of Hospitality, Sports, and Tourism Management
Senior Lecturer of Hospitality Management
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## Science Minor

The minor in science is for nonscience majors. It is offered by the department of chemistry, biochemistry and physics, Maxwell Becton College of Arts and Science, at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (16 credits)

- BIOL1221, BIOL1222, BIOL1223 Biological Diversity Lecture, Laboratory and Recitation (Metropolitan Campus: fall, spring, summer; Florham Campus: fall and summer)
- BIOL1233, BIOL1234, BIOL1235 Molecules, Cells and Genes Lecture, Laboratory and Recitation (Metropolitan Campus: fall, spring, summer; Florham Campus: spring and summer)
- CHEM1201, CHEM1203 General Chemistry I Lecture and Laboratory (must be taken in sequence; fall and spring)
- CHEM1202, CHEM1204 General Chemistry II Lecture and Laboratory (must be taken in sequence; fall and spring)

The minor is optional for students on the Florham Campus.

## For Information

James Dougherty, Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences
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201-692-2487
Mohammed Elshaer, Deputy Chair, Department of Chemistry, Biochemistry and Physics, Maxwell Becton College of Arts and Sciences
Assistant Professor of Biochemistry
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## Screenwriting and Dramatic Writing Minor

The 15 -credit screenwriting and dramatic writing minor is designed for students interested in studying the art and craft of writing for the screen and/or stage. The rationale for the required courses for this minor is that knowledge of all forms of creative and dramatic writing contribute to each other and are necessary for a student to become a well-rounded writer no matter what the format. The most talented, acclaimed and successful screenwriters and playwrights often cross genres.

The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

Required Courses (9 credits)

- CREW2255 Playwriting and Dramatic Structures
- FILM2250 Screenwriting I
- FILM2251 Screenwriting II


## Electives (6 credits)

Select two from the following courses:

- COMM3006 Narrative Communication
- CREW2002 Creative Writing: Fiction
- FILM3303 Advanced Screenwriting I
- FILM3304 Advanced Screenwriting II
- THEA3255 Advanced Playwriting


## For Information

Howard Libov, Chair, School of the Arts, and Director, MFA in Film, Maxwell Becton College of Arts and Sciences
Professor of Film
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973-443-8646

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## Social Justice Advocacy Minor

The 15 -credit social justice advocacy minor is offered by the department of criminology and criminal justice, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses ( 6 credits)

- CRIM1112 Minorities, Women and Criminal Justice
- CRIM1135 Social Justice and Structural Inequality


## Select any three courses ( 9 credits)

- CRIM1125 Introduction to Social Justice Advocacy
- CRIM1130 Working with Children and Families
- CRIM2203 Crime and Inequality
- CRIM2204 Juvenile Justice and Delinquency
- CRIM2208 Victimology
- CRIM3307 Domestic Violence
- CRIM3320 Interviewing and Counseling Strategies
- CRIM3324 Community Resource Management
- CRIM3326 Rehabilitative and Reentry Strategies


## For Information

Amy Shlosberg, Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
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Elizabeth Panuccio, Deputy Chair, Department of Criminology and Criminal Justice, Maxwell Becton College of Arts and Sciences
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## Sociology Minor

The Master of Arts in Education for Certified Teachers (MAC.T.) is a unique, 36-credit program that allows teachers to complete an 18 -credit certification in their area of specialization as well as a 12 -credit New Jersey Supervisor license. Because the program's reduced tuition rate has no hidden fees, its costs are comparable to that of a public university.
Upon earning the M. A. and completing three years of successful teaching experience, candidates may apply for a New Jersey Supervisor of Instruction Certificate.
Courses leading to the MA for Certified Teachers may be available at the Metropolitan Campus; the Florham Campus; selected off-site locations; and selected community colleges. Moreover, cohort groups may be established in school districts with sufficient enrollment that are easily accessible to teachers in surrounding communities.

## Admission requirements

All candidates who submit the following documents will be accepted as matriculated students in the MA for Certified Teachers in Education (MAC.T.) program:

- Application
- Official transcripts from all undergraduate and graduate institutions.
- Standard Teacher License or Certificate of Eligibility with Advanced Standing.
- Two letters of recommendation from individuals familiar with the candidate's recent performance, one should be from an immediate supervisor.


## Program Claims

The Master of Arts for Certified Teachers Program produces candidates who are:

- Qualified to teach their subject matter;
- Competent in pedagogy;
- Caring professionals;
- Technologically proficient;
- Culturally responsive to the needs of diverse learners;
- Reflective practitioners who embrace the concept of lifelong learning;
- Prepared to be a specialist (English as a Second Language, Literacy/Reading, Instructional Technology, Teacher of Students with Disabilities, or Mathematics Education), or a generalist (Professional Studies).
- Prepared to be certified as a supervisor in New Jersey.


## Degree Plan

## Certifications

- English as a Second Language (ESL) Certification
- New Jersey State Literacy/Reading Specialist \& Supervisor Certification/Endorsement
- Dual Program Literacy/Reading, Multisensory Reading
- Teacher of Students with Disabilities (TSD)
- Bilingual/Bicultural Education Specialist Certificate
- Early Childhood-Grade P-3 Specialist Program
- Professional Studies in Education (PROST)
- Instructional Technology Specialist (ITS) Certificate


## Spanish Minor (Florham)

The 15 -credit minor in Spanish is composed of the sequence of language courses indicated below. This ensures that the student who has completed this minor will be reasonably fluent in the language and capable of reading and appreciating written and oral communication in Spanish while also having a fair grasp of Spanish literature and culture.
Students who are assessed as sufficiently advanced in the language to place out of one or more of the required language courses may choose from the array of Spanish courses, with work done in the target
language. The student who takes all four language courses is left with one additional course needed to complete the minor; this course can also be selected from the available Spanish courses that are offered regularly, with work done in the target language. At most, one course may be taken in English.
Some advanced Spanish (SPAN) courses taught in English are cross-listed with languages (LANG); students must register under SPAN and do the work in Spanish to count for the minor.
The minor is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.
A Spanish minor - with different requirements - is also offered by the department of literature, languages, writing and humanities at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

Required Courses (up to 12 credits)

- SPAN1001 Beginning Spanish I (corequisite SPAN1007 Spanish Practicum I)
- SPAN1002 Beginning Spanish II (corequisite SPAN1008 Spanish Practicum II)
- SPAN2003 Spanish Conversation I or SPAN2103 Intermediate Spanish I
- SPAN2004 Spanish Conversation II or SPAN2104 Intermediate Spanish II

Practica, although required for language classes, do not count toward the minor.

## Elective Course (3 or more credits)

Choose one from the following:

- SPAN2006 Music in Spanish: Writing and Conversation
- SPAN2007 Hispanic Current Events: Writing and Conversation
- SPAN2008 Hispanic Film: Writing and Conversation
- SPAN2009 Spanish for Professions
- SPAN3561 Topics in Latin-American Literature I
- SPAN3562 Topics in Latin-American Literature II
- Any other SPAN course approved by the department


## For Information

Matthieu Boyd, Chair, Department of Literature, Languages, Writing and Humanities, Maxwell Becton College of Arts and Sciences
Associate Professor of Literature
mwboyd@fdu.edu
973-443-8719
For Spanish language placement contact any of the following faculty members:
Patricia Bazán
Professor of Foreign Languages and Literature
bazan@fdu.edu

Silvia Belen-Ramos

Senior Lecturer of Spanish
s belen@,fdu.edu
Laureano Corces (on sabbatical in fall 2022)
Associate Professor of Spanish
corces@fdu.edu

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## Spanish Minor (Metro)

The 15 -credit Spanish minor is for non-Spanish majors. It is offered by the department of literature, languages, writing and humanities, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.
A Spanish minor - with different requirements - is also offered by the department of literature, languages, writing and humanities at the Florham Campus, Madison, New Jersey.

## Requirements

Non-Spanish majors may complete a minor in Spanish by taking the following courses:

- SPAN1101 Elementary Spanish I
- SPAN1102 Elementary Spanish II
- SPAN2103 Intermediate Spanish I
- SPAN2104 Intermediate Spanish II
- SPAN3301 Advanced Conversation in Spanish

For students entering at the intermediate level, the following courses are recommended to fulfill the requirements:

- SPAN2103 Intermediate Spanish I
- SPAN2104 Intermediate Spanish II
- SPAN3301 Advanced Conversation in Spanish
- SPAN4437 Advanced Composition in Spanish
- Language and Culture Studies course (in consultation with department chair)


## For Information

Matthieu Boyd, Chair, Department of Literature, Languages, Writing and Humanities
Maxwell Becton College of Arts and Sciences
Associate Professor of Literature
mwboyd@fdu.edu
973-443-8719

## Speech Minor

The 15 -credit speech minor is useful for students planning careers in which effective oral communication is essential, such as law, teaching, broadcasting, the performing arts, hotel management, tourism, advertising and public relations. For international students it would be an ideal minor, since it would enable them to enhance their speaking facility.

This minor is offered by the department of communication, Maxwell Becton College of Arts and Sciences, at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

Students interested in this minor must complete 15 credits from the following 3-credit courses:

- COMM1 106 Interpersonal Communication
- COMM2557 Radio Broadcast Workshop
- SPCH1105 Voice Production and Articulation
- SPCH1155 Public Speaking
- SPCH2153 Speech and Voice Improvement
- SPCH2217 Speech for Broadcasters
- SPCH2318 Oral Presentations
- SPCH2351 Persuasive Speaking
- SPCH2353 Speech: Small-group Discussion
- SPCH4430 Selected Studies in Speech
- THEA2205 Acting: Theory and Practice I


## For Information

Gary Radford, Chair, Department of Communication, Maxwell Becton College of Arts and Sciences Professor of Communication
gary radford@fdu.edu
973-443-8648

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## Sport Management Minor

The 18 -credit sport management minor is offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and online.

## Requirements

## Required Courses (18 credits)

- SPAD2004 Introduction to Sport Management
- SPAD2010 Legal Issues in Sports
- SPAD2022 Facility Management
- SPAD2025 Global Perspectives in Sports
- SPAD3000 Fiscal Concepts in Sports
- Appropriate SPAD course from the list below or an approved course by the sport management adviser.
- SPAD2014 Ethical Issues in Sports
- SPAD2015 Team Development
- SPAD2018 Sports Internship I
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2020 Fundraising in Sports
- SPAD3003 Sports and Society
- SPAD4000 International Sports Course (Wroxton) or an approved course by the sport management adviser


## For Information

Robyn Lubisco, Director of the Sport Management Program (Florham Campus), International School of Hospitality, Sports, and Tourism Management
Associate Professor of Sport Management
lubisco@fdu.edu
Jong-Chae (J.C.) Kim, Director of the Sport Management Program (Metropolitan Campus), International School of Hospitality, Sports, and Tourism Management
Professor of Sport Management
jckim1@fdu.edu
Donald Hoover, Associate Director of Enrollment, International School of Hospitality, Sports, and
Tourism Management
Senior Lecturer of Hospitality Management
dhoover@fdu.edu
609-432-7297

## Studio Arts Minor

The 15 -credit minor in studio arts will prepare students in the fundamentals of two-dimensional and threedimensional visual language, allowing them to express themselves in a range of methods and materials.

These courses instill in students the conceptual foundations for understanding the creative process as well as the technical skills to implement their ideas. Student art exhibitions and faculty-led trips to museums and galleries enrich the learning experience.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (12 credits)

- ART1201 Drawing I
- ART1225 Painting I or


## ART1231 2-Dimensional Design I

- ART1235 Sculpture I or ART2233 3-Dimensional Design
- ART1315 Ceramics I


## Select any one of the following (3 credits)

- ART1250 Art of the Graphic Novel
- ART1260 Ceramic Character Sculpture
- ART2316 Ceramics II
- ART2326 Painting II
- ART3302 Life Drawing
- ART3337 Life Sculpture


## For Information

Douglas Cochrane, Fine Arts Program Director, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Art
douglas_cochrane@fdu.edu
973-443-8640
Judith Moonelis, Fine Arts Program Director, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Fine Arts and Studio Art
judy_moonelis@fdu.edu
973-443-8643

## Sustainability Management Minor

The 15 -credit sustainability management minor is offered for business and non-business majors by the Silberman College of Business at the Florham Campus, Madison, New Jersey.

To have the selected minor recorded on the transcript, students must earn a cumulative grade point ratio of 2.00 or better in the minor. In general, courses that count toward the declared major do not count toward the minor. The main exception to this rule applies to students in the business administration major, who can apply a maximum of two qualifying courses toward both their major and a minor; other exceptions are noted specifically in each minor.
Due to prerequisite courses, some, not all, minors are only open to students in the Silberman College of Business. Any student interested in pursuing a minor at Silberman College should contact an adviser in the Silberman Academic Advising Office.

## Requirements

- DSCI3502 Value Chain Management for Sustainability
- MGMT3400 Managing Sustainability in the Global Context
- MGMT4490 Guided Internship in Sustainability Management or a social entrepreneurship course approved by the chair of the management and entrepreneurship department.
- MKTG3501 Marketing for a Sustainable World

Select one elective:

- BIOL1070, BIOL1071 Ecosystem and Environmental Science Lecture and Laboratory (Silberman College and Maxwell Becton College of Arts and Sciences non-science majors)
- BIOL1180 Climate Change Biology (Becton College non-science majors)
- BIOL2049, BIOL2050 Ecology Lecture and Laboratory (Becton College science majors)
- CHEM1027, CHEM1028 Chemistry for the Global Citizen Lecture and Laboratory (Silberman College and Becton College non-science majors)
- PHYS1010, PHYS1020 Physics of Sustainable Energy Lecture and Laboratory (Silberman College and Becton College non-science majors)
- PHYS1201, PHYS1202 Physics for the Global Citizen Lecture and Laboratory (Silberman College and Becton College non-science majors)

Please consult an adviser to determine if one of the above electives will count toward general education science requirements.

## For Information

Florham Campus Advisers
973-443-8800

## Television Production Minor

The 15 -credit minor in television production will provide students with an introduction to the language of broadcast television. Upon completion of the minor, students will better understand the process of TVprogram production, be able to analyze the strengths of different genres in the medium and be able to create short programs in digital format.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (12 credits)

- CINE1360 History of Television
- FILM1501 Cinematic Storytelling
- VDEO3349 Introduction to Television


## Elective Course (3 credits)

Choose one from the following:

- FILM2255 TV News and Magazine Production
- FILM3430 Reality TV Production
- FILM4465 Client-driven Video Production I
- VDEO3351 TV Studio Production


## For Information

David Landau
Professor of Film, School of the Arts, Maxwell Becton College of Arts and Sciences
landau@fdu.edu
973-443-8642

## Theater Arts Minor (Florham)

The 15 -credit minor offers students a chance to obtain an introduction to theater studies, and is available to all students who are not already theater arts majors. It is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey. Students taking the minor are also encouraged to work on departmental productions in either of FDU's two theaters: Dreyfuss Theater or the Barn Theater.

## Requirements

Take three courses ( 9 credits) from the following:

- THEA1110 Introduction to Acting
- THEA2211 Stagecraft
- THEAH1201 Development of the Theater I or THEAH1202 Development of the Theater II

Take 6 credits of theater, danceor speech electives

## For Information

Stacie Lents, Director of Theater Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Theater
lents@fdu.edu
973-443-8397

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## Theater Arts Minor (Metro)

The School of the Arts, Maxwell Becton College of Arts and Sciences, offers a 15-credit theater arts minor for non-art and non-fine arts majors at the Metropolitan Campus, Teaneck, New Jersey.

Students who desire a theater arts minor, and who are not majoring in fine arts, may enroll in this program. A selection of courses totaling at least 15 credits, and arranged with the guidance of a fine arts adviser, is required.

## Requirements

A minor in theater for non-fine arts majors consists of 15 credits beyond the core.

- THEA1110 Introduction to Acting
- THEA2209 Stagecraft I
- THEAH1103 Introduction to Theater

6 credits of electives in Theater, Speech or Dance

## For Information

Stacie Lents, Director of Theater Program, Maxwell Becton College of Arts and Sciences
Professor of Theater
lents@fdu.edu
973-443-8397

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## Web Design Minor

In this 15 -credit minor students will explore the field of web design, learning the industry-standard tools and software for development of personal and commercial websites for the computer and mobile devices. A focus is on design, composition, color therapy, typography, interaction and responsive design.
The minor is offered by the School of the Arts, Maxwell Becton College of Arts and Sciences, at the Florham Campus, Madison, New Jersey.

## Requirements

## Required Courses (9 credits)

- CGD1313 Creative imagery with Photoshop
- CGD3303 Web Design
- CGD3315 WordPress


## Elective Courses (6 credits)

Select two of the following courses:

- ANIM1750 Motion Graphics with After Effects
- ANIM1850 3D Computer Modeling
- CGD2217 Motion Graphics for Designers
- CGD2701 Video for Designers
- CGD2810 UI/UX: An Introduction to Digital Product Design
- CGD3305 Dynamic Design
- CGD3362 Mobile App Design
- CGD3369 Motion on the Web
- CGD3371 Sell Your Design Online
- CGD3377 Web Design II
- CGD3380 Social Media Marketing Design


## For Information

Janet O'Neil, Director, Graphic Design Program, School of the Arts, Maxwell Becton College of Arts and Sciences
Professor of Graphic Design
joneil@fdu.edu
973-443-8470

## Website Design and Development Minor

The minor in website design and development consists of 15 credits. The minor provides students with a foundation in website design and development, and it can enhance their career and employment opportunities. The minor is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (12 credits)

- CGD1177 Introduction to Digital Media
- CSCI1105 Survey of Computers and Computer Software
- INFO2105 Internet and Web Applications
- INFO2106 Website Design and Management


## Elective Course (3 credits)

One course must be chosen from the following:

- INFO3201 Human Computer Interface
- INFO3205 Digital Media Publishing

To take any course in the minor and/or certificate, a student must meet all prerequisites for that course. With the approval of the academic adviser, students may take a higher-level INFO or CSCI course as an elective.

## For Information

Kalyan Mondal, Director of Center for Cybersecurity and Information Assurance, Coordinator of BS in Information Technology Program, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering

## Undergraduate Certificates

## Computer Programming Undergraduate Certificate

The computer programming undergraduate certificate provides students with broad-based expertise in computer programming languages, including Python, Java and C++. There are more than 200 contact hours of class instruction.
This 15 -credit certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Prerequisite for the Certificate

High-school diploma

## Requirements

Five courses ( 15 credits) are to be chosen from the following.

- CSCI1105 Survey of Computers and Computer Software
- CSCI1201 Computer Programming I
- CSCI1202 Computer Programming II
- CSCI2215 Introduction to Computer Science
- CSCI2234 Data Structure and Algorithms
- CSCI3268 Database Systems


## For Information

## Construction Management Technology Undergraduate Certificate

The construction management technology certificate program prepares students for an exciting and financially rewarding career in construction management. This 15 -credit certificate program is designed to expand the students' management skills in the construction industry.
The certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

Five courses ( 15 credits) are to be chosen from the following.

- EGTC3261 Estimating I
- EGTC3262 Estimating II
- EGTC4260 Contracts and Specifications
- EGTC4263 Project Management and Control I
- EGTC4264 Project Management and Control II
- EGTC4265 Construction Practices I

To take any course in the certificate program, a student must meet the prerequisites for that course.

## For Information

Alfredo Tan, Director, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering Professor of Electrical Engineering and Gregory Olsen Endowed Chair
tan@fdu.edu
201-692-2324

Susan Seed
Director, Student Advisement and Retention, Lee Gildart and Oswald Haase School of Computer
Sciences and Engineering
srseed@fdu.edu

## Esports Undergraduate Certificate

The objective of the 15 -credit esports certificate is to expose interested candidates to the growing sector of esports and competitive gaming and provide career pathways to the industry.
The certificate is offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and online.

## Requirements

## Required Courses (15 credits)

- ANIM1650 Game Design
- SPAD2007 Introduction to Esports
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2088 Esports Live Event and Operations
- SPAD3015 Introduction to Sports Analytics

NOTE: An internship in Esports (SPAD2018) can be a substitute for any of the courses above.

## For Information

Robyn Lubisco, Director of the Sport Management Program (Florham Campus), International School of Hospitality, Sports, and Tourism Management
Associate Professor of Sport Management
lubisco@fdu.edu
Donald Hoover, Associate Director of Enrollment, International School of Hospitality, Sports, and Tourism Management
Senior Lecturer of Hospitality Management
dhoover@fdu.edu
609-432-7297

## Event Planning Undergraduate Certificate

A 15 -credit certificate in event planning is being offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
The certificate is for those interested in designing a social or corporate event from inception to completion. Students will learn the various processes in achieving this by examining budgeting, site selection, menu creation, beverage planning, etc. The certificate is also for those interested in developing a comprehensive understanding of the event from point of sale through its conclusion via proven industry standards and technology.
The certificate was created in modules and is intended to be flexible to accommodate busy work schedules and can be completed in one year.
The school also offers a minor in event planning. The certificate is fully transferable to the minor.

## Admission Requirements

## Transfer Students and Advanced Standing

Transfer students will have completed 24 or more college-credit hours at an accredited post-secondary institution. Official transcripts from all colleges and universities attended must be submitted. A highschool transcript need not be submitted unless requested by the admissions office. Applicants with less than 24 credits earned are considered students with advanced standing, and must submit their official high-school transcript and SAT or ACT test scores in addition to college transcripts.

## Evaluation of Previous Academic Work

Students with an Associate of Applied Science (AAS) degree can transfer in a maximum of 64 credits. Students from other two- and four-year institutions can transfer in up to 90 credits on a case-by-case basis. Coursework with earned grades of A through C will be considered for transfer credit. Any transfer student who has earned an AA or AS degree at a New York or New Jersey community college, and is applying to a Bachelor of Arts program, is able to fulfill their General Education requirements at FDU. Some exceptions may apply.

## Community College Transfer Students

## FDU Policy - Transfer Students and General Education Credits

All incoming students with a completed AA/AS degree from a community college in New Jersey/New York will have all of their General Education requirements waived.
Students arriving from any community college or four-year institution without an AA/AS degree will have their incoming credits applied course for course.
If a student from a four-year institution in New Jersey or New York has with them an AA/AS degree from that same institution, then they will be considered to have met the General Education requirements with the same caveat that applies to those coming from New Jersey or New York community colleges.

Students are responsible for making certain their transcripts are submitted in a timely manner so that they can be evaluated for full credit.

Fairleigh Dickinson University has articulation agreements with most New Jersey community colleges. Prospective community-college transfer students are encouraged to contact the transfer counselor at their community college for more information or call the FDU Admissions Office at 800-338-8803. More information about transferring courses from a community college to a four-year college or university in New Jersey is also available at NJ Transfer.

## Requirements (15 credits)

Courses include:

- HRTM1103 Introduction to Event Planning
- HRTM2234 Meetings, Conventions and Trade Show Management
- HRTM3214 Special Events and Festival Management
- HRTM3254 Global Event Etiquette
- HRTM4240 Global Events Technology and Innovation


## For Information

Donald Hoover, Associate Director of Enrollment, International School of Hospitality, Sports, and Tourism Management
Senior Lecturer of Hospitality Management
dhoover@fdu.edu
609-432-7297

## Game Development Undergraduate Certificate

The certificate program in computer game development consists of 15 credits. This certificate program provides students with a basic foundation in computer game development. The problem-solving and critical-thinking skills acquired through this certificate program are essential skills needed to be successful in life and in the workplace.
The certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (9 credits)

- CSCI1201 Computer Programming I
- CSCI1202 Computer Programming II
- CSCI3317 Computer Game Programming


## Electives (6 credits)

Two courses must be chosen from the following:

- CGD1178 Multimedia on the Internet
- CGD2274 3D Visualization
- CGD2294 3D Multimedia
- INFO3201 Human Computer Interface

To take any course in the certificate program, a student must meet all the prerequisites for that course.

## For Information

Alfredo Tan, Director, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering Professor of Electrical Engineering and Gregory Olsen Endowed Chair
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201-692-2324
Susan Seed, Director, Student Advisement and Retention, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering
srseed@fdu.edu
201-692-2284

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## Hotel and Restaurant Franchising Certificate

A 15-credit certificate in hospital and restaurant franchising is being offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.
The certificate is designed for candidates interested in the entrepreneurial side of the leisure and hospitality sector leveraging the opportunities offered by franchising. The program prepares students for careers as franchisors or franchisees recognizing the unique opportunities franchising companies can offer to talented educated individuals. Offered in modules, it is intended to be flexible to accommodate busy work schedules and can be completed in one year. According to FRANdata, there will be more than 26,000 new franchised businesses opening in 2021.
The school also offers a minor in hotel and restaurant franchising. The certificate is fully transferable to the minor.

## Admission Requirements

## Transfer Students and Advanced Standing

Transfer students will have completed 24 or more college-credit hours at an accredited post-secondary institution. Official transcripts from all colleges and universities attended must be submitted. A highschool transcript need not be submitted unless requested by the admissions office. Applicants with less than 24 credits earned are considered students with advanced standing, and must submit their official high-school transcript and SAT or ACT test scores in addition to college transcripts.

## Evaluation of Previous Academic Work

Students with an Associate of Applied Science (AAS) degree can transfer in a maximum of 64 credits. Students from other two- and four-year institutions can transfer in up to 90 credits on a case-by-case basis. Coursework with earned grades of A through C will be considered for transfer credit. Any transfer student who has earned an AA or AS degree at a New York or New Jersey community college, and is applying to a Bachelor of Arts program, is able to fulfill their General Education requirements at FDU. Some exceptions may apply.

## Community College Transfer Students

## FDU Policy - Transfer Students and General Education Credits

All incoming students with a completed AA/AS degree from a community college in New Jersey/New York will arrive with all of their General Education requirements fulfilled (including UNIV core [or University Core courses]) - with the exception of any specific courses and prerequisites required for any given major or minor.
Students arriving from any community college or four-year institution without an AA/AS degree will have their incoming credits applied course for course.
If a student from a four-year institution in New Jersey or New York has with them an AA/AS degree from that same institution, then they will be considered to have met the General Education requirements with the same caveat that applies to those coming from New Jersey or New York community colleges.
Students are responsible for making certain their transcripts are submitted in a timely manner so that they can be evaluated for full credit.
Fairleigh Dickinson University has articulation agreements with most New Jersey community colleges. Prospective community-college transfer students are encouraged to contact the transfer counselor at their community college for more information or call the FDU Admissions Office at 800-338-8803. More information about transferring courses from a community college to a four-year college or university in New Jersey is also available at NJ Transfer.

## Requirements (15 credits)

Courses include:

- HRTM2238 Franchising Principles
- HRTM3258 Franchise Finance
- HRTM3259 Operations
- HRTM4282 Franchising Capstone
- Elective or Transfer Credits


## For Information

## Information Technology Undergraduate Certificate

The courses for the 15 -credit certificate in information technology (IT) prepare students to apply the principles of computer networking, programming and multimedia to an office, business or industry environment. It can help students assume responsibilities involving IT system planning, installation and maintenance in offices. A number of courses in this certificate program may help lead to professional certifications in Oracle or Network+ or Security+.
The certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

FDU's certificate program in information technology includes any five of the following courses. A grade of C or better is needed to earn the certificate.

- CSCI3268 Database Systems
- INFO2101 Computer Programming for Information Technologists I
- INFO2105 Internet and Web Applications
- INFO2106 Website Design and Management
- INFO4101 Data Communications and Computer Networks I
- INFO4102 Data Communications and Computer Networks II
- INFO4201 Information Technology Needs Assessment and Management
- INFO4891 Network and Information Security

To take any course in this certificate program, a student must meet all the prerequisites for that course.

## For Information

Kalyan Mondal, Director of Center for Cybersecurity and Information Assurance, Coordinator of BS in Information Technology Program, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering
Professor of Electrical Engineering

# Mechanical Engineering Technology Undergraduate Certificate 

This mechanical engineering technology certificate program, tailored to the needs of mechanical contractors (in the areas of HVAC, steam and product piping, etc.), prepares students for an exciting and financially rewarding career in mechanical engineering technology. This 15-credit certificate program is designed to expand the students' technical skills.
The certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

At least 5 courses ( 15 credits) are needed to earn the certificate.

- EGTC3261 Estimating I
- EGTC4260 Contracts and Specifications
- EGTC4263 Project Management and Control I
- EGTC4264 Project Management and Control II
- EGTG3351 Applied Thermodynamics
- EGTG4224 Process and Electromechanical Control Systems
- EGTG4254 Fluid Mechanics
- EGTM4040 Heating, Ventilation, Air Conditioning
- EGTM4041 Heating, Ventilation and Air Conditioning and Refrigeration Controls

To take any course in the certificate program, students must meet all prerequisites for that course. For example, students must take

- EGTG3351 Applied Thermodynamics forEGTM4040 Heating, Ventilation, Air Conditioning
- EGTM4040 Heating, Ventilation, Air Conditioning forEGTM4041 Heating, Ventilation and Air Conditioning and Refrigeration Controls


## For Information

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## Network and System Administration Undergraduate Certificate

The 15 -credit network and system administration certificate program prepares students to assume responsibilities involving information technology system planning, installation and maintenance in business and industries. Students learn the fundamentals of operating systems, networking and information security, and they obtain hands-on lab experience in these subjects. Moreover, students are encouraged to obtain professional certifications to enhance their career objectives. A number of courses in this certificate program may help lead to professional certification in Network+ or Security+.
The certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

Five courses are to be selected from the following:

- INFO2101 Computer Programming for Information Technologists I
- INFO4101 Data Communication and Computer Networks I
- INFO4102 Data Communication and Computer Networks II
- INFO4201 Information Technology Needs Assessment and Management
- IINFO4278 Operating Systems
- INFO4891 Network and Information Security

To take any course in the certificate program, a student must meet all the prerequisites for that required course.

## For Information

Alfredo Tan, Director, Lee Gildart and Oswald Haase School of Computer Sciences and Engineering Professor of Electrical Engineering and Gregory Olsen Endowed Chair

## Pharmaceutical Biostatistics Undergraduate Certificate

The pharmaceutical biostatistics undergraduate certificate program prepares students or professionals to apply statistical methods to quantitative analysis of health-care issues, including interpreting increasingly complex health-care data. The 15 -credit certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (6 credits)

- CSCI1201 Computer Programming I
- MATH2243 Statistical Programming


## Selected Electives (6 credits)

Select a set of two courses from the following two sets of statistics courses:

- MATH2337 Applied Statistics I MATH2338 Applied Statistics II
or
- MATH3237 Probability and Statistics I MATH3238 Probability and Statistics II


## Elective (3 credits)

Select one course from the following:

- CSCI1202 Computer Programming II
- CSCI2234 Data Structures and Algorithms
- MATH1201 Calculus I
- MATH2202 Calculus II
- MATH2255 Discrete Structures

Note that MATH3237 Probability and Statistics I and MATH3238 Probability and Statistics II are calculus-based courses, and that MATH2202 Calculus II is the prerequisite for MATH3237. To take any course in this certificate program, a student must meet all prerequisites for that course.

## For Information

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## Restaurant Entrepreneurship Certificate

A 15 -credit certificate in restaurant entrepreneurship is being offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey, and at the Metropolitan Campus, Teaneck, New Jersey.

The certificate is designed to set a solid business and commercial foundation for those interested in building and/or operating in the leisure and hospitality sector. The focus is given to creating new business models, engaging venues that offer exiting product mixes while making deliberate choices aimed at growing a sustainable business. The minor was created in modules and is intended to be flexible to accommodate busy work schedules and can be completed in one year.
The school also offers a minor in restaurant entrepreneurship. The certificate is fully transferable to the minor.

## Admission Requirements <br> Transfer Students and Advanced Standing

Transfer students will have completed 24 or more college-credit hours at an accredited post-secondary institution. Official transcripts from all colleges and universities attended must be submitted. A highschool transcript need not be submitted unless requested by the admissions office. Applicants with less than 24 credits earned are considered students with advanced standing, and must submit their official high-school transcript and SAT or ACT test scores in addition to college transcripts.

## Evaluation of Previous Academic Work

Students with an Associate of Applied Science (AAS) degree can transfer in a maximum of 64 credits. Students from other two- and four-year institutions can transfer in up to 90 credits on a case-by-case basis. Coursework with earned grades of A through C will be considered for transfer credit. Any transfer student who has earned an AA or AS degree at a New York or New Jersey community college, and is applying to a Bachelor of Arts program, is able to fulfill their General Education requirements at FDU. Some exceptions may apply.

## Community College Transfer Students FDU Policy - Transfer Students and General Education Credits

All incoming students with a completed AA/AS degree from a community college in New Jersey/New York will have all of their General Education requirements waived.
Students arriving from any community college or four-year institution without an AA/AS degree will have their incoming credits applied course for course.
If a student from a four-year institution in New Jersey or New York has with them an AA/AS degree from that same institution, then they will be considered to have met the General Education requirements with the same caveat that applies to those coming from New Jersey or New York community colleges.
Students are responsible for making certain their transcripts are submitted in a timely manner so that they can be evaluated for full credit.

Fairleigh Dickinson University has articulation agreements with most New Jersey community colleges. Prospective community-college transfer students are encouraged to contact the transfer counselor at their community college for more information or call the FDU Admissions Office at 800-338-8803. More information about transferring courses from a community college to a four-year college or university in New Jersey is also available at NJ Transfer.

## Requirements (15 credits)

Courses include:

- ENTR2710 Fundamentals of Entrepreneurship and Innovation
- ENTR3101 Small Business Management
- HRTM3203 Food and Beverage Management
- HRTM3256 Developing Your Restaurant's Team Culture
- HRTM3257 Analyzing and Leveraging Food Trends


## For Information

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## Sport Management Undergraduate Certificate

The 18 -credit sport management certificate is offered by the International School of Hospitality, Sports, and Tourism Management at the Florham Campus, Madison, New Jersey; Metropolitan Campus, Teaneck, New Jersey; and online.

## Requirements

## Required Courses (18 credits)

- SPAD2004 Introduction to Sport Management
- SPAD2010 Legal Issues in Sports
- SPAD2022 Facility Management
- SPAD2025 Global Perspectives in Sports
- SPAD3000 Fiscal Concepts in Sports
- Appropriate SPAD course from the list below or an approved course by the sport management adviser.
- SPAD2014 Ethical Issues in Sports
- SPAD2015 Team Development
- SPAD2018 Sports Internship I
- SPAD2019 Sports, Marketing, Public Relations
- SPAD2020 Fundraising in Sports
- SPAD3003 Sports and Society
- SPAD4000 International Sports Administration (Wroxton) or an approved course by the sport management adviser


## For Information

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## Website Design and Development Undergraduate Certificate

The website design and development certificate program prepares students for an exciting and financially rewarding career in website design, development and management. Students who complete this certificate program will have hands-on learning in social, corporate or individual website design, development, maintenance and management. Additionally such knowledge will be readily applicable to showcase major findings, events and educational materials in any discipline or career. Students from different majors, including liberal arts, and professionals from various careers are strongly encouraged to pursue this certificate.

The 15 -credit certificate is offered by the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering at the Metropolitan Campus, Teaneck, New Jersey.

## Requirements

## Required Courses (12 credits)

- CGD1177 Introduction to Digital Media
- CSCL1105 Survey of Computers and Computer Software
- INFO2105 Internet and Web Applications
- INFO2106 Website Design and Management


## Elective (3 credits)

One course is to be selected from the following:

- INFO3201 Human Computer Interface
- INFO3205 Digital Media Publishing

To take any course in certificate program, a student must meet all the prerequisites for that course. With the approval of an academic adviser, students may take other higher-level INFO or CSCI courses as elective.

## For Information

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## Courses and Course Descriptions

## Courses and Course Descriptions

Required and elective courses for each academic program are included in the program's section above. FDU course codes are made up of a three-to-seven letter subject (e.g. BIOL for biology) and a four-digit course number. When valid course codes appear in the program sections they are live clickable links that can be used to view the course title and course description for that course code.
The course titles and course descriptions shown for this Bulletin are as of summer 2022 so that they will correspond to the publication date of this archive. It is possible that they may change at a later date. To see the most current course titles and course descriptions, please use Coursefinder or Self-Service.

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