

Jefferson

Thomas Jefferson University

HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

ACADEMIC CATALOG

2022 - 2023



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Welcome to Thomas Jefferson University

This document provides information about the academic programs, degree offerings and requirements at all campuses of Thomas Jefferson University.

The programs, policies, procedures, requirements, tuition and fees described in this catalog are subject to change without notice, at the discretion of the University. Students are ultimately responsible for their own progress toward graduation; they are expected to use the academic catalog as a reference handbook and to familiarize themselves with the principal policies and procedures contained therein. The provisions of this catalog are not and may not be regarded as contractual between or among the University, its students or its employees or agents.

University Structure & Leadership

H. Richard Haversitck, Jr. is Interim President of Thomas Jefferson University and Interim CEO, Jefferson Health. Mr. Haverstick is an emeritus trustee and the immediate past chairman of the board of trustees of Thomas Jefferson University and Jefferson Health. The board of trustees appointed him Interim President, Thomas Jefferson University and Interim CEO, Jefferson Health, effective January 1, 2022. At the direction of the Board of Trustees of Thomas Jefferson University, and as of the printing of this annual catalog, a national search is underway to find the next CEO of Jefferson. The search comes after Stephen K. Klasko, MD, MBA, announced his retirement last year.

Mark Tykocinski, MD is our University Provost and serves in the dual role of Anthony F. and Gertrude M. DePalma Dean of the Sidney Kimmel Medical College at Jefferson. Dr. Tykocinski oversees more than 160 academic programs within the ten colleges, three schools, and two institutes that grant degrees at Jefferson.

University Mission, Vision & Values

We are a university with preeminence in transdisciplinary, experiential professional education, research and discovery, delivering exceptional value for 21st century students with excellence in architecture, business, design, fashion, engineering, health, science, and textiles infused with the liberal arts.

Commitment to Diversity & Equity

Thomas Jefferson University does not discriminate on any condition of ethnicity or ancestry, or on the basis of creed, race, color, sex, age, religion, national origin, marital status, sexual orientation or disability in its admissions, education programs, activities or employment practices. This policy is in accordance with state and federal laws, including Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990.

We are reimagining diversity and inclusion to promote and cultivate an inclusive environment that celebrates the differences and similarities of our patients, families, students, workforce and the communities we serve to achieve an equitable culture.

Title IX at Thomas Jefferson University

Title IX of the U.S. Education Amendments of 1972 (“Title IX”) is a federal civil rights law that prohibits discrimination on the basis of sex in education programs and activities. Thomas Jefferson University does not discriminate on the basis of sex in the education programs or activities that it operates, including admissions and employment.

Under Title IX, discrimination on the basis of sex can also include sexual harassment which is defined as conduct on the basis of sex that satisfies one or more of the following:

1. An employee of the College conditioning the provision of education benefits on participation in unwelcome sexual conduct (i.e., quid pro quo); or
2. Unwelcome conduct that a reasonable person would determine is so severe, pervasive, and objectively offensive that it effectively denies a person equal access to the institution’s education program or activity; or
3. Sexual assault (as defined in the Clery Act), dating violence, domestic violence, or stalking as defined in the Violence Against Women Act (VAWA).

Any person may report sex discrimination, including sexual harassment (whether or not the person reporting is the person alleged to be the victim of conduct that could constitute sex discrimination or sexual harassment), in person, by mail, by telephone, or by electronic mail, using the contact information listed for the Title IX Coordinator, or by any other means that results in the Title IX Coordinator receiving the person’s verbal or written report. Such a report may be made at any time (including during non-business hours) by using the telephone number, electronic mail address, or by mail to the office address listed for the Title IX Coordinator. The following person has been designated to handle inquiries regarding sex and gender-based non-discrimination policies: Katie Colgan Vodzak, J.D., Title IX Coordinator; 4201 Henry Avenue, Archer Hall 200, Philadelphia, PA, 19144; 215-951-2520; titleix@jefferson.edu

Thomas Jefferson University’s Sex and Gender-Based Misconduct Policy can be accessed via the website (www.jefferson.edu/titleix) and provides information on the University’s grievance procedures and process, including how to report or file a complaint of sex discrimination, how to report or file a formal complaint of sexual harassment, and how the University will respond.

Inquiries about the application of Title IX to the University may be referred the Title IX Coordinator, to the Assistant Secretary, or both. The Assistant Secretary’s contact information is U.S. Department of Education, Office of Postsecondary Education, 400 Maryland Avenue, S.W., Washington, DC 20202, Telephone: 202-453-6914.

University Accreditations

Thomas Jefferson University (TJU) maintains full accreditation from the regional accrediting agency, Middle States Commission on Higher Education, and approval and licensure from all applicable federal, state, and national agencies.

<p>Middle States Commission on Higher Education (MSCHE) 3624 Market Street, 2nd Floor West Philadelphia, PA 19104 Telephone: (267) 284-5000; E-mail: info@msche.org Spanish: Españolinfo@msche.org</p>	<p>www.msche.org</p>
<p>US Department of Education</p>	<p>https://feedback.studentaid.ed.gov</p>
<p>Commonwealth of Pennsylvania Department of Education 333 Market Street Harrisburg, PA 17126-0333</p>	<p>www.education.pa.gov</p>
<p>Pennsylvania State Authorization Reciprocity Agreement (SARA Distance Education State Portal) Gina Wetten Higher Education Associate II Department of Education Division of Higher and Career Education 333 Market Street Harrisburg, PA 17126 Telephone: (717) 265-7723 Email: giwetten@pa.gov</p>	<p>www.nc-sara.org</p>
<p>State of New Jersey Office of the Secretary of Higher Education Trenton, NJ 08625-0542 Telephone: (609) 292-4310 Email: oshe@oshe.nj.gov Note: Physician Assistant Program Only</p>	<p>https://www.state.nj.us/highereducation/</p>
<p>National Collegiate Athletic Association (NCAA) Indianapolis, IN</p>	<p>www.NCAA.org</p>
<p>Central Atlantic Collegiate Conference (CACC) P.O. Box 3575 New Haven, CT 06525 Telephone: 203.298.4806</p>	<p>www.caccathletics.org</p>
<p>Association for Assessment and Accreditation of Laboratory Animal Care 5205 Chairman's Court, Suite 300 Frederick, MD 21703 301.696.9626</p>	<p>www.aaalac.org</p>
<p>Association for the Accreditation of Human Research Protection Programs (AAHRPPP) Human Research</p>	<p>www.aahrpp.org</p>

College and programmatic accreditations are identified within each college section of this catalog and on the Consumer Information <https://www.jefferson.edu/about/consumer-information-disclosures.html>

A Brief History of the University

Unifying two renowned legacies of innovation, education, research and professional excellence, Jefferson (Philadelphia University + Thomas Jefferson University) has more than three combined centuries of history. Driven by this newly united and robust past, Jefferson delivers unique and high-impact professional education to our students in the areas of architecture, business, design, engineering, fashion, health, humanities, medicine, science and textiles.

Philadelphia University

Philadelphia University's roots trace back to the 1876 Centennial Exposition, when local textile manufacturers noticed that Philadelphia's textile industry trailed its rivals' capacity, technology and ability. In 1880, they formed the Philadelphia Association of Manufacturers of Textile Fabrics, with Theodore C. Search as its president. Search joined the board of directors of the Philadelphia Museum and School of Industrial Art (now the Philadelphia Museum of Art and the University of the Arts), thinking it the perfect partner for his plans for a school, and began fundraising in 1882. In early 1884, Search taught the first classes at the Philadelphia Textile School, which officially opened on November 5, 1884. In 1942, the Philadelphia Textile School was granted the right to award baccalaureate degrees and changed its name to the Philadelphia Textile Institute (PTI). In 1949, PTI moved to its present site in the East Falls section of Philadelphia, and in 1961, changed its name to Philadelphia College of Textiles and Science. The College's student population doubled between 1954 and 1964, and doubled again by 1978, with the addition of programs in the arts, sciences and business administration. In 1976, Philadelphia College of Textiles and Science offered its first graduate degree, the Master of Business Administration, and to better reflect the institution's breadth and depth, it applied for and was granted university status by the Commonwealth of Pennsylvania in 1999. It changed its name to Philadelphia University on July 13, 1999.

Thomas Jefferson University

Founded in 1824 as Jefferson Medical College, Thomas Jefferson University is a story that includes intrigue, innovation and boldness, with the lead played by Dr. George McClellan. A prominent Philadelphia physician, Dr. McClellan believed in teaching medical students by having them observe experienced doctors treating patients and participate in supervised, hands-on care. His belief was the spur that created Jefferson Medical College and reshaped the way medicine would be taught nationally. In 1877, Thomas Jefferson University Hospital was established and Jefferson Medical College became the second medical school in the country with a separate teaching hospital. Joining Jefferson Medical College in 1891 was the Jefferson Hospital Training College for Nurses and in 1967 the College of Allied Health Sciences. The University was officially established in 1969, the same year the College of Graduate Studies was opened (now known as the College of Biomedical Sciences). In 1991, the NCI-designated Sidney Kimmel Cancer Center was established, thanks to a groundbreaking gift from the Sidney Kimmel Foundation, and in 2006, the University had renamed and added the Schools of Nursing and Health Professions. Two years later, the Schools of Pharmacy and Population Health were formed. In 2014, the Sidney Kimmel Foundation bestowed a \$110 million gift to Jefferson - the largest gift in its history - and Jefferson Medical College became Sidney Kimmel Medical College at Thomas Jefferson University.

The University Today

The new Jefferson was established on July 1, 2017, as a result of the merger of these two renowned universities. Through a shared and unique approach to education, Jefferson is nationally and internationally recognized for many historical “firsts” including the first surgical use of anesthesia in Philadelphia; the blending of quail feathers and wool to create the Army’s ubiquitous olive drab as an alternative to dark blue and light-colored khaki military uniforms; the first successful open-heart operation using a heart-lung machine; and the first bifurcated aortal graft using knit fibers needed for artificial blood vessels. Today, we are a professional university that defies convention and dedicates itself to collaborative, transdisciplinary and inter-professional approaches to learning that offers a vibrant and expandable platform for education. Through this unique model, we are preparing our students for current and yet to-be-imagined careers setting tomorrow’s standards by breaking today’s.

Campus Locations

Our campuses are incubators, tradition breakers and beautiful places to learn. We cross the city and the suburbs. From our vibrant Center City campus to our East Falls grounds and beyond, each location offers a unique learning environment to experience all that is Jefferson.

Center City

Philadelphia, PA: Multiple Academic Programs

Located in the heart of Philadelphia our main campus is home to the Sidney Kimmel Medical College, one of the largest private medical colleges in the nation. The campus occupies 13 acres of academic, research, administrative, and recreational buildings from 8th to 11th Streets and between Market to Locust Streets. Our 14 affiliated hospitals along with its clinical partners annually treats nearly 126,000 inpatients and 1.3 million outpatients.

Jefferson Center City active student learning sites include **the Dr. Robert and Dorothy Rector Clinical Skills and Simulation Center**, which boasts over 60,000 sq. ft. of learning and teaching space. The Center has over 130 standardized and simulated patients, 28 exam rooms and 8 control rooms with digital recording systems and videoconferencing. An additional 3,000 sq. ft. is used for pharmacy simulation. **The Scott Memorial Library** has one of the region’s best collections of life sciences publications – with more than 220,000 books and bound print journals, and over 6,000 electronic journal subscriptions.

In addition to academic resources, our students can join in on one of the many activities offered by the University, sample the local cuisine, explore the historical district where our country started or relax in one of the many scenic locations around the city. Jefferson’s Center City Campus offers three residential living options, a multi-purpose fitness & recreation center (cardio, sauna, group exercise, racquet courts, swimming pool) and easy access to public transportation.

East Falls

Philadelphia, PA: Multiple Academic Programs

The 100 acre, 50+ building campus is located close to beautiful countryside, urban life, concert venues, galleries and museums, great restaurants and theaters. The tree-lined East Falls Campus is located on the edge of Philadelphia's Fairmount Park in the beautiful residential area of East Falls, just 15 minutes from historic Center City Philadelphia.

The Gallagher Athletic, Recreation and Convocation Center is home to three regulation-size basketball courts, a state-of-the-art fitness center, aerobics studio, a racquetball court and an elevated jogging track, as well as a 251-space underground parking garage. In addition, athletic facilities on campus include a baseball field, softball field, tennis courts, and soccer and lacrosse fields. **The Kanbar Campus Center**, a 72,000-square-foot social hub for the campus community makes a dramatic impact on the academic and social environment for all members of the University community. Most undergraduate students live in on-campus housing with accommodations for over 1,600 students and include co-ed and single-sex residence halls, townhouses and two- or three-bedroom apartments.

Bucks County

Trevoze, PA: Evening & Saturday Courses

The Bucks County campus is home to the A.S. in Occupational Therapy program and features a state-of-the-art lab where students participate in complex clinical activities to prepare them for practice. The site also includes smart, technology enhanced, classroom space and two computer labs for enriched learning. Located in the Bucks County Technology Park in Trevoze, the campus is less than one mile from I-95, PA Turnpike, Route 1, and the Trevoze Train Station with service from West Trenton to Philadelphia. The SEPTA Route 14 bus has a stop on the premises. Courses are offered in the evening and on Saturdays to accommodate the schedules of adults who balance many professional and personal responsibilities. This campus offers full service cafeteria and vending, outdoor picnic area and walking trail, 24-hour on-site security, plentiful free parking, and a 24-hour gym with reduced student rates.

Dixon

Horsham, PA: College of Nursing

Thanks to a generous gift from community volunteer and philanthropist Edith R. Dixon, Thomas Jefferson University College of Nursing's Abington-Dixon campus located in Horsham, PA is known as the Dixon Campus.

At 42,000 square feet, nearly one third of the space is dedicated to a state-of-the-art simulation center, where both undergraduate and graduate students will engage in complex clinical scenarios that parallel, anticipate and amplify real-life situations. The new campus also includes a 200-person tiered lecture hall and three 80-seat classrooms that will support the latest innovations in academic technology. A dedicated library, collaborative learning and study spaces, a student lounge and a central concourse will support faculty-student and student-student engagement at the highest level. Students also have access to a trail leading to a park, a gym conveniently located in the building next door, a cafeteria, ample parking and public transportation.

Spring House

Lower Gwynedd, PA, Jefferson Institute for Bioprocessing

JIB is a 25,000 sq. ft. fully closed-processing, CNC, GMP-simulated pilot scale and process development facility. The facility houses ready-to-use technologies in fully flexible, ballroom design suites. Our processing suites feature a full range of pilot-scale upstream and downstream equipment, QC analytical, digital (AI/AR/VR) technologies, scale-down modeling, process simulation, process measurements, instrumentation, calibration, automation and process control capabilities.

Online

World-class education at your fingertips

Jefferson Online is a student-centered institution that prepares graduates for successful careers in an evolving global marketplace. To learn more visit us at <https://online.jefferson.edu/>

Voorhees

Voorhees, NJ: Physician Assistant Program

The College of Health Professions opened this training facility in September, 2019 and houses a 60 seat classroom, a physical diagnoses laboratory, and a Simulation Center (Auscultation Simulators, iStan Adult Patient Simulator, Primary Care Rooms, Emergency Room Bays, and Inpatient Hospital Rooms). “This new location offers cutting edge technology and a beautiful space for our faculty to cultivate the next generation of healthcare providers.”

Jefferson’s College Locations

Academic Unit	Abbreviation	Campus & Program Location(s)
College of Architecture & Built Environment	CABE	East Falls, Online
Kanbar College of Design, Engineering & Commerce	KANBAR	East Falls, Spring House, Online
College of Health Professions	JCHP	Center City, East Falls, Online
College of Humanities & Sciences	JCHS	East Falls
College of Life Sciences	JCLS	Center City, East Falls, Online
Sidney Kimmel Medical College	SKMC	Center City
College of Nursing	JCN	Center City, Horsham
College of Pharmacy	JCP	Center City, Online
College of Population Health	JCPH	Center City, Online
College of Rehabilitation Sciences	JCRS	Center City, East Falls, Online
School of Continuing & Professional Studies	SCPS	Center City, East Falls Online
Jefferson Institute for Bioprocessing	JIB	Spring House
Institute for Emerging Health Professions	IEHP	Center City, Online

Academic Programs at Thomas Jefferson University

Undergraduate Degree Programs

ACADEMIC PROGRAM	DEGREE	CAMPUS	COLLEGE	PAGE
Abdomen-Extended & OB/GYN (Ultrasound)	BS	Center City	JCHP	189
Accounting	BS	East Falls	KANBAR	93
Animation & Digital Media	BS	East Falls	KANBAR	108
Architectural Studies	BS	East Falls	CABE	40
Architecture	BArch	East Falls	CABE	42
Behavioral & Health Services	BS	East Falls & Online	JSCPS	402
Biochemistry	BS	East Falls	JCLS	261
Biology	BS	East Falls	JCLS	263
Biopsychology	BS	East Falls	JCHS	249
Biotechnology	BS	Center City	JCHP	197
Business Management	BS	East Falls & Online	JSCPS	403
Cardiac Sonography	BS	Center City	JCHP	189
Chemistry	BS	East Falls	JCLS	264
Communication & Media Studies	BS	East Falls	JCHS	251
Computed Tomography (CT)	BS	Center City	JCHP	189
Construction Management	BS	East Falls	CABE	44
Cytotechnology & Cell Sciences	BS	Center City	JCHP	204
Engineering	BSE	East Falls	KANBAR	110
Exercise Science	BS	East Falls	JCRS	370
Fashion Design	BS	East Falls	KANBAR	112
Fashion Merchandising and Management	BS	East Falls	KANBAR	95
Finance	BS	East Falls	KANBAR	97
Health & Human Services	AS	Restricted District 1199C	JSCPS	400
Health & Human Services: Radiological Technology	AS	Restricted Einstein	JSCPS	401
Health Sciences	BS	East Falls	JCHP	165
Health Sciences	BS	East Falls/Online	JSCPS	404
Health Sciences: Pre-Physician Assistant	BS	East Falls	JCHP	177
Health Sciences: Pre-Medical Imaging & Radiation Sci	BS	East Falls	JCHP	179
Health Sciences: Pre-Medical Lab Sci & Biotechnology	BS	East Falls	JCHP	181
Health Sciences: Pre-Nursing	BS	East Falls	JCHP	183
Health Sciences: Pre-Pharmacy	BS	East Falls	JCHP	184
Health Services Management	BS	East Falls/Online	JSCPS	405
Health Studies	BS	East Falls/Online	JSCPS	406
Human Resource Management	BS	East Falls/Online	JSCPS	407
Industrial Design	BS	East Falls	KANBAR	113
Information Technology	BS	East Falls/Online	JSCPS	408
Interdisciplinary Studies	BS	East Falls	JCHS	253
International Business	BS	East Falls	KANBAR	98
Interior Design	BS	East Falls	CABE	46
Invasive Cardiovascular Technology	BS	Center City	JCHP	189
Landscape Architecture	BLA	East Falls	CABE	49
Law & Society	BS	East Falls	JCHS	255
Magnetic Resonance Imaging	BS	Center City	JCHP	189
Management	BS	East Falls	KANBAR	99
Marketing	BS	East Falls	KANBAR	100
Mechanical Engineering	BSE	East Falls	KANBAR	115
Medical Dosimetry	BS	Center City	JCHP	189
Medical Imaging & Radiation Sciences	BS	Center City	JCHP	187
Medical Laboratory Sciences	BS	Center City	JCHP	209
Nursing	BSN	Center City, Dixon	JCN	299
Occupational Therapy	ASOT	Bucks County	JCRS	369
Organizational Leadership	BS	East Falls/Online	JSCPS	409
Pre-Medical Studies	BS	East Falls	JCLS	266
Psychology	BS	East Falls	JCHS	256
Radiation Therapy	BS	Center City	JCHP	189
Radiography	BS	Center City	JCPH	189
Textile Design	BS	East Falls	KANBAR	117
Textile Product Science	BS	East Falls	KANBAR	118
Vascular Sonography	BS	Center City	JCHP	189
Visual Communication Design	BS	East Falls	KANBAR	119

Graduate Degree Programs				
ACADEMIC PROGRAM	DEGREE	CAMPUS	COLLEGE	PAGE
Applied Health Economics & Outcomes Research	MS	Online	JCPH	333
Architecture	MArch	East Falls	CABE	50
Architecture and Design Research	MS	East Falls	CABE	52
Architecture and Design Research	PhD	East Falls	CABE	65
Athletic Training	MS	East Falls	JCRS	372
Biochemistry & Molecular Pharmacology	PhD	Center City	JCLS	277
Biologic Process Engineering	PhD	Spring House	KANBAR/JIB	136
Biomedical Sciences	MS	Center City	JCLS	268
Biopharmaceutical Process Engineering	MS	Spring House	KANBAR/JIB	138
Biotechnology	MS	Center City	JCHP	199
Cardiovascular Perfusion	MS	Center City	JCHP	230
Cardiovascular Perfusion Post-Professional	MS	Online	JCHP	231
Cell Biology & Regenerative Medicine	PhD	Center City	JCLS	278
Cell & Developmental Biology	MS	Center City	JCLS	269
Clinical Research	MS	Center City	JCLS	270
Community and Trauma Counseling	MS	East Falls	JCHP	147
Community and Trauma Counseling: Art Therapy	Concentration	East Falls	JCHP	149
Community and Trauma Counseling: Child Trauma and Play Therapy	Concentration	East Falls	JCHP	150
Community and Trauma Counseling: Trauma, Addiction and Recovery	Concentration	East Falls	JCHP	151
Construction Management	MS	East Falls & Online & Hybrid	CABE	54
Couple & Family Therapy	MFT	Center City	JCHP	152
Cytotechnology & Cell Sciences	MS	Center City	JCHP	206
Emergency and Disaster Management	MS	East Falls & Online	JCHP	160
Engineering, Textile Concentration	MS	East Falls	KANBAR	121
Forensic Biology	MS	Center City	JCLS	271
Forensic Toxicology	MS	Center City	JCLS	272
Genetics, Genomics & Cancer Biology	PhD	Center City	JCLS	280
Geospatial Technology for Geodesign	MS	East Falls	CABE	56
Global Fashion Enterprise	MS	East Falls	KANBAR	101
Health Communication Design	MS	Hybrid- East Falls & Online	KANBAR	124
Health Data Science	MS	Online	JCPH	335
Health Policy	MS	Online	JCPH	338
Health Science	DHSc	Hybrid-Center City & Online	JCHP	163
Healthcare Quality and Safety	MS	Online	JCPH	341
Historic Preservation	MS	East Falls	CABE	57
Human Genetics & Genetic Counseling	MS	Center City	JCLS	273
Immunology & Microbial Pathogenesis	PhD	Center City	JCLS	282
Industrial Design	MS	East Falls	KANBAR	127
Innovation MBA	MBA	East Falls & Center City & Online	KANBAR	102
Integrative Health Sciences	MS	Online	JCHP	232
Integrative Physiology	PhD	Center City	JCLS	283
Interior Architecture	MS	East Falls	CABE	59
International Fashion Design Management	MS	East Falls	KANBAR	122
Medical Cannabis Science and Business	MS	Online	JCHP	233
Medical Laboratory Sciences	MS	Center City	JCHP	211
Medical Imaging & Radiation Sciences	MS	Center City	JCHP	193
Medicine	MD	Center City	SKMC	292
Microbiology & Immunology	MS	Center City	JCLS	275
Midwifery	MS	Online/Center City	JCHP	220
Midwifery	DM	Online- - not accepting new students in 2022	JCHP	221
Neuroscience	PhD	Center City	JCLS	284
Nursing	MSN	Center City	JCN	302
•Adult-Gerontology, Acute Care NP				
•Adult-Gerontology, Primary Care NP				
•Community Systems Administrator				
•Family/Individual Across Lifespan NP				
•Informatics				
•Neonatal NP				
•Pediatric Primary Care NP Direct Care				
•Psychiatric Mental Health NP				
•Women's Health-Gender related NP Direct Care				
Nursing	DNP	Center City	JCN	307
Nursing	PhD	Center City	JCN	311

Nurse Anesthesia	DNP	Center City	JCN	310
Nutrition and Dietetic Practice	MS (RDN)	Center City	JCHP	224
Occupational Therapy	MSOT	Center City	JCRS	373
Occupational Therapy	MSOT	East Falls	JCRS	374
Occupational Therapy	OTD	Center City	JCRS	375
Occupational Therapy	PPOTD	Center City	JCRS	376
Operational Excellence	MS	Online	JCPH	344
Organizational Leadership	MS	Online	JSCPS	410
Pharmacology	MS	Center City	JCLS	276
Pharmaceutical Sciences	MS	Center City	JCP	324
Pharmacy	PharmD	Center City	JCP	321
Physician Assistant Studies	MS	Center City	JCHP	226
Physician Assistant Studies	MS	East Falls & Voorhees	JCHP	227
Physical Therapy	DPT	Center City	JCRS	377
Population Health	MS	Online	JCPH	346
Population Health Pharmacy	MS	Online	JCP	326
Population Health Science	PhD	Center City	JCPH	353
Population Health	DHSc	Hybrid-Center City & Online	JCPH	357
Public Health	MS	Center City	JCPH	350
Real Estate Development	MS	East Falls & Online	CABE	60
Speech-Language Pathology	MS	Center City	JCRS	379
Strategic Leadership	DMgt	East Falls	JSCPS	411
Sustainable Design	MS	East Falls	CABE	62
Taxation	MS	East Falls	KANBAR	106
Textile Design	MS	East Falls	KANBAR	128
Textile Engineering & Science	PhD	East Falls	KANBAR	130
Textile Technology	MS	East Falls	KANBAR	129
Transformative Systems Leadership	MSN	Hybrid Center City & Online	JCN	305
Urban Design-Future Cities (MUD)	MS	East Falls	CABE	63
User Experience & Interaction Design	MS	East Falls	KANBAR	130

Certificate Programs				
ACADEMIC PROGRAM	CERTIFICATION	CAMPUS	COLLEGE	PAGE
Academic Nursing	Post-Graduate Certificate	Online	JCN	314
Advanced Headache Diagnosis and Management	Post-Graduate Certificate	Hybrid-Center City/Online	JCN	315
Applied Health Economics & Outcomes Research	Graduate Certificate	Online	JCPH	333
Biopharmaceutical Process Development	Graduate Certificate	Spring House	KANBAR	141
Business & Organizational Continuity	Graduate Certificate	Online	JCHP	161
Cannabis Business	Graduate Certificate	Online	JCHP	234
Cannabis Medicine	Graduate Certificate	Online	JCHP	235
Cannabis Science	Graduate Certificate	Online	JCHP	236
Child Trauma & Play Therapy	Graduate Certificate	Hybrid- East Falls & Online	JCHP	153
Clinical Chemistry	Graduate Certificate	Center City	JCHP	215
Clinical Hematology	Graduate Certificate	Center City	JCHP	216
Clinical Microbiology	Graduate Certificate	Center City	JCHP	217
Clinical Research & Trials: Implications	Graduate Certificate	Center City	JCLS	285
Clinical Research: Operations	Graduate Certificate	Center City	JCLS	286
Coaching in Context	Advance Practice Cert	Online	JHRS	388
Community & Trauma Counseling	Advance Practice Cert	East Falls	JCHP	154
Community & Trauma Counseling: Art Therapy	Advance Practice Cert	East Falls	JCHP	155
Community & Trauma Counseling: Trauma, Addiction and Recovery	Advance Practice Cert	East Falls	JCHP	156
Computed Tomography (CT)	Undergraduate Certificate	Center City	JCHP	196
Construction Management	Graduate Certificate	East Falls & Online	CABE	70
Design of Living Buildings	Graduate Certificate	East Falls	CABE	71
Design of Resilient Communities	Graduate Certificate	East Falls & Online	CABE	72
Emergency & Disaster Management	Graduate Certificate	Online	JCHP	160
Emergency Nurse Practitioner (NP)	Post-Graduate Certificate	Hybrid- CC & Online	JCN	316
Emerging Leaders in Autism Practice & Research	Advance Practice Cert	Online	JCRS	389
Geographic Information Systems	Graduate Certificate	East Falls	CABE	73
Geospatial Technology for Geodesign	Graduate Certificate	East Falls	CABE	74
Green Building Operations	Graduate Certificate	East Falls	CABE	75
Hand & Upper Limb Rehabilitation	Advance -Practice Cert	Center City	JCRS	390

Health Communications Design	Graduate Certificate	Hybrid- East Falls & Online		124
Health Data Science	Graduate Certificate	Online	JCPH	335
Healthcare Information Systems	Undergraduate Certificate	Online	JSCPS	397
Healthcare Quality & Safety	Graduate Certificate	Online	JCPH	341
Healthcare Quality & Safety	Advance Practice Cert	Online	JCPH	341
Healthcare Quality & Safety Education	Advance Practice Cert	Online	JCPH	343
Health Communication Design	Graduate Certificate	Hybrid- East Falls & Online	KANBAR	124
Health Policy	Graduate Certificate	Online	JCPH	338
Health Systems Science	Advance Practice Cert	Online	JCPH	343
Health Systems Science Education	Advanced Practice Cert	Online	JCPH	343
Historic Preservation	Graduate Certificate	East Falls	CABE	76
Human Clinical Investigation: Theory	Graduate Certificate	Center City	JCLS	287
Immunohematology	Graduate Certificate	Center City	JCHP	218
Infectious Disease Control	Graduate Certificate	Center City	JCLS	288
Integrative Health Education & Leadership	Advance Practice Cert	Online	JCHP	238
Integrative Nutrition	Advance Practice Cert	Online	JCHP	239
Life Care Planning	Graduate Certificate	Online	JCRS	391
Medical Coding & Data Quality	Undergraduate Certificate	Center City	JSCPS	398
Medical Practice Management	Undergraduate Certificate	Center City	JSCPS	399
Midwifery	Advance Practice Cert	Online/Center City	JCHP	222
Midwifery- Re-entry to Practice	Advanced Training	Online	JCHP	223
Mind-Body Medicine	Advance Practice Cert	Online	JCHP	240
Molecular Biology	Graduate Certificate	Center City	JCHP	219
Neuroscience: Advanced Concepts for Evidence Based Practice	Advance Practice Cert	Online	JCRS	392
Nurse Practitioners	Post-Graduate Certificate	Center City & Online	JCN	313
Operational Excellence	Graduate Certificate	Online	JCPH	344
Operational Excellence	Advance Practice Cert	Online	JCPH	344
Operational Excellence Education	Advance Practice Cert	Online	JCPH	344
Patient-Centered Research	Graduate Certificate	Center City	JCLS	289
Population Health Pharmacy	Graduate Certificate	Online	JCP	327
Population Health	Graduate Certificate	Online	JCPH	346
Population Health	Advance Practice Cert	Online	JCPH	346
Population Health Education	Advance Practice Cert	Online	JCPH	349
Population Health Pharmacy	Graduate Certificate	Online	JCP	327
Public Health	Graduate Certificate	Center City	JCPH	350
Real Estate Development	Graduate Certificate	East Falls	CABE	77
Smart Cities & Urban Analytics	Graduate Certificate	East Falls	CABE	78
Surface Imaging	Advance Practice Cert	East Falls	KANBAR	134
Sustainability Leadership	Graduate Certificate	East Falls & Online	CABE	79
Teaching and Learning	Graduate Certificate	Online	JCHP	186
Teaching in the Digital Age	Advance Practice Cert	Online	JCRS	393
Transformative Systems Leadership	Post-Graduate Cert	Online	JCN	317

Accelerated & Dual Degree Programs			
ACADEMIC PROGRAM	DEGREES	CAMPUS	PAGE
Architecture & Historic Preservation	BArch/MS	East Falls	80
Architecture Studies & Historic Preservation	BS/MS	East Falls	81
Architecture Studies & Real Estate Development	BSMS	East Falls	82
Architecture & Interior Architecture	BS/MS	East Falls	83
Biotechnology	BS/MS	Center City	200
Cell Biology & Regenerative Medicine	MD/ PhD	Center City	292
Cytotechnology & Cell Sciences	BS/MS	Center City	208
Construction Management & Real Estate Development	MS/MS	Hybrid- East Falls & Online	87
Construction Management & Sustainable Design	MS/MS	East Falls	88
Emergency & Disaster Management & Public Health	MS/MPH	East Falls/Center City/ Online	360
Exercise Science & Athletic Training	BS/MS	East Falls	167 & 382
Health Sciences & Community and Trauma Counseling	BS/MS	East Falls	169
Health Sciences & Nutrition & Dietetics	BS/MS	East Falls/Center City	171
Exercise Science & Occupational Therapy	BS/OTD	East Falls	173 & 384
Health Science & Physician Assistant	BS/PA	East Falls	175
Exercise Science & Physical Therapy	BS/DPT	East Falls/Center City	386
Health Sciences (Psychology) & Community and Trauma Counseling	BS/MS	East Falls	158
Interior Design & Architecture	BS/MArch	East Falls	84
Interior Design & Sustainable Design	BS/MS	East Falls	85
Law & Public Health	JD/MPH	Center City & Partner Institution	364

Landscape Architecture & Geodesign	BLA/MS	East Falls	86
Medical Laboratory Sciences	BS/MS	Center City	212
Medicine & Cell Biology & Regenerative Medicine	MD/PhD	Center City	292
Medicine & Public Health	MD/MPH	Center City	292 & 359
Medicine & Research	MD/PhD	Center City	292
Medicine & Università Cattolica Sacro Cuore & Health Policy	MD/MD/MS	Center City, Rome Italy	295
Occupational Therapy	BS/MS	Center City	380
Occupational Therapy	BS/MS	East Falls	380
Pharmaceutical Sciences & Public Health	PharmD/MPH	Center City	363
Pharmacy & Public Health	PharmD/MPH	Center City & Partner Institution	328
Physician Assistant & Public Health	PA/MPH	Center City & East Falls	365
Public Health & Pharmacy	MPH/PharmD	Center City & Partner Institution	328 & 362
Social Work & Public Health	MSS/MPH	Center City & Partner Institutions	361
Textile Design	BS/MS	East Falls	133

Academic Calendars

University Calendar	The University operates within a calendar year that begins on July 01 and ends on June 30.
Academic Program Calendar	Academic Programs calendars are individualized to meet the needs of their programmatic requirements.
Academic Calendars found at:	https://www.jefferson.edu/university/academic-affairs/tju/academic-services/registrar/calendars/academic-calendars.html

Schedule changes

The University reserves the right to make changes to the academic calendars as circumstances may require. Changing sections, replacing courses with another course, auditing a course, independent study, course-by-appointment, or changing a course from graded to credit/non-credit must be made by the “last day to add” deadline. See current Academic Calendar.

Absence & Observance of Religious Holidays

Jefferson is a nonsectarian educational institution and respects the diversity and religious needs of its affiliates. The University respects the rights of faculty, staff and students to observe religious holidays. While academic and personnel calendars do not incorporate religious holidays, the policy is intended to apply equitably to all religious groups and to provide opportunities to all to meet their religious obligations. Non-attendance of class on religious holidays by those observing the holiday will be excused without penalty. No adverse or prejudicial effects will result because a student availed herself or himself of these provisions. The University respects students’ rights to observe religious holidays. Students planning to be absent from a class due to religious observance shall notify the faculty during the first week of classes, if possible. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Professors shall work with students to ensure they have a reasonable opportunity to make up missed classes and assignments.

Admissions

Students who apply to the University should be seeking a sound and challenging collegiate education, and should have demonstrated an ability to be successful in such a program by prior academic performance and preparation.

- Each student is reviewed individually and evaluated based on educational background, including course preparation and grades earned.
- Academic Programs have specific policies, which govern their admission criteria.

Admissions Application

- Find the information you need to apply to Jefferson by visiting the Admissions website at <https://www.jefferson.edu/admissions.html>

Academic Degree Options

Undergraduate	More than 80 programs all with a focus on collaboration and critical thought that challenges the way forward and opens up endless opportunities for the future.
Transfer	<p>Many (not all) programs allow students to continue/complete their undergraduate degree by transferring credits taken at other accredited universities toward a degree at Jefferson. Students seeking to transfer into the university must submit official transcripts from all colleges/universities attended as well as essay and one letter of recommendation. If a student has earned less than 30 college credits, an official secondary school record and SAT I or ACT scores are required. Some transfer students may be required to submit a portfolio for consideration.</p> <p>Some of our programs are designed specifically for transfer students only and do not accept students into the freshman class; Nursing is one example of a Transfer Program.</p>
Graduate	Education beyond the undergraduate degree with over 70 programs at the master's and doctoral degree levels.
Accelerated	<p>1. Accelerated degree programs allow for a pathway toward completion of two degrees (undergraduate/graduate) in less time than would take in completing each degree separately. Students must maintain program-specific requirements upon admission and throughout program to remain eligible for this pathway.</p> <p>2. JSCPS (School of Continuing & Professional Studies) offers accelerated terms designed to support adult students and working professionals who are looking to earn or complete a degree. Courses are offered in 8-week hybrid and online formats.</p>
Dual	A pathway to two degrees at the same level. The two degrees may be completed concurrently or consecutively.
Certificate (Transcriptable)	<p>A credential issued by the University in recognition of the completion of a curriculum other than one leading to a degree. Courses are offered at the undergraduate or graduate level and all courses within the certificate should be able to be applied to completion of a degree (grade and time-frame dependent).</p> <p>Undergraduate-Open to students who have earned their High School Diploma Graduate-open to students who have earned their Graduate Degree Post-Professional- open to students who have completed their professional degree in field</p>

Admissions Classifications

Applicant	Student is preparing application materials for admissions to a specific academic program. See program application requirements on Admissions website.
Acceptance	Students who have met all admissions requirements with satisfactory performance as judged by the Admissions Committee are granted full acceptance. Acceptance into an Academic Program does not mean or guarantee acceptance into another academic program at the same or different level.
Probationary Acceptance	Students with academic performance and/or test scores below the normally acceptable levels but show potential to be successful in a graduate program may be granted probationary acceptance and students will be monitored closely by the program director to ensure fit for the academic rigor of the program.
Conditional Acceptance	Conditional acceptance may be granted to students who are missing some of their application materials but who otherwise meet admissions criteria. Conditional acceptance is limited to one semester, during which time the missing application materials must be submitted.
Non-Degree seeking	Courses taken under non-degree status may be applied to a degree program, but only after all admissions requirements are met and full acceptance is granted.
Readmission	See your program-specific policy on requirements of readmission in college handbook, university policies and consult with your Program Director.
International Applicants	We invite students from other countries to come study and research alongside some of the top faculty, students and researchers in the U.S. East Falls Application http://www.eastfalls.jefferson.edu/international/ Center City Application https://www.jefferson.edu/university/international_affairs.html

University Right to Withdraw Offer of Admission

1. Students planning to join Jefferson must notify the Office of Admissions should there be any substantial changes to their academic or disciplinary records between acceptance and matriculation. The University reserves the right to withdraw an offer of admission in the event that
2. A significant drop in academic performance
3. Failure to graduate from an accredited degree program
4. Misrepresentation of information in the application process
5. Behavior prior to enrolling that indicates a serious lack of judgement or integrity

Course/Program Format

Jefferson offers several delivery options for students based upon the program they are entering.

On Campus	courses/program taken onsite (face-to-face) at one of our seven locations throughout the region
Online	courses/program taken either entirely online or with periodic on-campus “retreats”
Hybrid	courses/program are a combination of onsite (face-to-face) and online formats
Accelerated	courses at various lengths outside of the standard 15-week semester
Short Courses	Faculty-led short courses/programs taken domestically or abroad.

Tuition & Fees

Tuition and fee rates are contingent on the academic programs and current student status. Please select the applicable tuition and fees information below that corresponds to the tuition and fees in your academic program.

Students should consult their academic department to determine whether the academic year for their program includes additional (e.g. summer) terms. Students may be responsible for additional tuition and fees.

Tuition Rate Information

Please Note:

The Tuition website is currently under revision and will be available after the printing of this catalog. 2021-2022 rates are posted at <https://www.jefferson.edu/tuition-and-financial-aid/tuition-information.html>

- **Invoices** are submitted in July and December for the next semester's charges and electronic statements may be accessed via BannerWeb using the TouchNet link.
- Students may add an **Authorized Payer** who will also be notified when a new statement is available.
- The University does not mail billing statements.
- **Refund Policy** can be found at <https://www.jefferson.edu/life-at-jefferson/handbooks/policies/undergraduate-policies/tuition-refund-policy.html>
- An individual's registration at Jefferson constitutes the student's agreement to make timely payment of all amounts due. Jefferson uses electronic means (email and the Internet) as a primary method of communication and providing billing, payment and enrollment services. By accepting Jefferson's offer of admission and enrolling in classes, each student accepts responsibility for paying all debts to the University, including tuition and fees, for which one is liable.

Credits and Status

Undergraduate Programs	<ul style="list-style-type: none">• For tuition and financial aid purposes, full-time refers to a student taking between 12-21 credits.• Part-time for financial aid purposes, refers to a student taking between 6-11.5 credits.• Taking credits above or below this range will have financial and financial aid impact.• Students are advised to consult with their Program Director/Department Chair and Financial Aid office to discuss the implications of taking credits above or below the specified range.
Graduate Programs	<ul style="list-style-type: none">• For tuition and financial aid purposes, full-time status varies depending on the academic program with the majority at 9 credits. There are limited exceptions under which specified programs maintain alternative halftime and full-time credit status.• Students are advised to consult with the Registrar's Office to discuss the appropriate credit minimum necessary for halftime enrollment. Halftime enrollment is one of the requirements to be eligible for financial aid.• Students are advised to consult with the Financial Aid office to discuss the financial implications of taking full and part-time credits per semester.

Financial-Aid

We believe the cost of pursuing an education should never get in the way of turning your dreams into reality. We offer a variety of options and payment plans to make our University accessible to the students who will one day go on to disrupt industries, create new ones and shape a world that's ready for anything.

Please visit the Financial-aid office that pertains to your academic program to address question related to the following topics:

- Undergraduate Student Aid
- Financial Aid Programs
- Code of Conduct
- Graduate Student Aid
- Application Process
- IRS Data Retrieval Tool
- Veterans Benefits
- FAFSA Codes
- Entrance/Exit Counseling
- International Student Aid
- Aid Filing Deadlines
- How to Read your Financial Aid Package

Financial Aid Office: **Center City**

Location	Curtis Building, Suite 115
Phone	215-955-2867
Email	Financial.Aid@jefferson.edu
Website	https://www.jefferson.edu/university/academic-affairs/tju/academic-services/financial_aid.html

Financial Aid Office: **East Falls**

Location	White Corners, First Floor
Phone	215-951-2940
Email	Financial.Aid@jefferson.edu
Website	http://www.eastfalls.jefferson.edu/financialaid/

Student Accounts: **Center City**

Location	1101 Market Street, 29th Floor
Phone	(215) 503-7669
Email	Tuition.Office@jefferson.edu
Website	https://www.jefferson.edu/university/academic-affairs/tju/academic-services/financial_aid/programs/payment_plan.html

Student Accounts: **East Falls**

Location	Archer Hall, First Floor
Phone	215-951-5988
Email	Tuition.Office@jefferson.edu
Website	https://www.jefferson.edu/university/academic-affairs/tju/academic-services/financial_aid/programs/payment_plan.html

Veterans' Administration

Thomas Jefferson University is an approved institution of higher learning in conjunction with Title 38 Veterans' Administration Education Benefits. Thomas Jefferson University ensures that it receives benefits to our Veterans Administration (VA)-eligible students by maintaining strict adherence to federal guidelines and regulations outlined by the VA. Biennially, with approval from the State Approving Agency (SAA), Thomas Jefferson University reviews its catalog and procedures to assure compliance with all associated entities of the VA and SAA. Below are the defined processes, and state and federally-mandated regulations that are required.

Per the 3679(e) compliance regulations from SAA and statutes lawfully outlined by the VA, the Thomas Jefferson University Course Catalog commits to the following: "As part of the Veterans Benefits and Transition Act of 2018, section 3679 of title 38, United States Code was amended, and educational institution will be required to confirm their compliance with the requirements as outlined."

Per the Veteran Benefits and Transition Act of 2018, the University has developed a policy that defines the following regarding benefit recipients (please note: a Covered Individual is any individual who is entitled to educational assistance under Chapter 31, Vocational Rehabilitation (Veteran Readiness), or Chapter 33, Post-9/11 GI Bill benefits):

- Chapter 31 individuals with an approved Tungsten invoice and educational plan provided by their Veteran Readiness and Employment (VRE) counselor
- Chapter 33 individuals whose benefits cover their tuition and fees with 100% benefit eligibility in accordance with the Post-9/11 Bill's private institution's annual tuition and fees cap
- Chapter 33 individuals whose benefits cover their tuition and fees with 100% benefit eligibility, under provision and certainty that their tuition and fees will be covered by Yellow Ribbon benefits, including but not limited to any additional and verifiable financial aid source, in accordance with the Post-9/11 Bill's private institution's annual tuition and fees cap
- Chapter 33 individuals whose benefits cover their tuition and fees with partial (50% or greater, but less than 100%) benefit eligibility, including but not limited to any additional and verifiable financial aid source, in accordance with the Post-9/11 Bill's private institution's annual allotted tuition and fees cap

The University Policy also states that:

- The Chapter 31 student(s) utilizing the benefits must have proper authorization from their VRE counselor within 30 days before the start of the term, not to exceed the first day of the term
- The Chapter 33 student(s) utilizing the benefits must submit their Certificate of Eligibility or Statement of Benefits within 30 days before the start of the term, not to exceed the first day of the term
- Students of each covered benefit must submit a VA Enrollment Confirmation Form (VA-1999 Form equivalent) each semester that they intend to use their benefits within 30 days before the start of the term. This is to inform the School Certifying Official (SCO) of their written request to be certified.
- Students provide additional information necessary to the proper certification of enrollment by the educational institution (e.g., submitting mitigating circumstances for prior reasons

the student was not able to maintain University academic policies in accordance with the Standards of Progress set by VA, a conscious change of enrollment by the student, or any life event that may impact a student's ability to attend classes)

- The school's ability to impose a fee if:
 - 1) the student's entitlement has reached its end and/or applicable delimiting date, and there are no longer sufficient funds to cover tuition and fees; and/or
 - 2) if the student does not have any other additional and verifiable financial aid source, and was delinquent in applying for such and doing so, with documented evidence they were advised to as per the Principles of Excellence; and/or
 - 3) the student did not, in a timely fashion, submit the required documentation to be certified for the term as per the policy's required process.
- This is not to supersede the VA's federal law in Stat. 5370, subsection B, of the Veterans Benefits and Transition Act of 2018, that late fees and denial of accesses of classes not be imposed due to delinquency of the school's inaction to certify benefits in a timely manner per the policy's required process.
- Thomas Jefferson University will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement funding from VA under chapter 31 or 33.

Department of Veteran Affairs: Principles of Excellence Statement

In accordance with Isakson and Roe Veterans Health Care and Benefits Improvement Act of 2020, Section 1018 requirement per the Department of Veteran Affairs, we duly uphold the Principles of Excellence set forth by the Department of Veteran Affairs with all statutes recognized:

- Providing students with a timely personalized Financial Aid Shopping Sheet covering the total cost of an education program
- Inform students who are eligible to receive Veterans education benefits of the availability and potential eligibility of Federal financial aid before packaging or arranging private student loans or alternative financing programs
- Avoid fraudulent and unduly aggressive recruiting or automatic renewal techniques (covered individuals must approve their enrollment in individual courses)
- Avoid misrepresentations or payment of incentive compensation
- Must fully disclose conditions or additional requirements, including training, experience, or examinations, required to obtain the license, certification, or approval for which the course of education is designed to provide preparation
- Provide to a covered individual enrolled in a course of education at the educational institution with information regarding the requirements to graduate from such course, including information regarding when required classes will be offered and a timeline to graduate
- Obtain the approval of the institution's accrediting agency for new courses or program offerings prior to enrolling students
- Maintain a policy to accommodate Service members and reservists readmitted to a program if they are temporarily unable to attend class or suspend their studies due to service requirements
- Designate a point of contact to provide academic and financial advising

Thomas Jefferson University will conduct an annual internal review to ensure that it complies with the policies and procedures, and that they are adequately and affirmatively published in the University Course Catalog.

Statement of Financial Responsibility

An individual's registration as a Jefferson student constitutes his or her agreement to make timely payment of all amounts due. Jefferson uses electronic means (email and the Internet) as a primary method of communication and providing billing, payment and enrollment services. Signatures or acknowledgments provided by the student electronically to Jefferson via Jefferson systems and/or @students.PhilaU.edu, @mail.Philau.edu or @PhilaU.edu email is valid and legally binding. Additionally, by accepting Jefferson's offer of admission and enrolling in classes, each student accepts responsibility for paying all debts to the University, including tuition and fees, for which s/he is liable. Details of the University's billing policies are outlined on their website (under revision at time of catalog publication).

Tuition Refund Policy

The following tuition refund schedule applies to:

1. A student who is enrolled in a standard 15-week semester, 12-week, accelerated or summer session of a minimum of 5-weeks who is charged tuition separately for each term in which they are enrolled during the academic year; and
2. Who withdraws from the University; or
3. Is dismissed from the University for academic reasons*;
4. Who is granted a Leave of Absence from the University will be eligible for a refund of tuition according to the following schedule:

Percent of Refund of Semester of Term Paid Tuition	Number of Days Enrolled
100%	0-7 calendar days
75%	8-14 calendar days
50%	15-21 calendar days
25%	22-28 calendar days
0%	29 calendar days

The following tuition refund schedule applies to:

1. A student who is enrolled
 - a. Continuously for at least 11 months who is charged two tuition payments to cover the entire period of enrollment for that academic year; or
 - b. In a term that includes both Pre-Fall and Fall terms in the Term Paid Tuition; or
 - c. In a term that includes both Spring and Summer in the Term Paid Tuition; and
2. Who withdraws from the University; or
3. Is Dismissed from the University for academic reasons*; or
4. Who is granted a Leave of Absence from the University who will be eligible for a refund of tuition according to the following schedule:

Percent of Refund of Annual Paid Tuition	Percent of Number of term calendar days enrolled divided by the total number of calendar days of the academic year enrollment period
100%	Less than 10%
90%	10 - 19 %
80%	20 - 29%
70%	30 - 39%
60%	40 - 49%
50%	50 - 59%
40%	60 - 69%
30%	70 - 79%
20%	80 - 89%
0%	90% or more

Title IV Federal Financial Aid Refund Policy

Please note, the above policy is for tuition refund purposes only. Additionally, students who are federal financial aid recipients (e.g., Federal Direct Subsidized and Unsubsidized Stafford Loan, Perkins Loan, Direct PLUS, Pell Grants, FSEOG Grants, Other Title IV aid) who withdraw, or otherwise cease to be enrolled before the end of a term will be subject to the federal Title IV Refund Policy. Title IV financial aid funds are awarded under the assumption that a student will attend for the entire period in which they are enrolled. When a student withdraws from all courses, stops attending, or enrolls for a less than halftime status, the eligibility for the full amount of Title IV aid may be forfeited. Therefore, a student may be eligible for a tuition refund under the University’s Tuition Refund Policy and may also be subject to the Federal Title IV Refund Policy, which may require the return of applicable federal financial aid funds.

The University is required to recalculate federal financial aid eligibility for students who complete less than 60% of an enrollment period (based on the number of calendar days). Once the term has been 60% completed, the student is considered to have earned 100% of the Title IV funds.

Federal Title IV refund

Financial Aid Office	https://www.jefferson.edu/university/academic-affairs/tju/academic-services/financial_aid/policies/title-iv-refund-policy.html
University Policy	https://www.jefferson.edu/life-at-jefferson/handbooks/policies/undergraduate-policies/tuition-refund-policy.html

Refund Policies & Notices

Federal Financial Aid Policy	The University uses federal regulations to determine the refund of federal financial aid funds to the federal government. A copy of this federal refund calculation is available on the Financial Aid webpage or at the University's Financial Aid Office
Room & Board	Any student who withdraws or changes room and board status after the semester begins is obligated for a full semester's room charge. Changes to the board plan may be made during the first two weeks of the semester with no penalty. After that time, students will be billed in full for the board plan.
Effective Date of Withdraw	The effective date for calculating refunds will be the effective date indicated on the Notification of Student Leave of Absence/Withdrawal form. Failure to complete this withdrawal form results in an unofficial withdrawal. Refunds, transcripts and recommendations will be withheld by the University until this official form is received. It is also the student's responsibility to drop his/her classes through BannerWeb when s/he completes this form.
Student Dismissal	Students dismissed from the University or from the residence halls will receive the following refunds: Tuition based on the tuition refund policy above; Students are obligated for the full semester's room and board charges.
Health Insurance	<p>All matriculated students with any on-campus experience are required to have health insurance and must complete the enrollment/waiver process for each academic year.</p> <p>Exemptions: Students who satisfy one of the following criteria are exempt from the health insurance requirement and no action will be required:</p> <ul style="list-style-type: none"> • If enrolled in a certificate program without a clinical or experiential component. • If enrolled in an online-only program without any on-campus presence or clinical or experiential component.
Withdraw and Leave of Absence Procedures	<p>A student who wants to initiate leave of absence or withdrawal must complete either the Withdrawal form or the Leave of Absence form. These forms are available from the Registrar's Office or online at www.eastfalls.jefferson.edu/Registrar/forms. A student is considered in attendance until one of these forms is completed and returned to the Registrar's Office and the student has been withdrawn from all of his/her classes.</p> <p>Students cannot drop all of their classes on BannerWeb. Students should contact the Registrar's Office to confirm all courses have been withdrawn and that their Withdrawal/Leave of Absence has been processed. Students are responsible for all charges until the date that the Withdrawal/Leave of Absence is process in the Registrar's Office. Students are encouraged to follow up with the Student Accounts and Financial Aid offices to discuss the financial implication</p>

Undergraduate Academic Programs: Goals, Outcomes, Components

Our Curricula Seek

- To advance students' knowledge and abilities.
- To broaden students' ways of thinking.
- To enhance students' awareness of the ideas, practices and values of their own and other cultures.
- To prepare students to synthesize general and specialized knowledge and apply it to a full personal and professional life.

Assessing Student learning

Jefferson is committed to providing excellent and innovative educational opportunities for all students. In order to maintain this quality and assure that students are learning all that they should, the University takes its responsibility for assessment seriously. The assessment of student learning occurs at all levels of the curriculum and is a central aspect of measuring institutional effectiveness. Learning outcomes are stated in the syllabus for each course and program, and student learning is assessed on a continuous basis at the course and program levels to ensure the continuous improvement of the curricula, programs and teaching, in order to increase student attainment. Students may be required to provide faculty with representative examples or copies of their work at various points in their curriculum in order for faculty to evaluate achievement of programmatic learning outcomes. All curricula at Jefferson combine theory and application, and offer integrative and active learning experiences for students. Assessment helps faculty understand how well students are achieving these outcomes, and reflects the commitment to the importance of learning through active engagement. Assessment helps to ensure that the University's programs meet the institutional learning outcomes.

Learning Outcomes

All Jefferson graduates will:

1. Apply broad and deep professional knowledge and skills
2. Synthesize disciplinary and Liberal Arts/Humanities understanding to formulate transdisciplinary approaches
3. Communicate effectively
4. Interpret, respect, and value local, global, and conceptual diversity
5. Act ethically in personal, professional, and civic spheres
6. Integrate theory and practice to guide research, scholarship, and creative endeavors
7. Integrate technology appropriately into professional practice

Undergraduate Degree Components

Concentration

A concentration allows for an in-depth exploration of a focused area within the scope of the student's major discipline. Concentrations are available for study by majors within the appropriate area only. Options for concentrations are specified by the academic program. Similarly, the number of credits required to complete the concentration as well as the sequence and selection of required and elective courses are determined by the program.

Creativity Core

The mission of Jefferson's Creativity Core Curriculum is to cultivate a confident and flexible student mindset through learning opportunities that explore individual and collaborative aptitude and equip students to yield novel and valuable results. The Creativity Core Curriculum has three components incorporated into the undergraduate student curriculum on the East Falls campus:

- **A Creativity Intensive Course**
Every major has a required course specific to the major that is designated as creativity intensive (CI). This course will help students to define creativity and creative practices in the context of a chosen discipline.
- **Creative Making Workshops**
Students will complete two Creative Making Workshops during their time at Jefferson: one in the First Year Seminar, and one in the Creativity Intensive course in their major. Creative Making Workshops are distinct experiences of 3-5 hours in length that provide students with the opportunity, materials, guidance and time to experiment in a risk-free environment in absence of expectations and deadlines. Workshop experiences require no prior topic knowledge, and student participation will result in the development of a unique artifact—whether tangible, digital, performative or conceptual. Topics for these workshops draw inspiration from a wide range of disciplines.
- **The Hallmarks Core Senior Touchstone Course**
The final course in the Hallmarks Core, "Philosophies of the Good Life," highlights the role that creativity plays in meaningful and successful lives. This course challenges students to use strategies like design thinking and reflective writing to imagine possible life and career paths, and to combine the wisdom of diverse cultures and thinkers into a personal vision of "the good life."

Designated Electives

Designated electives allow students to select a course from a pre-approved set of courses. Designated electives enable both freedom of choice with some degree of programmatic guidance.

General Electives

General Electives allow students to tailor their degree program to meet their personal interests and educational goals. Students who participate in an internship may apply these credits toward partial-completion of general elective requirements.

General Education

Study in the liberal arts and sciences encourages students to be integrative thinkers who build connections across disciplinary boundaries and within a wide range of knowledge. Through immersion in complex, real-world issues and studies in the humanities, social sciences, mathematics, and the natural and physical sciences, Jefferson prepares graduates who are well-read, well-spoken, worldly, flexible and adaptable—individuals who never stop learning and making connections in everything they do.

The Hallmarks Program for General Education

Students who attend our East Falls undergraduate programs fulfill the Commonwealth of Pennsylvania's requirement for 40 credits of general education courses by completing the Hallmarks Core curriculum, which is overseen by the College of Humanities and Sciences. Jefferson's customized approach to general education provides the scaffolding for undergraduate learning and organizes the Pennsylvania requirements to match the needs and interests of our pre-professional students, bringing all of the East Falls students together to share a common educational experience and to learn from one another's diverse perspectives.

Professional Studies

Strongly integrated with general education, the course of study in each professional major broadly prepares students to engage with the professional world and inquire about its political, economic and social contexts through the perspective of their practices. Professional studies provide the knowledge and skills to be successful in a profession and to become lifelong learners who are able to adapt to the changing conditions and demands of their careers.

Service Learning

SERVE 101, a one-credit course, provides an opportunity for students to contribute to and learn from Philadelphia, its neighborhoods and people. These experiences allow students to explore their interests and expand their knowledge through hands-on projects with a community outside of the University. Learning Outcomes for Service Learning Students who have completed SERVE-101 will

- Develop a sense of responsibility and commitment toward public service and citizenship through critical reflection and action
- Improve their understanding of societal problems, which affect members of the Philadelphia area community and beyond
- Relate community service experiences and issues to assigned journal questions and readings
- Develop a commitment to full participation in the life of their communities
- Consider civic obligations as a professional to improve quality of life in communities

Specialization

A specialization allows for a thematic grouping of courses within the scope of the student's major discipline. Specializations are available for study by majors within the appropriate area only. Options for specializations are specified by the academic program. The number of credits, sequence and selection of courses required to complete the concentration are determined by the program.

Physical Education

Physical education course options offer a variety of activities, including traditional instruction. PE options are PE-00 Varsity Athlete and/or PE-02 Recreation & Wellness.

PE 00: Varsity Athlete- Students who have participated on one of the University's 16 intercollegiate sports teams for one season will satisfy the requirement for this course and receive .05 credit. Students must register for this course in the semester they expect to

receive the course credit. Students must register for two separate semesters of PE-00 and complete an intercollegiate season in each semester to receive full physical education credit. Note: There will be no retroactive credit or arrangement for students other than those in his/her graduating (last) semester. For any concerns contact the Associate Director of Athletics

PE 02: Recreation and Wellness -Students participate in recreation and wellness activities offered through the Department of Athletics. Opportunities include participation in intramural sports, recreational courses in team and individual sports, and wellness courses such as yoga, stress management and tailored exercise programs.

- All activities must be validated by a representative from the Department of Athletics to earn credit.
- Students must register for the course at the beginning of the semester to receive course credit.
- All Students who register for two separate semesters of PE-02 and would receive 0.5 credits per 15 hours of pre-approved classes/events/participation for each semester
- If a student is currently enrolled in the graduating semester of his/her senior year and needs a PE credit to make their total required credits for graduation, s/he must directly speak and have approval from the Director of Fitness and Wellness to move forward with any exceptions.
- If a student is in the graduating semester of his/her senior year and wants to take a 0.5 PE credit to make their total required credits for graduation, s/he will be expected to enroll for the class in his/her final semester.

Honors Institute

The Philadelphia University Honors Institute at Thomas Jefferson University provides substantive curricular and co-curricular experiences in general education, as well as professional and multi-disciplinary offerings, that enable academically high-achieving students to discover and pursue academic and pre-professional interests, as well as develop leadership skills within an intellectually dynamic and socially vibrant community.

The Honors Goals/Core values promote the development of:

- Curiosity to pursue your own QUESTIONS,
- Empathy to ADAPT with respect to diverse perspectives,
- Confidence to ACT and apply knowledge in real-world conditions, and
- Courage to CONTRIBUTE ideas that make a difference.

Students in the Honors Institute are required to complete designated Honors courses in the Hallmarks Core and in the major, as well as co-curricular experiences fulfilling the Honors Cornerstones: Contribute, Act, Adapt, Question.

Through the Jefferson admission process, qualified students are selected to join the Honors Institute in one of three curricula based on their degree program:

- Distinguished Honors Scholar
- The requirements for this designation include:
 - 5 honors designated courses in the Hallmarks Core: FYS100H, WRIT201H, ETHC201H, GCIS300H, PHIL499H
 - 4 honors specified courses in the major
<https://www.eastfalls.jefferson.edu/honorsprogram/>
 - Documented co-curricular activity in each of the 4 Cornerstones (20 hours per Cornerstone)
 - A student completing all of the above requirements and maintaining a minimum cumulative GPA of 3.25 will graduate with the Distinguished Honors Scholar designation
- Honors Scholar
 - This designation is available to students in 2+ programs such as Medical Imaging & Radiation Science and Medical Lab Sciences & Biotechnology
 - Curricular requirements include:
 - 3 designated courses in Hallmarks Core: FYS 100H, WRIT 201H, ETHC 201
 - 2 honors specified courses in the major: HSCI 231H, HSCI 225 with Honors Common Assignment
 - Documented co-curricular activity in each of the 4 Cornerstones (20 hours per Cornerstone)
 - A student completing all of the above requirements and maintaining a minimum cumulative GPA of 3.25 will graduate with the Honors Scholar designation
- Honors Associate
 - This designation is available to students in the 2+ Pre-Pharmacy program. The curricular requirements are:
 - 3 courses FYS100H, WRIT 201H, ETHC 201H
 - Documented co-curricular activity in 2 co-curricular Cornerstones (20 hours per Cornerstone)

- A student completing all of the above requirements and maintaining a minimum cumulative GPA of 3.25 will graduate with the Honors Associate designation

The Honors Institute also offers an internal admission process for qualified students currently in their first year at Jefferson who are interested in joining the Honors Institute. In the spring semester of their first year, first-year students (excluding transfer students) who have achieved a first-semester GPA of at least 3.5 will be eligible to apply to the Honors Institute. Internal admission is not available to transfer students or students in 2+2 programs. Students in 3+2 or other accelerated programs are advised to meet with an Honors Institute advisor to review the feasibility of completing the honors requirements prior to submittal of an application. Students who are internally admitted are required to follow the Honors Institute curriculum for internal admits. (See <https://www.eastfalls.jefferson.edu/honorsprogram/>) For more information, contact the director at Honors.Institute@Jefferson.edu .

Honors course offerings are listed each semester in the University's course schedule. Enrolled students must take the course for a letter grade. The pass/fail or CR/NC option is not available for Honors courses.

Enrollment in Honors courses is designated on the University transcript and remains part of the student's permanent academic record. Honors students' academic records are reviewed annually to assure that participants are making satisfactory academic progress in the Honors curriculum and maintaining a cumulative GPA of 3.25 or higher in order to remain in the Honors Institute.

Students successfully completing all Honors requirements with a GPA of 3.25 or higher receive special recognition at graduation, as well as the Honors Stole and Certificate. Distinguished Honors Scholars will also receive the Honors Institute Medallion. This minimum GPA applies to all current and incoming students.

For more information, see the Philadelphia University Honors Institute website, <https://www.eastfalls.jefferson.edu/honorsprogram/>

Internship

An internship is a form of experiential learning that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional setting. Internships provide students with the opportunity to gain valuable applied experience and make connections in professional fields they are considering for career paths. All academic internships must meet the NACE criteria for an experience to be considered an internship (visit www.eastfalls.jefferson.edu/careerservices/Internships for details.)

Academic internships are offered during the fall, spring and 12-week summer term, and are taken for credit as an elective with a course syllabus focused on professional skill-building and written assignments. The undergraduate internship course, INTRN 493, exists in 0.5, 3 or 6 credit options. Students may only enroll in an internship course during the semester of the internship experience; credit is not issued retroactively or for future experiences. Students may earn up to 6 credits of internships (fulfilling general elective credit in their curriculum).

While the primary emphasis of the course is on the internship work experience, course assignments are incorporated to prompt reflection on the internship. This reflection is an integral component of experiential learning and students' overall career and professional development. The Career Services Center and designated Faculty Internship Adviser (FIA) from the student's major provide support and guidance during the semester of participation. Career Services staff is also available to assist students with internship search strategy prior to the internship.

At the conclusion of the internship semester, students are evaluated by their employer and FIA, receiving a grade derived from successful performance as determined by the employer, the quality of academic assignments submitted to faculty, and completion of minimum required hours. All internships, regardless of credit registration, require a minimum of 12 weeks in length. The 0.5- and 3-credit internship courses require a minimum of 144 hours per semester on site, and the 6-credit internship course requires a minimum of 288 hours per semester on site. All required hours and coursework must be completed within the semester dates for which the student is enrolled in the internship course.

Internship course registration may only occur once an offer has been received and accepted from the employer. Several steps are required in order to register, and the Registrar's Office ultimately enrolls each student in the internship course once all required paperwork is completed and submitted. The deadline to register for academic internships is the last day to add class for the semester of intended participation as established each semester by the Registrar's Office. (Refer to the academic calendar for specific dates.) Students are strongly encouraged to apply early and to contact Career Services for assistance, which provides the best success in finding an appropriate experience in time to meet registration deadlines. To learn more about the registration process, visit www.eastfalls.jefferson.edu/careerservices/Internships/InternshipsForCredit

Participation Requirements include:

- Completion of 60 credits by the start of the internship experience (90 credits for Architecture majors)
- 2.5 cumulative GPA in the semester preceding the internship

- **Transfer Students** must complete at least 15 credits earned at Jefferson prior to participation
- **International Students** must be eligible for Curricular Practical Training (CPT)

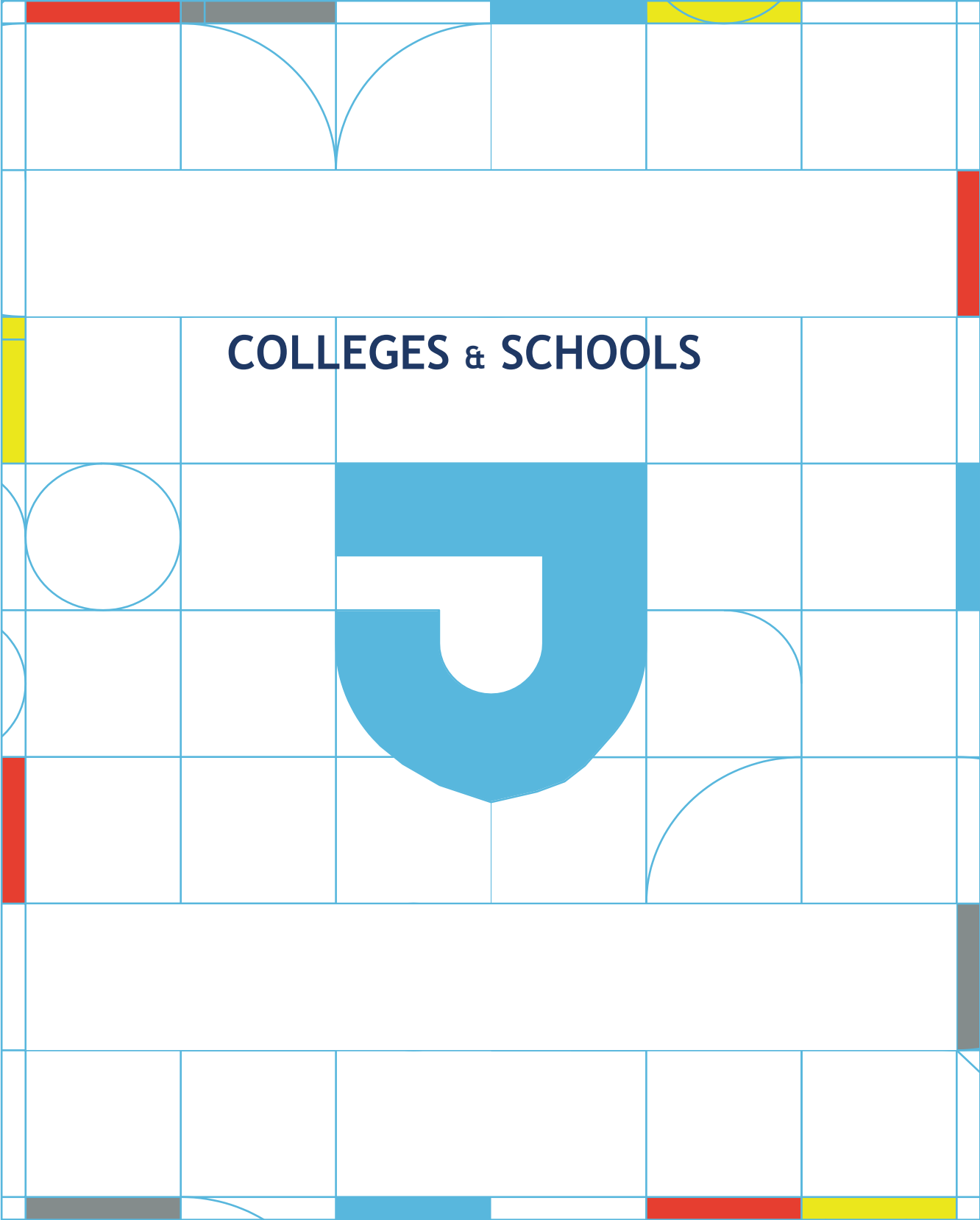
Minors

A minor is a set of courses that provides enhanced study in a particular subject area. A student may choose a minor with the assistance of an academic advisor upon completion of 30 semester hours. Options for minors are determined by the academic program and consist of a minimum of 12 credits in the subject area.

Undergraduate Minors		
Accounting	Fashion Merchandising and Management	Multimedia and Visualization
Animation and Digital Media	Finance	Pre-MBA (for BUSN majors)
Applied Business Analytics	Gender & Health Studies	Pre-MBA (for Non-BUSN majors)
Architectural History & Theory	Genetics	Psychology
Business	Global Studies	Public Health
Business of Healthcare	Graphic Design (for non-design students)	Spanish
Communication	Graphic Design (for Animation students)	Sports Management
Custom	Graphic Design for Design Students	Textile Design
Custom Specialization	International Business	Textile Product Science
Diversity Studies	Law and Society	Web Design & Development (non-VISCM students)
Entrepreneurship	Management	Web Design & Development (VISCM students)
Environmental Studies & Sustainability	Marketing	
Exercise Science	Medical Spanish	

Guidelines for minors:

- A student may not combine a major and minor in the same or similar functional area (e.g., Finance major and Finance minor; Management major and Human Resource Management minor).
- A student may not use the same course for credit in both the major and minor areas. Any substitute elective from within the discipline must be approved. Please see appropriate form available at University Registrar's website: www.eastfalls.jefferson.edu/registrar.
- A student may only use the same course for credit in the general elective and minor areas if his/her major does **not** require a minor. If a student's major requires a minor, that student cannot use the same course for the general elective and minor areas.
- Certain courses in the minor may have prerequisite courses that need to be completed.
- Courses taken to fulfill requirements in the Hallmarks Core cannot also be applied towards the minor. To have a Hallmarks Core course count towards the minor, students must take an additional course in that requirement category to fulfill the Hallmarks Core requirement (for example, students would need to take a second course in the American Diversity [ADIV] category if they wanted ADIV 202 to count towards the minor).





**COLLEGE OF ARCHITECTURE
& THE BUILT ENVIRONMENT**

Dean: Barbara Klinkhammer, RA (DEU), Dipl.-Ing
| 215- 951-2896 | Jefferson.edu/CABE

About Us

The College of Architecture & the Built Environment is committed to educating the next generation of design and construction professionals to create an equitable and sustainable future. Our curricula emphasize specialized knowledge unique to each discipline, paired with interdisciplinary collaboration that prepare students for practice in the global market. With its thriving design and construction industries, Philadelphia serves as our urban lab, furnishing students with professional experiences in a vibrant metropolitan area. Our college partners with major corporations, local communities and nonprofit organizations, supplying a broad range of real-world projects and networking opportunities. Our dynamic approach to education and emphasis on social equity, sustainability and design excellence equip our graduates with a competitive edge, poised to become innovative leaders in sustainable practice.

History

The College of Architecture & the Built Environment evolved from a single interior design course in 1980 to its current status with enrollment of over 800 Architecture, Interior Design, Landscape Architecture, Historic Preservation, Construction Management, Sustainable Design, Geodesign, Real Estate Development, Urban Design and Interior Architecture majors in 5 undergraduate programs, 9 graduate programs, 2 online graduate programs and a PhD program. In 1982 the Bachelor of Science in Interior Design officially began, and in 1991 the professional Bachelor of Architecture program was launched with eighty first-year students. The programs continued to grow and in 2004 the School of Architecture and Design was sub-divided, forming the School of Architecture and the School of Design and Media.

The Bachelor of Landscape Architecture joined the portfolio of design-oriented programs in the School of Architecture in 2005, while the long-standing, pre-professional Bachelor of Science Architectural Studies afforded study of related disciplines in concentrations such as Architectural Design Technology and Historic Preservation. Construction Management is the most recent undergraduate addition to the School of Architecture, launching in fall 2011.

In 2007 the School of Architecture established its first graduate program in Sustainable Design, followed by graduate programs in Construction Management (2009), Interior Architecture (2011), Geodesign (2013), Architecture (2014), Real Estate Development (2017) and Historic Preservation (2019), Urban Design (2021) and a doctoral program in Architecture and Design Research (2021). These programs are housed in the SEED Center, a LEED-rated building converted from an existing athletic gymnasium.

As part of a university restructuring in 2011, the School of Architecture became the College of Architecture & the Built Environment and celebrated the 35th anniversary of the BS Interior Design program and the 25th anniversary of the Bachelor of Architecture program in 2016.

Accreditations

National Architectural Accrediting Board (NAAB) Architecture (BArch); Architecture (MArch)	www.naab.org
Accreditation Board for Engineering and Technology (ABET) Construction Management (BS)	www.abet.org
Council for Interior Design Accreditation (CIDA) Interior Design (BS)	www.accredit-id.org
The American Society of Landscape Architects	www.asla.org

Landscape Architecture (BS)

Academic Programs

<u>Undergraduate</u>	Degree
Architectural Studies	BS
Architecture	BArch
Construction Management	BS
Interior Design	BS
Landscape Architecture	BLA
<u>Graduate</u>	
Architecture	MArch
Architecture	MS
Architecture and Design Research	MS
Architecture and Design Research	PhD
Construction Management	MS
Geospatial Technology for Geodesign	MS
Historic Preservation	MS
Interior Architecture	MS
Real Estate Development	MS
Sustainable Design	MS
Urban Design- Future Cities (MUD)	MS
<u>Certificate</u>	
Construction Management	Graduate Certificate
Design of Living Buildings	Graduate Certificate
Design of Resilient Communities	Graduate Certificate
Geographic Information Systems	Graduate Certificate
Geospatial Technology for Geodesign	Graduate Certificate
Green Building Operations	Graduate Certificate
Historic Preservation	Graduate Certificate
Real Estate Development	Graduate Certificate
Smart Cities & Urban Analytics	Graduate Certificate
Sustainable Leadership	Graduate Certificate
<u>Concentration</u>	
Construction Management	Concentration
Geographic Information System (GIS)	Concentration
Historic Preservation/Urban Revitalization	Concentration
Interior Architecture	Concentration
Real Estate Development	Concentration
Sustainable Design	Concentration
Sustainable Leadership	Concentration
<u>Accelerated/Dual Degree</u>	
Bachelor of Architecture & MS Historic Preservation	5+1.5
Bachelor of Architecture & MS Interior Architecture	5+1.5
Bachelor of Architecture & MS Real Estate	5+1
BS Architectural Studies & MS Historic Preservation	4+1
BS Architectural Studies & MS Real Estate Development	5+1
BS Interior Design & MS Architecture	4+2
BS Interior Design & MS Sustainable Design	4+1
BLA Landscape Architecture & MS Geospatial Technology for Geodesign	4+1
MS Construction Mgt. & MS Real Estate Development	1+1
MS Construction Mgt. & MS Sustainable Design	1+1

Architectural Studies

Bachelor of Science (BS)

Program Director	John Dwyer, AIA, NCARB
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/architectural-studies.html

Program Description

The four-year Bachelor of Science in Architectural Studies (BS) program allows students to focus on a field allied to the profession of architecture, customize their education and earn a pre-professional degree. After completing a foundation sequence of studio and technical courses in the first two years, students will either a) choose to specialize in one of three tracks-Real Estate Development, Historic Preservation, or XR Game Environments- or b) explore various architecture-related disciplines from a broad array of available minors (selecting two). Students may also choose to apply to the Bachelor of Architecture program at the end of the third semester.

Students will not only gain valuable skills and real-world experiences, but will also pave the way for a professional credential in one of our master's programs by taking graduate courses while still an undergraduate. Opportunities exist for collaborative projects, fieldwork, study abroad, professional internships and elective offerings.

Learning Goals/Outcomes

- Demonstrate expertise & professional level competency in technical & graphic methods
- Experience collaboration solving problems relative to contemporary issues relative to the built environment.
- Apply knowledge of the history & theory of historic and modern periods, styles, and places in the context of architectural fields
- Demonstrate knowledge of sustainability in the context of a range of architecture related fields
- Demonstrate and apply discipline specific knowledge of content areas that are studied as part of student selected tracks or minors
- Choose a track or two minors that allow students to gain professional credentials through the accelerated dual degree options offered by the College of Architecture & the Built Environment

Curriculum: 4 years, 125-128 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	Minor 1	Course for Minor 1/or Track	3
WRIT 101	Written Communication	3-4	Minor 1	Course for Minor 1/or Track	3
AMST 114	Topics in American Studies	3	AHST 305	History 3: Early Modern	3
SCI 109 or SCI 110	Sustainability & Eco-innovation or Landscape Ecology	3	Minor 2	Course for Minor 2/ or Track	3
PHYC 101	Physics	3	Minor 2	Course for Minor 2/ or Track	3
MATH 103	Quantitative Reasoning	3	AHST 306	History 4: Mod/Contemporary	3
MATH 1xx	Quantitative Reasoning II or General Elective	3-4	ADIV 1XX	American Diversity	3
ARFD 101	Design 1: Interdisciplinary Foundation	4	GCIT 2XX	Global Citizenship or Global Language	3
ARFD 103	Visualization 1: Drawing	3	CGIS 300	Contemporary Global Issues	3
ARCH 102	Design 2: Arch. Foundation Studies	4		General Elective	6
ARFD 108	Vis 2: Technics & Graphic Rep	3			
	<u>Year 2</u>			<u>Year 4</u>	
ARCH 313	Design 3: Arch. Foundation Studies	4	Minor 1	Course for Minor 1/or Track	3
ARCH 208	Visualization 3: Digital Modeling	3	Minor 1	Course for Minor 1/or Track	3
ARCH 210	Tech 1: Materials & Methods	3	Minor 2	Course for Minor 2/ or Track	3
	General Elective (Design 4: recommended)	3-4	Minor 2	Course for Minor 2/or Track	3
ARCH 212	Tech 2: Passive Sys. Build Environ.	3	ARST 4XX	Architectural Studies Capstone	3
AHST 206	History 2: Renaissance/Baroque	3	ISEM 3XX	Integrative Seminar	3
ARCH 303	Structures 1	3	GDIV 2XX	Global Diversity or Global Language	3
ETHC 1XX	Ethics	3	PHIL 499	Philosophies of the Good Life	3
WRIT 201/2	Writing Sem: Multimedia Comm.	3-4		General Elective	6

Architecture

Bachelor of Architecture (BArch)

Program Director	John Dwyer, AIA, NCARB
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/architecture.html

Program Description

- **Accreditation:** NAAB
- **STEM** designated program

The Bachelor of Architecture is a five-year professional degree program accredited by the National Architectural Accrediting Board (NAAB). Students receive an industry-centered, liberal arts-infused education, blending academic scholarship with hands-on, professional learning. The program encourages interdisciplinary collaboration, and most of our faculty members are practicing industry professionals. As architectural practices evolve rapidly to meet new environmental, economic and societal challenges, our curriculum's unique focus on market-driven innovation and sustainability gives students a competitive advantage in the industry. The program builds on an interdisciplinary foundation of design and visualization studies and grows into more advanced courses that support design projects of increasing complexity and scope. In the fifth year, students choose from a range of research design studios that explore critical issues such as sustainable design, future smart cities, informal settlements and responsive architecture.

Learning Goals/Outcomes

- Integrate knowledge of liberal arts and sciences with the design of the built environment.
- Appreciate the value of collaboration, including multidisciplinary collaboration, in solving design problems.
- Synthesize theory, function, technology and aesthetics in an integrated and creative way.
- Understand and respect the people, places and contexts that bear upon the built environment around the world.
- Examine the characteristics of professionalism in architectural practice.
- Practice design as integrated process that respects existing contexts and/or inevitable transformations in the field.

Curriculum: 5 year, 164-166 credits

Year 1			Year 3		
FYS 100	Pathways Seminar	1	ARCH 311	Design 5 for Architecture	6
WRIT 101	Written Communication	3	ARCH 313	Tech 3: Dynamic Environ System	3
ARFD 103	Visualization I: I Drawing 1	3	ARCH 304	Structures 2	3
AMST 114	Debating U.S. Issues	3	AHST 305	Early Mod Arch & Interiors III	3
SCI 109 or SCI 110	Systems Thinking & Sust. or Landscape Ecology	3	ARCH 312	Design 6 for Architecture	6
PHYC 101	General Physics	3	ARCH 326	Vis 2: Advanced Modeling	3
MATH 103	Quantitative Reasoning	3	AHST 306	Mod/Contemp. Arch & Interior	3
MATH 1XX	Quantitative Reasoning II or General Elective	3-4	ARCH 314	Tech 4: Adv. Build Analysis	3
ARFD 101	Dsn 1: Interdisciplinary Found	4	ADIV 1XX	American Diversity	3
ARFD 103	Visualization I: Drawing	3	GCIT 2XX	Global Citizenship	3
ARCH 102	Design 2: Arch Found Studies	4		General Electives	6
	Visualization Designated Ele	3			
Year 2			Year 4		
ARCH 213	Design 3: Arch Foundations	4		Nexus DSN Exp. (DSN 7 Options)	6
ARDS 210	Tech I: Material & Methods	3	ARCH 412	Design 8 for Architecture	6
AHST 205	History I: Built Environment	3	ARCH 416	Tech 5: Document & Detailing	3
ARDS 209	Vis 3: Digital Modeling	3	ARCH 4XX	Design Theory Seminar	3
ARCH 214	Design 4: Arch Foundation	4	CGIS 300	Contemporary Global Issues	3
ARCH 212	Technology 2: Passive Systems Build Enclosure	3	ISEM 3XX	Integrative Seminar	3
AHST 206	History 2: Ren/Baroque	3	GDIV 1XX	Global Diversity (or language)	3
ARCH 303	Structures I	3		General Electives	6
ETHCS 2XX	Ethics	3			
WRIT 201/2	Writing Sem: Multimedia Communication	3-4	Year 5		
			ARCH 507	Design 9 for Architecture	6
			ARCH 503	Professional Management	3
			ARCH 508	Design 10 for Architecture	6
			PHIL 499	Philosophies of the Good Life	3
				General Electives	12

Construction Management

Bachelor of Science (BS)

Program Director
Campus
Website

Gulbin Ozcan-Deniz, PhD, LEED AP BD+C
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/construction-management.html.html>

Program Description

- **Accreditation:** ABET
- **STEM** designated program

The Bachelor of Science in Construction Management is a STEM (Science, Technology, Engineering, and Math) program with the mission to provide students with a broad practice-oriented understanding of construction technology, business, architecture, and engineering, and with specific emphasis on the management of the construction process from project inception to closeout. The program is designed to equip students and graduates with the knowledge and the technical, administrative, and communication skills, necessary to succeed in the construction industry.

Construction managers play an integral role in the development, construction and maintenance of commercial, residential, institutional and industrial buildings, as well as civil and transportation infrastructure. Degree programs in construction management have become the preferred higher education option for students interested in leadership positions within this multifaceted and competitive field.

The curriculum combines traditional business management and construction-specific coursework with a comprehensive liberal arts and sciences program of studies to acquaint students with the full business model of construction management. Graduates of the Construction Management program will have the knowledge, as well as the technical, administrative and communication skills, necessary to succeed in all sectors of the construction industry.

The teaching faculty brings a wide variety of rich industry experience to the program. Many are current practitioners who bring their daily professional challenges to the classroom, enriching the student experience.

The proximity to Philadelphia's active urban economy presents opportunity for a wide variety of jobsite experiences and exposure to innovative, state-of-the-art practices. Housed in the University's highly regarded College of Architecture and the Built Environment, the program allows students to learn collaboratively with students in the Architecture, Interior Design, Architectural Studies, Geodesign and Landscape Architecture programs.

Graduates will have the skills necessary to manage the construction process from project conception to closeout with respect to scope, schedule, budget, quality, risk and safety, and the environment. The Construction Management Core Curriculum stresses the following topics:

- Construction Project Management from pre-design through commissioning
- Project life-cycle and sustainability
- Health and safety, accident prevention, and regulatory compliance
- Materials, labor, and methods of construction
- Project Delivery methods
- Finance and accounting principles
- Cost management including plan reading, quantity takeoffs and estimating
- Planning and scheduling
- Law, contract document administration and dispute prevention and resolution
- Leadership and managing people
- Business and communication skills

The program produces graduates familiar with industry-specific management practices who have developed an ethical, global and sustainable problem-solving approach. Thus, our graduates will be prepared to meet the challenges of a variety of career options which include: construction project management, construction field management, construction project estimating, scheduling, project supply chain management, real estate management, specialty contract services management, capital projects management, installation management, facilities management, and construction material and equipment sales.

Upper-level courses offer students the opportunity to collaborate and innovate across these disciplines, incorporating the business management skills as well as the liberal arts core to explore innovative approaches to hands-on project management challenges.

Program Educational Objectives

- Collaborate across disciplines of construction project stakeholders and appreciate the benefit of that collaboration.
- Communicate effectively with a variety of audiences, such as owners, design professionals and code officials, using appropriate media
- Find and evaluate relevant cost, schedule, quality and safety data based on sound analysis.
- Create sound and innovative approaches to challenges faced by construction project teams
- Identify and evaluate the ethical choices faced by construction management professionals and formulate value-based responses.

Accreditation

The Bachelor of Science in Construction Management program is accredited by the Applied and Natural Science Accreditation Commission (ANSAC) of ABET. Details can be found at www.abet.org. The ABET-accredited Construction Management program prepares students for entry-level construction manager/project manager/project engineer jobs, for advanced study, and to apply for memberships and scholarships in professional Construction Management organizations.

Curriculum: 4 years, 122-124 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Writing I: Written Communication	3	CGIS 300	Contemporary Global Issues	3
AMST 114	Topics in American Studies	3	GCIT 2XX or LANG 201	Global Citizenship or World Language	
SCI 109	Systems Thinking and Sustainability	3	ISEM-3XX	Integrative Seminar	3
PHYS 101	General Physics/Lab	4	CMGT 300	Construction Acct. & Cost Control	3
MATH 1XX	Quantitative Reasoning I	3	CMGT 302	Construction Contract Admin	3
MATH 1XX	Quant Reasoning II or Elective	3	CMGT 304	Construction Safety & Risk	3
CMGT 101	Construction Graphics	3	CMGT 306	Construction Site Operations	3
CMGT 102	Intro to Construction Industry	3	CMGT 310	Construction Surveying	3
CMGT 104	Intro to Estimating & Scheduling	3	ECON 205 or ECON 206	Economics (Macro or Micro)	3
ACCT 101	Financial Accounting	3	BLAW 301	Business Law	3
<u>Year 2</u>			<u>Year 4</u>		
ETHC 1XX	Ethics	3	PHIL 499	Philosophies of the Good Life	3
WRIT 201	Multimedia Communication	3	CMGT 450	Construction Project Mgt. Seminar	3
GDIV 1XX or LANG 101	Global Diversity or Language	3	CMGT 499	Construction Mgt. Capstone	3
CMGT 200	Planning and Scheduling	3		Construct Mgt. Ele. 1 (designated)	
CMGT 202	Construction Estimating & Budget	3		Construct Mgt. Ele. 2 (designated)	
CMGT 204	Behavior of Materials	3	FIN 301	Financial Management	3
CMGT 206	Building Systems	3		Business Electives	6
CMGT 208	Materials & Methods of Construct	3		General Electives	3
ABA 201	Applied Business Analytics I	3			

Interior Design

Bachelor of Science (BS)

Program Director	Lauren K. Baumbach, RA, AIA, IIDA, NCIDQ, IDEC
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/interior-design.html

Program Description

- **Accreditation: CIDA**

The Interior Design program is a four-year undergraduate degree program that leads to a Bachelor of Science in Interior Design. The program provides an extensive education to meet the requirements of this exciting and creative profession including an understanding of the aesthetic, technological, environmental, cultural, socio-economic, and global issues pertaining to the built environment.

The emphasis of the program is to provide a holistic and comprehensive education in interior design with a balance among the theoretical, conceptual, creative, and technical aspects of the discipline. This education is delivered through the core interior design curriculum, which is informed and enriched by the liberal arts and science curriculum and general electives.

At the program's center are design studios in which students explore the creative process through a series of varied and progressively more complex projects, covering the range of practice from residential to commercial and institutional design. The functional knowledge necessary for design is introduced through formally structured courses focusing on such varied topics as design innovation, space planning, human comfort and well-being, sustainable design, computer visualization, construction technology, color, lighting, furniture, materials, and textiles. Students also study the history and theory of architectural interiors from pre-history to contemporary works and understand and analyze their cultural relevance. The interior design studios foster an interdisciplinary environment centered on creative experimentation, where material from other courses is synthesized through the act of design. In the fourth year, the Capstone Experience is the culmination of all previous studies when a student integrates the knowledge and skills from previous courses into an individually driven research topic and design experience.

The Interior Design program also offers valuable real-world opportunities including internships in design firms, memberships in professional organizations, and design-based community service for non-profit organizations. Students can study abroad in the third year in the cities of Copenhagen, Rome, or an international exchange program. There are multiple interdisciplinary collaborative experiences integrated into the courses and co-curricular activities. A multidisciplinary faculty, a close-knit campus community and prime location in Philadelphia provide a stimulating setting for the informed and inventive academic development of every student. Students may follow secondary specializations by choosing a minor or an accelerated pathway into a graduate program in areas such as sustainable design, construction management, historic preservation, real estate development, and photography.

Mission

In preparing graduates for successful careers in an evolving global marketplace, the Interior Design program's mission is to prepare students to be independent thinkers, innovative problem-solvers, collaborators, and leaders with high standards of professionalism, integrity and excellence in design. With an emphasis on creativity, balanced with the knowledge and skills required for meaningful contributions to professional design practice, the program strives to instill in students an awareness and understanding of the global, cultural, social, aesthetic, technological, environmental, and ethical responsibilities involved in the design of interior environments.

The program is grounded in the belief that the interior designer mediates between human experience and the built environment, and that our graduates should enter the global marketplace as articulate, creative, inspired, socially aware and technically competent design professionals.

Learning Goals/Outcomes

- Examine global and local issues and the implications of a diverse cultural and socio-economic society and the impact of these on the design of the built environment.
- Evaluate the diverse values, behavioral norms, physical, psychological and spatial needs of different demographic/user groups in the context of designing interior environments.
- Design interior spaces using an ecologically sensitive approach that supports environmental sustainability and human well-being.
- Research, problem solve, and apply principles of design in order to generate innovative and creative solutions in the design of interior environments.
- Apply historical and theoretical knowledge of interiors, architecture, art and the decorative arts to the design and analysis of interior environments.
- Engage in multimodal communication methods and work collaboratively with a multi-disciplinary approach.
- Comply with ethical and professional standards of practice and the laws, codes, standards and guidelines that impact the health, safety and welfare of building occupants.
- Proficiently select and apply color, furniture, fixtures, equipment, finish materials and lighting in the design of interior spaces.
- Demonstrate knowledge of interior construction and building systems in order to coordinate the design of a complete interior and work productively with co-professionals in the making of the built environment.

Accreditation

Thomas Jefferson University's Interior Design program leading to the Bachelor of Science in Interior Design is accredited by the Council for Interior Design Accreditation (CIDA). To learn more about CIDA visit: www.accredit-id.org . The CIDA-accredited program prepares students for entry-level interior design practice, for advanced study, and to apply for membership in professional interior design organizations.

The BS in Interior Design granted by Thomas Jefferson University meets the educational requirement for eligibility to sit for the National Council for Interior Design Qualification Examination (NCIDQ Exam). To learn more about NCIDQ Exam eligibility and NCIDQ Certification visit: <https://www.cidq.org/eligibility-requirements>

Curriculum: 4 years, 137.5-139.5 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	CGIS 300	Contemp. Global Issues	3
WRIT 101	Written Communication	3	ISEM 360	Environments for Well-Being	3
AMST 114	Topics American Studies	3	GCIT 2XX	Global Citizenship/World Lang	3
SCI 106 or SCI 109	Biology for Design or Systems Thinking & Sustainability	3	INTD 304	Integrated Community Service	0.5
PHYC 101	General Physics	3	INTD 301	Design 5 for Interior Design	6
MATH 1XX	Quantitative Reasoning I		INTD 305	Interior Building Systems	3
WRIT 201	Multimedia Communication	3	AHST 305	Hist 3: Early Modern 1750-1940	3
ARFD 101	Design 1: Interdisciplinary Found. Studies	4	INTD 302	Design 6 for Interior Design	6
ARFD 103	Vis 1: Drawing	2	INTD 310	Textiles & Materials Inter & Arch	6
INTD 102	Design 2: Interior Design	4	INTD 309	Vis 4: Construction Documentation	3
INTD 109	Vis 2: Technics & Graphic Representation	3	INTD 307	History 4: Modern to Contemporary	3
<u>Year 2</u>			<u>Year 4</u>		
ADIV 1XX	American Diversity	3	ETHC 2XX	Ethics	3
GDIV 1xx	Global Diversity	3	PHIL 499	Phil of Good Life	3
INTD 201	Design 3 for Interior Design	4	INTD 401	Design 7 for Interior Design	6
INTD 209	Vis 3: Digital Modeling	3	INTD 487	Capstone Research & Program	3
AHST 205	History 1: Built Environment, Ancient/Medieval	3	INTD 488	Capstone Project for INTD	6
ARDS 210	Technology 1: Materials & Methods	3	INTD 412	Prof. Practice & Contract Design	2
INTD 202	Design 4 for Interior Design	4		General Electives	12
INTD 206	Interior Building Technology	3			
AHST 206	History 2: Renaissance/ Baroque	3			
	General Elective	3			

Landscape Architecture

Bachelor of Landscape Architecture (BLA)

Program Director	Kimberlee Douglas, RLA, ASLA, LEED G.A.
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/landscape-architecture.html

Program Description

- **Accreditation: LAAB**

The Landscape Architecture program provides students with educational opportunities to explore sustainable solutions to multifaceted ecological problems. Students learn to innovate, collaborate, and create outdoor environments that reconnect society with nature, encourage healthy lifestyles and tackle climate change and natural disasters Using “hands on” experiential learning, courses increase students’ design creativity, knowledge and skills to become engaged citizens and professionals capable of solving the today’s pressing problems. Students learn to work independently and in teams and to collaborate across disciplines on projects with community members, governmental agencies and environmental groups.

Learning Goals/Outcomes

- Apply knowledge of liberal arts & science to design solutions
- Collaborate in intra- and interdisciplinary teams, particularly through our experiential learning-based design studios
- Exhibit critical understanding of history/theory as applied to the design process
- Analyze the relationship between the design of places and their socio-cultural, environmental and economic contexts through service learning projects.
- Relate government regulations, professional practice and ethical responsibilities to the design process
- Analyze, interpret, and apply cutting-edge research in all stages of the design process

Curriculum: 4 years, 137-139 credits

Year 1			Year 3		
FYS 100	Pathways Seminar	1	ISEM 360	Human Behavior & Physical Environ	3
WRIT 101	Written Communication	3	CGIS 300	Contemporary Global Issues	3
AMST 114	Topics in American Studies	3	LARC 304	L A Design 5: Community Design	6
BIOL 101	Topics in Biology (Botany)	3	LARC 305	Plant Community Ecology	3
SCI 110	Landscape Ecology	3	LARC 206	Landscape Architecture History I	3
MATH 1XX	Quantitative Reasoning	3-4	LARC 409	LA Tech: Materials & Methods	3
WRIT 201	Multimedia Communication	3	LARC 400	L A Design 6: Urban Restoration Mgt.	3
ARFD 101	Foundation Design 1	4	LARC 412	Urban Hydrology	3
LARC 102	L A Foundation Design 2	4	LARC 212	Local Flora	3
ARFD 103	Visualization 1: Drawing	3			
ARFD 108	Vis 2: Technics and Graphic Rep	3			
Year 2			Year 4		
ETHC 1XX	Ethics	3	PHIL 499	Phil of Good Life	3
GDIV 2XX	Global Diversity or Lang 101	3	LARC 401	L A Design 7: Urban Design II	6
ADIV 1XX	American Diversity	3	LARC 516	L A Tech: Construction Documents	4
GCIT 2XX	Global Citizenship or Lang 201	3	LARC 307	Landscape Architecture History II	3
LARC 201	L A Design 3: Site Design	4	LARC 312	Sustainable Planting Design	3
LARC 207	L A Tech Grading	3	LARC 506	Prof Practice for L A	3
ARDS 208	Visualization 3: Digital Modeling	3	LARC 599	Landscape Arch Design 8: Capstone	6
LARC 300	L A .4: Urban Design I	6		General Electives	9
LARC 303	L A Tech Advanced Grading	3			
LARCH 310	GIS for Landscape Analysis	3			

Architecture

Master of Architecture (MArch)

Program Director
Campus
Website

John Dwyer, AIA, NCARB
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/architecture-march.html>

Program Description

The Master of Architecture Program is a first-professional graduate degree designed to prepare students for architectural practice and licensure through the development of critical and creative thinking, technological skills and experience, sustainability focused design knowledge of project management.

Through an innovative approach to interdisciplinary collaboration, students within the MArch program have the opportunity to take four general elective courses in a wide range of fields, gaining the experience and expertise needed to have high-impact careers. With this flexibility, each student has a highly customized course of study throughout the degree program.

Balancing current sustainable design practices along with architectural history and theory, the program culminates with a n individual final Master's project. Students may choose one of three unique pathways for their final project: the capstone, the co-op or the thesis.

The curriculum can be completed in two to three academic years. Advanced standing is determined by the program director and is based on previous education and experience.

Learning Goals/Outcomes

- Address social and cultural issues through informed design solutions that prioritize equity, sustainability and resilience.
- Research, analyze, and compare design propositions in a global environment
- Collaborate and connect with disciplines beyond the expertise of architecture
- Demonstrate the ability to integrate history and theory, sustainable practices, and technology throughout design projects.
- Demonstrate familiarity of diverse needs, values, traditions, abilities, and spatial patterns of different cultures and individuals
- Integrate professional practice with issues of public health, safety, and welfare regulations
- Demonstrate an understanding of the structural, environmental, and other building systems that support a healthy and sustainable environment.
- Demonstrate familiarity with current research and best practices.

Curriculum: 2-3.5 year, 49-100 credits (depending on advanced standing)

<u>Pre-Year 1</u>			<u>Year 3</u>		
ARCH 601	Intro to Design	3	ARCH 615	Design 5	6
ARCH 602	Intro to Visualization	3	ARCH 630	Research Methods	3
<u>Year 1</u>			ARCH 645	Technology 5	3
ARCH 611	Design 1	4		General Elective	3
ARCH 603	Seminar 1	2	ARCH 616	Design 6	6
ARCH 621	Visualization 1	3	ARCH 661	Professional Management	3
ARCH 631	History 1	3		General Electives	6
ARCH 641	Tech 1	3			
ARCH 612	Design 2	4			
ARCH 604	Seminar 2	2			
ARCH 632	History 2	3			
<u>Year 2</u>					
SDN 601	Principals & Methods of Sustainable Design	3			
ARCH 613	Design 3	4			
ARCH 633	History 3	3			
ARCH 652	Structures 2	3			
ARCH 643	Technology 3	3			
ARCH 614	Design 4	6			
ARCH 624	Visualization 2	3			
ARCH 634	History 4	3			
ARCH 644	Technology 4	3			
	General Elective	3			

Architecture & Design Research

Master of Architecture (MS)

Program Director	John Dwyer, AIA, NCARB
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/architecture-march.html

Program Description

- STEM designated program

The Master of Science in Architecture and Design Research is a post-professional research-based degree designed to provide students who have already earned an accredited undergraduate degree in architecture or related design or built environment discipline with an opportunity to specialize in an area of study that is critical to the profession today. The program prepares students for specialist and consulting positions in the broad field of the built environment, including Architecture, Engineering and Construction.

The MS in Architecture and Design Research offers students the platform to shape a customized education that furthers their architectural experience by developing advanced knowledge and expertise in areas of personal interest and specialization. Led by CAFE faculty advisors, students shape a Master's research project. This project can be self-directed or students can work directly with faculty in their specific research areas. Students assemble a suite of electives with faculty from across the College and University to build a graduate level research collaborative foundation for the Master's thesis.

- Customize study by selecting one of four research tracks:
- Material & Design Computation
- Health & Design
- History, Theory & Architectural Pedagogy
- Self-directed Research Area

Students in each track take two required research methods courses and a set of select courses from an approved list of designated electives, and general electives.

Learning Goals/Outcomes

- Critically analyze and synthesize established research theories and methods related to Material & Design Computation, or Health & Design, or Theory, History & Architectural Pedagogy, or other topics related architecture and buildings.
- Collaborate with professionals and academic experts in fields beyond architecture and the built environment.
- Demonstrate expertise in a chosen area of research.
- Demonstrate professional presentation and communication skills.
- Review and critically analyze original research in architecture and related disciplines.
- Conduct cutting-edge, applied research that culminates in a final project that contributes to the fields of architecture and the built environment.

Graduates who are interested in subsequently pursuing further studies in Jefferson's PhD in Architecture and Design Research program can get advanced placement into the PhD program for up to 18 credits which allows to complete the PhD studies in three academic years instead of the typical four-year timeframe. For advanced placement into the PhD program, graduates have to pass an oral and written Assessment Interview which evaluates the student's research statement including a general literature review of his/her broad area of inquiry, thesis and coursework papers, and transcripts.

Curriculum: 2 years, 30 credits

- 30 credits for PhD in Architecture & Design Research exit option

<u>Year 1 Fall</u>		<u>Year 2 Fall</u>	
ARCH 701	Research Theories & Methods 1 3		Elective (general or designated) 3
SDN 601	Principles of Sustainable Design 3		Elective (general or designated) 3
	Elective (general or designated) 3		Elective (general or designated) 3
<u>Year 1 Spring</u>		<u>Year 2 Spring</u>	
ARCH 702	Research Theories & Methods 2 3	ARCH 902	Graduate Thesis 6
SDN 622 or ARCH 613	Sustainable DSN Studio OR Architectural Design 3 4		
ARCH 630	Arch Research Methods 3		
	Elective (general or designated) 3		
	Elective (general or designated) 3		

Note:

1. Students are required to take a minimum of 9 credits from an approved list of designated electives
2. No more than 6 credits from the total 33 credits may be from independent study courses and no more than 9 credits from non-CABE courses
3. The Self-Directed Research Track requires ADR 701 and ADR 702, SDN 601, ARCH 902. Electives will be selected in consultation with advisor
4. ARCH 622 - Visualization I: Digital Modeling recommended for Material & Design Computation, Health & Design tracks students who do not have required skills in computational modeling (Rhino software)
5. If student research topic involves studio-based methods, 2 graduate electives can be substituted with a Design Research Studio (i.e., ARCH 507 Design 9 or ARCH 508 Design 10) or an independent study format design course (6 credits)

Construction Management

Master of Science (MS)

Program Director
Campus
Website

Gulbin Ozcan-Deniz, PhD, LEED AP BD+C
East Falls & Online
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/construction-management-ms.html>

Program Description

- STEM designated program

The MS in Construction Management program is designed to provide students with the knowledge and skills to plan and manage each phase of the construction process as applied to complex commercial, infrastructure, and residential building projects. The mission of the program is to offer a comprehensive construction and management education consistent with the mission of the University and the College of Architecture and the Built Environment to improve the quality and sustainability of the construction industry and thus the built environment.

Graduates will have the skills necessary to manage the construction process from project conception to closeout with respect to scope, schedule, budget, quality, risk and safety, and the environment. The Construction Management Core Curriculum stresses the following topics:

- Leadership, communication, problem solving, and business management skills
- Project Management from feasibility to commissioning and closeout
- Project life-cycle and sustainability
- Construction law, contract administration and regulatory compliance
- Types and behavior of construction materials and structures
- Project delivery methods
- The means and methods of construction
- Finance and accounting principles and procedures for construction
- Planning, scheduling, and methods of integrated project control
- Estimating, budgeting, purchasing, and cost control
- Safety, health, environmental and quality management of the construction process

Learning Goals/Outcomes

- Evaluate relevant cost, schedule, quality, and safety data; formulate and defend management decisions based on sound analysis
- Lead and/or effectively contribute to the success of complex project management teams of stakeholders such as owners, design professionals, code officials, colleagues and subordinates
- Formulate policies and procedures that anticipate challenges faced by construction project management teams
- Identify and evaluate the ethical choices faced by construction management professionals and formulate policies that promote ethical choices
- Foster and contribute in collaboration across all disciplines of construction project stakeholders and appreciate the benefit of collaboration.

Areas of study include: project planning, estimating, scheduling, risk management, construction information modeling techniques and documentation, legal and contractual issues, project finance and cost control, and health and safety. Moreover, a key component of the program is the integration of techniques, materials and methods of sustainable building into the construction process. Future construction managers will be trained in the principles of sustainability and Leadership in Energy and Environmental Design (LEED) standards. By definition, construction management is a cross-disciplinary practice that synthesizes aspects from the fields of business, architecture, engineering and construction. This degree program provides a balance among various skill sets with emphasis upon practical application, thereby ensuring that a graduate has the necessary knowledge base to be simultaneously successful on a construction site and in an office setting.

Curriculum: 2 year, 36 credits

<u>Year 1</u>			<u>Year 2</u>		
CMGT 600	Construction Estimating & Scheduling	3	CMGT 612	Advanced Construction Project Management	3
CMGT 602	Construction Information Modeling	3		Designated Elective (CMGT 618 or any SDN)	3
CMGT 603	Construction Law: Roles & Responsibilities	3		Designated Elective (CMGT 614, CMGT 618, MRE 601 or any IMBA)	3
CMGT 604	Project Finance & Cost Control	3	CMGT 901	Master's Project	3
CMGT 606	Construction Risk Management	3		General Electives	6
SDN 601	Principles of Sustainable Design	3			

Geospatial Technology For Geodesign

Master of Science (MS)

Program Director	Peng Du, Ph.D., LEED AP, WELL AP, Assoc. AIA
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/geospatial-technology-ms.html.html

Program Description

Jefferson's MS in Geospatial Technology for Geodesign leverages GIS and advanced geospatial technologies in identifying and finding innovative solutions to urban design and urban planning problems. Emphasizing GIS-based tools, 3D parametric design and modeling, sustainable design approaches, collaboration and innovation within an integrated process, this STEM-designated graduate program is intended to empower students to find resilient solutions to 21st century urban challenges resulting from population growth, decreasing resources, natural disasters, and climate change. Geodesign is sustainability in practice, and our graduates are leaders in this innovative field.

Geospatial Technology for Geodesign students are directly involved in collaborative applied research projects with industry partners, state and federal agencies, and community partnerships. They

work with advanced technologies including parametric 3D modeling, spatial data collection using emerging technologies such as LiDAR, UAVs (drones), UAV-based photogrammetry, advanced geospatial mobile applications, and BIM while they help develop and test new tools that inform future industry software. Graduates possess highly sought-after GIS skills and are prepared for dynamic careers in interdisciplinary firms, state and federal agencies, NGOs, academia and more.

Learning Goals/Outcomes

- Articulate, critically analyze and synthesize design and planning theories and philosophies related to the built environment.
- Review and critically analyze original research in Geodesign as related to the allied design disciplines
- Apply and synthesize Geodesign-related research
- Conduct cutting-edge, applied Geodesign research that contributes to the body of knowledge
- Demonstrate expertise within the interdisciplinary field of Geodesign
- Demonstrate professional presentation and communication skills
- Demonstrate the integration of knowledge, analysis and research through final small group research-based planning/design projects

Curriculum: 2 year, 36 credits

Year 1			Year 2		
GEOD 600	3D Modeling for Geodesign	3	GEOD 602	Geodesign Studio I	6
GEOD 615	Advanced GIS Urban Spatial Analytics I	3	GEOD 607	Explorations in Geodesign	3
GEOD 625	Internet GIS Tech for Design & Development	3	GEOD 605	Geodesign Research Studies	6
GEOD 616	Information Modeling	3		General Elective	3
GEOD 617	Advanced GIS for Urban Planning & Development	3			
SDN 601	Principles of Sustainable Design	3			

Historic Preservation

Master of Science (MS)

Program Director	Suzanne Singletary, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/historic-preservation-ms.html.html

Program Description

- **STEM Designated Program**

Jefferson's MS in Historic Preservation not only prepares graduates to preserve historic buildings and sites, but also to re-envision and re-purpose the past to serve present and future needs. The curriculum foregrounds adaptive reuse of historic structures as well as in-depth analysis through historical research and graphic documentation. Students develop skills fundamental to assess the condition and evolution of buildings and promote the ways historic structures order the urban fabric, contribute to healthy communities, and facilitate "place-making" as a catalyst for community revitalization. Students apply new and rapidly evolving digital technologies for managing, documenting and interpreting culturally significant structures and places.

Philadelphia, the first UNESCO World Heritage City in the US, a living laboratory of architectural styles and periods, offering a wealth of real-world projects and internships. Study Away Options—Spring semester studying preservation of Modernism at Bauhaus, Anhalt University, Dessau, Germany and research at Terragni Archives, Como Italy.

Customize study by selecting one of two tracks:

- Research and Documentation
- Preservation Design

Learning Goals/Outcomes

- Develop preservation protocols tailored to unique character of early and mid-century modern architecture
- Implement physical documentation and forensic analysis in the assessment of individual structures and sites as intrinsic to the current practice of architecture and preservation.
- Acquire competency in the application of analogue and digital techniques and software, particularly freehand sketching, constructed hand drawn drawings, model building, and CAD, 3-D modeling, LIDAR, Photogrammetry, and GIS.
- Assess and implement sustainable methods in the retrofitting of historic structures.
- Execute a holistic approach to preservation planning, as applied to the adaptive reuse of historic buildings and their role in urban regeneration via real world, community-based projects
- Evaluate preservation strategies, policies and methods as part of broad historic and social contexts
- Research, analyze, and compare preservation methodologies within a global context
- Apply economic and legal aspects of preservation to projects at multiple scales from micro to macro
- Support preservation as a model of embodied energy and as a sustainable solution to our environmental crisis via the adaptive reuse of historic structures
- Master archival research skills and digital technologies as applied to preservation.

Curriculum: 2 year, 49 credits

<u>Pre-Year 1 (based upon evaluation)</u>					
ARCH 602	Introduction to Visualization	3			
	<u>Year 1</u>			<u>Year 2</u>	
MHP 602	Uncovering Past: Tools, Methods & Strategies	3	MHP 622	Collaborative Preservation Project, Adaptive Reuse & Urban Regeneration	4
MHP 626	Building Conservation & Assessment	3	MPH 620	Thesis Preparation	3
MHP 624	Architectural Forensics & Documentation	3	ARCH 671	Vernacular Architecture	3
MHP 621	Issues in Contemporary Preservation	3		3 Designated Electives	9
MHP 603	Restoration & Rehabilitation of Modernist Buildings	3	MHP 605	Historic Preservation Thesis	4
ARCH 672	American Architecture	3	SDN 601	Principles of Sustainable Design	3
GEOD 610	Introduction to GIS	3			
MHP 623	Preservation Economics	3			

Interior Architecture

Master of Science (MS)

Program Director	Lauren K. Baumbach, RA, AIA, IIDA, NCIDQ, IDEC
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/interior-architecture-ms.html

Program Description

The MS in Interior Architecture program provides a balance between theory and application, and immerses students in the use of current technologies and sustainable practices. The curriculum ensures that students will be fully prepared to join the profession immediately upon graduation and assume roles in design, production, management or principal positions during their careers. In addition, it incorporates an international perspective and prepares graduates to contribute to projects across international boundaries and to work anywhere in the world. Graduates of the MSIA program will be qualified to sit for the National Council for Interior Design Qualification (NCIDQ) certification exam after accruing the required work experience in the field. NCIDQ certification is recommended and recognized throughout the U.S. and Canada.

Mission

The mission of the Interior Architecture program is to prepare students to be independent thinkers, innovative problem solvers, collaborators, and leaders with high standards of professionalism, integrity, and excellence in design. With an emphasis on creativity, balanced with the knowledge and skills required for meaningful contributions to professional design practice, the program strives to instill in students an awareness and understanding of the global, cultural, social, aesthetic, technological, environmental, and ethical responsibilities involved in the design of interior environments.

Learning Goals/Outcomes

- Examine global and local issues and the implications of a diverse cultural and socio-economic society and the impact of these on the design of the built environment.
- Evaluate the diverse values, behavioral norms, physical, psychological, and spatial needs of different demographic/user groups in the context of designing interior environments.
- Design interiors using an ecologically sensitive approach that supports environmental sustainability and human well-being.
- Research, problem solve and design to generate innovative and creative solutions in the design of interior environments.
- Apply historical and theoretical knowledge of interiors, architecture, art and the decorative arts to the design and analysis of interior environments.
- Engage in multimodal communication methods and work collaboratively with a multi-disciplinary approach.
- Comply with ethical and professional standards of practice and the laws, codes, standards, and guidelines that impact the health, safety, and welfare of building occupants.
- Proficiently select and apply color, furniture, fixtures, equipment, finish materials and lighting in the design of interior spaces.
- Demonstrate knowledge of interior construction and building systems to coordinate the design of a complete interior and to work productively with co-professionals in the making of the built environment.

Curriculum: 2-3 year, 49-69 credits

<u>Year 1</u> (students with unrelated degree)		<u>Year 3</u>			
IARP 501	Design I for Interior Architecture	4	IARC 702	Design V for I.A.	4
IARP 503	Graphic Representation	3	IARC 707	Technology III for I.A	3
IARP 505	History of Design I for I.A	3	IARC 708	Prof. Practice and Ethics	3
IARP 502	Design I for Interior Architecture	4	IARC 709	Research and Programming	3
IARP 504	Visual Communication I	3	IARC 710	Master's Project	4
IARP 508	Presentation Techniques	3		General Electives	6
<u>Year 2</u>					
IARC 601	Design III for I.A.	4			
IARC 603	History of Design II for I.A.	3			
IARC 604	Visual Communication III	3			
IARC 607	Technology I for I.A.	3			
IARC 610	Textiles and Materials	4			
IARC 602	Design IV for I.A.	3			
IARC 608	Technology II for I.A.	3			
SDN 601	Principles of Sustainable Design	3			
<u>Summer (Optional)</u>					
May substitute for 3-6 cr. of Yr 3 electives					
	General Electives	6			

Real Estate Development

Master of Science (MS)

Assoc Dean
Campus
Website

Suzanne Singletary
East Falls & Online options
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/real-estate-development-ms.html>

Program Description

- STEM designated program

Prepare students to be leaders in real estate profession and address the significant built environment challenges of the 21st century: sustainability, gentrification, poverty, the decline of brick and mortar retail and the shifts in demographics. Students will learn to address economic, social, and ecological issues when developing commercial, industrial, institutional, or mixed use and residential real estate development projects.

By focusing on the quadruple bottom line of real estate development and combining environmental and economic sustainability, social consciousness, design excellence, financial feasibility and economic viability, students gain first-hand experience how real estate development invigorates communities and shapes healthy places to live, work, and play. Using the city of greater Philadelphia area as a living laboratory, students learn to approach projects at various scales, ranging from a single building to an entire districts or neighborhoods.

Students have the option of taking classes in person at our East Falls Campus, or take part in an online, low-residency cohort. This cohort meets in person once a semester with other MSRED students and faculty in Philadelphia or another city in the region, while fulfilling all other requirements in a live online learning environment.

A faculty of industry experts and practitioners provide real-world insight into the sustainable and equitable practices, legal aspects of land-use, city and regional planning, and construction science and management. Much of the course work is collaborative, including case study analysis, group projects, and real-world problem solving. The Jefferson experience helps students

build a network of professional contacts and resources. The Jefferson experience helps students build a network of professional contacts and resources.

Learning Goals/Outcomes

- Learn to creatively invigorate urban communities—architecturally, environmentally and fiscally
- Track demographic, sociological, technological & economic trends that impact t supply & demand for particular projects within specific markets and areas
- Apply “green” planning principles, as outlined by Urban Land Institute and United States Environmental Protection Agency, to development projects
- Assess fundamental legal principles and ethical practices applicable to real estate development
- Apply financial and investment tools in a wide array of property types and development scenarios
- Examine opportunities & challenges of public-private partnerships, the techniques employed to encourage growth, and market and fiscal feasibility of cross-sector collaborations
- Focus on projects of various scales—from single building and neighborhood revitalization, to commercial, institutional and healthcare development
- Analyze demographic, technological and economic trends using current GIS technologies
- Measure efficacy of sustainable interventions, such as Smart Growth, New Urbanism, Brownfield Redevelopment and Adaptive Reuse as a springboard to urban revitalization
- Complete a comprehensive Capstone Project under the mentorship of faculty who are in the real estate industry

Curriculum: 1.5 - 2 year, 37 credits

<u>Year 1</u>			<u>Year 2</u>		
MRE 601	Sustainable Real Estate Development Process	3	MRE 640	Capstone Project	4
MRE 615	Real Estate Finance and Investment	3		Selected Elective	3
				MRE-602: Intro to Urban Planning; any other CABE graduate course or any IMBA course	
MRE 620	Case Study: Urban Revitalization, Historic Neighborhoods & Adaptive Reuse	3			
MRE 625	Real Estate Law and Ethical Practices	3			
MRE 630	Market Analysis and Valuation	3			
MRE 635	Public Private Partnerships	3			
MRE 638 or MRE 604	Designated Elective (Choose one) Case Study: Sustainable Affordable Housing Case Study: Mixed-Use, Commercial, & Health Care Facilities	3			
GEOD 625	Internet GIS for Design and Development	3			
SDN 601	Principles and Methods of Sustainable Design	3			
CMGT 6XX	Designated Elective (Choose one)	3			
CMGT-607	Intro to Construction Project Management				
CMGT 603	Construction Law: Roles & Responsibilities				
CMGT-604	Project Finance & Cost Control				
CMGT-600	Construction Estimating and Scheduling				

Note: the above is a suggested curriculum for completion in 1 ½ years. The MSRED program can be completed at any pace and a curriculum plan is created for each student upon entering the program.

Sustainable Design

Master of Science (MS)

Program Director Robert Fryer, RA, LEED AP BD+C, NCI
Campus East Falls & Online options
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/sustainable-design-ms/degree-options.html>

Program Description

- **STEM** designated program

The MS in Sustainable Design prepare students for the built environment industry by teaching specific skill sets necessary to conceptualize measure and construct a sustainable environment. This is balanced by broader, theoretical avenues of study that emphasize systems thinking, which place the technical knowledge gained in the program into context.

The on-campus program culminates with a two-semester thesis project that is meant to provide a component of depth in a specific built environment discipline or a particular subset of sustainability. Online students complete a shorter capstone project.

Learning Goals/Outcomes

- Apply skill sets necessary to accomplish effective sustainable design project as response to environmental, social & economic force
- Provide leadership, team building and organizational skills for diverse groups through the integrated process
- Work effectively within groups of varied disciplines
- Synthesize theories of sustainability into comprehensive research and design projects
- Develop diversity initiatives integral to sustainability problem-solving process as a reflection of emerging global marketplace
- Apply ethical values to integrated design process and to selection of systems and materials for a built project
- Bring innovation to fields & anticipate future directions in professions by adapting to social, environmental & economic changes

Curriculum: 2 year, 33 credits

<u>2-Year On Campus Program</u>				<u>2-Year Online Program</u>			
<u>Year 1</u>				<u>Year 1</u>			
SDN 601	Principles of Sustainable Design	3		SDN 601	Principles of Sustainable Design	3	
SDN 602	Adaptive & Resilient Dsn Studio	3		SDN 602	Adaptive & Resilient Design Studio	3	
	General Elective	3		SDN 621	Master Studio: Resilient Cities and Communities	4	
SDN 604	Green Materials and Life-Cycle Assessment	3		SDN 623	Studio Companion: Ecological Systems for Resilient Cities	2	
SDN 621	Master Studio: Resilient Cities and Communities	4			General Elective	3	
SDN 623	Studio Companion: Ecological Systems for Resilient Cities	2					
<u>Year 2</u>				<u>Year 2</u>			
SDN 622	Master Studio: Living Buildings	4		SDN 624	Studio Companion: Sustainable Systems for Living Buildings	2	
SDN 624	Studio Companion: Sustainable Systems for Living Buildings	2		SDN 604	Green Materials and Life-Cycle Assessment	3	
SDN 900	Thesis 1 in Sustainable Design	3		SDN 622	Master Studio: Living Buildings	4	
SDN 901	Thesis 2 in Sustainable Design	6		SDN 628	Capstone in Sustainable Design	6	
					General Elective	3	

Urban Design- Future Cities (MUD)

Master of Science (MS)

Interim Program Director
Campus
Website

Peng Du, Ph.D., LEED AP, WELL AP, Assoc. AIA
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/urban-design-ms.html>

Program Description

- STEM designated program

The Master of Urban Design - Future Cities (MUD) educates the next generation of urban designers, architects and researchers in the development of sustainable, healthy and smart cities and communities. Focused on envisioning the future, the program spotlights pressing contemporary issues with far-reaching consequences, such as the need to develop urban resiliency and carbon neutral communities and to harness the potential of smart technologies to achieve environmental wellness on multiple scales in response to rapid urbanization and climate change. Students have the opportunity to acquire new and valuable skills and benefit from state-of-the-art research at regional and transnational levels, thereby fostering innovation, entrepreneurship, and creativity through knowledge exchange and multidisciplinary learning.

The unique focus of MUD on contemporary urban issues such as urban resiliency, carbon neutral communities, wellness, and smart technologies differentiates Jefferson's program. Collaboration with the Jefferson Institute for Smart and Healthy Cities offers students unparalleled opportunities for research and industry experience.

Designing sustainable, healthy and smart cities

A focus on the unique challenges and possibilities in designing sustainable, healthy and smart cities differentiates the Master of Urban Design from similar programs. It also positions Jefferson as a leader in this emerging field, both nationally and internationally. The Institute for Smart and Healthy Cities serves as the hub and public face of the program and facilitates transdisciplinary research opportunities for students and faculty. Addressing climate change, public health, pandemics and other challenges by incorporating smart technologies into urban environments is the next frontier within the profession. Students may choose a concentration in public health, in collaboration with the Jefferson College of Population Health, or in other specializations, offered in the College of Architecture and the Built Environment, including Geodesign, Urban Revitalization, Smart Cities and Urban Analytics, or Resilient Cities.

Curriculum: 2 year, 48 credits

- Students without a formal education in architecture or a related field will take the first year of the Master of Architecture degree (24-30 credit) as an additional foundation year.

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
MUD 601	Master Studio: Towards Sustainable and Smart Cities	6	MUD 603	Master Studio: Future Cities	6
GEOD 615	Adv GIS: Urban Spatial Analytics I	3	MUD 631	Architectural Research Methods	3
MUD 600	Modeling Urban Environmental Performance	3	MUD 602	Graduate Seminar / Focus General Elective	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
SDN 621	Master Studio: Resilient Cities and Communities	4	MUD 604	Master's Thesis	6
SDN 623	Studio Companion: Ecological Systems for Resilient Cities	2	MUD 6xx	Graduate Seminar / Focus General Elective	3
GEOD 617	Adv GIS: Urban Spatial Analytics II	3			
MUD XXX	Emerging Design and Technology for Smart Cities	3			

Concentrations: Select three graduate courses from the following:

- Geodesign
- Urban Revitalization
- Public Health
- Smart Cities and Urban Analytics
- Resilient Cities

Architecture & Design Research

Doctor of Philosophy (PhD)

Program Director
Campus
Website

Kihong R. Ku, DDes
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/phd-architecture-design-research.html>

Program Description

- STEM designated program

The PhD in Architecture and Design Research supports interdisciplinary and transdisciplinary research to create new avenues of investigation, expand knowledge bases, solve time-sensitive, contemporary issues across architectural disciplines and yield new insights into the past, present, and future of the field. The focus is on anticipating and shaping the future of practice acknowledging that the architectural discipline is in constant flux that demands the understanding and development of new modes of design research. The PhD involves phases of coursework, qualifying exam, preliminary examination, dissertation proposal, and dissertation. The curriculum requires students to choose a focus area and conduct original research on timely, discipline-specific topics. Students shape a research question and pursue transdisciplinary inquiry, drawing upon the broad array of professional expertise available throughout the University. The final dissertation phase is an individualized, student-driven process, through which each student makes a significant contribution to the body of knowledge in the selected focus area.

Learning Goals/Outcomes

- Conduct original research to advance, change, or challenge the normative body of scholastic work that defines a given field of study in architecture and the related disciplines
- Design research and apply research methods that address the interdisciplinary challenges of an applied profession which comprises practical applications and scholarly inquiries
- Master knowledge in selected fields of study, from a wide array of topics, supported by the diverse expertise and research agenda of faculty, including, but not limited to, design technology, sustainable architecture, high performance buildings, urban design, smart cities, geospatial technologies, historic preservation, public interest design, design for health, sustainable development, real estate development, and innovative construction among others.
- Acquire and develop competency in teaching or research for academic or practice career paths through assistantship, fellowship opportunities.

Curriculum: 4 years, 48 credits

	<u>Year 1 Fall</u>				<u>Year 3 Fall</u>	
ADR 701	Research Theories & Methods 1	3		ADR 8XX	Dissertation Research/Writing	3
	Elective	3			<u>Year 3 Spring</u>	
	Elective	3		ADR 8XX	Dissertation Research/Writing	3
	<u>Year 1 Spring</u>				<u>Year 4 Fall</u>	
ADR 702	Research Theories & Methods 2	3		ADR 8XX	Dissertation Research/Writing	3
	Elective	3			<u>Year 4 Spring</u>	
	Elective	3		ADR 8XX	Dissertation Research/Writing	3
	<u>Year 2 Fall</u>					
ADR 898	Directed Research Seminar	9				
	Elective	3				
	Elective	3				
	<u>Year 2 Spring</u>					
ADR 8XX	Dissertation Proposal	9				

Graduate Concentrations

- Construction Management
- Geographic Information Systems (GIS)
- Historic Preservation/Urban Revitalization
- Interior Architecture
- Real Estate Development
- Sustainable Design
- Sustainability Leadership

Program Description

Certain CUBE graduate programs require that a student choose a concentration to establish a focus area within the primary discipline. Students enrolled in a master's program that does not require a concentration may elect to declare a concentration in order to pair their major discipline with another architecture related field. A concentration allows students to group electives together in a meaningful way, providing a set of courses that provides supplemental study in a particular subject area. Options for graduate concentrations are determined by the academic programs and consist of a minimum of nine (9) credits in the subject area. Guidelines for available concentrations are below:

- A student may not use the same course for credit in both the primary discipline and area of concentration. In other words, only general elective credits can be applied to the concentration.
- Concentrations typically consist of at least one required course, plus a selection of courses from which the student may choose.

Any substitute elective course from within the concentration must be approved by the program director of the area of concentration.

Construction Management, 9 credits

This concentration introduces construction management concepts and principles as applied to contemporary practice and investigates the intersecting roles of construction manager, architect, client, and general contractor. Topics encompass planning, programming and documentation from pre-construction to project close-out; legal aspects relative to environmental protection, contract documents; insurance and bonds; labor relations and inspection; project control; heavy construction skills and ethics; and the development of analytical and communication skills.

Select 3 Courses		
CMGT 603	Construction Law: Roles & Responsibilities	3
CMGT 604	Project Finance & Cost Control	3
CMGT 606	Construction Risk Management	3
CMGT 614	Materials & Methods of Construction	3
CMGT 618	Heavy Construction Principles & Practice	3

Geographic Information Systems (GIS), 9 credits

This concentration in GIS (Geographic Information Systems) provides students with the opportunity to learn and apply advanced spatial techniques and spatial thinking to various disciplines related to design of the built environment. Courses span introduction to advanced concepts and include desktop as well as internet technology

Required Course		
GEOD 610	Introduction to GIS	3
Select 2 Courses		
GEOD 615	Adv GIS: Urban Spatial Analytics I (Fall)	3
GEOD 617	Adv GIS: Urban Spatial Analytics II (Fall)	3
GEOD 625	Internet GIS Tech for Design and Devl (Fall)	3

Historic Preservation/Urban Revitalization, 9 credits

This concentration provides a foundation in the field of historic preservation. Courses cover contemporary practice and fieldwork, urban revitalization and sustainability issues, building conservation, methods of archival research, standards for documentation, American architectural traditions, as well as design considerations in the adaptive reuse of historic structures.

Required Course		
MHP 621	Issues in Contemporary Preservation	3
Select 2 Courses		
MHP 602	Uncovering the Past: Tools, Methods and Strategies	3
MHP 624	Architectural Forensics and Documentation	3
MHP 626	Building Conservation and Assessment	3
MHP 603	Restoration and Rehabilitation of Modernism	4
MHP 672	American Architecture	3
MHP 671	Vernacular Architecture	3

Interior Architecture, 9 credits

This concentration introduces students to both theory and application of interior architecture in the built environment. Students will be grounded in the methodologies of interior architecture, focus on the design and construction of the built environment through an interiors perspective, consider how human behavior influences the built environment and consider how the well-being of humans and the natural environment influences interior design. Students will also learn how the interaction of space, form, light, color, materiality and furniture transforms our lived experience in buildings.

Select 3 Courses		
IARC 603	History of Design II for I.A.	3
IARC 604	Vis. Comm. II for I.A.	3
IARC 610	Textiles & Materials for Interiors	3
IARC 607	Technology I for I.A. (interior detailing)	3
IARC 608	Technology II for I.A. (lighting design)	3
IARC 614	Furniture Design	3
IARP 502	Design II for I.A.	3
IARP 601	Design III for I.A.	3
IARC 602	Design IV for I.A.	3

Real Estate Development, 9 credits

This concentration introduces the economic, social and physical issues inherent in environmentally and fiscally sustainable real estate and land-use development. Through real-world case studies presented by leading developers, coursework encompasses market analysis and valuation, finance and investment, legal issues of ownership and land-use, public-private partnerships, urban regeneration and adaptive reuse, construction science and management, in addition to multiple design and development paradigms and their long-term local, national, and global impacts. Sustainable strategies inform a curriculum sensitive both to the ethical dimension of development and to the parameters of a capital-driven market.

Required Course		
MRE 601	Sustainable Real Estate Development Process	3
Select 2 Courses		
MRE 620	Urban Revitalization, Historic Neighborhoods & Adaptive Reuse	3
MRE 638	Sustainable Affordable Housing	3
MRE 630	Market Analysis and Valuation	3
MRE 615	Finance and Investment	3
MRE 635	Public-Private Partnerships	3
MRE 625	Real Estate Law and Ethical Practices	3

Sustainable Design, 9 credits

The concentration introduces students to the theory of sustainability and how it is applied in the built environment. Students will be grounded in the methodologies of sustainable design, learn to measure, predict and design for thermal comfort, adaptable opportunities and resilience across scales. Students will also learn how to design and calculate sustainable systems, and learn to evaluate, compare, perform life cycle analyses of materials.

Select 3 Courses		
SDN 601	Principles of Sustainable Design (Fall or Spring)	3
SDN 602	Adaptive and Resilient Design Studio (Fall online)	3
SDN 603	Sustainable Systems (Spring online)	3
SDN 604	Life Cycle Assessment & The Circular Economy	3

Sustainable Leadership, 9 credits

This concentration prepares students to design and deliver sustainability initiatives in current or future organizations. With the curriculum's project-based approach, students will build vital skills in problem scoping, systems modeling, solution framing and change management and immediately apply these skills to the sustainability challenges facing assigned organizations or clients.

Select 3 Courses		
SDN 601	Principles & Methods of Sustainable Design	3
SDN 625	Environmental Impact Analysis	3
SDN 626	Models & Metrics for Sustainable Organizations	3
SDN 627	Sustainability Advocacy & Change Management	3

<h1 style="margin: 0;">Construction Management</h1> <p style="margin: 0; color: #C07040;">Graduate Certificate</p>	
<p>Program Director Campus Website</p>	<p>Gulbin Ozcan-Deniz, PhD, LEED AP BD+C East Falls & Online https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/construction-management-ms.html</p>

Program Description

- STEM designated program

The twelve-credit Graduate Certificate in Construction Management will train students to assume leadership roles within this increasingly multifaceted and cross-disciplinary industry. Construction Managers must demonstrate mastery of a broad spectrum of skill sets and knowledge bases to plan and supervise the construction process as applied to commercial, residential and infrastructural building projects. The mission of the Graduate Certificate in Construction Management is to provide students with a broad-based, practice-oriented understanding of construction technology, sustainable principles and business practices.

The target audience for this certificate program comprises two distinct groups. One group includes graduates of professional programs, including Architecture, Interior Architecture, Landscape Architecture, and Business Administration, seeking to build knowledge and credentials in the field of construction management; and the second group includes professionals already working in the construction industry who would like to update their knowledge of new and emerging techniques and concepts. Students will be able to take classes either online or on campus on a part-time basis to coordinate with work schedules.

Learning Goals/Outcomes

- Evaluate relevant cost, schedule, quality, and safety data; formulate and defend management decisions based on sound analysis
- Lead and/or effectively contribute to the success of complex project management teams of stakeholders such as owners, design professionals, code officials, colleagues and subordinates
- Formulate policies and procedures that anticipate challenges faced by construction project management teams
- Identify and evaluate the ethical choices faced by construction management professionals and formulate policies that promote ethical choices
- Foster and contribute in collaboration across all disciplines of construction project stakeholders and appreciate the benefit of collaboration.

Curriculum: 12 credits

Core Curriculum		
CMGT 600	Construction Estimating & Scheduling	3
CMGT 603	Construction Law: Roles & Responsibilities	3
CMGT 604	Project Finance & Cost Control	3
CMGT 606	Construction Risk Management	3

Design of Living Buildings

Graduate Certificate

Program Director	Robert Fryer, RA, LEED AP BD+C, NCI
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/sustainable-design-ms/degree-options/graduate-certificates/design-of-living-buildings.html

Program Description

- STEM designated program

The Living Building Challenge is a green building certification program and sustainable design framework that visualizes the ideal for the built environment. This graduate certificate focuses on the design and certification of living buildings with a focus on the regenerative design of spaces and places that feature a strong connection to “light, air, food, nature and community.” As a student in this program, you will begin with an overall understanding of the sustainable design movement while also studying the “basics” of the Living Building Challenge. You will move on to study the various technical aspects of meeting the Challenge, with an emphasis on simulation, calculation, and validation. The Living Building Design Studio features interaction with industry professionals who have had direct experience in designing and certifying Living Building Challenge projects and ends with the design of a living building.

Learning Goals/Outcomes

- Gain understanding of the sustainable design movement while also studying the “basics” of the Living Building Challenge
- Study the various technical aspects of meeting the Challenge, with an emphasis on simulation, calculation, and validation
- Integrate and apply methodology in the design of a living building.
- Apply critical skills including the LEED® rating system, Passive House design, energy and daylight modeling and life cycle assessment.
- Credits earned through certificate courses are transferable into the MS in Sustainable Design program.

Curriculum: 12 credits

Core Curriculum		
SDN 601	Principles and Methodologies of Sustainable Design	3
SDN 602	Adaptive and Resilient Design Studio	3
SDN 622	Master Studio: Living Buildings	4
SDN 624	Studio Companion: Sustainable Systems for Living Buildings	2

Design of Resilient Communities

Graduate Certificate

Program Director	Robert Fryer, RA, LEED AP BD+C, NCI
Campus	East Falls & Online options
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/sustainable-design-ms/degree-options/graduate-certificates/design-of-resilient-communities.html

Program Description

- STEM designated program

Resilient Design practices are at the forefront of design thinking because they acknowledge that our efforts to stem the tide of climate change have not been enough. The harsh reality is that design in the 21st century will be focused on adaption to climate change.

Learning Goals/Outcomes

- Resilient design is an area of study that builds special skills, knowledge and approaches to guide organizations to continue to flourish within a challenging environmental, social and economic challenges.
- The Certificates offer a wide array of critical skills including the LEED® rating system, Passive House design, energy and daylight modeling and life cycle assessment.
- Credits earned through certificate courses are transferable into the MS in Sustainable Design program.

Curriculum: 12 credits

<u>Core Curriculum</u>		
SDN 601	Principles of Sustainable Design	3
SDN 602	Adaptive and Resilient Design Studio	3
SDN 621	Master Studio: Resilient Cities and Communities	4
SDN 623	Master Studio: Ecological Systems	2

Geographic Information Systems

Graduate Certificate

Program Director Campus Website	Peng Du, Ph.D., LEED AP, WELL AP, Assoc. AIA East Falls https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/graduate-certificates/geographic-information-systems.html
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Program Description

- **STEM** designated program

The mission of the Graduate Certificate in Geographic Information Systems (GIS) is to provide students with a broad-based, practice-oriented proficiency in advanced geospatial technology and spatial analytics.

Learning Goals/Outcomes

Prepare students to assume technology leadership roles in the use of Advanced GIS and Spatial Analytics, primarily within the allied design professions including Landscape Architecture, Architecture, Planning and Engineering, but also extending to more traditional spatial analysis roles. GIS professionals must demonstrate mastery of a broad spectrum of advanced geospatial skill sets and knowledge bases to plan and lead in the use of geospatial technology for projects related to the built environment.

Curriculum: 12 credits

<u>Core Curriculum</u>		
GEOD 610	Introduction to GIS	3
GEOD 615	Adv GIS: Urban Spatial Analytics I	3
GEOD 617	Adv GIS: Urban Spatial Analytics II	3
<u>Select One</u>		
GEOD 625	Internet GIS Tech for Design and Development	3
GEOD 600	3D Modeling for Geodesign	

Geospatial Technology For Geodesign

Graduate Certificate

Program Director	Peng Du, Ph.D., LEED AP, WELL AP, Assoc. AIA
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/graduate-certificates/geospatial-technology-for-geodesign.html

Program Description

- STEM designated program

The mission of the Graduate Certificate in Geospatial Technology for Geodesign is to enable students with a broad range of practice-oriented proficiencies in these cutting-edge technologies for design.

Learning Goals/Outcomes

Prepare students to assume leadership technology roles in the use of 3D parametric modeling and advanced GIS applied to the allied design professions including Landscape Architecture, Architecture, Planning and Engineering.

Curriculum: 12 credits

Core Curriculum		
GEOD 610	Introduction to GIS	3
GEOD 600	3D Modeling for Geodesign	3
GEOD 616	Information Modeling	3
	Select One	3
GEOD 615	Adv GIS: Urban Spatial Analytics II	
GEOD 617	Adv GIS: Urban Spatial Analytics II	
GEOD 625	Internet GIS Tech for Design and Development	

Green Building Operations

Graduate Certificate

Program Director	Robert Fryer, RA, LEED AP BD+C, NCI
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/sustainable-design-ms/degree-options/graduate-certificates/green-building-operations.html

Program Description

- STEM designated program

The Graduate Certificate in Green Building Operations is designed to educate students about the design and management of mainstream green buildings. With this extremely flexible graduate certificate, you will acquire the specific skills and knowledge that perfectly compliment your career goals.

Learning Goals/Outcomes

- The Certificates offer a wide array of critical skills including the LEED® rating system, Passive House design, energy and daylight modeling and life cycle assessment.
- Credits earned through certificate courses are transferable into the MS in Sustainable Design program.

Curriculum: 12 credits

Core Curriculum		
SDN 601	Principles and Methodologies for Sustainable Design	3
Select three courses		
		9
(The MSSD faculty will advise you to help select the best courses for your career)		
SDN 602	Adaptive and Resilient Design Studio	
SDN 603	Sustainable Building Systems	
SDN 604	Life Cycle Assessment and the Circular Economy	
SDN 609	BIM for Sustainable Design	
SDN 602	Adaptive and Resilient Design Studio	

Historic Preservation

Graduate Certificate

Program Director	Suzanne Singletary, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/historic-preservation-ms.html.html

Program Description

The twelve-credit Graduate Certificate in Historic Preservation will prepare students to assume leadership roles within this multifaceted, cross-disciplinary profession. Curricular emphasis upon adaptive reuse of historic structures and the application of preservation methodologies to urban revitalization will appeal to working professionals from a broad spectrum of disciplines.

Preservation methodologies applied to projects at multiple scales, ranging from the micro level of individual structures to the macro level of preservation planning, will equip students with the skills, knowledge and experience to address pressing environmental and community-based challenges. In “real world” projects, students implement preservation principles and methods relative to both pre-modern and modern buildings and technologies.

The following are suggested courses for the Graduate Certificate in Historic Preservation, although course substitutions are possible at the discretion of the Program Director.

Learning Goals/Outcomes

- Implement physical documentation and forensic analysis in the assessment of individual structures and sites as intrinsic to the current practice of architecture and preservation.
- Acquire competency in the application of analogue and digital techniques and software, particularly freehand sketching, constructed hand drawn drawings, model building, and CAD, 3-D modeling, LIDAR, Photogrammetry, and GIS.
- Assess and implement sustainable methods in the retrofitting of historic structures.
- Execute a holistic approach to preservation planning, as applied to the adaptive reuse of historic buildings and their role in urban regeneration via real world, community based projects
- Evaluate preservation strategies, policies and methods as part of broad historic and social contexts

Curriculum: 12 credits

<u>Core Curriculum</u>		
MPH 602	Uncovering the Past: Tools Methods & Strategies	3
MPH 621	Issues in Contemporary Preservation	3
MPH 624	Architectural Documentation & Forensics	3
	Select One	3
MPH 626	Building Conservation & Assessment	
ARCH 672	American Architecture	

Real Estate Development

Graduate Certificate

Program Director
Campus
Website

Assoc Dean Suzanne Singletary
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/real-estate-development-ms.html>

Program Description

- STEM designated program

For graduates of professional programs, including Architecture, Interior Architecture, Landscape Architecture, Construction Management, Sustainable Design, Business Administration, etc. seeking to build their knowledge-base and credentials in the field of real estate development, a customized portfolio of four courses is available, leading to a 12-credit hour Graduate Certificate in Real Estate Development.

Professionals working in the Real Estate Development industry who would like to update their knowledge of new and emerging techniques and concepts will also benefit from the 12-credit hour Graduate Certificate program. Classes are offered in the evening to coordinate with work schedules. Students have the option of designing their own curriculum or they can follow the suggested model below.

Learning Goals/Outcomes

- Apply “green” planning principles, as outlined by Urban Land Institute and United States Environmental Protection Agency, to development projects
- Assess fundamental legal principles and ethical practices applicable to real estate development
- Apply financial and investment tools in a wide array of property types and development scenarios
- Examine opportunities & challenges of public-private partnerships, the techniques employed to encourage growth, and market and fiscal feasibility of cross-sector collaborations
- Focus on projects of various scales—from single building and neighborhood revitalization, to commercial, institutional and healthcare development

Curriculum: 12 credits

MRE 601	Sustainable Real Estate Develop Process	3
	Select 2 courses	
MRE 604	Case Study: Mixed-Use, Commercial, & Health Care Facilities	3
MRE 615	Real Estate Finance and Investment	3
MRE 620	Case Study Studio: Urban Revitalization	3
MRE 625	Real Estate Law and Ethical Practices	3
MRE 630	Market Analysis and Valuation	3
MRE 635	Public-Private Partnerships	3
MRE 638	Sustainable Affordable Housing	3

Smart Cities & Urban Analytics

Graduate Certificate

Interim Program Director
Campus
Website

Peng Du, Ph.D., LEED AP, WELL AP, Assoc. AIA
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/graduate-certificates/urban-design.html>

Program Description

The twelve-credit Graduate Certificate in Smart Cities and Urban Analytics prepares architects, urban designers and city managers to become leaders in the planning, management, and operational functions of 'smart' cities. Foregrounding the development of future cities and communities, the certificate offers a unique focus on pressing, contemporary issues with far-reaching consequences. Coursework addresses the need

to develop urban resiliency and carbon neutral communities and to harness the potential of smart technologies to achieve environmental wellness on multiple scales in response to rapid urbanization and climate change. This credential provides the technical and theoretical skills needed to make a difference to the cities of today and tomorrow.

Curriculum: 12 credits

MUD 600	Modeling Urban Environmental Performance	3
MUD 6xx	Emerging Design and Technology for Smart Cities	3
GEOD 615	Adv GIS: Urban Spatial Analytics I	3
GEOD 617	Adv GIS: Urban Spatial Analytics II	3

Sustainability Leadership

Graduate Certificate

Program Director	Robert Fryer, RA, LEED AP BD+C, NCI
Campus	East Falls & Online options
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/sustainable-design-ms/degree-options.html

Program Description

- **STEM** designated program

The Sustainability Leadership Certificate at Thomas Jefferson University prepares forward-thinking professionals to design and deliver sustainability initiatives in their current or future organizations. With our curriculum's project-based approach, you will build vital skills in problem scoping, systems modeling, solution framing and change management and immediately apply them to the sustainability challenges facing your own organization or an assigned client.

As you progress through the program, your project advances with you, moving through stages from identifying and prioritizing key environmental challenges to developing and pitching an implementation plan for addressing them. Our faculty are prominent sustainability professionals ready to share their conceptual knowledge and practical experience as you master the strategies and tools needed to produce positive change in your field.

Learning Goals/Outcomes

- Build vital skills in problem scoping, systems modeling, solution framing and change management.
- Identify and prioritize key environmental challenges
- Develop implementation plans for addressing environmental challenges.
- Credits earned through certificate courses are transferable into the MS in Sustainable Design program.

Curriculum: 1 Year, 12 credits (on campus)

SDN 601	Principles of Sustainable Design	3
SDN 625	Environmental Impact Analysis	3
SDN 626	Models & Metrics for Sustainable Organizations	3
SDN 627	Sustainability Advocacy & Change Management	3

Accelerated & Dual Degree Programs

TIME TO DEGREE:

Length of time listed for completion of the graduate degree is approximate and based upon an ideal number of credits per semester, as determined by the specific graduate program. Students may take longer to fulfill graduate requirements. The maximum time for completion of the degree program is seven years from the date of first enrollment in the graduate program. Students who have not earned the graduate degree during this period will have their academic records reviewed and may be asked to meet additional requirements in order to graduate.

<h1>Architecture & Historic Preservation</h1>	
Bachelor of Architecture (BArch) & Master of Science (MS) Historic Preservation	
Program Directors	David Kratzer and Suzanne Singletary
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html

Program Description

The MS Historic Preservation prepares graduates to assume leadership roles within this multifaceted, cross-disciplinary profession. The “Preservation Design” track focuses upon the adaptive reuse of historic structures and the application of preservation methodologies to urban revitalization, sustainable practices that are increasingly essential skills for architects. This interdisciplinary and transdisciplinary combination fosters nimble, flexible problem solving on multiple levels. Working in team and/or studio centered processes, students engage in real world, experiential and collaborative learning. The Accelerated Dual

Degree programs prepare students for the complexities of contemporary practice and afford our graduates a competitive edge in today’s market.

The combined Bachelor of Architecture and MS Historic Preservation 5+1 Accelerated Dual Degree Option allows an undergraduate Architecture major to complete foundational coursework in Historic Preservation while completing the baccalaureate degree

Curriculum: 6.5 years

- By sub-matriculating, a student may complete four graduate courses required by the MS Historic Preservation program, for a maximum of twelve graduate course credits, thereby achieving advanced standing in the 49-credit MS Historic Preservation program and enabling a student to complete the master’s degree with an additional 37 credits, depending upon transcript evaluation.
- Upon graduation from the Bachelor of Architecture program, a student may fulfill requirements for the MS Historic Preservation in one year of full-time study

Contact Suzanne Singletary or David Kratzer for more information.

Architectural Studies & Historic Preservation

Bachelor of Science (BS) Architectural Studies & Master of Science (MS) Historic Preservation

Program Directors	John Dwyer and Suzanne Singletary
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html

Program Description

The MS Historic Preservation foregrounds preservation methodologies applied to projects at multiple scales, ranging from the micro level of individual structures to the macro level of preservation planning. Graduates are equipped with the skills, knowledge and experience to address pressing environmental and community-based challenges. By sub-matriculating in the master's program, Architectural Studies majors may complete foundational coursework required

in the "Documentation and Research" track, completing a maximum of 24 credits towards the MS Historic Preservation degree, thereby achieving advanced standing in the master's program while completing the baccalaureate degree. Upon graduation from the BS Architectural Studies, a student may fulfill remaining requirements for the MS Historic Preservation in one year of full-time study.

Curriculum: 5 years

- Students may elect to pursue a 24-credit concentration in Historic Preservation, consisting of four graduate and four undergraduate courses in the discipline.
- Students enrolled in the pre-professional BS Architectural Studies program may achieve professional credentials by enrolling in this 4+1 Accelerated Dual Degree option

Contact Suzanne Singletary or John Dwyer for more information.

Architecture Studies & Real Estate Development

Bachelor of Science (BS) Architectural Studies & Master of Science (MS) Real Estate Development

Program Director David Kratzer, AIA, NCARB and Suzanne Singletary
Campus East Falls
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html>

Program Description

- STEM designated program

In today's world, real estate is more than the financial bottom line. By focusing on the "quadruple bottom line" of real estate development – people, planet, profit and placemaking – today developers must combine financial feasibility with environmental sustainability, social consciousness, design excellence and community engagement. Using Philadelphia and its surroundings, students address real estate development projects ranging from single buildings to entire districts. By sub-matriculating in the master's program,

Architectural Studies majors may complete foundational coursework required in the MS Real Estate Development program, completing a maximum of 12 credits towards the graduate degree, thereby achieving advanced standing in the master's program while completing the baccalaureate degree. Upon graduation from the BS Architectural Studies, a student may fulfill remaining requirements for the MS Real Estate Development in one year of full-time study.

Curriculum: 5 years

- Students may elect to pursue a 24-credit track in Real Estate Development, consisting of four graduate real estate development courses and four undergraduate business courses.
- Students enrolled in the pre-professional BS Architectural Studies program may achieve professional credentials by enrolling in this 4+1 Accelerated Dual Degree option

Contact Suzanne Singletary for more information.

Architecture & Interior Architecture

Bachelor of Architecture (BArch) & Master of Science (MS) Interior Architecture

Program Directors John Dwyer and Lauren Baumbach
Campus East Falls
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html>

Program Description

The combined Bachelor of Architecture and the Master of Interior Architecture 5+2 Accelerated Degree is an innovative educational model that allows students to achieve two accredited professional degrees.

The 5+2 BArch/MSIA Accelerated Dual Degree creates a pathway for students who wish to pursue a graduate degree in Interior Architecture while completing the undergraduate, professional program in Architecture.

The program's transdisciplinary nature encourages students to think broadly and envision innovative solutions to design-related problems.

Curriculum: 6 years

- The 5+1 Accelerated Degree enables an undergraduate Architecture major to complete three graduate courses required by the Master of Interior Architecture program, for a maximum of eleven graduate course credits, while completing the undergraduate Bachelor of Architecture degree.
- By overlapping the two programs, a student achieves advanced standing in the three year, 69-credit Master of Interior Architecture program while an undergraduate and can complete the MSIA degree with an additional 20 credits.
- Upon graduation from the BArch program, a student may fulfill requirements for MSIA in one year of full-time study, comprising fall and spring semesters, for a total reduction of two years of graduate coursework and tuition.

Contact Lauren Baumbach or John Dwyer for more information.

Interior Design & Architecture

Accelerated Bachelor of Science (BS) & Interior Design & Master of Architecture (MArch)

Program Directors	John Dwyer and Lauren Baumbach
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html

Program Description

The BS Interior Design and MArch 4+2 Accelerated Dual Degree supports engaged, collaborative, active learning infused with “real world” issues. The design studios and core courses participate in collaborative projects with students working in other majors across the College as well as throughout the University. There is a strong potential for interdisciplinary research and design opportunities that engage community groups in public interest projects with the participation of industry partners. The combined BS Interior

Design and the Master of Architecture 4+2 Accelerated Degree Option is intended for students who wish to pursue a graduate degree in Architecture while completing the undergraduate, professional program in Interior Design.

Curriculum: 6 years

- The 4+2 Accelerated Degree Option enables an undergraduate Interior Design major to complete four graduate courses required by the Master of Architecture program, for a maximum of twelve graduate course credits, while completing the undergraduate BS Interior Design degree.
- By sub-matriculating, a student achieves advanced standing in the three and a half year, 100-credit Master of Architecture program and can complete the MArch degree with 52 credits.
- Upon graduation from the BS Interior Design program, a student may fulfill requirements for the MArch in two years of full-time study, comprising fall and spring semesters, for a total reduction of a year and half of graduate coursework and tuition.

Contact Lauren Baumbach or John Dwyer for more information.

Interior Design & Sustainable Design

Accelerated Bachelor of Science (BS) Interior Design & Master of Science (MS) Sustainable Design

Program Directors	Laura Baumbach Robert Fryer, RA, LEED AP BD+C, NCI
Campus Website	Rob Fleming East Falls https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html

Program Description

Our award-winning undergraduate Interior Design Program has been teaching the principals of sustainable design for over 15 years and our graduate Sustainable Design Program was one of the first of its kind in the U.S. The Interior Design and Sustainable Design departments have teamed up to create an accelerated option for obtaining the two degrees in just five years, in

lieu of the standard six years. Students who complete these two programs are uniquely qualified to serve as leaders in the design industry and the rapidly evolving global economy, which needs designers with expertise in the design of sustainable interior environments.

Curriculum: 5 year

- With guided course selection at the undergraduate level, students can obtain advanced standing in the graduate program, which allows them to complete the MS in Sustainable Design degree in just one year allowing students to save on tuition.

Contact Lauren Baumbach or Rob Fryer for more information.

Landscape Architecture & Geospatial Technological for Geodesign

Accelerated Bachelor of Landscape Architecture (BLA) &
Master of Science (MS) Geospatial Technology for Geodesign

Program Directors Kimberlee Douglas & Peng Du
Campus East Falls
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html>

Program Description

The 4+1 Bachelor of Landscape Architecture and MS in Geospatial Technology for Geodesign is intended for landscape architecture students interested in leveraging advanced geospatial technologies and sustainable design practices in the pursuit of innovative solutions to urban design and urban planning problems. In a hands-on, team-based, learning environment, students gain skills necessary to address complex “real-world” design problems with geospatial

visualization and analysis tools. Students pursuing the combined Bachelor of Architecture and MS Geospatial Technology for Geodesign reduce the total graduate credits from 36 to 27 credits in an additional year of full-time study.

Curriculum: 5 years

<u>Year 3 (along with required courses)</u>			<u>Year 4 (along with required courses)</u>		
LARC 515	Advanced GIS: for Landscape Architecture	3	GEOD 625	Internet GIS Technology for Design and Development	3
	Graduate course for Undergraduate (General Elective)	3	SND 601	Principles of Sustainable Design	3
Year 5 Fall			Year 5 Spring		
GEOD 600	3D Modeling for Geodesign	3	GEOD 605	Applied Geodesign Research Studio	6
GEOD 602	Geodesign Studio I	6	GEOD 607	Explorations in Geodesign	3
GEOD 617	Advanced GIS for Urban Planning and Development	3	GEOD 616	Information Modeling	3

Construction Management & Real Estate Development

Dual Master of Science (MS) Construction & Real Estate Development

Program Directors	Suzanne Singletary & Gubin Ozcan-Denis
Campus	Hybrid- East Falls & Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html

Program Description

- STEM designated program

This Accelerated Dual Degree is intended for students who wish to pursue a distinct graduate degree in both Construction Management and Real Estate Development. Rather than complete each curriculum separately and obtaining the degrees independently, this option affords students the opportunity to explore the synergies between these disciplines by intersecting coursework from each program. Once accepted into the 1+1 Accelerated Dual Degree Option, a student enrolls in either the M.S. Construction Management or in the M.S. Real Estate Development and sub-matriculates in the other program. The 1+1 Accelerated Dual Degrees capitalize upon coursework shared by both programs and upon the flexibility of elective courses

Layering an additional area of expertise to their primary area of study affords students the credentials and competencies to tackle a broad panorama of projects and to address pressing environmental and community-based challenges. Interdisciplinary and transdisciplinary educational models foster nimble, flexible problem solving on multiple levels. Working in team and/or laboratory centered processes, students engage in problem-based, experiential and collaborative learning. Such acumen not only prepares students for the complexities of the construction and real estate development industries, but also trains future leaders in these professions.

Curriculum: 2 years

- Both degrees can be accomplished in two-years of full-time study, comprising a total reduction of twelve credits or one semester of graduate coursework and tuition.
- Students may complete both programs in 61 credits, instead of the 73 credits required if the programs were pursued separately.

Contact Rob Fryer or Gulbin Ozcan-Deniz for more information.

Construction Management & Sustainable Design

Dual Master of Science (MS) Construction & Sustainable Design

Program Directors
Campus
Website

Rob Fleming & Gulbin Ozcan-Deniz
East Falls

<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html>

Program Description

This unique full-time, accelerated dual degree option is intended for students with a passion for both sustainable design and construction practices. Rather than completing both graduate curricula separately and obtaining the degrees independently, this option allows students to better capitalize on the synergies between the two disciplines and increase their competitive edge while reducing tuition cost and time. This 1+1 degree option provides a means for students to fully explore both disciplines in as little as two years, resulting in the award of both degrees.

The 1+1 Accelerated dual degree option allows students to customize their education, breaking outmoded disciplinary silos and expanding professional opportunities for our graduates. The combination of Construction Management and Sustainable Design, two complementary disciplines, leverages the intersections between these areas of expertise, providing graduates with the knowledge and skills to combine ecological concerns with building science.

Curriculum: 2 years

- Both degrees can be accomplished in two-years of full-time study, comprising a total reduction of twelve credits or one semester of graduate coursework and tuition.
- Students may complete both programs in 61 credits, instead of the 70 credits required if the programs were pursued separately.

Contact Rob Fleming or Gulbin Ozcan-Deniz for more information.



**KANBAR COLLEGE OF DESIGN,
ENGINEERING & COMMERCE**

Dean: Ron Kander, PhD | 215- 951-2740 | Jefferson.edu/Kanbar

About Us

Kanbar College offers an innovative and transdisciplinary approach to teaching and learning that provides students with the skills and knowledge to think creatively, brainstorm out-of-the-box ideas and work collaboratively to discover innovative solutions to complex problems.

Through the integrated DEC core curriculum, students gain the added value of expertise in related fields as well as deep discipline-specific knowledge. The program retains the core learning of each major while forging new collaborations between designers, engineers and entrepreneurs. By learning in a transdisciplinary environment, students go on to be better, more effective leaders in their professions.

When the critical-thinking and creativity skills of the designer combine with the analysis and problem-solving skills of the engineer and the planning and project-management skills of the business professional, they synthesize to form a suite of expertise that makes our students uniquely qualified to address today's real-world problems.

By bringing together design, engineering and business disciplines, Kanbar College pushes students to think beyond the boundaries of existing academic fields and focus on innovation through teamwork, collaboration and connections with industry partners while it emphasizes critical thinking and real-world problem-solving skills.

This pioneering curriculum prepares students to adapt to changes in their professions, collaborate with colleagues in other fields, and excel in jobs that exist today as well as ones that will emerge tomorrow. Students gain the knowledge and skills necessary to succeed in the 21st century workplace through real-world experience working on industry-sponsored projects.

Kanbar DEC Curriculum

The Kanbar College-wide curriculum offers intensive transdisciplinary skills development with the opportunity to practice and apply those skills in the context of students' own discipline. It includes three core courses: Finding and Shaping Opportunity, Systems Thinking and Sustainability, and Ethnographic Research Methods, that culminate in a fourth, integrated senior capstone project. Each course fosters collaboration among designers, engineers, and business majors giving students a breadth of expertise that goes beyond the boundaries of a traditional degree. This approach aggressively addresses changes in the 21st-century work world, where a sophisticated interdisciplinary understanding makes young professionals more effective in their own field of expertise, and enhances their ability to lead and succeed.

Finding and Shaping Opportunity	Introduces principles of design thinking as a key element of innovation. Students will create real-world value in an economic, social, and environmental context by innovating a new model for business that is both desirable and viable
Systems Thinking and Sustainability	Students develop systems models to identify key feedbacks and interactions among factors. A final team-based inquiry-driven project will characterize sustainability challenges and opportunities for focused interventions, with consideration of social equity dimensions and model limitations

Ethnographic Research Methods	The last course students take before their integrated capstone, brings together students' DEC core studies with the liberal arts and discipline expertise through a focus on understanding people and behavior.
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Accreditations

Accrediting Council for Business Schools and Programs (ACBSP) BS Programs; all Business academic programs (excluding SCPS programs) MS Programs: innovation MBA, Global Fashion Enterprise, Taxation	www.acbsp.org
Accreditation Board for Engineering and Technology (ABET) Engineering (BSE.); Mechanical Engineering (BSE)	www.abet.org
National Association of Schools of Art and Design, Commission on Accreditation (NASAD) Industrial Design	www.nasad.arts-accredit.org
Accreditation Board for Engineering and Technology (ABET) Engineering (BSE); Mechanical Engineering (BSE)	www.abet.org
National Association of Schools of Art and Design, Commission on Accreditation (NASAD) Industrial Design (BS); Industrial Design (MS)	www.nasad.arts-accredit.org

School of Business

Phillip Russel, PhD
Academic Dean

<https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business.html>

Whether you are an entering freshman or a seasoned MBA student, the School of Business will provide you with the cutting-edge skills and knowledge to allow you to succeed at every stage of your career - from excelling in your first job, to discovering new professions and opportunities as technologies and business models evolve.

From day one you will take a deep dive into your major or concentration, while working with students from other disciplines and simulating what you will experience in the workplace. As you interact with your peers and instructors, you will apply analytics and creativity to conceive of new, valuable, market-driven products and services. As you earn your degree, you'll benefit from unique advantages such as study abroad, internships with regional business, and collaboration on real projects with industry leaders to build valuable connections that can last a lifetime.

Nexus Projects

Nexus learning and teaching model focuses on the active learning and real-world problem solving through collaboration between students and faculty across disciplines and with external partners. Recent Nexus Projects have included:

- Nathan Sports Industry Project
- OmniWind Energy Systems - Weight Challenge
- Top Ram Business Plan Competition
- Federal Mogul Industry Challenge

Academic Programs

Undergraduate

Accounting	BS
Fashion Merchandising & Management	BS
Finance	BS
International Business	BS
Management	BS
Marketing	BS

Graduate

Global Fashion Enterprise	MS
Innovation Masters of Business Administration	MBA
Taxation	MS

<h1>Accounting</h1>	
Bachelor of Science (BS)	
Area Coordinator	Raymond Poteau, MBA, CPA
Campus	East Falls
Accreditation	ACBSP
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/accounting.html

Program Description

The accounting major at Thomas Jefferson University prepares students to become professionals with a broad understanding of public accounting and financial management of corporate and nonprofit organizations. Students have the opportunity to network with accounting industry professionals, participate in industry-sponsored projects, complete an exciting semester abroad, or help to run our Student Managed Investment Fund. They can also earn their iMBA degree in one additional year of study while preparing for the Certified Public Accountant (CPA) exam. Accountants serve a variety of roles in every company. Our graduates have gone to work at the Federal Reserve Bank, Ernst & Young and KPMG, just to name a few.

Learning Goals/Outcomes

- Prepare and analyze, at an in-depth level, corporate financial statements
- Apply knowledge of relevant professional accounting standards in the financial reporting and auditing of U.S. and multinational firms.

Curriculum: 4 year, 121-122 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	GDIV 2xx	Global Diversity	3
WRIT 101	Writing Seminar 1: Written Com	3	GCIT 2xxx	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
MATH 1xx	Mathematics Selection	3	DECM 300	Ethnographic Research Methods	3
DECF 102	Finding and Shaping Opportunity	3	ACCT 303	Accounting Theory & Practice	3
ECON 205	Macroeconomics	3	ACCT 309	Federal Taxes	3
ACCT 101	Financial Accounting	3	ACCT 316	Cost Accounting I	3
ACC T 102	Managerial Accounting	3	BLAW 301	Business Law	3
MKTG 102	Principles of Marketing	3	ABA 301	Data Mining & Predictive Analytics	3
MGMT 301	Principles of Management	3		General Elective	3
ECON 206	Microeconomics	3			
<u>Year 2</u>			<u>Year 4</u>		
ETHIC 2xx	Ethics	3	PHIL 499	Philosophies of the Good Life	3
ADIV 2xx	American Diversity	3	ABA 401	Operations & Data Analytics	3
WRIT 202	Writing Seminar II: Multimedia Communication	3	MGMT 498N	Business Capstone: Strategy Simulation	3
ACCT 203	Intermediate Accounting I	3	MGMT 499N	Business Capstone: CSR	3
ACCT 204	Intermediate Accounting II	3	ACCT 409	Auditing	3
DECS xxx	Science (Select one DECSYS)	3	ACCT 412	Advanced Accounting	3
	General Elective			General Electives or Internship	12
ABA 201	Introduction to Business Analytics	3			
ABA 202	Statistical Data Analytics	3			
FIN 301	Financial Management	3			

Fashion Merchandising & Management

Bachelor of Science (BS)

Program Director	Nioka Wyatt, MBA
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/fashion-merchandising-management.html

Program Description

Advancements in technology and globalization of the marketplace make the fashion industry an ever-changing, exciting place to work. This trillion-dollar industry needs bright, talented executives to guide the rapid pace of today's merchandising revolution. Skilled executives are required to deal with an increasingly complex variety of products and sourcing strategies and product development tasks, such as planning product lines months before they will appear in the stores. Once developed, new products must be sourced globally and then delivered to the consumer within a very short period.

The Fashion Merchandising and Management curriculum combines the fundamentals of business, including accounting, economics, marketing, finance and management, with textile and fashion courses taught by industry savvy professionals. Students learn

the process of product development, Omni channel engagement, sourcing and supply chain strategy from fiber development to final product, and become familiar with the use of technology application as well as analytics. Additional topics in product lifecycle management, design concepts and merchandising are explored. Students are also involved in the process of selection, procurement and distribution of products in a retail setting where they learn the significance of product execution through visual presentation.

Learning Goals/Outcomes

In addition to the goals and outcomes outlined by the School of Business Administration, graduates from the fashion merchandising and management program will be able to:

- Identify the interrelationship between the supply and value chain
- Explain retail strategies and company structure in global environments

Curriculum: 4 years, 121-123 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Writing Seminar 1: Written Communication	3	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
WRIT 201	Writing Seminar II: Multimedia Communication	3	DECM 300	Ethnographic Research Methods	3
MATH 1xx	Mathematics	3-4	BLAW 301	Business Law	3
DECF 102	Finding & Shaping Opportunity	3	FIN 301	Financial Management	3
ECON 205	Macroeconomics	3	ABA 301	Data Mining & Predictive Analytics	3
ACCT 101	Financial Accounting	3	DSGF 423	Design Concepts	3
ACCT 102	Managerial Accounting	3	CAD 201	Introduction to Digital Imaging	3
MKTG 102	Principles of Marketing	3		Specialization	3
FASM 101	Global Fashion Insight	3			
	<u>Year 2</u>			<u>Year 4</u>	
ETHIC 2XX	Ethics	3	PHIL 499	Philosophies of the Good Life	3
GDIV 1xx	Global Diversity	3	MGMT 498N	Business Capstone: Strategy Simulation	3
DECS 2XX	Science (Select one DECSYS) Specialization Course	3-4	MGMT 499N	Business Capstone: CSR	3
ABA 201	Intro to Business Analytics	3	ABA 401	Operations & Data Analytics	3
ECON 202	Microeconomics	3	TEXT 411	Textile/ Apparel Industry Issues	3
MGMT 301	Principles of Management	3		Specializations	3
ABA 202	Statistical Data Analytics	3		General Electives/ Internship	12
MKTG 217	Retail Strategy and Structure	3			
TEXT 101	Survey of Textile Industry	3			
Specializations: Students select one based on Career Pathway					
(a) Buying & Merchandising Merchandise Buying/Operations Product Development & Innovation -Visual Merchandising			(c) Fashion Product Development Prototyping Integrated Technology Value Chain Innovation		
(b) Global Brand Strategy Contemporary Brand Mgt. Apparel Merchandising Mgt. Business Licensing					

Area Coordinator	Tim Mooney, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/finance.html

Program Description

The finance major at Thomas Jefferson University prepares students to become professionals with a comprehensive understanding of global financial markets and financial institutions. Our graduates are prepared with skills to tackle complex financial problems, and have the professionalism to work effectively in any environment. Students have the opportunity to network with industry professionals, participate in international competitions, manage an investment portfolio through our Student Managed Investment Fund, study abroad for a semester, and earn their iMBA degree in one additional year while preparing for the Chartered Financial Analyst Level I (CFA) exam.

Learning Goals/Outcomes

In addition to the goals and outcomes outlined by the School of Business Administration, graduates from the finance program will be able to:

- Demonstrate knowledge of domestic and global capital markets and financial institutions
- Explain how managers make value-maximizing decisions in a corporation

Curriculum: 4 years, 121-122 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Writing Seminar I: Written Com	3	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
MATH xxx	Mathematics	3-4	DECM 300	Ethnographic Research	3
DECF 102	Finding and Shaping Opportunity	3	FIN 318	International Finance and Development	3
WRIT 201	Writing Sem II: Multimedia Comm.	3	FIN 303	Intermediate Financial Mgt.	3
ECON 205	Macroeconomics	3	FIN 322	Capital Mkts. & Institutions	3
ACCT 101	Financial Accounting	3	FIN 321	Investment & Portfolio Mgt.	3
ACCT 102	Managerial Accounting	3	BLAW 301	Business Law	3
MKTG 102	Principles of Marketing	3	ABA 301	Data Mining & Predictive Analytics	3
MGMT 301	Principles of Management	3			
<u>Year 2</u>			<u>Year 4</u>		
ETHC 2XX	Ethics	3	MGMT 498N	Business Capstone: Strategy Simulation	3
GDIV 2xx	Global Diversity	3	MGMT 499N	Business Capstone: CSR	3
DECF 200	Business Models	3	PHIL 499	Phil of the Good Life	3
DECS 2XX	Science (Select one DECSYS)	3	FIN 411	Personal Financial Planning & Risk Management	3
	General Electives	6	FIN 412	Financial Modeling	3
ECON 206	Microeconomics	3		General Elective or Internship	12
ABA 201	Introduction to Business Analytics	3	ABA 401	Operations & Data Analytics	3
ABA 202	Statistical Data Analytics	3			
FIN 301	Financial Management	3			

International Business

Bachelor of Science (BS)

Dean	Phillip Russel, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/international-business.html

Program Description

Prepares students to become professionals with a distinct ability to understand and excel in the global marketplace. Students in this program have the opportunity to become bilingual through advanced study of another language, travel abroad extensively to experience cultural immersion in places like Paris and Shanghai, and broaden disciplinary experience by taking a minor from another business discipline. Students can earn their iMBA degree in one additional year. International business skills are increasingly valuable in our globalized world. Our students have gone to work at multinational companies including Aramark, Merrill Lynch and Citibank, just to name a few.

Learning Goals/Outcomes

In addition to the goals and outcomes outlined by the School of Business Administration, graduates from the international business program will be able to utilize financial, economic, management and marketing trends and tools to make global strategic decisions.

Curriculum: 4 years, 121-122 credits

Year 1			Year 3		
FYS 100	Pathways Seminar	1	GCIT 2XX	Global Citizenship	3
WRIT 101	Writing Seminar 1: Written Communication	3	CGIS 300	Contemporary Global Issues	3
AMST 114	Topics in American Studies	3	DECM 300	Ethnographic Research Methods	3
ECON 206	Microeconomics	3	MKTG 324	International Marketing	3
MATH 1xx	Mathematics	3-4	FIN 318	International Finance	3
DECF 102	Finding and Shaping Opportunity	3	ECON 401	International Economics	3
ECON 205	Macroeconomics	3	LANG xxx	Language	6
ACCT 101	Financial Accounting	3	ABA 301	Data Mining & Predictive Analytics	3
ACCT 102	Managerial Accounting	3		General Elective	3
MKTG 102	Principles of Marketing	3			
MGMT 301	Principles of Management	3			
	Year 2	3		Year 4	
ETHIC 2XX	Ethics	3	ABA 401	Operations & Data Analytics	3
ADIV 2XX	American Diversity	3	MGMT 498N	Bus Capstone: Strategy Simulation	3
GDIV 1xx	Global Diversity	3	MGMT 499N	Business Capstone: CSR	3
WRIT 2xx	Multimedia Communication	3	PHIL 499	Philosophies of the Good Life	3
DECS 2XX	Systems: Select one DECS	3		Business Minor	12
FIN 301	Financial Management	3		General Electives	6
MGMT 307	International Management	3			
BLAW301	Business Law	3			
ABA 201	Intro to Business Analytics	3			
ABA 202	Statistical Data Analytics	3			

Management

Bachelor of Science (BS)

Dean	Cathy A. Rusinko, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/management.html

Program Description

The management major provides a broad-based and flexible approach to the study of business. Management majors focus on skills including teamwork, conflict resolution, leadership, professional communication, decision making, project management and creative problem solving. They can apply their expertise in for-profit and not-for-profit companies of all sizes or in their own entrepreneurial ventures. The major is flexible enough to accommodate a variety of options, including a minor from another disciplinary area, an internship and study abroad.

Our alumni have distinguished themselves in a variety of industries, including healthcare,

communication, retail, banking, insurance, global manufacturing, public agencies, and other service industries. Some graduates manage family businesses or start their own businesses.

Students also have the opportunity to earn their iMBA degree in one additional year.

Learning Goals/Outcomes

In addition to the goals and outcomes outlined by the School of Business, graduates from the management program will be able to: Apply their skills in leadership, teamwork, communication, and human resources to solve problems and inspire innovation in a wide array of companies and organizations.

Curriculum: 4 years, 121, 122 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	GDIV 2xx	Global Diversity	3
WRIT 101	Writing Sem 1: Written Comm.	3	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
WRIT 201	Writing Sem II: Multimedia Comm.	3	DECM 300	Ethnographic Research	3
MATH xxx	Mathematics	3-4		General Electives	6
DECF 102	Finding and Shaping Opportunity	3	MGMT 320	Human Resources	3
ECON 205	Macroeconomics	3	MGMT XXX	Management Elective	3
ACCT 101	Financial Accounting	3	BLAW 301	Business Law	3
ACCT 102	Managerial Accounting	3	ABA 301	Data Mining & Predictive Analytics	3
MKTG 302	Principles of Marketing	3			
MGMT 301	Principles of Management	3			
<u>Year 2</u>			<u>Year 4</u>		
ETHIC 2XX	Ethics	3	PHIL 499	Philosophies of the Good Life	3
ADIV 1XX	American Diversity	3	ABA 401	Operations & Data Analytics	3
	General Electives	3	MGMT 498N	Bus. Capstone: Strategy Simulation	3
DECS 2XX	Science (Select one DECSYS)	3	MGMT 499N	Business Capstone: CSR	3
MGMT 310	People and Teams in Organizations	3	MGMT 412	Current Management Topics	3
MGMT 315	Comm, Negotiations & Creative Economy	3		Management Elective	3
ECON 202	Microeconomics	3		General Electives	12
ABA 201	Introduction to Business Analytics	3			
ABA 202	Statistical Data Analytics	3			
FIN 301	Financial Management	3			

Marketing

Bachelor of Science (BS)

Area Coordinator	Chae Mi Lim, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/marketing.html

Program Description

The marketing major at Thomas Jefferson University prepares students to become professionals with a strong marketing foundation and real-world experiences. Students are prepared with skills to create value through strategic marketing plans and innovations and solve complex business problems in a collaborative team environment. Students have the opportunity to network with industry professionals, study abroad, and earn their iMBA degree in one additional year. Our graduates land jobs in advertising, brand management, digital marketing, marketing research, customer relationship management, and many other areas.

Learning Goals/Outcomes

In addition to the goals and outcomes outlined by the School of Business Administration, graduates from the marketing program will be able to:

- Demonstrate knowledge of concepts used in the strategic marketing process, with emphasis on SWOT analysis and environmental scanning
- Apply select elements of the marketing mix to marketing strategy for a product or service business

Curriculum: 4 years, 121-122 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	GDIV 2XX	Global Diversity	3
WRIT 101	Writing Seminar 1: Written Communication	3	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
MATH 1XX	Mathematics	3-4	DECM 300	Ethnographic Research Methods	3
DECF 102	Finding and Shaping Opportunity	3	ABA 301	Data Mining & Predictive Analytics	3
ACCT 101	Financial Accounting	3			
ACCT 102	Managerial Accounting	3	MKTG 305	Contemporary Brand Management	3
MKTG 102	Principles of Marketing	3	MKTG 315	Marketing in a Digital Environment	3
ECON 205	Macroeconomics	3		Genera; Electives	9
MGMT 301	Principles of Management	3			
ECON 206	Microeconomics	3			
<u>Year 2</u>			<u>Year 4</u>		
ETHC 2XX	Ethics	3	PHIL 499	Philosophies of the Good Life	3
ADIV 2XX	American Diversity	3	ABA 401	Operations & Data Analytics	3
WRIT 201/202	Writing Seminar II: Multimedia Communication	3-4	MGMT 498N	Business Capstone: Strategy Simulation	3
DECS 2XX	Science (Select one DECS)	3	MGMT 499N	Business Capstone: CSR	3
BLAW 301	Business Law	3	MKTG 391	Marketing Research	3
ABA 201	Intro to Business Analytics	3	MKTG 412	Marketing Strategy Seminar	3
ABA 202	Statistical Data Analytics	3		General Electives or Internship	12
FIN 301	Financial Management	3			
MKTG 207	Consumer in the Marketplace	3			
MKTG 310	Integrated Marketing Communication	3			

Global Fashion Enterprise

Master of Science (MS)

Program Director	Shubha Bennur, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/ms-global-fashion-enterprise.html

Program Description

Expands the career horizons of forward-thinking professionals with diverse backgrounds in fashion design, merchandising, management, and other industries who want a competitive edge, valuable connections, and real-world experience in the evolving fashion industry. Students benefit from a focus on global fashion development and an appreciation of apparel ecosystems throughout the value chain. Graduates of the MSGFE program possess the skills, knowledge and industry networks to bring value-added innovation to the fashion industry and to manage a thriving global fashion enterprise successfully.

Learning Goals/Outcomes

- Evaluate & utilize global fashion value chain innovations and best practices in solving industry problems and tapping opportunities
- Identify multicultural influences on the conduct of business throughout the global apparel value chain, including ethical issues
- Evaluate and leverage technologies and metrics in driving fashion industry performance
- Integrate material and product analysis and lifecycle assessments throughout the fashion value chain
- Compile new fashion designs/ideas/technologies into business models and actionable plans.

Curriculum: 2 year, 31-43 credits

IMBF 504	Financial and Managerial Accounting	1.5	GFE 732	Global Fashion Seminar	1
IMBF 505	Financial Management	1.5	GFE 734	Fashion Supply Chain Mgt	3
IMBG 508	Statistical Analysis for Business Decisions	1.5	IMBA 759	Entrepreneurship	3
GFEF 501	Prototyping	3	TXF 510	Digital Imaging for Fashion	3
IMBF 510	Operations Management	1.5	GFE 791	Fashion Internship	3
IMBA 604	Business Model Innovation	3	GFE 793	Global Fashion Networking	3
GFE 600	Fashion immersion	3	GFE 721	Global Fashion Project 1	3
GFE 612	Technology in Fashion	3	GFE 722	Global Fashion Project 2	3
GFE 621	Fashion Global Marketing and Sourcing	3	GFE 723	Global Fashion Project 3	3
GFE 725	Brand Driven Design & Innovation	3			

Innovation MBA

Master of Business (MBA)

Program Directors D. K. Malhotra, PhD
Campus East Falls, Center City, and Online options
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/innovation-mba.html>

Program Description

The iMBA's integrated curriculum helps students become dynamic problem-solvers and entrepreneurial thinkers, learning to navigate new, more valuable realities for their businesses and careers. Regardless of delivery method, our faculty of world-renowned academicians and industry experts brings invaluable real-world experience to the classroom, and Thomas Jefferson University's signature learning strategies inspire market-driven innovation through teamwork, collaboration, and industry connections. Jefferson iMBA graduates are exceptionally well prepared to be leaders in the exciting, challenging global marketplace.

Learning Goals/Outcomes

- Ethical Responsibility - students will implement ethical decisions
- Financial Skills - students will analyze financial ratios and statements
- Writing Skills - students will write effective business documents
- Leadership Skills - students will exhibit leadership and independent thinking skills, and work effectively in teams
- Integrative Learning - students will blend knowledge and skill sets from different disciplinary areas to develop effective business strategies

Concentrations

- Accounting (CPA Prep)
- Analytics
- Biopharmaceutical Commercialization
- Cannabis Business
- Fashion Business
- Finance (CFA Prep)
- Leadership
- Marketing
- Real Estate Development

Curriculum: 2 year, 36-46 credits

<ul style="list-style-type: none"> • Business Foundation (0-9 Credits) • Innovation Core (9 credits) • Business Core (18 credits) • Concentrations (9-10 credits) 					
IMBF 503	Foundations of Economic Analysis	3	IMBA 627	Competitive Technical Intelligence	3
IMBF 504	Intro to Financial & Managerial Accounting	1.5	IMBA 628	Accounting for Mgt Decisions	3
IMBF 505	Financial Management	1.5	IMBA 629	Financial Policy and Planning	3
IMBF 508	Statistical Analysis for Business Decisions	1.5	IMBA 630	Operations from a Systems Perspective	3
IMBF510	Operations Management	1.5	IMBA 642	Strategic Insight and Implementation	3
IMBA 731	Design Thinking in Business	3	IMBA 792 or IMBA 700	International Bus Trip or International Econ & Finance	3
IMBA 602	Managing Innovative People & Teams	3	Concentration Courses		9-10
IMBA 604	Business Model Innovation	3			

Concentration: Accounting

Provides students with tailored accounting or taxation coursework and aligned CPA exam preparation, in addition to the MBA core curriculum. This option is designed so students can earn their MBA degree and complete the four sections of the CPA exam in as little as one year, though a part-time option is also available.

<u>CPA Preparation Accounting Courses</u>			<u>CPA Preparation Taxation Courses</u>		
IMBA 741	Financial Accounting & Reporting I	3	TAX 660	Individual Taxation	3
IMBA 742	Financial Accounting & Reporting II	3	TAX 662	Corporate Taxation	3
IMBA 743	Auditing & Attestation	4	TAX 664	Tax Research	3
	Becker CPA Review	0		Becker CPA Review	0

Concentration: Health Analytics

The concentration in Health Analytics is designed to provide students with the knowledge and skills necessary to build a rewarding career in the healthcare industry. It prepares graduates to be successful in an ever-changing healthcare environment driven by data and analytics and the ability to turn data into insight and action. Knowledge of a programming language (R or Python) and graduate level advanced statistics is required for this concentration.

<u>Required Courses</u>		
HDS 501	Health Informatics and Analytics	3
HDS 518	Data Science I	3
HDS 532	Data Visualization	3

Concentration: Biopharmaceutical Commercialization

Through collaboration with the Jefferson Institute for Bioprocessing (JIB) this concentration is designed to provide students with the knowledge and skills necessary to build a rewarding career in the biopharma industry while focusing on the commercialization of advanced medicines, including cell and gene therapies, recombinant vaccines and monoclonal antibodies. Additionally, students will gain an understanding of the production of biopharmaceuticals and biologics, their regulatory and quality-based requirements, and key commercialization strategies and analytics.

<u>Required</u>		
ENGR 621	Intro to Biopharmaceuticals and Biologics Production	3
ENGR 619	Biopharmaceuticals and Biologics: Regulatory and Quality	3
ENGR 620	Biopharmaceutical Commercialization: Strategy and Analytics	3

Concentration: Cannabis Business

The concentration in Cannabis Business, designed in collaboration with the Jefferson Institute of Emerging Health Professions (IEHP), will offer students opportunity to gain valuable insight and training needed to interpret and solve real-world problems within the cannabis industry. Students gain an understanding of the emerging issues in the cannabis industry, the cultural and social history of cannabis, cannabis laws and regulations, and major aspects of quality assurance and control in cannabis testing.

<u>Required Courses (6 credits)</u>		
CBU 501	Emerging Issues in Cannabis Industry	3
CCT 508	Quality Control & Quality Assurance in Medical Cannabis Analysis and Dispensing	3
<u>Any three of the following</u>		
CMD 503	Pathology Potentially Responsive to Cannabis	3
CMD 504	Conventional & Cannabinoid Therapy of Disease	3
CMD 505	Health Implications of Medicinal Cannabis	3
CSC 511	Botany and Chemistry	3
CSC 512	Forensic Analysis of Cannabis and Cannabis-Derived Products	3
CMD 513	Cannabinoid Pharmacology	3
IMBA 759	Entrepreneurship	3
	Internship (approved by PD)	3
<u>Elective (select one)</u>		
CMD 503	Pathology Potentially Responsive to Cannabis	3
CMD 504	Conventional & Cannabinoid Therapy of Disease	3
CMD 505	Conventional & Cannabinoid Therapy of Disease	3
CSC 511	Botany and Chemistry	3
CSC 512	Forensic Analysis of Cannabis and Cannabis-Derived Products	3
CSC 513	Cannabinoid Pharmacology	3
IMBA 759	Entrepreneurship	3
	Internship (approved by PD)	3

Concentration: Fashion Business

Build specialized skills to help prepare for careers in the fashion design, merchandising, management and other global fashion industries.

<u>Required</u>		
GFE 600	Fashion Immersion	3
<u>Any two of the following</u>		
IMBA 791	Fashion Career Jumpstart Internship	3
GFE 729	Product Lifecycle Management	3
IMBA 759	Entrepreneurship	3
GFE 621	Fashion Global Marketing and Sourcing	3
GFE 734	Fashion Supply Chain Management	3

Concentration: Finance (CFA Preparation)

The CFA Preparation concentration is designed for those seeking the Chartered Financial Analyst designation who have an undergraduate finance background. The MBA-CFA Preparation option provides students with tailored finance courses and CFA Level 1 exam preparation, in addition to the core MBA curriculum. This is offered in partnership with the Philadelphia Chartered Financial Analyst Society.

<u>Required</u>		
IMBA 772	Investment & Portfolio Management	3
IMBA 776	Speculative Markets	3
IMBA 777	Fixed Income Securities	3
	Philadelphia CFA Society CFA Review Course	0

Concentration: Leadership

Designed to develop the specialized management skills to lead interdisciplinary teams, this concentration prepares students for leadership roles and focuses on business strategy. With a focus on effective professional communication and methods for moving teams toward a common goal, the management program prepares for an array of managerial roles.

<u>Required</u>		
IMBA 625	Communication, Negotiation, Creative Economy	3
IMBA 759	Entrepreneurship	3
IMBA 791	Career Jumpstart or	3
IMBA 714	New Product Development	

Concentration: Marketing

Designed for students who have undergraduate experience in areas like business management and fashion merchandising, this concentration provides insight to better understand consumer behavior and develops skills to analyze demand and market segments.

<u>Required</u>		
IMBA 762	Qualitative and Quantitative Marketing Research	3
IMBA 761	Promotion Management	3
IMBA 791 or	Career Jumpstart Internship or	3
IMBA 714	New Product Development	

Concentration: Real Estate Development

The concentration in Real Estate Development, designed in collaboration with College of Architecture and Built Environment, introduces the economic, social and physical issues inherent in environmentally and fiscally sustainable real estate and land-use development. Through real-world case studies presented by leading developers, coursework encompasses market analysis and valuation, finance and investment, legal issues of ownership and land-use, public-private partnerships, urban regeneration and adaptive reuse, construction science and management

<u>Required</u>		
MRE 601	Sustainable Real Estate Development Process	3
<u>Any two of the following</u>		
MRE 604	Case Study: Mixed-Use, Commercial and Health Care Facilities	3
MRE 615	Real Estate Finance and Investment	3
MRE 620	Case Study: Urban Revitalization, Historic Neighborhoods, & Adaptive Reuse	3
MRE 625	Real Estate Law & Ethical Practices	3
MRE 630	Market Analysis and Valuation	3
MRE 638	Public-Private Partnerships	3
TAX 789	Real Estate Taxation	3

Taxation

Master of Science (MS)

Program Director John Grigsby, LL.M., CFE, CFP, CPA, FHFMA
Campus East Falls
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-business/academic-programs/ms-taxation.html>

Program Description

Geared to practicing accountants in fields of public, corporate and governmental accounting, and to lawyers, financial managers and planners who need extensive information and formal study in taxation. The program is practitioner-focused and is strongly linked to business practice. Outstanding faculty members bring the highest level of expertise into the classroom. Students select courses from an innovative and state-of-the-art curriculum. Computer applications are integrated in the total curriculum where appropriate. All courses are taught based on the most up-to-date tax laws, and the implications of proposed changes in tax legislation are discussed.

Learning Goals/Outcomes

- Evaluate and apply fundamental accounting and tax principles, concepts and laws to a variety of business and non-business situations
- Demonstrate an understanding of professional responsibilities and ethical decision making in accounting and tax settings
- Master the ability to communicate in a clear, concise and effective manner in both written and oral form
- Demonstrate the ability to efficiently and effectively research and resolve complex tax issues by analyzing tax codes, regulations, rulings and interpretations
- Blend knowledge and skill sets from different disciplinary areas to develop effective business, tax and financial strategies.

Curriculum: 1-2 years, 30 credits

<u>Core Curriculum</u>					
TAX 660	Individual Taxation and Planning	3	TAX 765	Taxation of Flow-Through Entities	3
TAX 662	Corporation Taxation and Planning	3	TAX 794	State and Local Taxation and Planning	3
TAX 664	Tax Research and Professional Responsibilities	3	TAX 795	Estate Planning and Taxation	3
				Designated Elective Courses in Taxation	12

School of Design & Engineering

Michael J. Leonard,
Academic Dean

<https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering.html>

The School emphasizes in-depth exploration of individual design and engineering disciplines, while encouraging interdisciplinary communication and collaboration. Classes stress conceptual thinking, design excellence, intellectual curiosity and creative expression, combining a focused concentration on one particular field with a broad-based educational foundation that fosters critical thinking skills in a global context. This multi-tiered approach provides graduates with the knowledge and skills to navigate professional challenges successfully and to reap the rewards of leadership and success in their careers. The faculty of practicing professionals, state-of-the-art facilities, study abroad opportunities and collaborative approach to learning all contribute to creating a unique, intellectually stimulating environment that enables students to creatively meet the challenges of our fast-changing global marketplace.

Fashion and Textile Futures Center

Jefferson's premier center for fashion and textile programs immerses students in experiences that mirror industry: the Future Center provides forward-looking, market-sensitive, dynamic and highly collaborative environment. If you aspire to change the world through fashion and textiles, to rethink centuries of normal and wow employers with your ideas, you're going to love it here.

Academic Programs

Undergraduate

Animation & Digital Media	BS
Engineering	BSE
Fashion Design	BS
Industrial Design	BS
Mechanical Engineering	BSE
Textile Design	BS
Textile Product Science	BS
Visual Communication Design	BS

Graduate

Biologic Process Engineering	PhD
Biopharmaceutical Process Engineering	MS
Engineering (Textile Concentration)	MS
Health Communication Design	MS
Industrial Design	MS
International Fashion Design Management	MS
Textile Design	MS
Textile Engineering & Science	PhD
Textile Technology	MS
User Experience & Interaction Design	MS

Certificate

Biopharmaceutical Process Development	Graduate Certificate
Health Communication Design	Graduate Certificate
Surface Imaging	Advanced Practice Certificate

Accelerated Program

Textile Design	Accelerated BS/MS
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Animation & Digital Media

Bachelor of Science (BS)

Program Director	Jason Kirk
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/animation-digital-media.html

Program Description

The Animation & Digital Media program at Thomas Jefferson University connects students to the animation and digital media industries with the objective of becoming successful filmmakers as well as designers capable of applying skillsets to a wide range of industries which are increasingly in demand. The program offers a thorough understanding of animation fundamentals along with practical experience utilizing cutting-edge tools and techniques. As a graduate of the program, you will be equipped for leading creative roles in film, television, visual effects, marketing and video games.

Learning Goals/Outcomes

- Competence with multiple industry standard tool sets ranging from traditional production to digital 2D and 3D animation.
- Understanding of animation production workflows & pipelines, scalable from independent projects to team-based productions.
- Communicate effectively in a visual medium.
- Create immersive and engaging digital content at a professional level.
- Exposure to film studies and timeline based narrative design.
- Development of research planning, storytelling, artistic, and technological skillsets that are necessary for professional readiness and flexibility.
- Experiences working as an integral member of a cooperative team in the classroom, through industry sponsored projects and internships.
- Focused experiences in liberal arts that reinforce student's abilities to represent themselves and communicate ideas professionally.
- Demonstrate expertise and professional level competency in technical and graphic methods used in practice.
- Experience collaboration, including multidisciplinary collaboration, in solving design problems.

Curriculum: 4 year, 121-125 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 1XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
DBTU 114	Debating U.S. Issues	3	CGIS 300	Contemporary Global Issues	3
MATH xxx	Math Selection I	3-4	DECM 300	Methods: Ethnographic	3
MATH xxx	Math Selection II	3-4	ANIM 301Z	Motion Graphics I	4
DCEP 101	Integrative Design Process	3	ANIM 312	Motion Graphics II	3
VDES 101	Design Essentials	3	ANIM 318	3D Animation II	3
DRAW 101	Drawing Essentials	3	ANIM 303	History of Animated Cinema	3
ANIM 201	Intro Animation	3	ANIM 310	Digital Audio Production	3
GRPS 102	Design II Intro Visual Comm	3		Animation Elective	3
GRPH 110	Digital Imaging	3			
<u>Year 2</u>			<u>Year 4</u>		
GDIV 1XX	Global Diversity	3	ANIM 407Z	Adv Topics in 3D Animation	4
WRIT 201	Multimedia Communications	3	DIGD 370	Portfolio Development	1
ETHC 1XX	Ethics	3	ANIM 497Z	Animation Capstone I	4
GRPH 201	Design III: Graph Design Communication	3	ANIM 499Z	Animation Capstone II	4
ANIM 308N	3D Animation	3		Animation Electives	4
ANIM 202	Storytelling & Storyboarding	3		General Electives	6
ANIM 307	3D Modeling	3	BLAW 301	Business Law I	3
DIGD 318	Media Production	3			
DRAW 206	Figure Drawing	3			
DEC 2XX	Systems (select one DECSYS)	3			
DECF 200	Business Models	3			

Bachelor of Science in Engineering (BSE)

Program Director	Brian George, PhD
Campus	East Falls
Accreditation	ABET
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/engineering.html

Program Description

The BSE in Engineering program at Jefferson is accredited by the Engineering Accreditation Commission of ABET. The program prepares graduates with a breadth of engineering skills and knowledge while developing specific expertise and analytical skills in an area of technical concentration, including Industrial and Systems Engineering or Textile Engineering. Through applied coursework culminating in a two-semester senior design project, the graduates gain hands-on, practical experience to obtain professional licensure, succeed in the industry, or pursue graduate studies.

Learning Goals/Outcomes

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- 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
- an ability to communicate effectively with a range of audiences
- 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
- 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
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Curriculum: 4 years, 127.5 - 129.5 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ISEM 300	Ethnographic Research Method	3
WRIT 101	Written Communication I	3-4	ENGR 371	Engineering Special Topics	3
AMST114	Topics in American Studies	3	ENGR 210	Intro To Materials I or	3
MATH 111	Calculus I	4	ENGR 304	Operations Research I	
PHYS 201L	Physics I/ Lab	4	ENGR 308	Integrated Engr Product Development	3
CHEM 103	Chemistry I/Lab	4	ENGR 311	Fluid Mechanics	3
MATH 112	Calculus II	4	ENGR 314	Numerical Methods for Engrs	3
DECF 102	Finding & Shaping Opportunity	3	MENG 407	Thermodynamics & Heat Tr I	3
ENGR 101	Introduction to Engineering	3		Engr. Concentration Courses	6
ENGR 104	Introduction to Computing	3	ENGR 305	Engineering Statistics I	3
ENGR 102	Engineering Drawing	3	ENGR 322	Fund. Electrical Engineering	3
	<u>Year 2</u>		ENGR 399	E Design Seminar	0.5
GDIV/GCIT 2xx	Global Diversity	3		<u>Year 4</u>	
WRIT 201	Multimedia Communication	3-4	PHIL 499	Philosophies of the Good Life	3
SCI 2XX	Systems: Scientific Understanding	3	ETHC 1XX	Ethics	3
ENGR 371	Special Topics	3	ENGR 303	Engineering Economics	3
PHYS 203L	Physics II/ Lab	4	CGIS 300	Contemp. Global Issues	3
MATH 213	Calculus III	4	MENG 405	Introduction to Mechatronics	3
ENGR 215	Engineering Statics	3	ENGR 498	Senior Design Project I	3
MATH 225	Differential Equations	3	ENGR 499	Senior Design Project II	3
ENGR 218	Engineering Dynamics	3		Engr. Concentration Courses	6
ENGR 301	Mechanics of Materials	3			

Fashion Design

Bachelor of Science (BS)

Program Director	Farai Simoyi
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/fashion-design.html

Program Description

The fashion design program at Thomas Jefferson University is globally recognized for its team-oriented designers who understand the interrelationship of design, production and commerce while creatively answering the ever-changing needs of the fashion marketplace. As an integral part of the College of Design, Engineering and Commerce, fashion designers work on industry-related and interdisciplinary projects to develop sophisticated and unique solutions to challenging problems.

Learning Goals/Outcomes

- Apply conceptual and critical thinking skills to demonstrate the theoretical foundation of the profession
- Perform a broad base of technical skills and technology required of the profession
- Utilize quantitative reasoning and verbal, written and visual skills effectively
- Demonstrate understanding of business practice and ethics
- Possess skills to make contributions to the global fashion industry
- Examine global & cultural issues as they affect the world.

Curriculum: 4 years, 121-124 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ETHC 2XX	Ethics	3
WRIT 101	Written Communication	3/4	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
MATH1XX	Mathematics	3/4	DECM 300	Ethnographic Research	3
FASD 111	Studio I	3	FASD 311	Studio IV	3
DRAW 101	Drawing Essentials	3	FASD 316	Fashion Design	3
FASD 252	Fashion Design Research	3	FASD 322	Sustainable Concepts for Fashion Design I	3
DRAW 206	Figure Drawing	3	FASD 335	Studio V	3
TEXT 101	Survey of the Textile Industry	3	FASD 300	Technical Design	
ARTH 102	History of Western Art II	3			
DECF 102	Finding & Shaping Opportunity	3			
<u>Year 2</u>			<u>Year 4</u>		
WRIT 201	Multimedia Communication	3/4	PHIL 499	Capstone Folio Workshop	3
GDIV 2XX	Global Diversity	3	TEXT 331	Apparel Fabric Performance	3
SCI 2XX	Scientific Understanding	3	FASD 415	Studio VI	4
ARTH 314	History of Costumes & Textiles	3	FASD 416	Studio VII	4
ADIV 2XX	American Diversity	3	CAD 302	3D Virtual Fashion Design Essentials	3
FASD 211	Studio II		FASD 433	Portfolio Layout/Development	3
FASR 207	Fashion Figure Drawing	3		Designated FD Elective: FASD 315, FASD 317, FASR 317, FASR 319, FASD 419	3
CAD 204	CAD for Fashion Design	3		General Electives	9
FASD 213	Studio III	3			
FASD 205	History 20 th Century Designers	1			
DECS 2XX	Systems: DECS course	3			

Industrial Design

Bachelor of Science (BS)

Program Director	Tod Corlett
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/industrial-design.html

Program Description

Equips students to create attractive, meaningful and practical products and systems that serve the needs of the end-user and support the objectives of other stakeholders. The program prepares students to respond thoughtfully and creatively to challenges and opportunities presented by technological advances, social development and cultural change. The strengths of the program are derived from its interdisciplinary structure, collaboration with industry and engagement of the design community. Insights and unique collaborative project opportunities offer themselves to design students on a campus that hosts programs in related professions. Studio life is characterized by the simulation of work dynamics found in design consultancies, corporate design departments, and entrepreneurial ventures.

Learning Goals/Outcomes

- Interpret changes in society and technology and ideas in the humanities and the arts through discussion, verbal, visual and written communication
- Develop personal knowledge and methods needed to engage the discourse about design in different geographic and cultural contexts
- Develop creative solutions to complex problems, relying on ideation techniques, open-ended explorations, systematic information gathering, analysis and creative resolution
- Understand the priorities of other professions and stakeholders and collaborate with these in a productive, empathic manner
- Seek to influence their own and other professions to adopt better practices and continually strive to improve the human condition
- Approach their work with independence and the ability to continually assess and develop their methods so they can lead efforts to achieve better results

Curriculum: 4 years, 127-129 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
DBTU 114	Topics American Studies	3	DBIT 300	Debating Global Issues	3
MATH XXX	Mathematics	3-4		General Elective	3
	Physical Ed or Service Learn	1	DECM 300	Ethnographic Research Methods	3
INDD 101	Design I for Industrial Design	4		Science (Select one DECS)	
INDD 102	Design 2 for Industrial Design	4	INDD 301	Design V for Industrial Design	4
INDD 106	Materials & Process Fabrication	3	INDD 302	Design VI for Industrial Design	5
CAD 206	CAD 1 for Industrial Design	3	INDD 210	Ergonomic Studies	3
DRAW 101	Drawing Essentials	3	INDD 304	Design History & Theory	3
ARTH 102	History of Western Art II	3			
<u>Year 2</u>			<u>Year 4</u>		
ETHC 2XX	Ethics	3	HALMK 399	Capstone Folio Workshop	3
GDIV 1XX	Global Diversity	3		Concentration Courses	9
PHYS 101	Physics I	4		General Electives	6
WRIT 201	Multimedia Communication	3	INDD 401	Design VII for Industrial Design	5
INDD 201	Design 3 for Industrial Design	4	INDD 402	Design VIII for Industrial Design	5
INDD 202	Design 4 for Industrial Design	4	ARTH 101	History of Western Art 1	3
INDD 207	Materials and Processes for Manufacturing	3			
DRAW 301	Drawing: Design & Development	3			
INDD 324	History of Design & Communication	3			
DECP 101	Integrative Design Process				

Mechanical Engineering

Bachelor of Science (BS)

Program Director
Campus
Website

Brian George, PhD
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/mechanical-engineering.html>

Program Description

- **Accreditation: ABET**

The BSE Mechanical Engineering program, accredited by the Engineering Accreditation Commission of ABET, bestow graduates with a breadth of engineering skill and knowledge while facilitating technical depth in mechanical engineering design and manufacturing, energy and thermal-fluid Sciences, mechanics, and mechatronics. Students graduate qualified to lead successful and productive careers in their discipline, work collaboratively with colleagues of other disciplines, and pursue Professional Engineering (PE) licensure, and graduate studies.

Learning Goals/Outcomes

- Work in diverse and challenging careers, including engineering practice
- If qualified and interested, succeed in the diverse and challenging environments of advanced study, alternative career paths, or entrepreneurship.
- Meet employer expectations through integrity, creativity, curiosity, ethics, responsibility, and application of experiential learning.
- Pursue intellectual activity, personal growth, and professional development through relationships with each other; professional colleagues; and Thomas Jefferson University faculty, staff, and alumni.

Curriculum: 4 years, 127.5-129.5 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ENGR 371	Engineering Special Topics	3
WRIT 101	Written Communication	3-4	ENGR 302	Design for Manufacturability	3
AMST 114	Topics in American Studies	3	ENGR 305	Engineering Statistics	3
MATH 111	Calculus I	4	ENGR 322	Fund Electrical Engineering I	3
PHYS 201/L	Physics I/Lab	4	ENGR 308	Integrated Engr Develop	3
CHEM 103/L	Chemistry I/Lab	4	ENGR 311	Fluid Mechanics	3
MATH 112	Calculus II	4	ENGR 314	Numerical Methods Engineers	3
DECF 102	Finding & Shaping Opportunity	3	MENG 407	Thermodynamics	3
ENGR 101	Introduction to Engineering	3	ENGR 210	Intro to Material Science	3
ENGR 104	Intro to Computing	3	MENGR 301	Machine Design	3
ENGR 102	Engineering Drawing	3	MENG 399	ME Design Seminar	0.5
<u>Year 2</u>			<u>Year 4</u>		
ADIV 2XX	American Diversity	3	PHIL 499	Philosophies of Good Life	3
WRIT 201	Multimedia Communication	3-4	ETHC 2XX	Ethics	3
DECS 2XX	Science (DECSYS)	3	ENGR 303	Engineering Economics	3
GDIV/ GCIT 2XX	Global Diversity or Citizenship	3	MENG 405	Introduction to Mechatronics	3
ENGR 301	Mechanics of Materials	3	MENG 427	System Dynamics and Control	3
PHYS 203/L	Physics II/Lab	4	DECM 300	Ethnographic Research	3
MATH 213	Calculus III	4	MENG 428	Heat Transfer	3
ENGR 215	Engineering Statics	3	ENGR 498	Senior Design Project I	3
MATH 225	Differential Equations	3	ENGR 499	Senior Design Project II	3
ENGR 218	Engineering Dynamics	3	CGIS 300	Contemp. Global Issues	3

Textile Design

Bachelor of Science (BS)

Program Director	Marcia Weiss
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/textile-design.html

Program Description

With growing interest in materiality and expanding international markets, the billion-dollar textile industry impacts lives in a multitude of ways, from interiors and fashion, to performance and high-tech. This provides a world of opportunity for talented textile designers. Our program puts students on the fast track to an exciting career in this field. Textile Design majors' range from those who are design- and trend oriented to those focused on textile science, engineering and product development, enabling specialization in the area most suited to individual interests and strengths. Each year, Textile Design students win awards in prestigious, international design competitions sponsored by textile associations and industry corporations.

Learning Goals/Outcomes

- Apply conceptual and critical thinking skills that illustrate an understanding of the myriad opportunities within textile design
- Demonstrate creative talents that advance the textile design profession
- Examine textile design issues through acquiring, developing and conveying design ideas and information
- Demonstrate an understanding of design business practices, including ethics and law
- Develop a network of design industry thought leaders through successful completion of the program
- Integrate international perspectives to function in a global marketplace.

Curriculum: 4 years, 124-126 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
MATH 1XX	Mathematics	3-4	CHEM 101	General Chemistry	3
TEXT 105	Textile Design Studio 1: Ideation	3	DECM 300	Ethnographic Research	3
DECP 101	Finding & Shaping Opportunity	3	ARTH 3XX	History of Art of Color	3
VDES 101	Design Essentials	3		Textile DSN Designated Ele	3
DRAW 101	Drawing Essentials	3	TEXT 3XX	Textile Design Management	3
TEXT 101	Survey of the Textile Industry	3	TEXC 202/L	Color, Dyeing & Finishing /Lab	4
DRAW 303	Drawing: Materials and Methods	3	TEXT 306	Text Studio 4: Performance	3
KNIT 201	Knitting Technology I	3			
<u>Year 2</u>			<u>Year 4</u>		
ETHC 2XX	Ethics	3	PHIL 499	Philosophies of the Good Life	3
GDIV 2XX	Global Diversity	3	TEXT 307	Textile Materials	4
WRIT 201	Multimedia Communication	3	TEXT 490	Textile Design Capstone 1	3
DECS 2XX	Systems	3	TEXT 411	Textile & Apparel Issues	1
PRNT 305	Textile Printing Technology	3		Textile Designated Elective	6
WEAV 201	Weave Technology I	3		General Electives or Minor	12
TEXT 205	Textile Design Studio 2: Fashion	3	TEXT 491	Textile Design Capstone 2	3
ARTH 101/2	History of Art 1 or 2	3			
TEXT 206	Textile Design Studio 3: Interiors	3			
ARTH 314	History of Textiles and Costumes	3			

Textile Product Science

Bachelor of Science (BS)

Program Contact	Marcia Weiss
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/textile-product-science.html

Program Description

The program focuses on the innovative global textile industry, including fiber-engineered products for medical, geotextiles, architecture, fiber-reinforced composites, and traditional apparel and home applications. In this program students have the opportunity to select one of 4 career-focused concentrations and complete graduate level courses to transition into select Jefferson graduate programs.

Learning Goals/Outcomes

Prepares students to work in a global industry that includes fiber-engineered products for medical, geotextiles, architecture, fiber-reinforced composites, traditional apparel, and home-furnishing applications.

Concentrations

- Sports & High-Performance Materials
- Commerce
- Fashion Management
- Textile Fashion Sustainability

Curriculum: 4 years, 130-133 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
CHEM 101	Gen Chemistry or	3-4	DECM 300	Ethnographic Research Methods	3
OR 103	Chemistry I Lecture/Lab				
PHYS 101 or	Gen Physics or	3-4	KNIT 205 or	Weave Tech. II or	4
PHYS 201	Physics I/Lab		WEAV 301	Knit Tech. II	
MATH 1XX	Mathematics	3-4	TEXC 202/L	Color, Dyeing & Finishing /Lab	4
ENGR 104	Intro Computing	3		Concentration Courses	6
DECF 102	Finding & Shaping Opportunity	3	TEXT 321	Nonwovens	3
TEXT 104	Fiber and Yarn Studies	3		Designated Elective	3
KNIT 201 or	Knit Technology or	3	TEXT 411	Seminar: Textile/Apparel Issues	1
WEAV 201	Weave Technology I				
CAD 201 or	Intro Digital Imaging or	3			
ENGR 102	Engineering Drawing				
<u>Year 2</u>			<u>Year 4</u>		
ETHC 2XX	Ethics	3	PHIL 499	Philosophies of the Good Life	3
GDIV 2XX	Global Diversity	3		Concentration Courses	9
WRIT 201	Multimedia Communication	3		General Electives	12
DECS 2XX	Science (Select one DECSYS)	3	TEXT 487N	Capstone in TMT	6
	General Elective	3			
WEAV 201	Weave Technology I or	3			
OR KNIT 201	Knit Technology I				
KNIT 205 or	Weave Tech II or Knit Tech II	4			
WEAV 301					
TEXT 307	Textile Materials	4			
	Concentration Courses	6			

Visual Communication Design

Bachelor of Science (BS)

Program Director	Elizabeth Shirrell
Campus	East Falls
Website	Jefferson.edu/BSVisualCommunicationDesign

Program Description

Design shapes our world and human experiences. The Visual Communication Design program emphasizes the role of design as a vital cultural, social, economic, political, and environmental force in society. By fostering curiosity, faculty empower students to develop individual points of view and equip them to investigate and tackle the complex challenges of our profession and the world. Graduates learn to make and think using a range of techniques and applications, to collaborate with peers and faculty from other programs, to work on industry projects, and to engage with the professional design community. Students select a concentration in year three; Graphic Design Communication (GRAPH) or Web Design and Development (WEB).

Learning Goals/Outcomes

- Identify communication design problems to support appropriate solutions for intended audiences and context
- Conduct research & analysis to shape solutions and user experience
- Generate/prototype solutions to discover possibilities
- Evaluate outcomes to measure effectiveness
- Collaborate productively in teams (interdisciplinary)
- Adapt to continually changing professional challenges
- Demonstrate visual literacy through means such as composition, hierarchy, typography & creation of meaningful images
- Display proficiency in tools & technology

Curriculum: 4 years, 121-123 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
MATH 1XX	Math I	3-4	DECM 300	Ethnographic Research Methods	3
SCU XXX	Science	3	DECM 300	Ethnographic Research Methods	3
DECF 102	Finding and Shaping Opportunity	3	DIGD 318	Media Production	3
VDES 101	Design Essentials	3	MKTG 102	Principles of Marketing	3
DRAW 101	Drawing Essentials	3		Visual Comm Design Elective	3
GRPH 102	Design II Intro to Graphic Design	3		General Elective	3
ARTH 103	Survey of the History Art	3	Concentration: Graphic Design		
GRPH 110	Digital Imaging	3	GRPH 301	Design V: Intro to Branding	3
	<u>Year 2</u>		GRPH 302	Design VI: Advanced Branding	3
ETHC 2XX	Ethics	3	Concentration: Web Design		
GDIV 1XX	Global Diversity	3	DIGD 307	Design V: Adv Web & Strat.	3
WRIT 201	Multimedia Communication	3	DIGD 403	Web Development	3
GRPH 208	History of Graphic Design	3		<u>Year 4</u>	
DECS 209	Systems Thinking & Sustainability	3	PHIL 499	Philosophies of the Good Life	3
GRPH 201	Design III for Graphic Design	3	GRPH 308	Design Theory and Criticism	3
GRPH 202	Design IV for Graphic Design	3	DIGD 498	Capstone Prep & Prof Practice	3
ARTH 2XX	Art History Elective	3	GRPH499	Design VIII: Capstone	6
DIGD 200	Fund. of Web Programming	3		Visual Comm Design Elective	3
DIGD 206	Fund. Web Design & Strategy	3		General Electives	6
			Concentration: Graphic Design		
			GRPH 401	Design VII: Systems Design Integration	3
			Concentration: Web Design		
			DIGD 314	Design VII: User Interface Design	3
			DIGD 320	JavaScript	3

Engineering, Textile Concentration

Master of Science (MS)

Program Director	Brian George, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-in-engineering.html

Program Description

This program is intended to develop the graduate student's knowledge in the advanced fields of textile science and engineering. Students with undergraduate education in the fields of textile engineering, textile chemistry and textile sciences, and those with undergraduate experience in engineering or materials technology are welcome to pursue this program. The wide range of textile engineering courses will prepare the student to make significant contributions in either advanced textile manufacturing technology or textiles material science. The carefully integrated educational offerings at the University enable the student to be exposed to a wide range of professional education possibilities. A capstone experience is provided during the final semester.

Learning Goals/Outcomes

- Demonstrate knowledge & proficiency in technical aspects of textile engineering
- Analyze and criticize established textile theories and synthesize new theories. • Understand and evaluate engineering theory
- Apply their acquired skills toward the development of a unique research project
- Demonstrate a competent knowledge and proficiency in the field of textile engineering
- Perform written and oral technical communications at a competent level

Curriculum: 2 Years, 36 credits

- For students matriculating in the MS Textile Engineering program with no undergraduate background in textiles, a group of foundation courses may be required. The foundation courses will be determined at the time of admission by the program director.
- Students select 9 courses from TXE Options
- TXE 941 (Required)

<u>Core Curriculum</u>					
TXE 601	Fiber and Yarn Studies	3	TXE 754	Industrial and Specialty Fabrics	3
TXE 613	Characterization of Fibrous Materials	3	TXE 755	Advanced Yarn Studies	3
TXE 621	Mechanics of Materials	3	TXE 759	Product Evaluation	3
TXE 622	Mechanics of Textiles	3	TXE 762	Textile & Apparel Op Management	3
TXE 624	Advanced Textile Composites	3	TXE 783	Adv. Chemistry of Fibrous Materials	3
TXE 625	Biomaterials Technology	3	TXE 790	Quality Management	3
TXE 713	Coloration and Finishing Studies	3	TXE 791	Internship	3
TXE 721	Analytical Methods	3	TXE 797	Selected Topics	3
TXE 751	Advanced Woven Structures	3	TXE 798	Independent Study	3
TXE 752	Advanced Knitted Structures	3	TXE 941	Research Thesis	9
TXE 753	Advanced Nonwoven Structures	3			

International Fashion Design Management

Master of Science (MS)

Program Director
Campus
Website

Farai Simoyi
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-international-fashion-design-management.html>

Program Description

The MS in International Fashion Design Management program is developed to create the next generation of fashion professionals for a complex global fashion system. Students are invited to create their own path, and customize the experience to focus on different tracks with global opportunities right at their fingertips. By moving beyond the hand-crafted approach to fashion, students will have the opportunity to focus on design as a strategic function, integrated along the cycle of research and design, product development, branding and distribution.

Learning Goals/Outcomes

- Identify and synthesize research methodologies for the formulation of conceptual and tangible outcomes
- Implement strategic planning across the design development process
- Demonstrate how design interfaces with the wider fashion enterprise
- Manage the design portfolio
- Identify ethical theories and implement them in the international apparel markets
- Summarize and implement timelines used in the design process
- Integrate quantitative data & design development.

Curriculum: 1.5-2 years, 31-37 credits

<u>Year 1-Core Curriculum</u>			<u>Year 2-Core Curriculum</u>		
FDM 601	Design Process Timeline: Planning and Management	3	SDE 783	Capstone Fashion Design Management	3
FDM 617	Designing within Brand Parameters	3	CAD 4XX	CLO 3D Design Innovation	3
FDM 610	Social Media Metrics in Design	3			
FDM 623	Textile Design and Approval Processes	3			
FDM 621	Building Brand Identity	3			
FDM 707	Strategic Design and Merchandising Processes	4			

<u>FDM Core Curriculum + Sustainable Design Leadership Certification Study Track</u>		
SDN 625	Environmental Impact Analysis & Systems Thinking	3
SDN 626	Models & Metrics for Sustainable Organizations	3
	Take 2 courses below after graduation + receive certificate from Sustainable Design Program	3
SDN 601	Principles in Sustainable Design	3
SDN 602	Adaptive & Resilient Design	3

<u>FDM Core Curriculum + Sustainable Design Leadership Concentration Study Track</u>		
SDN 625	Environmental Impact Analysis & Systems Thinking	3
SDN 626	Models & Metrics for Sustainable Organizations	3
SDN 627	Sustainability Advocacy & Change Mgmt.	3

<u>FDM Core Curriculum + Entrepreneurship Study Track</u>		
GFE 611	Product Development & Entrepreneurship	3
GFE 621	Global Fashion Marketing & Sourcing	3

<u>FDM Core Curriculum + Textile Study Track</u>		
TXF 511	Knit Technology	3
TXD 665	Design Management	3

<u>FDM Core Curriculum + Innovation/Technology Study Track</u>		
IND 371	Soft Goods Development	3
GFE 612	Technology in Fashion	3
DSGN 371	Soft Goods Fabrication	3

Health Communication Design

Master of Science (MS)
& Graduate Certificate

Program Director Maribeth Kradel-Weitzel
Campus Hybrid: East Falls & Online
Website <https://www.jefferson.edu/healthcommdesign>

Program Description

The mission of the Health Communication Design program is to create a healthier world through clear, accessible and actionable communication design strategies. Through a series of themed, stackable certificates, delivered in a low-residency model, the MS in Health Communication Design equips students with theory and practice-based skills to address critical and complex health communication and design issues for individuals, communities, healthcare providers and policymakers. The program employs a human-centered process informed by user research, empathy, and a transdisciplinary, collaborative, multi-modal approach. Students can select a single themed certificate or complete two certificates plus a capstone to earn the MS in Health Communication Design, all delivered in a low-residency model.

Learning Goals/Outcomes

- Act as agents of lasting change at the intersection of health and design.
- Construct health communication research and solutions within an ethical framework.
- Create a personal approach for navigating the future of health communication work in an environment that is volatile, uncertain, complex and ambiguous.

Curriculum: Certificate, 12 credits

Design and Communication for Disease Prevention, Management and Cure: Ethics and Accessibility Focus (offered in fall semesters)

* Foundational Courses may be required for students without appropriate design experience

- HCMD 501 Digital Imaging Fundamentals
- HCMD 502 Typography Foundation

HCMD 600	Project Core—Design and Communication for Disease Prevention, Management and Cure	4
HCMD 601	Topic Core— Design and Communication for Disease Prevention, Management and Cure	3
Select Two	Skills Modules	2
HCMD 603	Change Management	
HCMD 604	Design Thinking Essentials	
HCMD 605	Negotiations	
	Elective	3
Additional options such as independent study, internship or other courses offered outside this program may be considered with approval from the program director.		
	HCMD 602 Communicating Health Data	
	HCMD 609 Health and Package Design	

Curriculum: Certificate, 12 credits

Design and Communication for Life Stages and Identity: Sustainable Systems Focus (offered in spring semesters)

* Foundational Courses may be required for students without appropriate design experience

- HCMD 501 Digital Imaging Fundamentals
- HCMD 502 Typography Foundation

HCMD 608	Project Core— Design and Communication for Life Stages and Identity	4
HCMD 607	Topic Core— Design and Communication for Life Stages and Identity	3
Select two	Skills Modules	2
HCMD 603	Change Management	
HCMD 604	Design Thinking Essentials	
HCMD 605	Negotiations	
	General Elective	3
Additional options such as independent study, internship or other courses offered outside this program may be considered with approval from the program director.		
	HCMD 602 Communicating Health	
	HCMD 609 Health and Package Design	

Curriculum: Graduate Degree, 30 credits

Complete both Certificate 1 and Certificate 2 and:		
HCMD 606	Capstone Preparation	1
	*Note that Capstone Preparation will substitute for one Skills Module within the second certificate earned.	
HCMD 605	Capstone	6

Industrial Design

Master of Science (MS)

Program Director	Tod Corlett
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-industrial-design.html

Program Description

MS in Industrial Design is a professional program based on interdisciplinary project work. In this program, you will learn to design effectively at the collaborative and chaotic “front end” of the product-development process. You will work with product users, researchers, businesspeople, engineers and manufacturers to create products and systems that are better at serving their users, societies and the world at large.

Learning Goals/Outcomes

- Informing design through creative research into user needs
- Working closely with business, engineering and other disciplines to design platforms and systems- not just isolated objects
- Designing intelligent products for the “internet of things,” integrating hardware, software and electronic interactivity
- Understanding and designing for global societies
- Prepare graduates for entrepreneurial work in the field, or for a position in a corporate design department or design-consulting firm.

Curriculum: 2 years, 42 credits

<u>Foundation Courses (Based on prior training)</u>			<u>Year 2</u>		
IDE 510	Ergonomic Studies	3	MSID 803	Master’s Project I: Research and Design	4
IDE 507	Design I for Industrial Design	4	MSID 704	Prototyping Interactive Systems	3
CADE 500	CAD I for Industrial Design	3		Elective	3
IDF 514	Drawing Essentials	3	MSID 804	Master’s Project II: Development and Evaluation	5
IDF 500	Drawing Design Development	3	MSID 701	Design Business and Entrepreneurship	3
IDF 505	Materials and Processes for Manufacturing	3	MSID 798 or MSID 791	Independent Study or Internship	3
IDF 508	Materials and Processes for Fabrication	3			
	<u>Year 1</u>				
MSID 500	Skills and Methods for Industrial Design	3			
MSID 703	User Centered Studio	4			
MIID 700	Research and Design Process	3			
	Elective	3			
MSID 705	Collaborative Studio	5			
MSID 797	Current Issues Seminar	3			
MSID 798	Independent Study, Internship or elective	3			

Textile Design

Master of Science (MS)

Program Director	Marcia Weiss
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-textile-design.html

Program Description

Provides both integration and balance between creative design and technology to prepare students for successful careers within the textile design industry. The program opens up the opportunity for successful and creative professional development for students who hold previous studio arts degrees as well as those coming from alternative backgrounds. The program structure has a unique balance of a strong technical base across all aspects of textiles upon which students build their design skills in a single concentration of knit, weave or print. Collaborative experiences with other majors plus a range of additional projects assigned by industry professionals and companies serve to expand the students' experiences.

Learning Goals/Outcomes

- Develop an appreciation of the multifaceted nature of textile design and the technical knowledge, skills, design and development processes and business structures required for a professional career in textiles
- Practice sustained visual research through original observation and trend information
- Apply visual research and technical skills into a collection of knitted, woven or printed textiles
- Produce a final body of textile design work—a fabric collection for exhibition and portfolio—exhibiting individual concept and development
- Produce an account of their final semester collection in thesis format for inclusion in the Gutman Library collection.

Curriculum: 2 years, 39 credits

<u>Year 1</u>			<u>Year 2</u>		
TXD 615	Design Studio 1A	3	TXD 743	Design Studio 2B	3
TXD 616	Design Studio 1B	3	TXD 744	Design Studio 2C	3
TXD 617	Design Studio 1C	3		Graduate Elective	3
TXD 749 or TXD 750 or TXD 776	Weave/Knit/Print Technology II	3	TXD 772	Design Studio 3A	3
	Business Elective	3	TXD 773	Design Studio 3B	3
TXD 777	Advanced CAD	3	TXD 774	Design Studio 3C	2
TXD 625	Seminar	0	TXD 975	Thesis	1
TXD 742	Design Studio 2A	3			

Textile Technology

Master of Science (MS)

Program Director	Brian George, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-textile-technology.html

Program Description

The MS in Textile Technology at Jefferson offers an integrated and collaborative curriculum that blends theoretical knowledge with experiential laboratory experiences. In many courses' students turn innovative ideas into original products. It is expected that graduates of the program will pursue careers in production, product evaluation, research and development, or management in the textile and apparel related fields.

Learning Goals/Outcomes

- Teaches cutting-edge technical textile processes to students interested in learning more about the science and technical based aspects of textiles.
- Courses focus on development, production, and characterization of fibers, yarns, fabrics, and textile-based products.
- The program combines theoretical knowledge gained in the classroom with hands-on experience with weaving, knitting, nonwovens, and composites production equipment in the innovative Fashion and Textiles Futures Center, as well as materials evaluation equipment in the Brunner Lab on the East Falls campus.

Curriculum: 2 Years, 30 credits

- Students select 8 courses from TEXT options below
- Thesis (Required, 6 credits)

<u>Core Curriculum</u>					
TEXT 601	Fiber and Yarn Studies	3	TEXT 754	Industrial and Specialty Fabrics	3
TEXT 602	Sustainable Textiles	3	TEXT 755	Advanced Yarn Studies	3
TEXT 603	Advanced Integrated Engineering Product Development	3	TEXT 759	Product Evaluation	3
TEXT 613	Characterization of Fibrous Materials	3	TEXT 762	Textile & Apparel Op Management	3
TEXT 621	Mechanics of Materials	3	TEXT 783	Adv. Chemistry of Fibrous Materials	3
TEXT 622	Mechanics of Textiles	3	TEXT 790	Quality Management	3
TEXT 624	Advanced Textile Composites	3	TEXT 791	Internship	3
TEXT 625	Biomaterials Technology	3	TEXT 797	Selected Topics	3
TEXT 713	Coloration and Finishing Studies	3	TEXT 798	Independent Study	3
TEXT 721	Analytical Methods	3			
TEXT 751	Advanced Woven Structures	3			
TEXT 752	Advanced Knitted Structures	3			
TEXT 753	Advanced Nonwoven Structures	3			

Textile Engineering & Sciences

Doctor of Philosophy (PhD)

Program Director	Brian George, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/phd-textile-engineering-sciences.html

Program Description

The PhD program in Textile Engineering & Science emphasizes not only depth in fundamental textile engineering and sciences/mechanical engineering disciplines, but also an interdisciplinary approach to understanding technologies in which textile engineers and scientists can and should take a leading role. It is this combined emphasis on fundamentals, the ability to think and work outside one's area of expertise and the ability to frame complex problems that best defines this doctoral program. Students will propose a textile engineering and sciences problem of substance and then develop a solution. Students must demonstrate the ability to apply scientific principles to meet engineering needs with due regard to factors such as environmental, financial, and/or societal, and they must do so within a reasonable time constraint.

Learning Goals/Outcomes

- Demonstrate knowledge of and proficiency in applying research methodology to textile engineering
- Demonstrate knowledge and proficiency in technical aspects of textile engineering
- Analyze and critique established textile and engineering theories and synthesize new theories based on research
- Apply their acquired skills toward the development of a unique research project
- Perform written and oral technical communications at a competent level.

Curriculum: 2 years, 36 credits

- Beyond Master's Degree in approved field

Year 1			Year 2		
	Graduate Engineering or Textile courses (3)	9	TES 903	Dissertation Research I	9
TES 901	Preliminary Examination Prep	3	TES 904	Dissertation Research II	3
TES 902	Thesis I	6	TES 906	Thesis II	6

- In a collaborative agreement with nearby Temple University, the three graduate-level courses may be taken at the College of Engineering at Temple, or at another university after consultation between the student, the dissertation chair, and the director of the program, or they can be taken at Thomas Jefferson University.
- The student's doctoral committee may require additional courses to enhance the student's research.
- Students will then be required to pass a two-part qualifying examination in the field of textile engineering. The first part is a written examination, and the second part is an oral examination
- A major and a minor topic will be chosen by the candidate and the doctoral committee

User Experience & Interaction Design

Master of Science (MS)

Program Director
Campus
Website

Neil Harner
East Falls

<https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-user-experience-interaction-design.html>

Program Description

User Experience and Interaction Design prepares students to be professionals who will change standards by which society communicates and interacts. When one looks at websites, mobile communications devices, graphic user interfaces, or integrated systems, one sees the importance of interaction in communicating a rich media experience. For businesses, success depends on a well-designed, engaging, dynamic and robust user experience. The MS in User Experience and Interaction Design program provides students the necessary skillsets and promotes the critical thinking that is vital to this evolving field.

Learning Goals/Outcomes

- Use principles of design, such as visual organization, information hierarchy, typography, narrative and aesthetics to solve problems
- Plan and design usable sites by collecting data through various methods
- Analyze and evaluate data, plan and execute intuitive interfaces, user experiences and rich interactive designs
- Use equipment, technology and resources that represent current trends in the field
- Analyze and design functional prototypes
- Apply user experience design principle
- Evaluate and respond to user needs and develop solutions to usability problems
- Apply fundamental concepts of Internet and digital marketing including social media and email marketing
- Create and analyze system architecture such as Content Management Systems, web development, user interactions and database development
- Use computer languages, compilers, interpreters and assembler products to produce code and output to meet specifications
- Illustrate an understanding of digital technologies in the creation, production and use of visual communication
- Utilize and synthesize digital tools including software, photography, time-based and interactive media to create effective visual designs

Curriculum: 1.5 - 2 years, 31-37 credits

<u>Standard Plan (Fall Start)</u>				
<u>Year 1</u>		<u>Year 2</u>		
IDD 510	Essentials of Interactive Design	6	IDD 941N UXD Thesis Project Preparation	1
INDD 700	Research & Design Process Methods	3	IDD 635 Interactive Narrative/ Drama	3
IDD 621N	Digital Experience Design	3	IDD 632 Database Management/ Scripting	3
IDD 637	Mobile Communication Design	3	IDD 798 UXD Internship or Independ Study	3
MSID 701	Design Business and Entrepreneurship	3		
IDD 631N	Digital Innovation Design	3		

<u>Accelerated Plan (Professionals & Undergraduate Pathway)</u>				
<u>Year 1</u>		<u>Year 2</u>		
INDD 700	Research and Design Process Methods	3	IDD 942 UXD Thesis Project	6
IDD 621N	Digital Experience Design	3		
IDD 632	Database Management/ Scripting	3		
IDD 637	Mobile Communication Design	3		
MSID 701	Design Business and Entrepreneurship	3		
IDD 635	Interactive Narrative/ Drama	3		
IDD 941	UXD Thesis Project Preparation	1		
IDD 631N	Digital Innovation Design	3		
IDD 798	UXD Internship or Independ Study	3		

Textile Design

Accelerated Bachelor of Science (BS) & Master of Science (MS)

Program Director	Marcia Weiss
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-textile-design.html

Program Description

The School of Design and Engineering offers a five-year Bachelor of Science/Master of Science (BS/MS) program to qualifying students majoring in textile design. Students follow the BS in Textile Design program for the first three years. Graduate courses taken in the fourth year of undergraduate study are applied toward both the BS and MS degrees. The fifth year includes summer sessions, in addition to the fall and spring semesters.

The five-year program offers an opportunity for students wishing to further their design education through graduate-level studio work. The program focuses on design development on a more concentrated basis, and thus extends and expands students' design skills and portfolio work (within their selected specialization) to a level not attainable through the undergraduate program.

Procedures

Prior to the end of their junior year, Textile Design BS students must complete the following:

- Meet with their academic advisor from the Textile Design program to discuss their interest
- Contact Graduate Admissions to share their intention to enter the 4 + 1 degree program and to discuss the procedure for doing so
- Currently-enrolled undergraduate Textile Design students will be considered for admission if they have maintained at minimum a 3.0 GPA
- Textile Design BS students must complete a minimum of 120 unique undergraduate credits to receive their undergraduate degree.

Program Learning Outcomes

Please see the Textile Design BS and Textile Design MS catalog entries for Program Learning Outcomes for both programs.

Curriculum: 5 years, 120 (BS) & 30 (MS)

<u>Year 4 (year 4 +)</u>			<u>Year 5 Spring</u>		
TXD 617	Design Studio 1C	3	TXD 772	Design Studio 3A	3
<u>Year 4 Summer</u>			<u>Year 5 Summer</u>		
TXD 615	Design Studio 1A	3	TXD 773	Design Studio 3B	3
			TXD 777	Advanced Computer Aided Design	3
<u>Year 5 Fall</u>					
TXD 742	Design Studio 2A	3		Graduate Elective	3
TXD 743	Design Studio 2B	3	TXD 774	Design Studio 3C	2
TXD 744	Design Studio 2C	3	TXD 975	Thesis	1

Surface Imaging

Advanced Practice Certificate

Program Director	Hitoshi Uniie
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-surface-imaging.html

Program Description

The Surface Imaging Advanced Practice Certificate offers a unique design education by viewing anything and everything as the canvas through the utilization of a variety of printing technologies. By applying painting, drawing, photography and printmaking to advanced design studios and printing practices, you will produce complex and unique surface image projects. You will be able to bring your creativity to life through fabrication printing, including additive material deposition and subtraction printing technologies (enhanced 3D surface and laser printing)—allowing you to produce anything you can imagine. Product development and management skills are enhanced with thorough knowledge and experience in advanced printing technology, applied engineering and an understanding of innovative business systems. Each course in the certificate program consists of stackable 1.5 graduate credits, and after completion of 9 credits students will be awarded the Advanced Practice Certification in Surface Imaging. The program is designed for imaging practitioners, professional designers as well as students in the universities and colleges who wish to enhance their careers in Surface Imaging.

Learning Goals/Outcomes

- Gain professional experience through research based real-world projects with industry partners that stress critical thinking and problem-solving skills through teamwork and collaboration.
- Work on interdisciplinary projects using advanced technology and design solutions.
- Be prepared to be a leader in the growing imaging industry which includes graphic, architectural, interior, textile, fashion apparel and home industries, as well as all facets in the global imaging industry.

Curriculum:

MSSIC 500	Surface Imaging Design	1.5
MSSIC 501	Digital Textile Printing	1.5
MSSIC 502	Hard Surface Digital Printing	1.5
MSSIC 503	Digital Printing for Flexible Substrates	1.5
MSSIC 504	Digital Color Management	1.5
MSSIC 505	Printing Technology	1.5

Jefferson Institute for Bioprocessing

Parviz Shamlou, PhD
Executive Director

<https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/research-and-innovation/institute-for-bioprocessing.html>

About Us

The Jefferson Institute for Bioprocessing (JIB) is a highly specialized education and training center that utilizes commercial-scale, single-use bioprocessing equipment to train and educate the next generation of biopharmaceutical process engineers and scientists.

Biopharmaceutical processing is a rapidly growing industry focused on the development of robust processes to manufacture high-value biologics and advanced therapeutics for patients with debilitating and life-limiting diseases that affect millions of patients worldwide, such as cancer, rheumatoid arthritis, Alzheimer's and Parkinson's.

The focus of JIB is the hands-on training of industry professionals through workshops and certificates and laboratory-intensive education of new bioprocessing engineers at the undergraduate and graduate levels.

We understand the critical need to rapidly develop and advance the skills and knowledge of scientists, engineers and technicians in bioprocessing, biomanufacturing, analytical methods and regulatory requirements.

Our Facilities

The Jefferson Institute for Bioprocessing (JIB) is a 25,000 sq. ft. state-of-the art facility designed for the training of industry professionals, as well as the education of the next generation of scientists and engineers interested in pursuing rewarding careers in biomanufacturing

Graduate

Biologic Process Engineering	PhD
Biopharmaceutical Process Engineering	MS

Certificate

Biopharmaceutical Process Development	Graduate Certificate
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Biologics Process Engineering

Doctor of Philosophy (PhD)

Program Director	Cameron Bardliving, PhD
Campus	Spring House
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/research-and-innovation/institute-for-bioprocessing/academic-programs/phd-in-biologics-process-engineering.html

Program Description

This primary goal of the industry-sponsored program is to meet the career aspirations of qualified students and professionals who wish to develop their practical and foundational skills in the new and emerging areas of biopharmaceutical and biological engineering and bioprocessing. The Ph.D. program will produce well-trained and well-educated individuals who can meet the rising technical and regulatory demands for manufacturing of safe and efficacious medicine including legacy biologics such as vaccines, proteins and monoclonal antibodies, as well as advanced, next-generation biologics such as gene therapy, tissue engineering and regenerative medicine.

Learning Goals/Outcomes

- Create independent research leading to new knowledge in a specialized area relevant to processing and commercialization of biologics.
- Support advanced skills through design of new equipment and technologies, setting up and conducting novel experiments, gathering and analysis of qualitative and quantitative data.
- Defend results and data through effective written and oral communication and presentation.
- Synthesize interactive, multidisciplinary, collaborative experiences through reflection on learning, work and instruction.
- Evaluate decisions based on ethical principles in research, development and professional activities.

Curriculum: 3 Years, 54 credits

For students matriculating in the PhD in Biologics Process Engineering program with no graduate background in Bioprocessing, a group of foundation courses may be required. The foundation courses will be determined at the time of admission by the program director.

<u>Year 1</u>			<u>Year 3</u>		
ENGR 801	Doctoral Research I	6	ENGR 810	Doctoral Research III	4
ENGR 802	Doctoral Research I	6	ENGR 811	Technical Comm Biopharma Research II	2
ENGR 803	Doctoral Research I	6	ENGR 812	Doctoral Research III	4
	<u>Year 2</u>		ENGR 813	Technical Comm Biopharma Research II	2
ENGR 804	Doctoral Research II	4	ENGR 814	Doctoral Research III	4
ENGR 805	Technical Comm Biopharma Research I	2	ENGR 815	Technical Comm Biopharma Research II	2
ENGR 806	Doctoral Research II	4			
ENGR 807	Technical Comm Biopharma Research I	2			
ENGR 808	Doctoral Research II	4			
ENGR 809	Technical Comm Biopharma Research I	2			

Biopharmaceutical Process Engineering

Masters of Science (MS)

Program Director	Geoff Toner, MS
Campus	Spring House
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/ms-biopharmaceutical-process-engineering.html

Program Description

The new transformational (12 months) 36-credit Master's Degree Program in Biopharmaceutical Process Engineering will be delivered at the Jefferson Institute for Bioprocessing (JIB) and is ideal for employment focused graduates with first degrees in Life Sciences and Engineering.

The Jefferson Institute for Bioprocessing (JIB) is a 25,000 sq. ft. state-of-the art facility designed for the training of industry professionals, as well as the education of the next generation of scientists and engineers interested in pursuing rewarding careers in biomanufacturing. Biopharmaceutical Processing is a rapidly growing industry focused on the development of robust processes to manufacture high value biologics and advanced therapeutics for patients with debilitating and life limiting diseases that affect millions of patients worldwide, such as cancer, rheumatoid arthritis, Alzheimer's, and Parkinson's.

Training and education in biopharmaceutical processing are exceptionally laboratory intensive. At JIB our students spend less time in traditional classroom settings and more time in JIB's pilot-scale facility fully equipped with the most advanced technologies and processes used by industry to manufacture biopharmaceuticals.

For the hybrid option, the Fall and Spring schedules for courses requiring the completion of on-site hands-on laboratory related coursework will be available prior to the start of each respective semester. In each instance, the on-site coursework will be scheduled in continuous late-semester blocks to avoid the necessity of frequent travel.

Learning Goals/Outcomes

- Prepare graduates for a wide range of positions in industry and academia.
- Provide scientific and engineering-based knowledge necessary for employment in the field.
- Impact Bioprocessing community through scholarship and advances in research.

Curriculum: 12 Months, 36 credits

Fall		
ENGR 609	Bioprocess Engineering for Scientist or	3
BP 601	Basic Life Sciences for Engineers	
ENGR 611	Principles of Biopharmaceutical Process Engineering	3
ENGR 607	Business and Entrepreneurship in Life Sciences	1.5
ENGR 604	Biopharmaceutical Process Operations	3
ENGR 603	Applied Mathematical and Statistical Methods in Biomanufacturing	1.5
ENGR 600	Bioanalytical/Regulatory/Quality Principles	3
Spring		
BP 601	Intro to Upstream Unit	3
BP 602	Intro to Downstream Unit Operations	3
ENGR 605	Quality by Design (QbD), Process Selection and Optimization	1.5
ENGR 606	Process Characterization and Validation	1.6
	Concentration Coursework	6
Summer		
ENGR 608	Capstone Project	6

Concentrations (select one concentration)

Protein Replacement Therapies

The concentration is specifically designed to meet the needs of future industry professionals that would like to specialize in the areas of bio-therapeutic development and formulation. The courses included in the concentration provide participants with the knowledge and skillset to identify emerging developments in bio-therapeutic manufacturing, design and create viral and plasmid-based vectors using recombinant DNA technology and transfect / optimize the cell lines required to produce protein-based therapeutics. Participants will also be introduced to the challenges and opportunities in formulation practice with a focus on the development of liquid formulation for proteins and monoclonal antibodies for subcutaneous and intravenous delivery.

ENGR 613	Vector and Cell Line Design	3
ENGR 612	Emerging Therapeutics	1.5
ENGR 622	Biotherapeutic Formulation	1.5

Analytical Techniques and Regulatory Principles

The concentration in Analytical Techniques and Regulatory Principles has been designed in response to a need within the biopharmaceutical industry for individuals with an advanced knowledge of the principles and practices of state-of-the-art analytical techniques and current regulatory requirements. The required coursework focuses on GMP analytical packages, Quality Management Systems and the regulatory principles, including ICH q 10, required to produce safe and efficacious therapeutics. Additionally, students will gain an understanding of the molecular techniques required to produce biologics and biosimilars, method validation, pharmaceutical GMP and Chemistry, Manufacturing and Control (CMC).

ENGR 616	Chemistry, Manufacturing and Control (CMC) and Pharmaceutical Good Manufacturing Practices	1.5
ENGR 618	Technical and Regulatory Aspects of Analytical Method Validation	1.5
ENGR 615	Biologics and Biosimilars: Regulatory Overview	1.5
ENGR 617	Quality Systems for Regulatory Compliance	1.5

Advanced Vaccine Manufacture

The unprecedented effects of newly emerging viruses with high mortality rates and pandemic disease causing potential has greatly increased the demand for vaccine manufacturing capabilities that can respond both rapidly and cost effectively. Advanced recombinant antigen vaccine manufacturing provides unparalleled opportunities to meet these needs, but requires specialized training and education. The Advanced Vaccine Manufacture concentration provides students with the knowledge and skillset to identify emerging developments in vaccine manufacturing, construct cell lines to produce advanced vaccines and formulate the end-product to meet the needs of patients in a safe and efficacious manner.

ENGR 613	Vector and Cell Line Design	3
ENGR 612	Emerging Therapeutics	1.5
ENGR 614	Vaccine Formulation	1.5

Biopharmaceutical Process Development

Graduate Certificate

Executive Director Campus Website	Geoff Toner, MS Spring House https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/research-and-innovation/institute-for-bioprocessing/academic-programs/certificate-in-biopharmaceutical-process-development.html
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Program Description

The 12-credit Graduate Certificate in Biopharmaceutical Process Development curriculum is designed to credibly prepare students who have already earned a Bachelor's Degree in Engineering or Life Sciences for a variety of technical jobs in biomanufacturing. The curriculum is interdisciplinary and emphasizes inquiry, laboratory- and pilot-plant scale-based learning, and team building. We see the BPD Certificate as strongly allied to Jefferson's core mission of educating scientists and engineers for fruitful careers in biomanufacturing. A primary learning outcome of the BPD Certificate is to provide students with the basic professional skills to operate effectively in technical entry level roles in biomanufacturing.

Students also gain an understanding of the regulatory environment in which biomanufacturing operates, and the Certificate prides itself on the team-based projects that pervade the curriculum with A focus on communication and team-work skills.

The 12-credit BPD Certificate is intended to bridge the gap between traditional undergraduate courses in life sciences and engineering and the skills required for a successful career in 21st century biopharmaceutical industries. Students will gain the basic skills needed for entry level positions in biomanufacturing.

Curriculum: 12 credits

BP 601 or	Basic Engineering for Scientists OR	2
BP 602	Basic Biochemistry & Biology for Engineers	
BP 603	Introduction to Biopharmaceutical Processing	2
BP 605	Introduction to Upstream Unit Operations	4
BP 604	Introduction to Downstream Unit Operations	4



**COLLEGE OF
HEALTH PROFESSIONS**



Dean: Michael Dryer, PA-C, DrPH | 215- 503-4943 | Jefferson.edu/JCHP

About Us

The Jefferson College of Health Professions (JCHP) is committed to educating healthcare professionals of the highest quality and ethical standards for contemporary practice in the global community. The College, representing inter-professional programs across the health professions, offers natural opportunities for students to develop professional behaviors within a community of learners. JCHP offers degrees ranging from a bachelor of science through clinical doctorate across several academic departments:

- Counseling and Behavioral Health
- Emergency & Disaster Management
- Health Sciences Programs
- Medical Laboratory Sciences & Biotechnology
- Midwifery & Women's Health
- Physician Assistant Studies
- Medical Imaging & Radiation Sciences
- Nutrition Sciences

JCHP also offers academic certificate programs, master's degree programs and continuing education opportunities through the Institute of Emerging Health Professions.

We seek to be responsive to the changing needs of the healthcare system.

- Curriculum is based on a set of core competencies that are essential to effective practice.
- Programs continually make innovative curricular changes to prepare students to function as outstanding health professionals in the dynamic environment of health care.
- Faculty develop learning and training experiences to ensure that students have the knowledge, skills and experience to be an evidence-based practitioner.
- As an integral part of a major academic health center, students have many inter-professional opportunities focused on working together, understanding one another's contributions, and effectively communicating in order to provide the best possible care for patients.

Accreditations

Accreditation Commission for Midwifery Education (ACME) Midwifery (DM)	www.midwife.org/default.aspx
Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) Physician Assistant (MS); Physician Assistant Studies (MS)	http://www.arc-pa.org
Commission on Accreditation of Medical Physics Education Programs (CAMPEP) Medical Physics (MS)	www.campep.org
Committee on Education of the American Association of Marital and Family Therapy (COAMFTE) Couple and Family Therapy (MS)	www.coamfte.org
Commission on Accreditation of Allied Health Education Programs (CAAHEP) Cardiac Sonography (BS); Cytotechnology (BS); Cytotechnology (MS); Abdomen-Extended & OB/GYN (BS); Perfusion (Certificate, MS); Vascular Sonography (BS)	www.caahep.org
Joint Review Committee on Cardiovascular Technology (JRC-CVT) Cytotechnology (BS); Cytotechnology (MS); Perfusion;	www.jrccvt.org
Joint Review Committee on Education in Radiologic Technology (JRCERT) Magnetic Resonance Imaging (BS); Medical Dosimetry (BS); Radiation Therapy (BS); Radiography (BS)	www.jrcert.org
Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) Nuclear Medicine Technology Program	www.jrcnmt.org
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) Medical Laboratory Sciences Programs	www.naacls.org
Council for Accreditation of Counseling and Related Educational Programs (CACREP)	www.cacrep.org

Academic Programs by Departments

Counseling and Behavioral Health

Graduate

Community & Trauma Counseling	MS
Community & Trauma Counseling: Art Therapy	CTC Concentration
Community & Trauma Counseling: Child Trauma and Play Therapy	CTC Concentration
Community & Trauma Counseling: Trauma, Addiction, & Recovery	CTC Concentration
Couple & Family Therapy	MFT

Certificate

Child Trauma & Play Therapy	Adv-Practice Certificate
Community & Trauma Counseling	Adv-Practice Certificate
Community & Trauma Counseling: Art Therapy	Adv-Practice Certificate
Community & Trauma Counseling: Trauma, Addiction & Recovery	Adv-Practice Certificate

Accelerated/Dual Degree

BS Health Sciences & MS Community & Trauma Counseling	3+2
BS Psychology & MS Community & Trauma Counseling	3+2

Emergency & Disaster Management

Graduate

Emergency & Disaster Management	MS
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Certificate

Clinical Hematology	Graduate Certificate
Emergency & Disaster Management	Graduate Certificate

Accelerated/Dual Degree

Emergency & Disaster Management/Public Health	MS/MPH
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Health Sciences

Graduate

Health Science	DHSc
Nutrition and Dietetic Practice	MS/RDN

Undergraduate

Health Sciences	BS
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Accelerated/Dual Degree

Health Sciences (BS) & Athletic Training (MS)	BS/MS
Health Sciences (BS) & Community and Trauma Counseling (MS)	BSMS
Health Sciences (BS) & Nutrition & Dietetic Practice (MS)	BS/MS
Health Science (BS) & Occupational Therapy (MS)	Closed to new students
Health Sciences (BS) & Physician Assistant Studies (MS)	BS/MS
Health Sciences: Pre-Physician Assistant	BS
Health Sciences: Pre-Medical Imaging/ Radiation Science	BS
Health Sciences: Pre-Medical Lab Sci/Biotechnology	BS
Health Sciences: Pre-Nursing	BS
Health Sciences: Pre-Pharmacy	BS

Certificate

Teaching and Learning	Graduate Certificate
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Medical Imaging & Radiation Sciences

Undergraduate

Abdomen-Extended & OB/GYN (Ultrasound)	BS
Cardiac Sonography (Echocardiography)	BS
Computed Tomography (CT)	BS
Invasive Cardiovascular Technology	BS
Magnetic Resonance Imaging	BS
Medical Dosimetry	BS
Medical Imaging & Radiation Science	BS
Radiation Therapy	BS
Radiography	BS
Vascular Sonography	BS

Graduate

Medical Imaging & Radiation Sciences	MS (Executive style)
Certificate	
Computed Tomography	Undergraduate Certificate
Medical Laboratory Sciences & Biotechnology	
Undergraduate	
Biotechnology	BS
Cytotechnology & Cell Sciences	BS
Medical Lab Sciences	BS
Graduate	
Biotechnology	MS
Cytotechnology & Cell Sciences	MS
Medical Lab Sciences	MS
Certificate	
Clinical Chemistry	Graduate Certificate
Clinical Hematology	Graduate Certificate
Clinical Microbiology	Graduate Certificate
Immunohematology	Graduate Certificate
Molecular Biology	Graduate Certificate
Accelerated/Dual Degree	
Biotechnology	BS/MS
Cytotechnology & Cell Sciences	BS/MS
Medical Laboratory Sciences	BS/MS
Medicine & Cell Biology & Regenerative Medicine	MD/PhD (see SKMC)
Midwifery	
Graduate	
Midwifery	MS
Midwifery	DM
Certificate	
Midwifery	Advanced Practice Certificate
Midwifery Re-entry to Practice	Advanced Training
Nutrition Sciences	
Nutrition & Dietetic Practice	MS
Physician Assistant	
Graduate	
Physician Assistant Studies - Center City	MS
Physician Assistant Studies - East Falls	MS
Physician Assistant Studies -New Jersey	MS
Accelerated/Dual Degree	
BS Health Sciences & MS Physician Assistant Studies	Professional Phase
Institute of Emerging Health Professions	
Graduate	
Medical Cannabis Science and Business	MS
Cardiovascular Perfusion	MS
Cardiovascular Perfusion Post-Professional	MS
Integrative Health Sciences	MS
Certificate	
Cannabis Business	Graduate Certificate
Cannabis Medicine	Graduate Certificate
Cannabis Science	Graduate Certificate
Integrative Health Education & Leadership	Advanced Practice Certificate
Integrative Nutrition	Advanced Practice Certificate
Mind-Body Medicine	Advanced Practice Certificate

Community & Trauma Counseling

Master of Science (MS)

Program Director	Kirby L. Wycoff, PsyD, EdM, MPH, NCSP
Assoc Prog Director	Yoon Suh Moh, Ph.D., LPC (DC, PA), NCC, CRC, BC-TMH
Campus	East Falls
Website	https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling.html

Program Description

The Master of Science in Community and Trauma Counseling Program provides graduates with the knowledge and skills for trauma-informed practice as community mental health counselors across a breadth of settings

including agency and institutional settings, professional private practice, and other environments influenced by traumatic events and extreme stress.

Curriculum: 2 year, 60 credits (no concentration)
(enrolled in Summer 2020 and prior)

<u>Year 1 Pre-Fall</u>			<u>Year 2 Pre-Fall</u>		
CTC 605	Foundations Trauma Counseling	3	CTC 611	Career Development	3
<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
CTC 601	Orientation to the Counseling Profession	3	CTC 652	Childhood Trauma and Play	3
CTC 602	Practicum I	3	CTC 653	Advanced Clinical Interventions in Trauma Treatment I	3
CTC 604	Psychopathology	3	CTC 791	Internship I	3
CTC 607	Advanced Counseling Theory and Practice	3			
<u>Year 1 Winter</u>			<u>Year 2 Spring</u>		
CTC 605	Foundations Trauma Counseling (Track up students)	3	CTC 609	Assessment in Counseling	3
<u>Year 1 Spring</u>			CTC 655	Advanced Clinical Interventions in Trauma Treatment II	3
CTC 603	Human Growth and Development	3	CTC 792	Internship II	3
CTC 606	Social and Cultural Diversity	3			
CTC 651	Neurobiology of Trauma	3			
CTC 701	Practicum II	3			
<u>Year 1 Summer</u>					
CTC 608	Group Work Community & Trauma Counseling	1.5			
CTC 610	Counseling Research & Evaluation	3			
CTC 613	Attachment, Relationship & Family Therapy	3			
CTC 614	Foundations of Addictive Behavior	3			
CTC 616	Experimental Group Process	1.5			

Curriculum: 2 year, 60 credits

- no concentration
- enrolled during and after Summer 2021

	<u>Year 1 Pre-Fall</u>				<u>Year 2 Pre-Fall</u>	
CTC 605	Foundations Trauma Counseling	3		CTC 611	Career Development	3
	<u>Year 1 Fall</u>				<u>Year 2 Fall</u>	
CTC 601	Orientation to the Counseling Profession	3		CTC 652	Childhood Trauma and Play Therapy	3
CTC 602	Practicum I	3		CTC 653	Advanced Interventions I	
CTC 603	Human Growth and Development	3		CTC 791	Internship I	3
CTC 604	Psychopathology	3			<u>Year 2 Spring</u>	
	<u>Year 1 Spring</u>					
CTC 606	Social and Cultural Diversity	3		CTC 651	Neurobiology of Trauma	3
CTC 607	Advanced Counseling Theory and Practice	3		CTC 655	Advanced Clinical Interventions in Trauma Treatment II	3
CTC 610	Counseling Research and Evaluation	3		CTC 792	Internship II	3
CTC 701	Practicum II	3				
	<u>Year 1 Summer</u>					
CTC 608	Group Work in Community and Trauma Counseling	1.5				
CTC 609	Assessment in Counseling	3				
CTC 613	Attachment, Relationship & Family Therapy	3				
CTC 614	Foundations of Trauma and Addictive Behavior	3				
CTC 616	Experiential Group Process	1.5				

Community & Trauma Counseling + Art Therapy Concentration

CTC Concentration

Program Director	Nicole G. Johnson, Ph.D., LPC, ACS, CAADC, CCDP-D, BC-TMH
Assoc Prog Director	Yoon Suh Moh, Ph.D., LPC (DC, PA), NCC, CRC, BC-TMH
Concentration Coord	Rachel Brandoff, Ph.D., ATR-BC, ATCS, LCAT
Campus	East Falls
Website	www.jefferson.edu/arttherapy

Curriculum: 2 years, 69 credits

- enrolled during and after Summer 2021

<u>Year 0 Summer</u>			<u>Year 2 Pre-Fall</u>		
CTC 510	History and Theory of Art Therapy	3	CTC 611	Career Development	3
CTC 512	Ethics, Standards & Professional Orientation in Art Therapy	3	<u>Year 2 Fall</u>		
CTC 520	Studio and Techniques of Art Therapy	3	CTC 652	Childhood Trauma and Play Therapy	3
<u>Year 1 Pre-Fall</u>			CTC 653	Advanced Interventions I	
CTC 605	Foundations of Trauma Counseling	3	CTC 791	Internship I	3
<u>Year 1 Fall</u>			<u>Year 2 Spring</u>		
YCTC 601	Orientation to the Counseling Profession	3	CTC 651	Neurobiology of Trauma	3
CTC 602	Practicum I	3	CTC 619	Art Therapy Assessment (*Replaces CTC 655)	3
CTC 603	Human Growth and Development	3	CTC 792	Internship II	3
CTC 604	Psychopathology	3	<u>Year 1 Spring</u>		
CTC 606	Social and Cultural Diversity	3	<u>Year 1 Summer</u>		
CTC 607	Advanced Counseling Theory and Practice	3	CTC 609	Assessment in Counseling	3
CTC 610	Counseling Research and Evaluation	3	CTC 613	Attachment, Relationship & Family Therapy	3
CTC 701	Practicum II	3	CTC 614	Foundations of Trauma and Addictive Behavior	3
CTC 609	Assessment in Counseling	3	CTC 620	Group Work in Art Therapy and Counseling (*Replaces CTC 608 and 616)	3
CTC 613	Attachment, Relationship & Family Therapy	3			
CTC 614	Foundations of Trauma and Addictive Behavior	3			
CTC 620	Group Work in Art Therapy and Counseling (*Replaces CTC 608 and 616)	3			

Community & Trauma Counseling + Child Trauma and Play Therapy Concentration

CTC Concentration

Program Director Assoc Prog Director Concentration Coord Campus Website	Nicole G. Johnson, Ph.D., LPC, ACS, CAADC, CCDP-D, BC- Yoon Suh Moh, Ph.D., LPC (DC, PA), NCC, CRC, BC-TMH Katherine Wenocur, DSW, LCSW, RPT-S East Falls www.jefferson.edu/playtherapy
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Curriculum: 2 years, 66 credits

<u>Year 1 Pre-Fall</u>			<u>Year 2 Pre-Fall</u>		
CTC 605	Foundations Trauma Counseling	3	CTC 611	Career Development	3
<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
CTC 601	Orientation to the Counseling Profession	3	CTC 652	Childhood Trauma and Play Therapy	3
CTC 602	Practicum I	3	CTC 653	Advanced Interventions I	3
CTC 603	Human Growth and Development	3	CTC 791	Internship I	3
CTC 604	Psychopathology	3	CTC 660	Foundations of Child Centered Play Therapy (*Additional Course for Play Therapy Concentration)	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
CTC 606	Social and Cultural Diversity	3	CTC 651	Neurobiology of Trauma	3
CTC 607	Advanced Counseling Theory and Practice	3	CTC 661	Historically Significant Approaches: Directive Play Therapy (*Additional Course for Play Therapy Concentration)	3
CTC 610	Counseling Research and Evaluation	3	CTC 662	Integrative Seminar: Intersectionality and Play Therapy (*Replaces CTC 655)	3
CTC 701	Practicum II	3	CTC 792	Internship II	3
<u>Year 1 Summer</u>					
CTC 608	Group Work in Community and Trauma Counseling	1.5			
CTC 609	Assessment in Counseling	3			
CTC 613	Attachment, Relationship & Family Therapy	3			
CTC 614	Foundations of Trauma and Addictive Behavior	3			
CTC 616	Experiential Group Process	1.5			

Community & Trauma Counseling+ Trauma, Addictions and Recovery Concentration

CTC Concentration

Program Director Nicole G. Johnson, Ph.D., LPC, ACS, CAADC, CCDP-D, BC-
Assoc Prog Director Yoon Suh Moh, Ph.D., LPC (DC, PA), NCC, CRC, BC-TMH
Concentration Coord Katherine Sperandio, PhD, LPC, ACS, NCC
Campus East Falls
Website <https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/ms-art-therapy.html>

Curriculum: 2 years, 66 credits

- Enrolled during and after Summer 2021

	<u>Year 1 Pre-Fall</u>				<u>Year 2 Pre-Fall</u>	
CTC 605	Foundations Trauma Counseling	3		CTC 611	Career Development	3
	<u>Year 1 Fall</u>				<u>Year 2 Fall</u>	
CTC 601	Orientation to the Counseling Profession	3		CTC 652	Childhood Trauma and Play Therapy	3
CTC 602	Practicum I	3		CTC 653	Advanced Interventions I	
CTC 603	Human Growth and Development	3		CTC 791	Internship I	3
CTC 604	Psychopathology	3		CTC 670	Screening, Assessment and Treatment Planning for Addiction (*Additional Course for Addiction Therapy Concentration)	3
	<u>Year 1 Spring</u>				<u>Year 2 Spring</u>	
CTC 606	Social and Cultural Diversity	3		CTC 651	Neurobiology of Trauma	3
CTC 607	Advanced Counseling Theory and Practice	3		CTC 671	Ethical Treatment and Interventions for Addiction (*Additional Course for Addictions Therapy Concentration)	3
CTC 610	Counseling Research and Evaluation	3		CTC 672	Neurobiology and Psychopharmacology of Addiction (*Replaces CTC 655)	3
CTC 701	Practicum II	3		CTC 792	Internship II	3
	<u>Year 1 Summer</u>					
CTC 608	Group Work in Community and Trauma Counseling	1.5				
CTC 609	Assessment in Counseling	3				
CTC 613	Attachment, Relationship & Family Therapy	3				
CTC 614	Foundations of Trauma and Addictive Behavior	3				
CTC 616	Experiential Group Process	1.5				

Couple & Family Therapy

Master of Family Therapy (MFT)

Program Director	Erica J. Wilkins, PhD, LMFT
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/family-therapy.html

Program Description

A unique collaborative effort between two highly-respected institutions: Thomas Jefferson University and Council for Relationships. This is a full-time, two-year, 66-credit program, which is modeled on the core curriculum developed by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), focusing on key areas of contemporary practice, including:

- Couple and marital counseling
- Family therapy with children
- Families in transition (divorce and remarriage)
- Family violence
- Medical family therapy
- Sex therapy

Curriculum: 2 years, 66-69 credits

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
CFTP 501	Theory & Practice Family Therapy I	3	CFTP 601	Implications for Diversity Practice	3
CFTP 503	Foundations of Systemic Practice	3	CFTP 602	Research Couple & Family Therapy	3
CFTP 505	Life Span Development from a Systemic Perspective	3	CFTP 603 or CFTP 605	Advanced Sex Therapy I * or Issues Violence and Abuse Family**	3
CFTP 506	Practicum I	3	CFTP 606	Multisystemic Context	3
CFTP 509	Professional, Ethical, and Legal Issues in Couple & Family Counseling	3	CFTP 607	Practicum IV	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
CFTP 502	Theory & Practice of Family Therapy II	3	CFTP 610	Trauma-Interventions from a Contextual Context	3
CFTP 507	Practicum II		CFTP 604 CFTP 611	Advanced Sex Therapy* or Medical Family Therapy **	3
CFTP 514	Theory & Practice of Couple Therapy	3	CFTP 612	Families in Transition	3
CFTP 513	Systemic/Relational Assessment & Mental Health Diagnosis and Treatment	3	CFTP 613	Master's Project	3
CFTP 511	Introduction to Sex Therapy: Concepts in Human Sexuality	3	CFTP 608	Practicum V	3
<u>Year 1 Summer</u>			<u>Year 2 Summer</u>		
CFTP 512	Live Supervision I	3	CFTP 608	Practicum V (if needed) ***	3
CFTP 508	Practicum III	3			

* Sex Therapy Track Course

** Couple & Family Therapy Track Course

***may be required to complete Practicum V through the summer (June through August)

Child Trauma & Play Therapy

Advanced Studies Graduate Certificate

Cert Coordinator	Katherine Wenocur, DSW, LCSW, RPT-S
Campus	East Falls
Website	https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/advanced-studies-in-child-trauma-and-play-therapy.html

Program Description

The Certificate of Advanced Studies in Child Trauma and Play Therapy trains exceptionally skilled child and adolescent therapists who are uniquely equipped with trauma competencies and knowledge, coupled with play therapy techniques and applications to support the health and emotional wellbeing of children and families. The Certificate consists of four classes (for credit or continuing education) designed for professionals who have already earned a graduate degree in counseling or a related mental health discipline

or for students currently enrolled in a clinical mental health graduate program. The Certificate meets educational requirements towards the attainment of the Registered Play Therapist™ (RPT) credential, and CTC is an Approved Provider of Play Therapy Education.

Curriculum: 12 credits

	<u>Pre-Fall</u>	
CTC652	Childhood Trauma & Effects	3
	<u>Fall</u>	
CTC 660	Foundations of Child Centered Play	3
CTC 661	Historically Significant Approaches: Directive Play Therapy	3
	<u>Spring</u>	
CTC 662	Integrative Seminar: Intersectionality and Play Therapy	3

Community & Trauma Counseling

Advanced Studies Graduate Certificate

Cert Coordinators	Nicole G. Johnson, Ph.D., LPC, ACS, CAADC, CCDP-D, BC-TMH Yoon Suh Moh, Ph.D., LPC (DC, PA), NCC, CRC, BC-TMH Neil Andress, Manager of Clinical Sites and Community Relations East Falls
Campus Website	https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/advanced-studies-certificate.html

Program Description

This certificate is designed for professionals who have already earned a graduate degree in counseling or a related mental health discipline.

Curriculum: 12 credits

<u>Core Curriculum</u>		
CTC 605	Foundations of Trauma Counseling*	3
CTC 651	Neurobiology of Trauma	3
CTC 653	Advanced Clinical Interventions in Trauma Treatment*	3
	<u>Select 1</u>	3
CTC 652	Childhood Trauma and Effects	
CTC 655	Advanced Clinical Interventions in Trauma Treatment II	

* Denotes required course

Community & Trauma Counseling Art Therapy

Advanced Studies Graduate Certificate

Cert Coordinator Campus Website	Rachel Brandoff, Ph.D., ATR-BC, ATCS, LCAT East Falls https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/advanced-studies-art-therapy-certificate.html
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Program Description

The Professional Certificate of Advanced Studies in Art Therapy gives clinicians the skills and knowledge they need to competently, confidently, and ethically incorporate art therapy into their practice.

Curriculum: 15-30 credits

- **Certificate Program** - 15 credit program for clinicians seeking to gain and incorporate art therapy skills into practice)
- **Professional Certificate Program and Internship Supervision** - 30 credit program for clinicians seeking credentialing as board certified Art Therapists

<u>Required Courses</u>			<u>Select Three</u>		
			<u>Fall</u>		
CTC 510	Ethics, Standards and Professional Orientation Art Therapy	3	CTC 603	Human Growth and Development	3
CTC 512	Ethics, Standards and Professional Orientation in Art Therapy	3	CTC 652	Childhood Trauma and Effects	3
CTC 520	Studio and Techniques of Art Therapy	3	CTC 653	Advanced Clinical Interventions in Trauma Treatment I	3
CTC 619	Art Therapy Assessment (Professional Certificate Only)	3	<u>Spring</u>		
CTC 620	Advanced Group, Couples and Family Art Therapy Process	3	CTC 606	Social and Cultural Diversity	3
CTC 791	Art Therapy Internship I (Professional Certificate Only)	3	CTC 651	Neurobiology of Trauma	3
CTC 792	Art Therapy Internship II (Professional Certificate Only)	3	<u>Summer</u>		
			CTC 613	Attachment Relations & Family Therapy	3
			CTC 614	Foundations of Addictive Behaviors	3

Community & Trauma Counseling: Trauma, Addiction and Recovery

Advanced Studies Graduate Certificate

Cert Coordinator
Campus
Website

TBD
East Falls
<https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/advanced-studies-in-trauma-addiction-and-recovery.html>

Program Description

The Certificate of Advanced Studies in Trauma, Addiction and Recovery provides professionals with an advanced understanding of the potential impact of trauma on physical, social, cognitive, and emotional development and further provides training in identifying, diagnosing and treating co-occurring substance use and mental health disorders. The Certificate consists of four classes (for credit or continuing education) designed for

professionals who master's level clinical mental health professionals, physicians, nurses, OTs, PAs or for students currently enrolled in one of the aforementioned graduate programs. This program meets the educational requirements for the Certified Advanced Alcohol and Drug Counselor (CAADC) in the state of Pennsylvania

Curriculum: 12 credits

	<u>Summer</u>	
CTC614	Foundations of Addictive Behavior	3
	<u>Fall</u>	
CTC 670	Screening, Assessment and Treatment for Planning for Addiction	3
	<u>Spring</u>	
CTC 671	Ethical Treatment and Intervention for Addiction	3
CTC 672	Neurobiology and Psychopharmacology of Addiction	3

Health Sciences & Community & Trauma Counseling

Bachelor of Science (BS) Health Sciences & Master of Science (MS) Community & Trauma Counseling

Undergraduate Director	Wendy Krupnick, PhD, MBA
Graduate Director	Nicole G. Johnson, Ph.D., LPC, ACS, CAADC, CCDP-D, BC-TMH East Falls
Campus Website	https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/bs-ms-combined-degrees.html

Program Description

Designed for students interested in becoming professional counselors who want to make a difference in the lives of trauma survivors. Accelerated dual degree program allows students to seamlessly complete undergraduate and graduate degrees in less time than would be required to complete both separately.

- See each program for Learning Outcomes.

Learning Goals/Outcomes (Health Sciences)

- Apply scientific and psychological concepts to make informed clinical decisions.
- Explain factors that can influence health and well-being.
- Apply principles of professionalism, respect, and ethical behavior (in class and in the field).
- Demonstrate an understanding of a range of health professions' scopes of practice and responsibilities to make informed career decisions.

Curriculum: 5 years, 165 credits

- 120 credits BS; 48 credits MS

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	CGIS 300	Contemporary Global Issues	3
WRIT 101	Writing Seminar I	3	ISEM 3XX	Integrative Seminar	3
AMST 114	Topics American Studies	3	PHIL 499	Philosophies of the Good Life	3
WRIT 201	Writing Seminar II	3	STAT 220	Statistics for Behavioral Sciences	3
MATH 1XX	Pre-Calculus	3	HSCI 330	Med Terminology and Documentation	3
BIOL 112	Core Concepts Biology Lecture/Lab	4		General Electives	9
BIOL XXX	Science Elective	3-4	HSCI XXX	Writing Intensive Elective	3
HSCI 100	Intro Health Professions	1	PSYC 2XX	Psychology Elective	3
PSYC 101	Introduction to Psych.	3	HSCI 3XX	Health Sciences Electives	6
PSYC 103	Physiological Psychology	3		General Elective	3
PSYC 213	Developmental Psych.	3			
	General Elective	3			
<u>Year 2</u>			<u>Year 4 Fall</u>		
ETHC 2XX	Ethics	3	CTC XXX	Professional Courses	12
GDIV 2XX	Global Diversity	3		General Elective	3
ADIV 2XX	American Diversity	3			
GCIT 2XX	Global Citizenship	3			
PSYC 201	Abnormal Psychology	3			
PSYC 226	Psychology of Trauma	3			
PSYC 222	Counseling Psychology	3			
PSYC 220	Clinical Psychology	3			
BIOL 201/L	A&P Lecture/Lab	4			
BIOL 202/L	A&P II Lecture/Lab	4			
HSCI 230	Intro to Health Care	2			
HSCI 3XX	Health Science Elective	3			

BS Awarded (December)

Winter and Spring & Year 5
Refer to CTC MS Program

Psychology & Community & Trauma Counseling

Bachelor of Science (BS) Psychology & Master of Science (MS) Community & Trauma Counseling

Program Advisors

Undergraduate: Dale Michaels, MS, LPC
Graduate: Kirby Wycoff, PsyD, EdM, MPH, NCSP
East Falls

Campus
Website

<https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/bs-ms-combined-degrees.html>

Program Description

Designed for students interested in becoming professional counselors who want to make a difference in the lives of trauma survivors. Accelerated dual degree program allows students to seamlessly complete undergraduate and graduate degrees in less time than would be required to complete both separately.

- See each program for Learning Outcomes.

Learning Goals/Outcomes (Psychology)

- Apply scientific and psychological concepts to make informed clinical decisions.
- Explain factors that can influence health and well-being.
- Apply principles of professionalism, respect, and ethical behavior (in class and in the field).
- Demonstrate an understanding of a range of helping professions' scopes of practice and responsibilities to make informed career decisions.

<h1>Emergency & Disaster Management</h1>	
Master of Science (MS) Graduate Certificate	
Program Director	Jean Bail, EdD, RN, MSN, CEN, MEP, EMT-P
Campus	East Falls & Online options
Website	TBD

Program Description

Jefferson's Master of Science in Emergency & Disaster Management program prepares students to manage and develop the increasingly complex disaster management and preparedness requirements of the 21st century.

Certificate Curriculum: 1 year, 9 credits

EDM 610	Foundations in Emergency Management	3
EDM 640	Logistic Management for Disasters	3
	EDM Elective	3

MS Curriculum: 1-3 year, 36 credits

Core Curriculum					
EDM 610	Foundations in Emergency Management	3	EDM 640	Logistic Management Disasters	3
EDM 631	Organizational Management and Communications in Disasters	3	EDM 651	Applied Research Methods and Statistics	3
EDM 635	Psychological Aspects of Disasters	3	EDM 755	Capstone Experience in Disaster Medicine and Management	3
EDM 639	Principles Disaster Exercises and Drills Concurrent with EDM 700 EDM Conference week	3		Electives (Designated)	12
EDM 643	Public Health Implications of Disasters	3	In addition to the eight required courses, students are recommended to complete 100 hours of experiential learning.		
Students select from the following electives:					
EDM 612	Foundations of Homeland Security & Defense		EDM 625	Business and Crisis Continuity	
EDM 613	International and Humanitarian Disaster Management)		EDM 626	Organizational Recovery and Planning	
EDM 615	Hazardous Materials & Industrial Safety		EDM 627	Principles of Terrorism	
EDM 617	Disaster Mapping		EDM 648	Emergency Preparedness with Special Needs Populations	
EDM 619	Natural Disasters		EDM 649	Health care Emergency Management	
EDM 623	Weapons of Mass Destruction		EDM 653	Clinical Disaster Medicine	
EDM 624	Organizational Risk and Crisis Management		EDM 791	Internship in Disaster Medicine and Management	
			EDM 797	Special Topics in Disaster Medicine and Management (1-3)	

Business & Organizational Continuity

Graduate Certificate

Program Director
Campus
Website

Jean Bail, EdD, RN, MSN, CEN, MEP, EMT-P
Online
TBD

Program Description

Designed for working professionals and students in the MS in Emergency & Disaster Management program, this three-course certificate program provides students with an awareness of businesses' vulnerability to major disruptions due to data loss and natural disasters, as well as how to promote an effective recovery.

Curriculum: 9 credits

<u>Core Curriculum</u>		
EDM 625	Business and Planning for Crisis Continuity	3
EDM 624	Organizational Risk and Crisis Management	3
EDM 626	Organizational Recovery and Planning	3

Emergency & Disaster Management/ Public Health Dual Degree

Master of Science (MS) & Master of Public Health (MPH)

Program Directors	Emergency & Disaster Management: Jean Bail, EdD, RN, MSN, CEN, MEP, EMT-P Public Health: Rosemary (Rosie) Frasso, PhD, MSc, CPH
Campus Website	Online or East Falls/Center City https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/public-health/Pathways/dual-degrees/dmm-mph.html

Program Description

The dual MS in Emergency & Disaster Management and Master of Public Health degree offers an opportunity for students to learn about the intersection of public health and emergency management. When a natural disaster strikes or a contagious disease spreads, swift and coordinated responses are required to restore order along with vital services, utilities and infrastructure.

This makes emergency management professionals a vital component to any comprehensive public health system. Public health professionals in emergency management respond to major disasters to protect residents from disease outbreaks and other hazards that result from contaminated food and water, chemical releases, insect-borne diseases, and unmet medical needs.

Curriculum: 63 credits

- sequence varies

<u>MPH</u>			<u>EDM</u>		
PNH 501	Foundations of Public Health	3	EDM 610	610 Foundations in Emergency Management	3
PBH 500	Foundations of the US Healthcare System	3	EDM 631	Organizational Management and Communications in Disasters	3
PBH 502	Society, Behavior & the Environment	3	EDM 635	Psychological Aspects of Disasters	3
PBH 504 or PBH 505	Fundamentals of Statistics	3	EDM 639	Disaster Exercise and Drills	3
PBH 506	Fundamentals of Epidemiology	3	EDM 640	Logistic Management for Disasters	3
PBH 509	Foundations of Policy & Advocacy	3	EDM 643	Public Health Implications of Disasters	3
PBH 510	Health Research Methods	3	EDM 755	Capstone Experience in DMM (joint with MPH)	3
PBH 520	Program Planning, Implementation & Evaluation	3		General Electives	6
PBH 651	Clerkship- Applied Practice Experience (joint with EDM)	0	EDM 700	EDM Conference Week	0
PBH 609	GIS Mapping	3			
	General Electives	9			

<h1>Health Sciences</h1>	
Doctorate of Health Sciences (DHSc)	
Program Director	Adam Bailis, PhD
Campus	Online
Website	https://www.jefferson.edu/DHSc

Program Description

The JCHP Doctor of Health Science (DHSc) Program is for professionals seeking advancement in healthcare practice, education and policy. The fully online program will accommodate students who are working healthcare professionals. All students will experience in-depth, individualized, multi-disciplinary training in a comprehensive range of healthcare leadership, teaching and learning, and research skills that support their development as leaders in a burgeoning health professions career landscape.

Interdisciplinary health professions education and practice is the foundation of the JCHP DHSc program. Accordingly, the curriculum is comprised of courses drawn from five colleges at Jefferson, ensuring that the program is relevant to professionals that span the full gamut of healthcare. This extraordinary breadth of coverage provides JCHP DHSc students an ideal opportunity for interprofessional study and practice, as well as robust support for a broad range of healthcare research topics.

Learning Goals/Outcomes

The DHSc program will enable students to deepen their knowledge in selected domains of clinical leadership and health professions teaching and learning, as well as leverage that knowledge in evidence-based practice. Didactic courses provide deep immersion in a broad array of emerging areas in the health professions. Doctoral project courses deliver experiential learning in defining the leading edge of an area of health care, investigating the basis of new challenges, and developing potential solutions. This combination of knowledge and skill will prepare DHSc graduates to become valuable problem solvers wherever their careers may lead.

Curriculum: 43 credits

<u>Core Courses (Required)</u>			<u>Clinical Leadership Track (12 cr)</u>		
HPS 600	Fundamentals of Applied Biostatistics	3	NU 707	Leadership and Interprofessional Collaboration	3
HPS 601	Applied Health Research Methods	3	MDW 805	Organizational Change	3
HPS 602	Responsible Conduct of Research	1	RS 650	Healthcare Law and Ethics	3
HPS 603	Health Systems Science	2	MIDW 712	Introduction to Health Policy	3
HPS 604	Scholarly Writing	2	NU 704	Philosophy, Foundations and Methods for Evidence-Based Practice	3
<u>Doctoral Project Courses (Required)</u>			LDSP 640	Psychology of Conflict and Negotiation in Organizations	3
HPS 701	Doctoral Project Foundation	2	<u>Health Professions Teaching & Learning Track (12 cr)</u>		
HPS 702	Doctoral Project Strategy	2	HPS 610	Simulation in Health Professions Education	3
HPS 703	Doctoral Project Execution	2	HPS 620	Foundations of Interprofessional Education and Collaborative Practice	3
HPS 704	Doctoral Project Completion	2	GC 752	Curriculum and Instructional Design	2
	Electives from Options (See list online)	6	GC 751	Instructional Technology and Learning	2
			GC 753	Program Assessment and Evaluation	2
<u>Selective Courses Clinical Leadership (6 cr)</u>			GC 749	Science of Learning	2
	Any track course not taken to satisfy track requirement	6			
RS 640	Financial Management	3			
RS 580	Personnel Management	3			
EDM 624	Organizational Risk and Crisis Management	3			
	Selective Courses - Health Professions Teaching & Learning (Any track course not taken to satisfy track requirement)	6			
OT 785	Evidence Base of Teaching: Advanced Curriculum Development	3			
GC 748	Learner-Centered Education	3			
RS 630	Faculty Development	3			

Health Sciences

Bachelor of Science (BS)

Program Director	Wendy Krupnick, PhD, MBA
Campus	East Falls
Website	https://www.jefferson.edu/university/health-professions/departments/programs/health-sciences-programs/health-sciences.html

Program Description

The Health Sciences program provides a strong foundation in the health, psychology and science disciplines combined with unique practical and clinical experiences. Together, these prepare students for a range of professional opportunities, from direct entry into a health career to further education in graduate or health professions programs. Students earn credit while building clinical experience through patient contact and volunteer hours integrated into health sciences coursework. Customizable General Electives allow students to develop an area of specialization, pursue a minor concentration, or complete credit-bearing internships in an emergency room, physician's office, rehabilitation facility, or other area matched to future career interests. Students also have opportunities to study away or participate in medical mission trips.

Learning Goals/Outcomes

- Apply scientific and psychological concepts to make informed clinical decisions.
- Explain factors that can influence health and well-being.
- Apply principles of professionalism, respect, and ethical behavior (in class and in the field).
- Demonstrate an understanding of a range of health professions' scopes of practice and responsibilities to make informed career decisions.

Curriculum: 4 years, 120 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	PSYC 213	Developmental Psychology	3
WRIT 101	Writing I: Written Communication	3	CGIS 300	Contemporary Global Issues	3
AMST 114	Topics in American Studies	3	ISEM 3XX	Integrative Seminar	3
MATH 102	Pre-Calculus (or higher)	3	HSCI XXX	Writing Intensive Elective	3-4
SCI Elec	BIOL-CHEM-PHYC-SCI Elective/Lab	8	GCIT 2XX	Global Citizenship	3
BIOL 103 OR 112	Biology I Lecture/Lab or Core Concepts in Biology/Lab	4	HSCI 225	Applied Stats for Health Sciences	3
BIOL 104 OR SCI Elec	Biology II Lecture/Lab or BIOL-CHEM-PHYC-SCI Elective/Lab	4	HSCI 3XX	Health Sciences Electives	6
WRIT 201	Multimedia Communication	3	SCI Elec	BIOL-CHEM-PHYC-SCI Elective/Lab	4
				General Elective	3
<u>Year 2</u>			<u>Year 4</u>		
HSCI 230	Introduction to Healthcare	2	PHIL 499	Philosophies of the Good Life	3
PSYC 101	Introduction to Psychology	3	HSCI 330	Medical Terminology and Documentation	3
GDIV 2XX	Global Diversity	3	PSYC 2XX	Psychology Electives	6
ADIV 2XX	American Diversity	3		General Electives (consider 4-course minor)	18
ETHC 2XX	Ethics	3			
PSYC 201	Abnormal Psychology	3			
HSCI 3XX	Health Sciences Electives				
BIO 201	Anatomy & Physiology I Lecture/Lab	4			
BIOL 202	Anatomy & Physiology II Lecture/Lab	4			

Health Sciences & Athletic Training

Accelerated Bachelor of Science (BS) Health Sciences & Master of Science (MS) Athletic Training

Program Director	Wendy Krupnick, PhD, MBA
Graduate	Kelly Pagnotta, PhD, LAT, ATC
Campus	East Falls
Website	https://www.jefferson.edu/university/rehabilitation-sciences/departments/athletic-training/degrees-programs/bs-ms-combined.html

Program Description

As a student in this accelerated dual degree program, you can earn both your bachelor's and master's degrees in five years. Students begin their pre-professional education in the Health Sciences where they complete college studies, health sciences, and prerequisite coursework with other health and pre-medical students on Jefferson's East Falls Campus. Students who maintain progression criteria are guaranteed to matriculate into the Athletic Training professional program.

Jefferson's academic advisors and faculty work closely with our students on course selection and academic performance to ensure that each student is on pace to transition into the professional phase of the program. The MS in Athletic Training program is designed to help meet the growing demand for professional Certified Athletic Trainers (ATC). It prepares highly motivated students with an interest in the medical field to sit for the National Athletic Trainers Association Board of Certification (BOC) examination upon graduation.

Curriculum: 5 Years, 156 credits

Year 1			Year 4		
FYS 100	Pathways Seminar	1	ATP 600	Emergency Care	4
WRIT 101	Writing Seminar I	3	ATP 602	Scientific Inquiry & Writing	1
AMST 114	Topics in American Studies	3	ATP 605	Fundamentals of Athletic Training	4
WRIT 2XX	Writing Seminar II	3-4	ATP 610	Basics of Rehabilitation	3
MATH 102	Pre-Calculus	3	ATP 620	Practicum Athletic Training I	3
BIOL 112	Core Concepts in Biology/Lab	4	ATP 615	Functional Human Anatomy	3
CHEM 101 or CHEM 103	Chemistry I/Lab	4	ATP 625	Prevention, Eval & Treatment Ath Inj I (U. Extremity)	4
HSCI 100	Intro to Health Professions	1	ATP 635	Human Physiology	3
HSCI 230	Introduction to Health Care	2	ATP 630	Therapeutic Modalities	3
PSYC 101	Introduction to Psychology	3	ATP 645	Motor Control and Human Movement	3
PSYC 213	Developmental Psychology	3	ATP 640	Practicum Athletic Training II	3
ADIV 2XX	American Diversity	3	Year 5		
ETHC 2XX	Ethics	3	ATP 660	Specialty Practicum in Athletic Training	3
GDIV 2XX	Global Diversity	3	ATP 665	Prevention, Eval & Treatment Ath Inj II (L. Extremity)	4
GCIT 2XX	Global Citizenship	3	ATP 685	Organization & Administration in Athletic Training	2
STAT 220	Stats for Behavioral Sciences	3	ATP 661	Practicum Athletic Training III	3
PSYC 201	Abnormal Psychology	3	ATP 690	Gen Medical Condition & Pharm Athletic Training	3
HSCI 304	Nutrition and Health	3	ATP 691	Research/Collaborative Project I	1
HSCI 305	Concepts in Fitness & Wellness	3	ATP 670	Prevention, Evaluation and Treatment of Athletic Injuries III (Spine and advanced techniques)	4
BIOL 201/L	Anatomy and Phys. I Lecture/Lab	4	ATP 695	Psychological Aspects of Injury and Rehabilitation	3
BIOL 202/L	Anatomy and Phys. II Lecture/Lab	4	ATP 696	Professional Topics in Athletic Training	2
			ATP 662	Practicum in Athletic Training IV	3
			ATP 692	Research/Collaborative Project II	1
Year 3					
PHYS 111	Physics I	4			
CGIS 300	Contemporary Global Issues	3			
ISEM 3XX	Integrative Seminar	3			
PHIL 499	Philosophies of the Good Life	3			
HSCI 3XX	HSCI Elective	3			
EXSC 306	Exercise Physiology	3			
EXSC 307	Kinesiology	3			
HSCI 330	Med Term & Documentation	3			
PSYC 322	Research Methods	3			
	General Elective	3			

Athletic Training Graduate Program

Refer to the Jefferson College of Rehabilitation Sciences (JCRC) for more information about the graduate Athletic Training program.

Health Sciences & Community & Trauma Counseling

Accelerated Bachelor of Science (BS) Health Sciences & Master of Science (MS) Community & Trauma Counseling

Program Director (Undergraduate)	Wendy Krupnick, PhD, MBA
Graduate Director	Kirby Wycoff, PsyD, EdM, MPH, NCSP
Campus	East Falls
Website	https://www.jefferson.edu/university/healthprofessions/departments/counseling-behavioralhealth/programs/community-trauma-counseling/bsms-combined-degrees.html

Program Description

Designed for students interested in becoming professional counselors who want to make a difference in the lives of trauma survivors.

- Accelerated dual degree program allows students to seamlessly complete undergraduate and graduate degrees in less time than would be required to complete both separately.
- See each program for Learning Outcomes

Learning Goals/Outcomes (Health Sciences)

- Apply scientific and psychological concepts to make informed clinical decisions.
- Explain factors that can influence health and well-being.
- Apply principles of professionalism, respect, and ethical behavior (in class and in the field).
- Demonstrate an understanding of a range of health professions' scopes of practice and responsibilities to make informed career decisions

Curriculum: 5 years, 165 credits

- BS:120 cr.; MS: 48 cr.

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	CGIS 300	Contemporary Global Issues	3
WRIT 101	Writing Seminar I	3	ISEM 3XX	Integrative Seminar	3
AMST 114	Topics in American Studies	3	PHIL 499	Philosophies of the Good Life	3
WRIT 201	Writing Seminar II	3	STAT 202	Statistics for Behavioral Science	3
MATH 1XX	Pre-Calculus	3	HSCI 330	Medical Terminology and Documentation	3
BIOL 112	Core Concepts in Biology Lecture/Lab	4		Science Electives	6
	Science Elective	3-4			-
HSCI 100	Introduction to Health Professions	1	HSCI XXX	Writing Intensive Elective	3
			PSYC 2XX	Psychology Elective	6
					-
PSYC 101	Introduction to Psychology	3			8
PSYC 103	Physiological Psychology	3	HSCI 3XX	Health Sciences Elective	3
PSYC 213	Developmental Psychology	3		Free Elective	3
	Free Elective	3			
				<u>Year 4 Fall</u>	
			CTC XXX	Professional Courses	1
					2
				Free Elective	3
ETHC 2XX	Ethics	3			
GDIV 2xx	Global Diversity	3		BS Awarded (December)	
ADIV-2XX	American Diversity	3			
GCIT 2XX	Global Citizenship	3		Winter and Spring & Year 5	
PSYC 201	Abnormal Psychology	3		Refer to CTC MS Program	
PSYC 226	Psychology of Trauma	3			
PSYC 222	Counseling Psychology	3			
PSYC 220	Clinical Psychology	3			
BIOL 201/L	Anatomy and Physiology I Lecture/Lab	4			
BIOL 202/L	Anatomy and Physiology II Lecture/Lab	4			
HSCI 230	Introduction to Health Care	2			

Health Sciences & Nutrition	
Accelerated Bachelor of Science (BS) Health Science & Master of Science (MS) Nutrition and Dietetic Practice	
Undergraduate Directors Graduate Director Campus	Wendy Krupnick, PhD, MBA Kati Fosselius, MS, RDN, LDN East Falls (undergraduate) Center City (graduate)

Program Description

As a student in this accelerated dual degree program, you can earn both your bachelor’s and master’s degrees in five years. Students begin their pre-professional education in the Health Sciences where they complete college studies, health sciences, and prerequisite coursework with other health and pre-medical students on Jefferson’s East Falls Campus. Students who maintain progression criteria are guaranteed to matriculate into the Nutrition professional program.

Jefferson’s academic advisors and faculty work closely with our students on course selection and academic performance to ensure that each student is on pace to transition into the professional phase of the program. The MS in Nutrition program is designed to help meet the growing demand for professional Registered Dietitian Nutritionists (RDNs). It prepares highly motivated students with an interest in the medical field to sit for the Commission on Dietetic Registration national Registration Examination for Dietitians examination upon graduation.

Students matriculating into the professional phase of study in the Nutrition and Dietetic Practice program will complete 24 graduate credits during Year 4 fall and spring semesters. These credits are allocated to the undergraduate BS degree in Health Sciences, with graduation eligibility in December. year 4 summer and year 5 courses comprise the MS degree.

Learning Goals/Outcomes (Health Sciences)

- Apply scientific and psychological concepts to make informed clinical decisions.
- Explain factors that can influence health and well-being.
- Apply principles of professionalism, respect, and ethical behavior (in class and in the field).
- Demonstrate an understanding of a range of health professions’ scopes of practice and responsibilities to make informed career decisions.

Curriculum: 5 years, 150 credits (120 BS; 30 MS)

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	CGIS 300	Contemporary Global Issues	3
WRIT 101	Writing Seminar I	3	ISEM 3XX	Integrative Seminar	3
AMST 114	Topics American Studies	3	PHIL 499	Philosophies of the Good Life	3
WRIT 201	Writing Seminar II	3	HSCI 304	Nutrition & Health	3
MATH 1XX	Pre-Calculus (or higher)	3	HSCI 3XX	Health Sciences Elective	3
BIOL 112	Core Concepts Biology Lecture/Lab	4	CHEM 201	Organic Chemistry I Lecture and Lab	4
CHEM 103	Chemistry I Lecture and Lab	4	PSYC 2XX	Psychology Elective	3
CHEM 104	Chemistry II Lecture and Lab	4		General Electives	9
HSCI 100	Intro Health Professions	1		General Elective (if credits needed)	0-3
PSYC 101	Introduction to Psychology	3			
	General Elective	3			
<u>Year 2</u>			<u>Year 4 (Pre-Fall & Fall)</u>		
ETHC 2XX	Ethics	3	RDN 571	Medical Nutrition Therapy I	3
GDIV 2XX	Global Diversity	3	RDN 531	Integrative Nutrition Across Life Cycle	3
ADIV 2XX	American Diversity	3	RDN 511	Nutritional Biochemistry & Physiology	3
GCIT 2XX	Global Citizenship	3	REN 535	Food Science & Safety	3
HSCI 225	Applied Statistics	3	REN 537	Culinary Nutrition, Functional Foods & Diet Planning	3
HSCI 230	Intro to Health Care	2	RDN 614	Nutrition Counseling	3
CHEM 214	Bioorganic Chemistry	3	RDN 671	Medical Nutrition Therapy II	3
BIOL 201	Anatomy & Physiology I Lecture/Lab	4	REN 612	Nutrition Communication, Education & Leadership	3
BIOL 202	Anatomy & Physiology II Lecture/Lab	4			
BIOL 221	Microbiology Lecture and Lab	4			
			<u>Year 5 (refer to Nutrition & Dietetic MS Program)</u>		

Nutrition & Dietetic Graduate Curriculum

- Refer to the Jefferson College of Health Professions (JCHP) for graduate Nutrition & Dietetic curriculum.

Health Sciences & Occupational Therapy

Accelerated Bachelor of Science (BS) Health Sciences & Doctorate in Occupational Therapy (OTD)

Undergraduate Director Graduate Director Campus Website	Wendy Krupnick, PhD, MBA Stephen Kern, PhD, OTR/L, FAOTA East Falls/Center City https://www.jefferson.edu/university/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/bs-otd-programs-east-falls/curriculum.html
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Program Description

Occupational Therapy is a healthcare profession that helps people to maximize their functional independence after illness or injury, or, develop the social and emotional skills necessary to participate fully in everyday life. Occupational therapists assist children with motor, social and learning needs to be successful in school activities and family life. They help adults to develop strategies to address the physical and emotional changes associated with rehabilitation or long-term health needs. Therapy frequently involves assisting individuals to relearn old skills, develop new ways of doing, or adapt the environment to enable them to live satisfying and independent lives.

The accelerated BS in Health Sciences/Doctorate in Occupational Therapy (OTD) program is designed for students who know early on that they want to become occupational therapists. This dual degree program allows students to seamlessly complete undergraduate and graduate degrees in less time than would be required to complete both degrees separately. Undergraduate courses and extra-curricular experiences provide students with a foundation to develop the knowledge, values and interpersonal skills needed for success as an occupational therapist.

During the first three years of undergraduate coursework, students complete major requirements for the bachelor's degree, including college studies and occupational therapy program prerequisites. Students who meet the graduate occupational therapy program progression criteria can enroll in first year Occupational Therapy graduate coursework during Year 4 of undergraduate studies. At the end of Year 4, students are awarded the BS in Health Sciences, and are eligible to participate in the May commencement ceremony. Upon completion of graduate occupational therapy program requirements in Year 6, the doctoral degree in Occupational Therapy will be awarded.

The accelerated BS/OTD is a cohort program that requires uninterrupted enrollment. Once accepted, students may not accelerate (i.e. take additional courses during summer semesters to shorten program length) or decelerate (i.e. take a reduced course load in a semester and add another year to undergraduate study).

For more information about the Occupational Therapy Doctorate (OTD), refer to the College of Rehabilitation Sciences section of the Catalog.

Curriculum: 6 years, 205 credits (minimum 120 cr. BS)

<u>Hallmark Courses</u>			<u>Health Sciences Core Courses</u>		
FYS 100	Pathways Seminar	1	HSCO 100	Introduction to Health Professions	3
WRIT 101	Writing Seminar I	3	HSCI 230	Introduction to Health Care	3
WRIT 2XX	Multimedia Comm	3	HSCI 330	Medical Terminology	3
BIOL112/L	Concepts of Bio/Lab	4	HSCI 225/ STAT 220	Applied Statistics	3
MATH 102	Pre-calculus or higher	3-4	HSCI 3XX	Health Sci Designated Elective	3
AMST 114	Topics in Am Studies	3	HSCI 3XX	Designated Elective	12-13
GDIV 2XX	Global Diversity	3	HSCI/BIOL	Writing Intensive Designated Elective	3-4
GCIT 2XX	Global Citizenship	3	<u>Science Courses</u>		
ETHC 2XX	Ethical Reflection	3	BIOL 201/L	Anatomy and Physiology I/Lab	4
ADIV 2XX	American Diversity	3	BIOL 202/L	Anatomy and Physiology II/Lab	4
ISEM 3XX	Integrative Seminar	3	PHYS 111	Physics I Mechanics & Thermodynamics	4
CGIS 300	Contemp Global Issues	3	<u>Psychology Courses</u>		
PHIL 499	Philosophies of the Good Life	4	PSYC 101	Introduction to Psychology	3
			PSYC 201	Abnormal Psychology	3
			PSYC 213	Developmental Psychology	3
			<u>Year 4</u>		
			OT Doctoral Courses towards BS		37
			<u>Year 5 & 6</u>		
			OT Doctoral Courses toward OTD		79

*Designated Electives: HSCI, PSYC, BIOL, EXSC courses

Occupational Therapy Graduate Curriculum

- Refer to the Jefferson College of Rehabilitations Sciences (JCRS) for graduate Occupational Therapy curriculum.

Health Sciences & Physician Assistant

Accelerated Bachelor of Science (BS) Health Sciences & Master Physician Assistant (PA)

Program Directors	Undergraduate: Wendy Krupnick, PhD, MBA Graduate: Michele Q. Zawora, MD
Campus Website	East Falls https://www.jefferson.edu/university/health-professions/departments/physician-assistant-studies/degrees-programs/undergraduate/3-2-pathway.html

Program Description

The Health Sciences to Physician Assistant program is designed for students who have determined they want to pursue a physician assistant career early. Students in this five-year accelerated dual degree program are assured a seat in the graduate MS Physician Assistant Studies program, provided they meet progression criteria set for their enrollment term.

Prior to enrolling in the professional phase of the program, students must complete an online application through CASPA (Centralized Application Service for Physician Assistants) by the stated deadline of the year prior to their desired master's enrollment date. All applicants who apply to CASPA, have a CASPA-calculated cumulative GPA and science GPA of 3.25, and at least 200 documented direct patient contact hours will receive an admissions interview.

Students matriculating into the professional phase of study in the Physician Assistant program will complete 20-22 graduate PA credits during Year 4 fall. These credits are allocated to the undergraduate BS degree in Health Sciences, with graduation eligibility in December. Year 4 spring and Year 5 courses comprise the MS degree.

The accelerated BS/MS PA is a cohort program that requires uninterrupted enrollment. Once accepted, students may not accelerate (i.e. take additional courses during summer semesters to shorten program length) or decelerate (i.e. take a reduced course load in a semester and add another year to undergraduate study).

The graduate Physician Assistant Program requires a continuous 25 months of study and includes Didactic and Clinical portions. The Didactic year consists of three semesters of medically related classroom and laboratory work, integrating some clinical experiences. Students must successfully complete all Didactic courses before entering the Clinical year. The Clinical year consists of extensive clinical experience through nine 5-week rotations at a variety of medical facilities, including hospitals and medical offices.

Curriculum: 5 years, 217 credits

<u>Year 1</u>			<u>Year 4 Summer & Fall - BS Awarded in December)</u>		
FYS 100	Pathways Seminar	1	PAST 407A	Advanced Human Anatomy A	2
WRIT 101	Writing Seminar I	3	PAST 407B	Advanced Human Anatomy B	3
AMST 114	Topics in American Studies	3	PAST 421	Genetics, Immunology & Microbiology	2
WRIT 2XX	Writing Seminar II	3-4	PAST 413	Medical Physiology & Pathophysiology	3
MATH 1XX	Pre-Calculus/Intro Calculus	3	PAST 417	Medical History & Physical Diagnosis	5
BIOL 103	Biology I/Laboratory	4	PAST 411	Applied Behavioral Sciences	3
BIOL 104	Biology II/ Laboratory	4	PAST 410	Medical & Professional Ethics	2
CHEM 103	Chemistry I/Laboratory	4	PAST 403	Evidence Based Medicine	2
CHEM 104	Chemistry II/ Laboratory	4	<u>Year 4 Spring (credits toward MS)</u>		
PSYC 101	Introduction to Psychology	3	PAST 530	Clinical Medicine	8
HSCI 100	Intro to Health Professions	1	PAST 612	Clinical Reasoning	2.5
<u>Year 2</u>			PAST 550	Pharmaco-Therapeutics	4
ETHC 2XX	Ethics	3	PAST 610	Emergency Medicine	3
GDIV 2XX	Global Diversity	3	PAST 615	Diagnostic Medicine	2
ADIV 2XX	American Diversity	3	PAST 605	Clinical Correlations of Public Health	1
GCIT 2XX	Global Citizenship	3	<u>Year 5 (Summer)</u>		
PSYC 201	Abnormal Psychology	3	PAST 621	Clinical Disciplines Overview (Surgery, Pediatrics, Women's Health)	6
HSCI 230	Intro to Health Care	2	PAST 622	Pharmacotherapeutics Seminar	1
CHEM 214	Bioorganic Chemistry	3	PAST 603	Advanced Physical Assessment	0.5
BIOL 221	Microbiology Lecture & Lab	4	PAST 623	Advanced Diagnostics Medicine	1
BIOL 201	Anatomy and Physiology I/L	4	Transition to Clinical Year		
BIOL 202	Anatomy and Physiology II/L	4	<u>Year 5 (Clinical Rotations: 5 weeks each)</u>		
PSYC 213	Developmental Psychology	3	Internal Medicine		
CGIS 300	Contemporary Global Issues	3	Primary Care I		
ISEM 3XX	Integrative Seminar	3	Primary Care II		
PHIL 499	Philosophies of the Good Life	3	Pediatrics		
HSCI 225	Applied Statistics	3	Women's Health		
HSCI 3XX	Health Sciences Elective	3	Emergency Medicine		
BIOL XXX	Biology Elective	3	Psychiatry/Mental Health		
HSCI 320	Clinical Interactions	3	Surgery		
HSCI 330	Medical Terminology	3	General Elective		
BIOL 207	Principles Genetics Lecture & Lab	3	PAST 772	Master's Comprehensive Experience	2
General Electives		6			

Health Sciences: Pre-Physician Assistant

Bachelor of Science (BS)

Program Director	Wendy Krupnick, PhD, MBA
Campus	East Falls
Website	https://www.jefferson.edu/university/health-professions/departments/physician-assistant-studies/degrees-programs/undergraduate.html

Program Description

The Pre-Physician Assistant pathway in Health Sciences is designed for highly qualified students who, due to seat limits, are not accepted into the accelerated BS/MS in Physician Assistant Studies program. Students can complete the four-year BS in Health Sciences degree following the same curriculum as the Pre-PA pathway and, after completing either Year 3 or Year 4, apply for admission into the graduate Physician Assistant (PA) program at Jefferson East Falls or New Jersey campuses. Students from Jefferson who meet progression criteria are guaranteed an admissions interview for selected reserved seats at the East Falls or Vorhees campus graduate program. All PA prerequisite courses are completed during the undergraduate program. Since this pathway is not completed in an accelerated format, it provides students with more opportunities to incorporate experiences like study away, intercollegiate athletics, and leadership roles in student life into their undergraduate education program.

Progression Criteria

Progression criteria for priority interview consideration includes the following: minimum cumulative and science GPAs of 3.25; minimum 200 hours of direct patient contact, completed CASPA online application (requires personal essay, letters of recommendation).

Curriculum: 4 years, minimum 120 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	PSYC 213	Developmental Psychology	3
WRIT 101	Writing I: Written Communication	3	ISEM 3XX	Integrative Seminar	3
HSCI 100	Intro. to Health Professions	1	BIOL 221	Microbiology/L	4
AMST 114	Topics in American Studies	3	GCIT 2XX	Global Citizenship	3
MATH 102	Pre-Calculus (or higher)	3	HSCI 225	Applied Statistics for Health Sciences	3
CHEM 103	Chemistry I/Lab	4	HSCI 320	Clinical Interactions	3
CHEM 104	Chemistry II/Lab	4	HSCI 3XX	Health Sciences Elective	3
BIOL 103	Biology I Lecture/Lab	4		BIOL 207/L or BIOL 256/L	4
				Genetics Lecture/Lab (recom)	
BIOL 104	Biology II Lecture/Lab	4		Science Elective CHEM 201	4
				Organic Chemistry I (recom)	
WRIT 201	Multimedia Communication	3		General Elective	3
<u>Year 2</u>			<u>Year 4</u>		
HSCI 230	Introduction to Healthcare	2	CGIS 300	Contemporary Global Issues	3
PSYC 101	Introduction to Psychology	3	PHIL 499	Philosophies of the Good Life	3
GDIV 2XX	Global Diversity	3	PSYC 2XX	Psychology Electives	6
ADIV 2XX	American Diversity	3	HSCI 330	Medical Terminology	3
ETHC 2XX	Ethics	3		General Elective	15
				consider 4-course minor	
PSYC 201	Abnormal Psychology	3			
HSCI 3XX	Health Sciences Electives	6			
BIOL 201	Anatomy & Physiology I Lecture/Lab	4			
BIOL 202	Anatomy & Physiology II Lecture/Lab	4			

Health Sciences: Pre-Medical Imaging & Radiation Sciences

Bachelor of Science (BS)

Program Director Wendy Krupnick, PhD, MBA
Campus East Falls
Website <https://www.jefferson.edu/university/health-professions/departments/programs/health-sciences-programs/pre-medical-imaging-radiation-sciences.html>

Program Description

As a student in this program, you will complete foundation and pre-professional coursework with other pre-medical and health students on Jefferson's East Falls Campus. During the second year, students will begin the process of working with faculty to select concentrations in the radiologic sciences. Students who maintain progression criteria are guaranteed to matriculate into the professional phase, delivered on the Center City campus. Jefferson's academic advisors and faculty work closely with our students on course selection and academic performance to ensure that each student is on pace to transition into the professional phase of the program.

Program Highlights

In our stimulating and supportive environment, you will build a strong foundation in sciences and humanities, preparing you for success in upper-division courses in Medical Imaging and Radiation Sciences.

Preprofessional Curriculum: 50-60 credits

- Years 1 & 2

Year 1			Year 2		
FYS 100	Pathways Seminar	1	ADIV/GDIV/GCIT	Diversity/Citizenship	3
AMST 114	Topics in Am Studies	3	ADIV/GDIV/GCIT	Diversity/Citizenship	3
WRIT 101	Written Communication	3	HSCI 225	Applied Stats for Health Sciences	3
WRIT 2XX	Multimedia Communication	3-4		General Elective	1-3
MATH 102	Pre-Calc/ Intro Calc	3-4	HSCI 330	Medical Terminology	3
BIOL 112	Core Concepts in Biology/Lab	4	BIOL 201	*Anatomy & Physiology I/Lab	4
HSCI 100	Intro to Health Professions	1	BIOL 202	*Anatomy & Physiology II/Lab	4
HSCI 230	Intro to Health Care	2	PHYC 111	*Physics I	4
CHEM 103	*Chemistry I/Lab	4	PHYC 112	* Physics II	4
PSYC 101	Introduction to Psychology	3	*Science prerequisites		

- All grades must be C or higher; AP credit accepted for non-science courses only
- Matriculation into professional program requires recommended minimum 3.0 overall GPA or higher overall GPA and minimum 3.0 science GPA

Professional Curriculum:

Students study two concentrations, one each in Years 3 and 4. Each concentration is 12-months long comprised of both didactic and clinical hours. Students select one of the concentrations listed below for Year 3. Refer to Medical Imaging & Radiation Sciences section for upper-division curriculum information.

Nuclear Medicine Radiography
Magnetic Resonance Imaging
Vascular Sonography

Abdomen-Extended & OB/GYN (Ultrasound)
Cardiac Sonography

Health Sciences: Pre-Medical Laboratory Sciences & Biotechnology

Bachelor of Science (BS)

Contact
Campus
Website

Admissions Office
East Falls/Center City
<https://www.jefferson.edu/academics/colleges-schools-institutes/health-professions/departments-programs/medical-laboratory-biotechnology/degrees-programs.html>

Program Description

As a student in this program, you will complete foundation and pre-professional coursework with other pre-medical and health students on Jefferson's East Falls Campus. During the second year, students will begin the process of working with faculty to select concentrations in the Medical Laboratory Sciences & Biotechnology program. Students who maintain progression criteria are guaranteed to matriculate into the professional phase, delivered on the Center City campus. Jefferson's academic advisors and faculty work closely with our students on course selection and academic performance to ensure that each student is on pace to transition into the professional phase of the program.

Program Highlights

In our stimulating and supportive environment, you will build a strong foundation in sciences and humanities, preparing you for success in upper-division courses in Medical Laboratory Sciences and Biotechnology.

The Department of Medical Laboratory Sciences and Biotechnology offers three different programs:

- Biotechnology
- Cytotechnology and Cell Sciences
- Medical Laboratory Sciences

2+2 Pathway

In the BS program (2+2), students complete their first two years of preprofessional coursework on the East Falls campus. Students who meet progression criteria matriculate into upper division professional courses on the Center City campus in the third undergraduate year. They complete their BS in one of the three laboratory programs after their fourth undergraduate year.

3+2 Pathway

In the accelerated Health Sciences BS/MS program (3+2) students complete their first three years of preprofessional coursework on the East Falls campus, in partial fulfillment of the BS degree in Health Sciences. Students who meet progression criteria matriculate into upper division professional courses on the Center City campus in the fourth undergraduate year. The first year of professional courses are applied to the Health Sciences bachelor degree. Students' final year of professional courses comprise the MS degree in one of the three programs. Refer to Medical Laboratory Sciences and Biotechnology section for curriculum information on each program.

Preprofessional Curriculum:

- HSCI 2+2 program: 59-62 credits (remaining BS credits completed in professional program)
- HSCI 3+2 program: minimum 87 credits (remaining BS credits + MS credits completed in professional program)

Year 1			Year 2		
FYS 100	Pathways Seminar	1	WRIT 2XX	Multimedia Communication	3-4
AMST 114	Topics in Am Studies	3	ADIV/GDIV/GCIT	Diversity/Citizenship	3
WRIT 101	Written Communication	3	ADIV/GDIV/GCIT	Diversity/Citizenship	3
PSYC 101	Introduction to Psychology	3	ETHC 2XX	Ethics	3
MATH 102	Pre-Calc/ Intro Calc	3-4	HSCI 225	Applied Statistics	3
BIOL 103	*Biology I /Lab	4	BIOL 201	*Anatomy & Physiology I/Lab	4
HSCI 100	Intro to Health Professions	1	BIOL 202	*Anatomy & Physiology II/Lab	4
HSCI 230	Intro to Health Care	2	Science Elec	Choose 1: BIOL 207; BIOL 256; BIOL 309; BIOL 321; CHEM 201; or PHYC 111 (for Biotech & Med Lab Sciences)	3-4
BIOL 104	*Biology II/Lab	4		General Elective (optional)	0-3
CHEM 103	*Chemistry I/Lab	4			
CHEM 104	*Chemistry II/Lab	4			

*Science prerequisites

Preprofessional Curriculum: 28-31 credits

- Accelerated Dual Degree 3+2 BS/MS Program:

BIOL 221	Microbiology/Lab	4	PSYC 2XX	Psychology Elective	3
ADIV/GDIV/GCIT	Diversity/Citizenship	3	HSCI 2XX	Health Science Elective	3
CGIS 300	Contemporary Global Issues	3	HSCI 330	Medical Terminology & Documentation	3
ISEM 300	Integrative Seminar	3	PHIL 499	Philosophies of the Good Life	3
	General Elective	3		General Elective (optional)	0-3

- All grades must be C or higher; AP credit accepted for non-science courses only
- Matriculation requires preferred 3.0 or higher overall GPA and science GPA

Health Sciences: Pre-Nursing

Bachelor of Science (BSN)

Program Director	Wendy Krupnick, PhD, MBA
Campus	East Falls
Website	https://www.jefferson.edu/university/health-professions/departments/programs/health-sciences-programs/pre-nursing.html

Program Description

With a strong foundation in sciences, psychology, and humanities, the nursing preparation sequence fulfills all necessary prerequisites for upper-division courses in the Jefferson College of Nursing BSN program. Students are prepared for roles as compassionate clinical leaders upon graduation.

Program Highlights

Upon completing a BSN program at Jefferson College of Nursing, you will be prepared to excel on the national licensure examination, and will have access to registered nursing positions in all healthcare environments, including Magnet-designated hospitals. Extensive simulation and immersion experiences will prepare you to be a clinical leader in your profession from day one. Graduates are also prepared to continue in graduate or doctoral level nursing programs to pursue advanced nursing careers.

Prerequisite/Foundation Curriculum: 59-62 credits

<u>Year 1</u>			<u>Year 2</u>		
FYS 100	First Year Seminar	1	HSCI 225	Applied Statistics in Health Sciences	3
WRIT 101	Writing Seminar I	3	PSYC 213	Developmental Psychology	3
MATH 102	Pre-Calculus (or higher)	3	HSCI 311	Introduction to the Nursing Profession	2
CHEM 103	Chemistry I/Lab	4	GDIV or ADIV 2XX	Diversity course	3
BIOL 112	Core Concepts of Biology/Lab	4	HSCI 304	Nutrition and Health	3
PSYC 101	Introduction to Psychology	3	BIOL 201	Anatomy & Physiology I/Lab	4
AMST 114	Topics in American Studies	3	BIOL 202	Anatomy & Physiology II/Lab	4
WRIT 201	Writing Seminar II	3	BIOL 221	Microbiology/Lab	4
HSCI 100	Intro to Health Professions	1	ETHC 2XX	Ethics	3
HSCI 230	Intro to Healthcare	2		General Elective (optional)	0-3
PSYC 201	Abnormal Psychology	3			

- All grades must be C or higher;
- matriculation into the professional phase requires 3.0 or higher overall GPA and science GPA;
- all math and science courses must be completed within 5 years of Nursing matriculation; AP credit accepted for non-science courses only.

Upper-Division Nursing Sequence

- Refer to the Jefferson College of Nursing (JCN) for upper-division nursing curriculum (BSN Traditional Track)

Health Sciences: Pre-Pharmacy

Bachelor of Science (BS)

Program Director	Wendy Krupnick, PhD, MBA
Campus	East Falls
Website	https://www.jefferson.edu/university/health-professions/departments/programs/health-sciences-programs/pre-pharmacy.html

Program Description

Two-Year Pathway

Begin your education by completing two years of pre-professional study on the East Falls campus, in preparation for your application to the 4-year, graduate Pharmacy program. While no undergraduate degree is awarded in this pathway, you will have the opportunity to take undergraduate courses with other pre-medical, health sciences and future pharmacy students.

Three-Year Pathway

Students interested in earning their undergraduate degree enter the 3+4 Pre-Pharmacy pathway where they earn both a BS and PharmD in seven years (refer to curriculum

below). The extra undergraduate year offers more opportunities to experience college life - like study away and participation in athletics, campus, and leadership experiences. The BS degree in Health Sciences is awarded upon completion of first-year pharmacy graduate coursework.

All Pharmacy applicants must apply to the graduate program through an online centralized application service, PharmCAS, and be invited to interview. East Falls students who meet the progression criteria through the Health Sciences Pre-Pharmacy programs are guaranteed an interview for the competitive professional program at Jefferson College of Pharmacy.

Prerequisite Curriculum/Foundation: 72 credits

- Two-Year Pathway

<u>Year 1</u>			<u>Year 2</u>		
FYS 100	Pathways Seminar	1	GCIT 2XX	Global Citizenship	3
WRIT 101	Writing Seminar I	3	ETHC 2XX	Ethics	3
AMST 114	Topics in America Studies	3		Designated Elective: Select 2 from list*	6-8
CHEM 103	General Chemistry I/Lab	4	BIOL 201	Anatomy & Physiology I/Lab	4
BIOL 103	Biology I/Lab	4	CHEM 201	Organic Chemistry I/Lab	4
MATH 103	Applied Calculus	3	PHYC 111	Physics I	4
PSYC 101	Introduction to Psychology	3	BIOL 221	Microbiology/Lab	4
GDIV 2XX	Global Diversity	3	BIOL 202	Anatomy & Physiology II/Lab	4
ADIV 2XX	American Diversity	3	CHEM 202	Organic Chemistry II/Lab	4
CHEM 104	General Chemistry II/Lab	4			
BIOL 104	Biology II/Lab	4			

*Designated Electives (choose min 6 cr.): HSCI 225, COMM 102; ECON 2XX; ETHC 2XX; BIOL 207; BIOL 256; BIOL 302; BIOL 321; PHYC 112

Pharmacy prerequisites include 9 cr. social science and 9 cr. humanities courses

All grades must be C or higher; courses must be completed within 5 years of Pharmacy application
AP credit accepted for non-science courses only

Students must apply to the graduate program through PharmCAS and meet progression criteria to be eligible to interview for the graduate-level Pharmacy program in Center City

Pharmacy Curriculum

- Refer to the Jefferson College of Pharmacy (JCP) for graduate pharmacy curriculum.

Three-Year Pathway:

- Foundation and Prerequisite Coursework (99 credits over Years 1-3) + 24 Pharmacy graduate credits to complete the BS degree requirement

<u>Year 1</u>			<u>Year 2</u>		
FYS 100	Pathways Seminar	1	GCIT 2XX	Global Citizenship	3
WRIT 101	Writing Seminar I	3	ETHC 2XX	Ethics	3
AMST 114	Topics in America Studies	3	WRIT 2XX	Writing II	3
CHEM 103	General Chemistry I/Lab	4	BIOL 201	Anatomy & Physiology I/Lab	4
BIOL 103	Biology I/Lab	4	PHYC 111	Physics I	4
MATH 103	Applied Calculus	3	PSYC 101	Intro to Psychology	3
PSYC 101	Introduction to Psychology	3	HSCI 230	Intro to Healthcare	2
GDIV 2XX	Global Diversity	3	BIOL 221	Microbiology/Lab	4
ADIV 2XX	American Diversity	3	BIOL 202	Anatomy & Physiology II/Lab	4
CHEM 104	General Chemistry II/Lab	4		*Designated Elective	3-4
BIOL 104	Biology II/Lab	4		<u>Year 3</u>	
			CHEM 201	Organic Chemistry I/Lab	4
			CHEM 202	Organic Chemistry II/Lab	4
			HSCI 225	Applied Statistics	3
			HSCI 330	Medical Terminology	3
			HSCI 3XX	Health Sciences Elective	3
			PSYC 201	Abnormal Psychology	3
			CGIS 300	Contemporary Global Issues	3
			ISEM 3XX	Integrative Seminar	3
			PHIL 499	Philosophies of the Good Life	3
				General Elective	3

- Designated Electives (choose): COMM 102; ECON 2XX; BIOL 207; BIOL 256; BIOL 302; BIOL 321; PHYC 112
- Pharmacy prerequisites include 9 cr. social science and 9 cr. humanities courses
- All grades must be C or higher; courses must be completed within 5 years of Pharmacy application
- Students must apply to the graduate program through PharmCAS and meet progression criteria to be eligible to interview for the graduate-level Pharmacy program in Center City

Teaching and Learning

Graduate Certificate

Contact	Adam Bailis, PhD
Campus	Online
Website	TBD

Program Description

The Advanced Practice Certificate in Health Professions Teaching and Learning will prepare healthcare professionals to utilize the best evidence-based frameworks, methodologies and tools to educate the future healthcare workforce. Courses will present the theoretical basis and current approaches to curriculum design and delivery, as well as the development of simulation, and interprofessional education and

practice as critical components of the health professions education landscape. This combined focus on foundational and emergent domains of health professions education will prepare certificate holders to become vital contributors to the classroom, clinic and beyond.

Curriculum: 12 credits

GC 751	Instructional Technology and Learning	2
GC 752	Curriculum and Instructional Design	2
GC 753	Program Assessment and Evaluation	2
HPS 610	Simulation in Health Education	3
HPS 620	Interprofessional Education and Collaborative Practice in Healthcare	3

Medical Imaging and Radiation Sciences

Bachelor of Science (BS)

Department Chair	Colleen Dempsey, EdD, R.T. (R)(ARRT)
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/health-professions/departments-programs/medical-imaging-radiation-sciences/degrees-programs/bs-programs.html

Program Description

The Department of Medical Imaging and Radiation Sciences prepares students for careers in medical imaging and radiation oncology. As the field of radiology has become more advanced and complex, the need exists for proficient, multi-skilled professionals. Medical imaging and radiation science professionals operate sophisticated equipment to produce optimal diagnostic images, calculate radiation treatment plans and deliver radiation treatments. They have the knowledge to identify normal and abnormal anatomy and physiology, are responsible for the well-being of patients in their care and are a member of the health care team.

The mission of the Department of Medical Imaging and Radiation Sciences is to provide a comprehensive education preparing students for entry-level practice in medical imaging and radiation sciences as competent, caring members of the health care team, cultivating professionalism and life-long learning.

One Year Program Concentrations:

Students who have the 50 prerequisite credits and a baccalaureate degree are eligible to apply to the following one-year concentrations:

- Abdomen-Extended & OB/GYN General (Ultrasound)
- Cardiac Sonography
- General Sonography
- Vascular Sonography
- Magnetic Resonance Imaging
- Medical Dosimetry
- Radiation Therapy
- Radiography

Students who have the 50 prerequisite credits and certification in or have graduated from an accredited program* in medical imaging and radiation science may apply to the following one-year concentrations:

- Cardiac Sonography
- Abdomen-Extended & OB/GYN General (Ultrasound)
- Vascular Sonography
- Computed Tomography - requires ARRT (R), (T), (N) or CNMT
- Invasive Cardiovascular Technology - requires ARRT(R) or ARDMS RDCS/RVT
- Magnetic Resonance Imaging
- Medical Dosimetry - requires ARRT (T) or successful completion of a JRCERT-accredited Radiation Therapy Program)

- Radiation Therapy
- Radiography

Two Year Program Concentrations:

Imaging Concentrations

Abdomen-Extended & OB/GYN (General Ultrasound), Cardiac Sonography, Computed Tomography^{1, c}, Invasive Cardiovascular Technology², Magnetic Resonance Imaging, Nuclear Medicine, Radiography, Vascular Sonography

Radiation Oncology Concentrations

Radiation Therapy, Medical Dosimetry³

Non-Imaging Concentrations

Offered in the School of Continuing and Professional Studies Health Service

¹ Second year (ONLY after the first year of Radiography, Radiation Therapy, or Nuclear Medicine)

² Second year (ONLY after the first year of Radiography, Cardiac Sonography, or Vascular Sonography)

³ Second year

Concentration: Cardiac Sonography

<u>Semester 1</u>			<u>Semester 3</u>		
RSCS 302	Noninvasive Testing Principles and Procedures	1	RSCS 413	Clinical Cardiac III	8
RSCS 311	Cardiovascular Physiology	2	RSCS 481	Cardiac Review Seminar	2
RSCS 321	Patient Care & Services Diagnostic Imaging	2			
RSCS 331	Cardiac Procedures I	2			
RSCS 351	Cardiac Principles I	3			
RSCS 400	Ultrasound Physics I	2			
RSCS 411	Clinical Cardiac I	6			
RSCS 491	Special Topics in Cardiac Sonography I	1			
<u>Semester 2</u>					
RSCS 312	Cardiovascular Pathophysiology	2			
RSCS 332	Cardiac Procedures II	2			
RSCS 352	Cardiac Principles II	3			
RSCS 403	Ultrasound Physics II	2			
RSCS 412	Clinical Cardiac II	6			
RSCS 492	Special Topics in Cardiac Sonography II	1			

Concentration: Computed Tomography

<u>Semester 1</u>			<u>Semester 3</u>		
RSC 400	CT Physics & Instrumentation	3	RSC 414	Clinical CT III	8
RSC 401	Cross Sectional-Anatomy I	2	RSC 473	CT Review Seminar	2
RSC 412	CT Clinical I	6			
RSC 431	CT Procedures I	3			
RSC 433	CT Procedures Simulation Lab I	1			
<u>Semester 2</u>					
RSC 402	Cross-Sectional Anatomy II	2			
RSC 413	CT Clinical II	6			
RSC 432	CT Procedures II	3			
RSC 434	CT Procedures Simulation Lab II	1			
RSC 451	Imaging Informatics	1			
RSC 498	CT Special Topics	1			

Concentration: Abdomen-Extended & OB/GYN (General Ultrasound)

<u>Semester 1</u>			<u>Semester 3</u>		
RSS 321	Patient Care & Services Diagnostic Imaging	2	RS 408	Sonography Review Seminar	2
RSS 400	Ultrasound Physics I	2	RS 414	Clinical Sonography III	8
RSS 401	Sonography Cross-Sectional Anatomy	2			
RSS 402	Abdominal Sonography I	2			
RSS 404	Pelvic Sonography	3			
RSS 412	Clinical Sonography I	6			
RSS 415	Sonography Procedures I	2			
<u>Semester 2</u>					
RSS 403	Ultrasound Physics II	2			
RSS 405	Obstetrical Sonography	3			
RSS 413	Clinical Sonography II	6			
RSS 416	High Resolution Sonography	2			
RSS 417	Sonography Procedures II	2			
RSS 422	Abdominal Sonography II	2			
RSS 498	Special Topics in General Sonography	2			

Concentration: Invasive Cardiovascular Technology

<u>Semester 1</u>			<u>Semester 3</u>		
RSI 338	Invasive Procedures I	3	RSI 433	Clinical Invasive III	8
RSI 341	Radiographic Physics & Instrumentation I	2	RSI 483	Invasive Review Seminar	2
RSI 357	Invasive Principles I	3			
RSI 431	Clinical Invasive I	6			
<u>Semester 2</u>					
RSI 313	Radiobiology & Health Physics	2			
RSI 339	Invasive Procedures II	3			
RSI 342	Radiographic Physics & Instrumentation II	2			
RSI 358	Invasive Principles II	3			
RSI 432	Clinical Invasive II	6			

Concentration: Invasive Cardiovascular Technology- Cardiac Sonography Background

<u>Semester 1</u>			<u>Semester 3</u>		
RSI 338	Invasive Procedures I	3	RSI 433	Clinical Invasive III	8
RSI 341	Radiographic Physics & Instrumentation I	2	RSI 483	Invasive Review Seminar	2
RSI 357	Invasive Principles I	3			
RSI 431	Clinical Invasive I	6			
<u>Semester 2</u>					
RSI 313	Radiobiology & Health Physics	2			
RSI 339	Invasive Procedures II	3			
RSI 342	Radiographic Physics & Instrumentation II	2			
RSI 358	Invasive Principles II	3			
RSI 432	Clinical Invasive II	6			

Concentration: Invasive Cardiovascular Technology- Radiography Background

<u>Semester 1</u>			<u>Semester 3</u>		
RSI 302	Noninvasive Testing Principles & Procedures	1	RSI 433	Clinical Invasive III	8
RSI 311	Cardiovascular Physiology	2	RSI 483	Invasive Review Seminar	2
RSI 338	Invasive Procedures I	3			
RSI 357	Invasive Principles I	3			
RSI 431	Clinical Invasive I	6			
<u>Semester 2</u>					
RSI 312	Cardiovascular Pathophysiology	2			
RSI 339	Invasive Procedures II	3			
RSI 358	Invasive Principles II	3			
RSI 432	Clinical Invasive II	6			

Concentration: Invasive Cardiovascular Technology- Vascular Sonography Background

<u>Semester 1</u>			<u>Semester 3</u>		
RSI 302	Noninvasive Testing Principles & Procedures	1	RSI 433	Clinical Invasive III	8
RSI 338	Invasive Procedures I	3	RSI 483	Invasive Review Seminar	2
RSI 341	Radiographic Physics & Instrumentation I	2			
RSI 357	Invasive Principles I	3			
RSI 431	Clinical Invasive I	6			
<u>Semester 2</u>					
RSI 312	Cardiovascular Pathophysiology	2			
RSI 339	Invasive Procedures II	3			
RSI 342	Radiographic Physics & Instrumentation II	2			
RSI 358	Invasive Principles II	3			
RSI 432	Clinical Invasive II	6			

Concentration: Magnetic Resonance Imaging

<u>Semester 1</u>			<u>Semester 3</u>		
RSM 321	Patient Care & Services in Diagnostic Imaging	2	RSM 414	Clinical MRI III	8
RSM 400	MRI Physics & Instrumentation I	3	RSM 473	MRI Review Seminar	2
RSM 401	Cross-Sectional Anatomy I	2	RSM 474	MRI Advanced Scanning Seminar	1
RSM 411	MRI Safety	2			
RSM 412	Clinical MRI I	6			
RSM 431	MRI Procedures I	2			
<u>Semester 2</u>					
RSM 402	Cross-Sectional Anatomy II	2			
RSM 403	MRI Physics and Instrumentation II	1			
RSM 413	Clinical MRI II	6			
RSM 415	MRI Pathology	1			
RSM 432	MRI Procedures II	3			
RSM 451	Imaging Informatics	1			
RSM 498	MRI Special Topics	1			

Concentration: Medical Dosimetry

<u>Semester 1</u>			<u>Semester 3</u>		
RSD 322	Patient Care in Radiation Oncology	2	RSD 414	Clinical Medical Dosimetry III	8
RSD 401	Cross-Sectional Anatomy I	2			
RSD 412	Clinical Medical Dosimetry I	6			
RSD 430	Case Studies in Dosimetry*	1			
RSD 435	Medical Dosimetry Physics I	3			
RSD 439	Radiation Protection	1			
RSD 440	Introduction to Radiobiology	2			
RSD 480	Survey of Medical Imaging	2			
<u>Semester 2</u>					
RSD 402	Cross-Sectional Anatomy II	2			
RSD 413	Clinical Medical Dosimetry II	6			
RSD 415	Clinical Radiation Oncology	2			
RSD 436	Medical Dosimetry Physics II	3			
RSD 442	Quality Assurance & Instrumentation	2			
RSD 443	Brachytherapy	2			
RSD 444	Special Procedures	2			
					*Students coming from TJU Radiation Therapy program only

Concentration: Radiation Therapy

<u>Semester 1</u>			<u>Semester 3</u>		
RST 322	Patient Care in Radiation Oncology (hybrid)	2	RST 414	Clinical Radiation Therapy III	10
RST 401	Cross-Sectional Anatomy I	2	RST 429	Radiation Therapy Principles and Procedures III	2
RST 409	Radiation Therapy Principles and Procedures I	3	RST 473	Radiation Therapy Review Seminar	2
RST 409L	Radiation Therapy Lab I	1			
RST 412	Clinical Radiation Therapy I	6			
RST 435	Radiation Therapy Physics I	2			
RST 439	Radiation Protection	1			
RST 440	Introduction to Radiobiology	2			
<u>Semester 2</u>					
RST 402	Cross-Sectional Anatomy II	2			
RST 413	Clinical Radiation Therapy II	6			
RST 415	Clinical Radiation Oncology	2			
RST 416	Principles of Radiation Dosimetry	2			
RST 419	Radiation Therapy Principles and Procedures II	3			
RST 436	Radiation Therapy Physics II	3			

Concentration: Radiography

<u>Semester 1</u>			<u>Semester 3</u>		
RSR 321	Patient Care & Services in Diagnostic Imaging	2	RSR 333	Advanced Radiographic Procedures	1
RSR 331	Radiographic Procedures I	2	RSR 333L	Advanced Radiographic Procedures Lab	1
RSR 331L	Radiographic Procedures I Lab	1	RSR 373	Clinical Radiography III	8
RSR 341	Radiography Physics and Instrumentation I	2	RSR 412	Radiographic Pathology	2
RSR 353	Radiographic Imaging Principles I	2	RSR 414	Radiography Capstone	1
RSR 361	Image Analysis I	2	RSR 471	Radiography Review Seminar	2
RSR 371	Clinical Radiography I	4			
<u>Semester 2</u>					
RSR 313	Radiobiology and Health Physics	2			
RSR 332	Radiographic Procedures II	2			
RSR 332L	Radiographic Procedures II Lab	1			
RSR 342	Radiography Physics and Instrumentation II	2			
RSR 354	Radiographic Imaging Principles II	2			
RSR 362	Image Analysis II	2			
RSR 372	Clinical Radiography II	6			

Concentration: Sonography- Vascular

<u>Semester 1</u>			<u>Semester 3</u>		
RSV 311	Cardiovascular Physiology	2	RSV 423	Clinical Vascular III	8
RSV 321	Patient Care & Services in Diagnostic Imaging	2	RSV 482	Vascular Review Seminar	2
RSV 335	Vascular Procedures I	2			
RSV 353	Vascular Principles I	2			
RSV 400	Ultrasound Physics I	2			
RSV 401	Vascular Anatomy	2			
RSV 421	Clinical Vascular I	6			
<u>Semester 2</u>					
RSV 313	Vascular Pathophysiology	1			
RSV 336	Vascular Procedures II	2			
RSV 354	Vascular Principles II	3			
RSV 403	Ultrasound Physics II	2			
RSV 422	Clinical Vascular II	6			
RSV 493	Special Topics in Vascular Sonography	2			

Concentration: Vascular Sonography

<u>Semester 1</u>			<u>Semester 3</u>		
RSV 311	Cardiovascular Physiology	2	RSV 423	Clinical Vascular III	8
RSV 321	Patient Care & Services in Diagnostic Imaging	2	RSV 482	Vascular Review Seminar	2
RSV 335	Vascular Procedures I	2			
RSV 353	Vascular Principles I	3			
RSV 400	Ultrasound Physics I	2			
RSV 401	Vascular Anatomy	2			
RSV 421	Clinical Vascular I	6			
<u>Semester 2</u>					
RSV 313	Vascular Pathophysiology	1			
RSV 336	Vascular Procedures II	2			
RSV 354	Vascular Principles II	3			
RSV 403	Ultrasound Physics II	2			
RSV 422	Clinical Vascular II	6			
RSV 493	Special Topics in Vascular Sonography	2			

Medical Imaging & Radiation Sciences

Master of Science (MS)

Program Director	Colleen Dempsey, EdD, RT (R) (ARRT)
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/health-professions/departments-programs/medical-imaging-radiation-sciences/degrees-programs/ms-programs.html

Program Description

The Master of Science in Medical Imaging & Radiation Sciences is the only program of its kind on the East Coast. The field of Medical Imaging and Radiation Sciences is rapidly growing, and the learning curve never ends. This profession requires highly-skilled and flexible practitioners, as well as proficient, qualified directors, administrators and educators.

Tracks

- Computed Tomography (CT)
- Education
- Invasive Cardiovascular Technology (ICVT)
- Management

Curriculum: 1 year, credits 30-50

- Varies by Track

Education Track: 30 credits

<u>Semester 1</u>			<u>Semester 3</u>		
RS 510	Research I	2	RS 560	Program Accreditation	3
RS 520	Research II	2	RS 620	Advances Current Technology II	2
RS 540	Program Management	3	RS 660	Seminar	2
RS 550	Principles of Instruction	3	RS 692	Capstone Project III	1
RS 690	Capstone Project I	1			
<u>Semester 2</u>					
RS 530	Radiologic & Imaging Sciences	2			
RS 610	Advances Current Technology I	2			
RS 630	Faculty Development	3			
RS 650	Healthcare Law & Ethics	3			
RS 691	Capstone Project II	1			

Management Track 30 credits

<u>Semester 1</u>			<u>Semester 3</u>		
RS 510	Research I	2	RS 590	Accreditation and Quality Management	3
RS 520	Research II	2	RS 620	Advances Current Technology II	2
RS 580	Personnel Management	3	RS 660	Seminar	2
RS 640	Financial Management	3	RS 692	Capstone Project III	1
RS 690	Capstone Project I	1			
<u>Semester 2</u>					
RS 530	Radiologics	2			
RS 570	US Healthcare System	3			
RS 610	Advances in Current Tech I	2			
RS 650	Healthcare Law & Ethics	3			
RS 691	Capstone Project II	1			

Computed Tomography (CT): 44 credits

<u>Semester 1</u>			<u>Semester 3</u>		
RS 510	Research I	2	RS 660	Seminar	2
RS 520	Research II	2	RS 692	Capstone Project III	1
RS 690	Capstone Project I	1	RSC 514	CT Clinical III	8
RSC 500	CT Physics & Instrumentation	3	RSC 773	CT Review Seminar	2
RSC 501	Cross-Sectional Anatomy I	2			
RSC 512	CT Clinical I	4			
RSC 531	CT Procedures I	3			
RSC 533	CT Procedures Simulation Lab I	1			
<u>Semester 2</u>					
RS 691	Capstone Project II	1			
RSC 502	Cross-Sectional Anatomy II	2			
RSC 513	CT Clinical II	6			
RSC 532	CT Procedures II	3			
RSC 534	CT Procedures Simulation Lab II	1			

ICVT FOR CARDIAC SONOGRAPHER: 49 credits

<u>Semester 1</u>			<u>Semester 3</u>		
RS 510	Research I	2	RS 660	Seminar	2
RS 520	Research II	2	RS 692	Capstone Project III	2
RS 690	Capstone Project I	1	RSI 533	Clinical Invasive III	8
RS 531	Clinical Invasive I	6	RSI 583	Invasive Review Seminar	2
RS 538	Invasive Procedures I	3			
RS 541	Radiographic Physics & Instrumentation I	2			
RS 557	Invasive Principles I	3			
<u>Semester 2</u>					
RS 691	Capstone Project II	1			
RSI 513	Radiobiology & Health Physics	2			
RSI 532	Clinical Invasive II	6			
RSI 539	Invasive Procedures II	3			
RSI 542	Radiographic Physics & Instrumentation I	2			
RSI 558	Invasive Principles II	3			

ICVT FOR RADIOGRAPHERS: 48 credits

<u>Semester 1</u>			<u>Semester 3</u>		
RS 510	Research I	2	RS 660	Seminar	2
RS 520	Research II	2	RS 692	Capstone Project III	1
RS 690	Capstone Project I	1	RSI 533	Clinical Invasive III	8
RSI 502	Noninvasive Testing Principles & Procedures	1	RSI 583	Invasive Review Seminar	2
RSI 511	Cardiovascular Physiology	2			
RSI 531	Clinical Invasive I	6			
RSI 538	Invasive Procedures I	3			
RSI 557	Invasive Principles I	3			
<u>Semester 2</u>					
RS 691	Capstone Project II	1			
RS 512	Cardiovascular Pathophysiology	2			
RSI 532	Clinical Invasive II	6			
RS 539	Invasive Procedures II	3			
RS 558	Invasive Principles II	3			

ICVT For Vascular Sonography: 50 credits

<u>Semester 1</u>			<u>Semester 3</u>		
RS 510	Research I	2	RS 660	Seminar	2
RS 520	Research II	2	RS 692	Capstone Project III	1
RS 690	Capstone Project I	1	RSI 533	Clinical Invasive III	8
RSI 502	Noninvasive Testing Principles & Procedures	1	RSI 583	Invasive Review Seminar	2
RSI 531	Clinical Invasive I	6			
RSI 538	Invasive Procedures I	3			
RSI 541	Radiographic Physics & Instrumentation I	2			
RSI 557	Invasive Principles I	3			
<u>Semester 2</u>					
RS 691	Capstone Project II	1			
RSI 513	Radiobiology & Health Physics	2			
RSI 532	Clinical Invasive II	6			
RSI 539	Invasive Procedures II	3			
RSI 542	Radiographic Physics & Instrumentation II	2			
RSI 558	Invasive Principles II	3			
RSI 583	Invasive Review Seminar	2			

Computed Tomography (CT)

Undergraduate Certificate

Program Director	Colleen Dempsey, EdD, R.T. (R) (ARRT)
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/health-professions/departments-programs/medical-imaging-radiation-sciences/degrees-programs/certificates.html

Program Description

This part-time, one-year, online or on campus program is designed for certified radiographers, radiation therapists or nuclear medicine technologists to expand their education in computed tomography (CT).

Curriculum: 16 credits, part-time

RSPC 400	CT Physics & Instrumentation	3
RSPC 401	Cross-Sectional Anatomy I	1
RSPC 412	PET/CT Clinical I	1
RSPC 431	CT Procedures I	3
RSPC 402	Cross-Sectional Anatomy II	1
RSPC 413	CT Clinical II	1
RSPC 432	CT Procedures II	3
RSPC 414	CT Clinical III	1
RSPC 473	CT Review Seminar	2

Biotechnology	
Bachelor of Science (BS)	
Program Director Campus Website	Scott Gygax, PhD Center City https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/biotechnology/overview.html

Program Description

Biotechnology is one of the region's most promising, exciting and fastest-growing industries, and evolves through rapidly changing technologies, techniques and applications.

The curriculum prides itself on the team-based projects that pervade the courses and a focus on communication and teamwork skills, consistent with the learning outcomes for the courses, is evident as the students are required to demonstrate both written and oral presentation skills throughout the curriculum.

Bachelor of Science (BS) Curriculum Options

- 2 year
- 1 year
- 1 year-Biopharmaceutical Process Development

Curriculum: BS, 2-year option

- Credits Required for Admission: 55

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
BT 303	Molecular Preparatory Tech	3	BT 305	Survey of Biotechnology Applications	3
BT 310	Fund Molecular Techniques	4	BT 412	Biotechnology Practicum I	3
BT 405	Applied Microbial Biotechnology	3	BT 422	Biotechnology Practicum II	3
LS 301	Molecular Biology	3	HCA	Health Services Delivery & Organization	3
LS 304	Biochemistry	3	LS 331	Immunology	3
BT 320	Cell and Tissue Culture Tech	4	LS 403	Research Design	3
			LS 404	Experimental Research I (requires approval)	1
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
BT 410	Molecular Diagnostic Tech	4	BT 325	Product Development and Management	3
BT 411	Protein Purification & Characterization	3	BT 403	Human Genetics	3
LS 440	Current Research Biosciences	2	BT 406	Bioinformatics	2
	Program Approved Elective	1-2	BT 416	Comprehensive Examination	0
			BT 432	Biotechnology Practicum III	3
			BT 442	Biotechnology Practicum IV	3
			LS 430	Laboratory Standards and Practices	3
			LS 405	Experimental Research II (approval)	1-2

Curriculum: BS, 1-year option without concentration

- Credits Required for Admission: 70

<u>Year 1 Fall</u>			<u>Year 1 Summer</u>		
BT 303	Molecular Preparatory Techniques	3	BT 412	Biotechnology Practicum I	2
BT 310	Basic Molecular Techniques	4	BT 416	Comprehensive Examination	0
BT 405	Microbial Genetics	3	BT 422	Biotechnology Practicum II	3
LS 301	Molecular Biology	3	BT 432	Biotechnology Practicum III	3
LS 304	Biochemistry	3	BT 442	Biotechnology Practicum IV	3
LS 331	Immunology	2	LS 430	Lab Standards and Practices	3
<u>Year 2 Spring</u>					
BT 320	Cell and Tissue Culture Techniques	4			
BT 325	Product Development & Management	3			
BT 403	Human Genetics	3			
BT 406	Bioinformatics	2			
BT 410	Molecular Diagnostic Techniques	4			
BT 411	Protein Purification & Characterization	3			
LS 440	Current Research in the Biosciences	2			

Curriculum: BS, 1 year option Biopharmaceutical Process Development concentration

- Credits Required for Admission: 70

<u>Year 1 Fall</u>			<u>Held at Jefferson Institute for Bioprocessing (JIB)</u>		
			<u>Year 1 Summer</u>		
BT 303	Molecular Preparatory Techniques	3	BP 401	Basic Engineering for Scientists	2
BT 310	Fundamental Molecular Techniques	4	BP 403	Intro to Biopharmaceutical Processing	2
BT 405	Applied Microbial Biotechnology	3	BP 404	Intro to Downstream Unit Operations	4
LS 301	Molecular Biology	3	BP 405	Intro to Upstream Unit Operations	4
LS 304	Biochemistry	3	BT 412	Biotechnology Practicum I	3
LS 331	Immunology	3	BT 416	Comprehensive Examination	0
<u>Year 1 Spring</u>			BT 422	Biotechnology Practicum II	3
BT 320	Cell and Tissue Culture Techniques	4	BT 432	Biotechnology Practicum III	3
BT 325	Product Development & Management	3	BT 442	Biotechnology Practicum IV	3
BT 403	Human Genetics	3			
BT 406	Bioinformatics	2			
BT 410	Molecular Diagnostic Techniques	4			
BT 411	Protein Purification & Characterization	3			

Biotechnology

Master of Science (MS)

Program Director	Scott Gyax, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/cytotechnology-cell/overview.html

Program Description

Biotechnology is where life sciences and technology converge. A degree in biotechnology opens up numerous employment possibilities since practically every industry utilizes biotechnology. A biotechnology degree fosters creativity, innovation, and adaptability that is applicable to most career choices. Biotechnology is one of the region's most promising, exciting and fastest-growing industries, and evolves through rapidly changing technologies, techniques and applications.

Curriculum: 1 year, 58 credits

- no concentration

<u>Year 1 Fall</u>			<u>Year 1 Summer</u>		
BT 503	Molecular Preparatory Techniques	3	BT 812	Biotechnology Practicum I	3
BT 510	Fundamental Molecular Techniques	4	BT 813	Biotechnology Practicum II	3
BT 605	Applied Microbial Biotechnology	3	BT 814	Biotechnology Practicum III	3
LS 501	Molecular Biology	3	BT 815	Biotechnology Practicum IV	3
LS 504	Biochemistry	3	BT 816	Comprehensive Examination	0
LS 531	Immunology	3	LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
LS 603	Research Design	3	LS 803	Contemp. Topics Research	2
<u>Year 1 Spring</u>					
BT 520	Cell and Tissue Culture Techniques	4			
BT 525	Product Development and Management	3			
BT 603	Human Genetics	3			
BT 606	Bioinformatics	2			
BT 610	Molecular Diagnostic Techniques	4			
BT 611	Protein Purification and Characterization	3			

Curriculum: MS, 1 year, 65 credits

- Biopharmaceutical Process Development concentration

<u>Year 1 Fall</u>			<u>Year 1 Summer</u>		
			Held at Jefferson Institute for Bioprocessing (JIB)		
BT 503	Molecular Preparatory Techniques	3	BT 601	Basic Engr for Scientists	2
BT 510	Fundamental Molecular Techniques	4	BT 603	Intro to Biopharmaceutical Processing	2
BT 605	Applied Microbial Biotechnology	3	BT 604	Intro Downstream Unit Operations	4
LS 501	Molecular Biology	3	BT 605	Intro to Upstream Unit Operations	4
LS 504	Biochemistry	3	BT 812	Biotechnology Practicum I	3
LS 531	Immunology	3	BT 813	Biotechnology Practicum II	3
LS 603	Research Design	3	BT 814	Biotechnology Practicum III	3
<u>Year 1 Spring</u>			BT 815	Biotechnology Practicum IV	3
BT 520	Cell and Tissue Culture Techniques	4	BT 816	Comprehensive Examination	0
BT 525	Product Development and Management	3			
BT 603	Human Genetics	3			
BT 606	Bioinformatics	2			
BT 610	Molecular Diagnostic Techniques	4			
BT 611	Protein Purification and Characterization	3			

Curriculum: MS, 2 years, 59 credits

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
BT 503	Molecular Preparatory Techniques	3	BT 812	Biotechnology Practicum I	3
BT 510	Fundamental Molecular Techniques	4	BT 813	Biotechnology Practicum II	3
BT 605	Applied Microbial Biotechnology	3	LS 531	Immunology	3
LS 501	Molecular Biology	3	LS 603	Research Design	2
LS 504	Biochemistry	3	LS 804**	Experimental Research I	1
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
BT 520	Cell and Tissue Culture Techniques	4	BT 525	Product Development & Mgt	3
BT 603	Human Genetics	3	BT 814	Biotechnology Practicum III	3
BT 606	Bioinformatics	2	BT 815	Biotechnology Practicum IV	3
BT 610	Molecular Diagnostic Techniques	4	BT 816	Comprehensive Examination	0
BT 611	Protein Purification and Characterization	3	LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
			LS 803**	Contemp. Topics Research	2
			or		
			LS 805**	Experimental Research II	1

**To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

Biotechnology

Bachelor of Science (BS) & Master of Science (MS)

Program	Scott Gygax, PhD
Director	Center City
Campus	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/biotechnology.html
Website	

Curriculum: BS/ MS, 2 years, 74 credits

- Credits Required for Admission: 82

<u>Year 1 Fall Undergraduate Phase</u>			<u>Year 2 Fall Graduate Phase</u>		
BT 303	Molecular Preparatory Techniques	3	BT 812	Biotechnology Practicum I	3
BT 305	Survey of Biotechnology Applications	3	BT 813	Biotechnology Practicum II	3
BT 310	Fundamental Molecular Techniques	4	LS 531	Immunology	3
BT 405	Applied Microbial Biotechnology	3	LS 603	Research Design	2
LS 301	Molecular Biology	3	LS 640	Methods in Biosciences Education	3
LS 304	Biochemistry	3	LS 804*	Experimental Research I (approval)	1
				Program Approved Elective	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
BT 320	Cell and Tissue Culture Techniques	4	BT 525	Product Development and Mgt.	3
BT 403	Human Genetics	3	BT 814	Biotechnology Practicum III	3
BT 406	Introduction to Bioinformatics	2	BT 815	Biotechnology Practicum IV	3
BT 410	Molecular Diagnostic Techniques	4	BT 816	Comprehensive Examination	0
BT 411	Protein Purification & Characterization	3	LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
LS 540	Current Research in the Biosciences	3	LS 803**	Contemporary Topics Research (approval)	2
			LS 805*	Experimental Research II	1
				Program Approved Elective	3

**To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

Curriculum: Advanced MS, 2 years, 33 credits

- Part-time without Concentration

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
LS 603	Research Design	2	LS 504	Biochemistry	3
BT 605	Applied Microbial Biotechnology	3	LS 804	Experimental Research I	1
BT 812	Practicum I OR Program-Approved Elective	3	BT 815	Practicum IV OR Program-Approved Elective	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
BT 813	Practicum II OR Program-Approved Elective	3	BT 606	Bioinformatics	2
BT 603	Human Genetics OR Program-Approved Elective	3	BT 525	Product Development & Management	3
<u>Year 1 Summer</u>			LS 805	Experimental Research II	1
LS 610	Regulatory and Fiscal issues in Laboratory Management OR Program-Approved Elective	3			
BT 814	Practicum III OR Program-Approved Elective	3			

Curriculum: MS, Two-year

- Part-Time, Biopharmaceutical Process Development concentration

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
BT 605	Applied Microbial Biotechnology	3	LS 603	Research Design	2
BT 812	Practicum I or Program-Approved Elective	3	LS 804	Experimental Research I	1
<u>Year 1 Spring</u>			BT 815	Practicum III or Program-Approved Elective	3
BT 813	Practicum II or Program-Approved Elective	3	<u>Year 2 Spring</u>		
BT 603	Human Genetics or Program-Approved Elective	3	BT 606	Bioinformatics	2
<u>Year 1 Summer</u>			BT 525	Product Development & Management	3
LS 610	Regulatory and Fiscal issues in Laboratory Management or Program-Approved Elective	3	LS 805	Experimental Research II	1
BP 601	Basic Engineering for Scientists	2	<u>Year 2 Summer</u>		
BP 603	Introduction to Biopharmaceutical Processing	2	BP 604	Introduction to Downstream Unit Operations	4
			BP 605	Introduction to Upstream Unit Operations	4

Curriculum: Advanced MS

- One year option without Concentration

<u>Year 1 Fall</u>		
LS 504	Biochemistry or Program-Approved Elective	3
BT 605	Applied Microbial Biotechnology	3
LS 603	Research Design	2
LS 804	Experimental Research I	1
LS 812	Practicum I or Program-Approved Elective	3
LS 813	Practicum II or Program-Approved Elective	3
<u>Year 1 Spring</u>		
BT 606	Bioinformatics	2
BT 603	Human Genetics or Program- Approved Elective	3
BT 525	Product Development and Management	3
LS 610	Regulatory and Fiscal Issues in Laboratory Management or Program-Approved Elective	3
LS 805	Experimental Research II	1
LS 814	Practicum III or Program-Approved Elective	3
LS 815	Practicum IV or Program-Approved Elective	3

Curriculum: Advanced M.S.

- One year option Biopharmaceutical Process Development concentration

<u>Year 1 Fall</u>		
BT 605	Applied Microbial Biotechnology	3
LS 603	Research Design	2
LS 804	Experimental Research I	1
LS 812	Practicum I OR Program-Approved Elective	3
LS 813	Practicum II or Program-Approved Elective	3
<u>Year 1 Spring</u>		
BT 606	Bioinformatics	2
BT 525	Product Development and Management	3
LS 814	Practicum III or Program-Approved Elective	3
LS 815	Practicum IV or Program-Approved Elective	3
<u>Year 1 Summer</u>		
BP 601	Basic Engineering for Scientists	2
BP 603	Introduction to Biopharmaceutical Processing	2
BP 604	Introduction to Downstream Unit Operations	4
BP 605	Introduction to Upstream Unit Operations	4

Cytotechnology & Cell Sciences

Bachelor of Science (BS)

Program Director	Kelly Lennen, MS, CT (ASCP)
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/cytotechnology-cell/overview.html

Program Description

Cytotechnologists are experts of cell and tissue structure morphology and function, and using microscopes, automated imaging systems and sophisticated laboratory techniques to detect and diagnose diseases. Cytotechnologists work both independently and collaboratively with pathologists, radiologists, oncologists and other members of a healthcare team.

Professionals in this field:

- Select and perform molecular and immunologic tests that help to personalize patient care Diagnose mysterious respiratory illnesses
- Assist clinicians in collecting and evaluating specimens
- Identify precancerous cells at their earliest and most curable stage

Curriculum: BS, 2 years, 64.5 credits

- Credits Required for Admissions: 55

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
LS 301	Molecular Biology	3	LS 331	Immunology	3
HUMN 315	Methods of Effective Thinking	3	CT 412	Cytotechnology Practicum I	3
LS 311	Functional Histology	2.5	CT 413	Cytotechnology Practicum II	3
CT 301	Principles of Cell Analytics	2	HCA 300	Health Services Delivery and Organization	3
CT 311	Cytopathology I	5	LS 498	Elective	3
CT 312	Cytopathology I Laboratory	3			
	<u>Year 1 Spring</u>			<u>Year 2 Spring</u>	
LS 413	Pathology	2	LS 440	Current Research in the Biosciences	2
CT 310	Cytological and Surgical Pathology Techniques	2	CT 414	Cytotechnology Practicum III	3
LS 310	Intro to Molecular Diagnostics	2	CT 415	Cytotechnology Practicum IV	3
CT 315	Cytopathology II	4	CT 416	Comprehensive Examination	0
CT 317	Cytopathology III	3	CT 325	Cellular, Molecular, and Immuno Diagnostics	3
			LS 430	Laboratory Standards & Practice	3
			CT 375	Cytotechnology Seminar	2
				Program Approved Elective	2

Curriculum: BS, 1 year, 56.5 credits

- Credits Required for Admissions: 70

<u>Year 1 Fall</u>			<u>Year 1 Summer</u>		
CT 301	Principles of Cell Analysis	2	CT 416	Comprehensive Examination	0
CT 311	Cytopathology I	5	CT 430	Laboratory Standards and Practices	3
CT 312	Cytopathology I Laboratory	3	CT 412	Cytotechnology Practicum I	3
HUMN 315	Methods of Effective Thinking	3	CT 413	Cytotechnology Practicum II	3
LS 301	Molecular Biology	3	CT 414	Cytotechnology Practicum III	3
LS 311	Functional Histology	2.5	CT 415	Cytotechnology Practicum IV	3
LS 331	Immunology	3	CT 375	Cytotechnology Seminar	2
<u>Year 1 Spring</u>					
LS 413	Pathology	2			
LS 440	Current Research in Biosciences	2			
LS 310	Intro to Molecular Diagnostics	2			
CT 310	Cytological & Surgical Pathology Technique	2			
CT 315	Cytopathology II	4			
CT 317	Cytopathology III	3			
CT 325	Cellular, Molecular & Immuno Diagnostics	3			

Cytotechnology & Cell Sciences

Master of Science (MS)

Program Director	Kelly Lennen, MS, CT(ASCP)
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/cytotechnology-cell/overview.html

Curriculum: 2 years, 56.5 credits

<u>Year 1 Fall</u>		<u>Year 2 Fall</u>	
LS 501	Molecular Biology 3	LS 531	Immunology 3
LS 511	Functional Histology 2.5	CT 812	Cytotechnology Practicum I 3
CT 501	Principles of Cell Analysis 2	CT 813	Cytotechnology Practicum II 3
CT 511	Cytopathology I 5	LS 603	Research Design 2
CT 512	Cytopathology I Laboratory 3	LS 804	Experimental Research I 1
<u>Year 1 Spring</u>		<u>Year 2 Spring</u>	
LS 613	Pathology 2	CT 525	Cellular, Molecular and Immuno Diagnostics 3
CT 510	Cytological & Surgical Pathology Techniques 2	CT 575	Cytotechnology Seminar 2
CT 515	Cytopathology II 4	LS 610	Regulatory & Fiscal Issues in Lab Management 3
CT 517	Cytopathology III 4	CT 814	Practicum III 4
LS 510	Introduction to Molecular Diagnostics 2	CT 815	Practicum IV 3
		CT 816	Comprehensive Exam 0
		LS 805 or	Contemporary Topics Research or 1
		LS 805	Experimental Research II

Curriculum: 1 year, 56.5 credits

<u>Year 1 Fall</u>		<u>Year 1 Summer</u>	
LS 501	Molecular Biology 3	LS 610	Regulatory & Fiscal Issues Lab Mgt. 3
LS 603	Research Design 2	CT 575	Cytotechnology Seminar 2
LS 511	Functional Histology 2.5	CT 812	Practicum I 3
CT 501	Principles of Cell Analysis 2	CT 813	Practicum II 3
CT 511	Cytopathology I 5	CT 814	Practicum III 3
CT 512	Cytopathology I Laboratory 3	CT 815	Practicum IV 3
LS 531	Immunology 3	CT 816	Comprehensive Exam 0
LS 510	Intro to Molecular Diagnostics 2	LS 803	Contemporary Topics Research 2
CT 510	Cytological & Surgical Pathology Techniques 2		
CT 515	Cytopathology II 4		
CT 517	Cytopathology III 4		
CT 525	Cellular, Molecular and Immuno Diagnostics 3		
LS 613	Pathology 2		

Curriculum: 2 years, 29-31 credits

- Advanced MS, Part-time

<u>Year 1</u>			<u>Year 2</u>		
LS 603	Research Design	2	LS 804	Experimental Research I	1
LS 640	Methods in Bioscience Education	3	LS 815	Practicum IV **	2
LS 812	Practicum I *	3	LS 504	Biochemistry	3
LS 610	Regulatory & Fiscal Issues in Laboratory Management	3	LS 803 or LS 805	Contemporary Topics Research or Experimental Research II	1
LS 613	Pathology	2		Concentration Electives	2-4
LS 813	Practicum I *	2			
LS 814	Practicum III*	2			
	Conventional Elective***	3			

* Or substitute LS 644 Lab Education, Administration and Instruction

** Or substitute LS 644 Lab Education, Administration and Instruction, or LS 498 Special Topics in Lab Science

*** Select a total of 5-7 credits of concentration electives from graduate courses on contemporary areas of clinical or research lab management, administration and advanced practice.

Curriculum: 1 year, 46-51 credits

- Advanced MS

<u>Year 1 Fall</u>		
LS 504	Biochemistry (BT and MLS programs only)	3
LS 531*	Immunology (CT program only)	3
LS 603	Research Design	2
LS 640	Methods in Biosciences Education	3
LS 804**	Experimental Research I (approval)	1
LS 812	Practicum I	3
LS 813 or LS 644*	Practicum II Laboratory Education, Administration, and Instruction	3-4
LS 613	Program-Approved Electives	3
<u>Year 1 Spring</u>		
LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
LS 613	Pathology	2
LS 803** or LS 805**	Contemporary Topics Research or Experimental Research II (requires special approval)	2 1
LS 814	Practicum III	3
LS 815	Practicum IV	3
or LS 644† or LS 698	Laboratory Education and Instruction Special Topics in the Laboratory Sciences	3-4 3-4
	Program-Approved Electives	2-4

*To meet entry-level competency requirements for immunology credits, students entering as certified cytotechnology graduates who have not completed three credits in immunology are required to enroll in LS 531 Immunology. Certified cytotechnology graduates who have completed three credits of immunology may enroll in a program-approved elective.

**To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

*Program approval and minimum course grade requirements must be met to register for LS 644.

Cytotechnology & Cell Sciences

Bachelor of Science (BS) & Master of Science (MS)

Program Director Kelly Lennen, MS, CT(ASCP)
 Campus Center City
 Website <https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/cytotechnology-cell/overview.html>

Curriculum: 2 years, 69.5-70.5

- Credits Required for Admissions: 82

<u>Year 1 Fall Undergraduate Phase</u>			<u>Year 2 Fall Graduate Phase</u>		
LS 301	Molecular Biology	3	LS 603	Research Design	2
HUMN 315	Methods of Effective Thinking	3	LS 640	Methods in Biosciences Education	3
LS 311	Functional Histology	2.5	CT 812	Cytotechnology Practicum I	3
CT 301	Principles of Cell Analytics	2	CT 813	Cytotechnology Practicum II	3
CT 311	Cytopathology I	5	LS 644	Laboratory Education & Instruction, or Program Approved Elective	3-4
CT 312	Cytopathology I Laboratory	3			
LS 331	Immunology	3			
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
LS 540	Current Research in Biosciences	3	LS 610	Regulatory & Fiscal Issues in Lab Management	3
LS 310	Intro to Molecular Diagnostics	2	LS 613	Pathology	2
CT 310	Cytological and Surgical Pathology Techniques	2	LS 803	Contemporary Topics Research	2
CT 315	Cytopathology II	4	CT 575	Cytotechnology Seminar	2
CT 317	Cytopathology III	3	CT 814	Cytotechnology Practicum III	3
			CT 815	Cytotechnology Practicum IV	3
			CT 816	Comprehensive Examination	0
			CT 575	Cytotechnology Seminar	3

Medical Laboratory Science

Bachelor of Science (BS)

Program Director	Valerie Jalicke, MS, MLS(ASCP) ^{CM}
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/medical-laboratory/overview.html

Program Description

Professionals in Medical Laboratory Science conduct health screening tests for diabetic and cardiac risk, examine patient specimens for the presence of infectious microorganisms, type and cross-match blood for transfusion, detect specific blood cells to reveal leukemia and measure a patient's response to medications and therapies and develop and manage complex technical systems to assist in performing these tests.

Curriculum: BS, 2 years, 31.5 credits

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
LS 301	Molecular Biology	3	HCA 300	Health Services Delivery & Organization	3
LS 331	Immunology	3	HUMN 315	Methods of Effective Thinking	3
MLS 312	Clinical Microbiology I	3.5	LS 311	Functional Histology	2.5
MLS 323	Clinical Chemistry I	3	MLS 412	Medical Lab Sciences Practicum I	3
MLS 341	Clinical- Hematology I	3	MLS 422	Medical Lab Sciences Practicum II	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
LS 310	Intro to Molecular Diagnostics	2	LS 430	Laboratory Standards and Practices	3
MLS 313	Clinical Microbiology II	2	LS 440	Current Research in the Biosciences	2
MLS 324	Clinical Chemistry II	2	MLS 375	Medical Laboratory Sciences Seminar	2
MLS 343	Clinical Hematology II	3	MLS 416	Comprehensive Examination	0
MLS 352	Immunohematology	3	MLS 442	Medical Lab Sciences Practicum III	3
MLS 376	Urinalysis and Body Fluids	3	MLS 454	Medical Lab Sciences Practicum IV	3

Curriculum: BS, 1 year, 54 credits

- Credits Required for Admissions: 70

<u>Year 1 Fall</u>			<u>Year 1 Summer</u>		
LS 301	Molecular Biology	3	LS 430	Laboratory Standards and Practices	3
LS 331	Immunology	3	MLS 412	Medical Lab Sciences Practicum I	3
MLS 312	Clinical Microbiology I	3.5	MLS 416	Comprehensive Examination	0
MLS 323	Clinical Chemistry I	3	MLS 422	Medical Lab Sciences Practicum II	3
MLS 341	Clinical Hematology I	3	MLS 442	Medical Lab Sciences Practicum III	3
	<u>Year 1 Spring</u>		MLS 454	Medical Lab Sciences Practicum IV	3
LS 310	Intro to Molecular Diagnostics	2			
LS 440	Current Research Biosciences	2			
MLS 313	Clinical Microbiology II	3.5			
MLS 324	Clinical Chemistry II	3			
MLS 343	Clinical Hematology II	3			
MLS 352	Immunoematology	3			
MLS 376	Urinalysis and Body Fluids	3			

Medical Laboratory Sciences

Master of Science (MS)

Program Director	Valerie Jalicke, MS, MLS(ASCP) ^{CM}
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/medical-laboratory/overview.html

Curriculum: 2 years, 60 credits

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
LS 531	Immunology	3	LS 501	Molecular Biology	3
MLS 512	Clinical Microbiology I	3.5	LS 603	Research Design	2
MLS 523	Clinical Chemistry I	3	LS 804**	Experimental Research I (approval)	1
MLS 541	Clinical Hematology I	3	MLS 812	Medical Lab Sciences Practicum I	3
			MLS 813	Medical Lab Sciences Practicum II	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
MLS 513	Clinical Microbiology II	3.5	LS 510	Intro to Molecular Diagnostics	2
MLS 524	Clinical Chemistry II	3	LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLS 543	Clinical Hematology II	3	LS 803 or	Contemporary Topics Research	2
MLS 552	Immunochemistry	3	LS 805**	Experimental Research II (approval)	1
MLS 576	Urinalysis and Body Fluids	3	MLS 575	Medical Laboratory Sciences Seminar	2
			MLS 814	Medical Lab Sciences Practicum III	3
			MLS 815	Medical Lab Sciences Practicum IV	3
			MLS 816	Comprehensive Examination	0

Curriculum: 1 year, 56 credits

<u>Year 1 Fall</u>			<u>Year 1 Summer</u>		
LS 501	Molecular Biology	3	LS 610	Regulatory and Fiscal Issues in Lab Mgt.	3
LS 531	Immunology	3	LS 803	Contemporary Topics Research	2
LS 603	Research Design	2	MLS 812	Medical Lab Sciences Practicum I	3
MLS 512	Clinical Microbiology I	3.5	MLS 813	Medical Lab Sciences Practicum II	3
MLS 523	Clinical Chemistry I	3	MLS 814	Medical Lab Sciences Practicum III	3
MLS 541	Clinical Hematology I	3	MLS 815	Medical Lab Sciences Practicum IV	3
			MLS 816	Comprehensive Examination	0
<u>Year 1 Spring</u>					
LS 510	Intro to Molecular Diagnostics	2			
MLS 513	Clinical Microbiology II	3.5			
MLS 524	Clinical Chemistry II	3			
MLS 543	Clinical Hematology II	3			
MLS 552	Immunochemistry	3			
MLS 576	Urinalysis and Body Fluids	3			

**To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses

Medical Laboratory Sciences

Bachelor of Science (BS) &
Master of Science (MS)

Program Director Valerie Jalicke, MS, MLS(ASCP)^{CM}
Campus Center City
Website <https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/bs-ms-programs/medical-laboratory/overview.html>

Curriculum: 2 years, 76-77 credits

- Credits Required for Admission: 82

<u>Year 1 Fall Undergraduate Phase</u>			<u>Year 2 Fall Graduate Phase</u>		
LS 301	Molecular Biology	3	LS 603	Research Design	2
LS 331	Immunology	3	LS 640	Methods in Biosciences Education	3
MLS 312	Clinical Microbiology I	3.5	MLS 812	Medical Lab Sciences Practicum I	3
MLS 323	Clinical Chemistry I	3	MLS 813	Medical Lab Sciences Practicum II	3
MLS 341	Clinical Hematology I	3		Program-Approved Electives	6
			LS 644*	Laboratory Education, Administration, and Instruction (recommended)	3-4
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
LS 310	Intro to Molecular Diagnostics	2	LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
LS 540	Current Research in Biosciences	3	LS 803**	Contemporary Topics Research	2
MLS 313	Clinical Microbiology II	3.5	MLS 575	Medical Laboratory Sciences Seminar	2
MLS 324	Clinical Chemistry II	3	MLS 814	Medical Lab Sciences Practicum III	3
MLS 343	Clinical Hematology II	3	MLS 815	Medical Lab Sciences Practicum IV	3
MLS 352	Immunoematology	3	MLS 816	Comprehensive Examination	0
MLS 376	Urinalysis and Body Fluids	3		Program-Approved Elective	3

*Program approval and minimum course grade requirements must be met to register for LS 644.

**To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

Curriculum: 1 year, 49-54 credits

- Advanced MS

<u>Year 1 Fall</u>		
LS 504	Biochemistry (BT and MLS programs only)	3
LS 531*	Immunology (CT program only)	3
LS 603	Research Design	2
LS 640	Methods in Biosciences Education	3
LS 804**	Experimental Research I (approval)	1
LS 812	Practicum I	3
LS 813 or	Practicum II	3
LS 644*	Laboratory Education, Administration, and Instruction	3-4
LS 613	Program-Approved Electives	3
<u>Year 1 Spring</u>		
LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
LS 613	Pathology	2
LS 803** or	Contemporary Topics Research or	2
LS 805**	Experimental Research II (requires special approval)	1
LS 814	Practicum III	3
LS 815 or	Practicum IV or	3
LS 644† or	Laboratory Education and Instruction or	3-4
LS 698	Special Topics in the Laboratory Sciences	3-4
	Program-Approved Electives	2-4

*To meet entry-level competency requirements for immunology credits, students entering as certified cytotechnology graduates who have not completed three credits in immunology are required to enroll in LS 531 Immunology. Certified cytotechnology graduates who have completed three credits of immunology may enroll in a program-approved elective.

**To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

*Program approval and minimum course grade requirements must be met to register for LS 644.

Curriculum: 2 years, 48-51 credits

- Advanced MS, Part-Time

<u>Year 1 Fall</u>			<u>Year 2 Fall (Graduate Phase)</u>		
LS 603	Research Design	2	LS 504	Biochemistry (BT & MLS program only)	3
LS 640	Methods in Biosciences Education	3	LS 531*	Immunology (CT program only)	3
LS 812 or LS 644 or	Practicum I Laboratory Education, or Administration, and Instruction	3 3-4	LS 804*	Experimental Research I (requires special approval)	1
	Program-Approved Electives	3		Program-Approved Electives	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
LS 813	Practicum II	3	LS 613	Pathology	3
LS 644 or LS 698	Laboratory Education, Administration, and Instruction or Special Regulatory and Fiscal Issues in Laboratory Management Topics in Lab Sciences	3-4			
<u>Year 1 Summer</u>			LS 803** or LS 805	Contemporary Topics Research or Experimental Research II (approval)	2 1
LS 610	Regulatory and Fiscal Issues in Laboratory Management	3	LS 815 or LS 698	Practicum IV Special Topics in the Lab Sciences	3 3-4
LS 814	Practicum III	3			

*Program approval and minimum course grade requirements must be met to register for LS 644.

‡To meet entry-level competency requirements for immunology credits, students entering as certified cytotechnology graduates who have not completed three credits in immunology are required to enroll in LS 531 Immunology. Certified cytotechnology graduates who have completed three credits of immunology may enroll in a program-approved elective.

**To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

Clinical Chemistry

Graduate Certificate

Program Director	Valerie Jalicke, MS, MLS(ASCP) ^{CM}
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/graduate-certificates/clinical-chemistry.html

Program Description

Clinical chemists analyze blood and body fluids to determine their biochemical parameters and the physiological health of the patient. Clinical chemists use the latest technology to measure enzyme activity, blood gas saturation, drug and glucose concentrations and other biochemical reactions.

Curriculum: 22 credits

- On campus

LS 501	Molecular Biology	3
LS 523	Clinical Chemistry I	3
LS 531	Immunology	3
LS 510	Intro to Molecular Diagnostics	2
MLS 524	Clinical Chemistry II	2
LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLS 812	Medical Laboratory Sciences Practicum I (Clinical Chemistry)	3
MLS 576	Urinalysis and Body Fluids	3

Curriculum: 11 credits

- Online

MLSO 504	Biochemistry	3
MLSO 523	Clinical Chemistry I	2
MLSO 524	Clinical Chemistry II	2
MLSO 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLSO 812	Medical Laboratory Science Practicum I	1

Clinical Hematology

Graduate Certificate

Program Director	Valerie Jalicke, MS, MLS(ASCP) ^{CM}
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/graduate-certificates/hematology.html

Program Description

Hematologists analyze the function and formation of red and white blood cells and other elements of blood and body fluids. They also monitor the components of the coagulation system.

Curriculum: 21 credits

- On-campus

LS 501	Molecular Biology	3
LS 531	Immunology	3
MLS 541	Clinical Hematology I	3
MLS 576	Urinalysis and Body Fluids	3
MLS 543	Clinical Hematology II	3
LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLS 812	Medical Laboratory Sciences Practicum I (Clinical Hematology)	3

Curriculum: 9 credits

- online

MLSO 510	Introduction to Molecular Diagnostics	1
MLSO 541	Clinical Hematology I	2
MLSO 543	Clinical Hematology II	2
MLSO 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLSO 812	Medical Laboratory Science Practicum I	1

Clinical Microbiology

Graduate Certificate

Program Director	Valerie Jalicke, MS, MLS(ASCP) ^{CM}
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/graduate-certificates/microbiology.html

Program Description

Microbiologists culture, isolate and diagnose bacteria, parasites and viruses to identify the cause of disease and the best course of treatment. The role of the microbiologist has become increasingly important in identifying and neutralizing potential biological attack agents as organisms continue to develop resistance to the drugs used to treat disease.

Curriculum: 24 credits

- on-campus

LS 501	Molecular Biology	3
MLS 512	Clinical Microbiology I	3.5
LS 531	Immunology	3
LS 510	Introduction to Molecular Diagnostics	2
MLS 513	Clinical Microbiology II	3.5
LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLS 576	Urinalysis and Body Fluids	3
MLS 812	Medical Laboratory Sciences Practicum I (Clinical Microbiology)	3

Curriculum: 9 credits

- online

MLSO 510	Introduction to Molecular Diagnostics	1
MLSO 512	Clinical Microbiology I	2
MLSO 513	Clinical Microbiology II	2
MLSO 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLSO 812	Medical Laboratory Science Practicum I	1

Immunohematology

Graduate Certificate

Program Director	Valerie Jalicke, MS, MLS(ASCP) ^{CM}
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/graduate-certificates/immunohematology.html

Program Description

Immunohematologists type and cross-match blood from donors and recipients and analyze specific blood products for use in blood-component therapy. Bloodbanking (immunohematology and transfusion medicine) has become increasingly complicated, since therapy using individual blood components is more in demand than therapy using whole blood.

Curriculum: 20 credits

- on-campus

LS 501	Molecular Biology	3
LS 531	Immunology	3
MLS 541	Clinical Hematology I	3
LS 510	Introduction to Molecular Diagnostics	2
MLS 552	Immunohematology	3
LS 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLS 812	Medical Laboratory Sciences Practicum I (Clinical Hematology)	3

Curriculum: 10 credits

- online

MLSO 531	Immunology	2
MLSO 551	Immunohematology I	2
MLSO 552	Immunohematology II	2
MLSO 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLSO 812	Medical Laboratory Science Practicum I	1

Molecular Biology

Graduate Certificate

Program Director	Scott Gyax, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/medical-laboratory-biotechnology/degrees-programs/graduate-certificates/molecular-biology.html

Program Description

Molecular biologists use a wide variety of techniques to prepare specimens for diagnosing genetic diseases, identifying infectious agents and paternity testing. These professionals are experts in tests and methods that are increasingly common in clinical diagnostic settings and in research and forensic laboratories. These methods include:

- DNA/RNA extraction
- Southern blot
- Western blot
- Gene amplification
- Gene sequencing

Curriculum: 29 credits

- on-campus

LS 501	Molecular Biology	3
BT 503	Molecular Preparatory Techniques	1
BT 510	Fundamental Molecular Techniques	4
LS 613	Pathology	2
BT 603	Human Genetics	3
BT 610	Molecular Diagnostic Techniques	4
BT 611	Protein Purification and Characterization	3
LS 812	Practicum (Research Applications)	3
LS 813	Practicum (Clinical Applications)	3
LS 814	Practicum (Forensic Applications)	3

Curriculum: 11 credits

- online

MLAO 603	Human Genetics	3
MLSO 611	Molecular Diagnostics	2
MLSO 606	Bioinformatics	2
MLSO 610	Regulatory and Fiscal Issues in Laboratory Management	3
MLSO 812	Molecular Techniques Practicum	1

Midwifery	
Master of Science (MS)	
Program Director	Barbara Reale, DNP, CNM, FACNM
Campus	Online/Center City
Website	https://www.jefferson.edu/university/health-professions/departments/programs/midwifery-womens-health/ms-midwife.html

Program Description

Our Mission is to promote midwifery through education, practice, advocacy, and research to improve lives. Midwives have a unique approach to healthcare. We partner with the individuals we serve to provide empowering reproductive, sexual primary healthcare with a particular focus on childbirth, early parenthood and the newborn. Students are grounded by the Hallmarks of Midwifery and prepared to assume responsibility and accountability for their practice consistent with the published Core Competencies. The MS in Midwifery is a distance education program with required on-campus intensives. The curriculum can be completed in a 2-year accelerated or a 3-

year format. In either format, the final four semesters (clinical portion) are full-time. This accredited program leads to eligibility for the American Midwifery Certification Board exam. Graduates are eligible to earn certification as either a Certified Nurse-Midwife (CNM) or Certified Midwife (CM). Registered Midwives and other primary health care providers seeking the CM or CNM credential, may be eligible for the Advanced Placement Option. Students entering the MS in Midwifery via the accelerated BSN + MS Midwifery dual admission, enter the MS program with 6 graduate credits earned.

Curriculum: 62 credits

- sequence may vary

Semester 1			Semester 4		
MIDW 643	Advanced Physiology/ Pathophysiology Primary Care	3	MIDW 712	Introduction to Health Policy	3
MIDW 642	Professional Issues	3	MIDW 611	Intrapartum Care	4
MIDW 730	Theoretical Foundations for Midwifery	3	MIDW 639	Advanced Pharmacology II	1.5
MIDW 699	Advanced Health Assessment	3	MIDW 632	Clinical Midwifery in Ambulatory Settings II	3
Semester 2			MIDW 640	Preparation for Full Scope Midwifery Practice	1
MIDW 645	Reproductive and Sexual Healthcare	4	Semester 5		
MIDW 638	Advanced Pharmacology I	2.5	MIDW 633	Clinical: Full Scope Midwifery Care I	4
MIDW 731	Evidence-Based Care: Evaluating Research	3	MIDW 619	Advanced Perinatal Pathophysiology	4
Semester 3			Semester 6		
MIDW 613	Embryology and Genetics	1	Elective		
MIDW 641	Preparation for Office Based Practice	1	MIDW 634	Clinical: Full Scope Midwifery Care II	5
MIDW 610	Antepartum Care	4	MIDW 646	Midwifery Nexus Project	1.5
MIDW 612	Postpartum/Newborn Care	2.5			
MIDW 631	Clinical Midwifery in Ambulatory Settings I	2			

Midwifery

Doctor of Midwifery (DM)

Program Lead	Dana Perlman, DNP, CNM, FACNM
Campus	Online/Center City
Website	https://www.jefferson.edu/university/health-professions/departments/programs/midwifery-womens-health/doctor-midwifery.html

This program is not accepting new applicants in 2022/2023

Program Description

The professional Doctor of Midwifery degree is the first doctoral program in the United States designed to develop and enhance leadership skills specifically for midwives. Students will pursue scholarship and research to advance clinical practice, education, policy, or administration. In addition to coursework, all doctoral students complete an Advances in Midwifery (AIM) project in an interest area they develop with close mentorship from program faculty.

Curriculum: 35 credits

<u>Fall</u>			<u>Spring</u>		
MIDW 501	Orientation Residency	0.5	MIDW 812	Professional Communication	3
MIDW 800	Current Issues in Midwifery	2	MIDW 822	AIM Operation Workshop	3
MIDW 810	Epidemiology for Midwifery	3			
<u>Spring</u>			<u>Summer</u>		
MIDW 811	Leadership in Midwifery	2	MIDW 815	Grant Writing	3
MIDW 712	Intro to Health Policy	3			
<u>Summer</u>			<u>Fall</u>		
MIDW 813	Midwifery Case Studies	2	MIDW 823	AIM: Implementation Workshop	3
MIDW 807	Data Driven Midwifery	1.5			
<u>Fall</u>			<u>Spring</u>		
MIDW 805	Organizational Change	3	MIDW 824	AIM: Analysis Workshop	3
MIDW 821	AIM: Project Design and Methods	2			
			<u>Summer</u>		
			MIDW 825	AIM Dissemination Workshop Midwifery Thinks! Symposium	1

Midwifery

Advanced Practice Certificate

Program Director	Barbara Reale, DNP, CNM, FACNM
Campus	Online/Center City
Website	https://www.jefferson.edu/university/health-professions/departments/programs/midwifery-womens-health/ms-midwife.html

Program Description

The Post-Graduate Certificate in midwifery is a distance education program with required on-campus intensives for aspiring midwives who already hold a graduate degree in a health-related field, such as an MSN, DNP, or MPH. The curriculum can be completed in a 2-year accelerated format or 3-year format. In either format, the final four semesters (clinical rotation portion) are full-time. This accredited program

leads to eligibility to sit for the American Midwifery Certification Board exam. Graduates are eligible to earn certification as either a Certified Nurse-Midwife or Certified Midwife. Applicants may be eligible for the Advanced Placement Option.

Curriculum: 2-3 years, 50 credits

- Sequence may vary

<u>Semester 1</u>			<u>Semester 4</u>		
MIDW 643	Advanced Physiology/ Pathophysiology Primary Care	3	MIDW 611	Intrapartum Care	4
MIDW 642	Professional Issues	3	MIDW 639	Advanced Pharmacology II	1.5
MIDW 699	Advanced Health Assessment	3	MIDW 632	Clinical Midwifery in Ambulatory Settings II	3
			MIDW 640	Preparation for Full-Scope Midwifery Practice	1
<u>Semester 2</u>			<u>Semester 5</u>		
MIDW 645	Reproductive and Sexual Healthcare	4	MIDW 633	Clinical: Full-Scope Midwifery Care I	4
MIDW 638	Advanced Pharmacology I	2.5	MIDW 619	Advanced Perinatal Pathophysiology	4
<u>Semester 3</u>			<u>Semester 6</u>		
MIDW 613	Embryology and Genetics	1	MIDW 634	Clinical: Full-Scope Midwifery Care II	5
MIDW 641	Preparation for Office-Based Practice	1	MIDW 646	Midwifery Nexus Project	1.5
MIDW 610	Antepartum Care	4			
MIDW 612	Postpartum/Newborn Care	2.5			
MIDW 631	Clinical Midwifery in Ambulatory Settings I	2			

Midwifery

Midwifery Re-entry to Practice Process

Program Director	Barbara Reale, DNP, CNM, FACNM
Campus	Online
Website	https://www.jefferson.edu/university/health-professions/departments/programs/midwifery-womens-health/doctor-midwifery.html

Program Description

The Midwifery Re-entry to Practice Process offers midwives holding national certification from the American Midwifery Certification Board a non-degree, post-professional mechanism to meet the re-entry to practice guidelines published by the American College of Nurse-Midwives. The program of study is individualized for each midwife based on prior work experience and length of clinical practice. Students independently review areas of midwifery practice followed by examinations to demonstrate current knowledge base and sound clinical reasoning. Students may also pursue a supervised clinical practicum to demonstrate current clinical judgement and skill.

Nutrition and Dietetic Practice

Master of Science (MS)

Program Director	Kati Fosselius, MS, RDN, LDN
Campus	Center City
Website	www.jefferson.edu/MSRDN

Program Description

The MS in Nutrition & Dietetic program is designed to help meet the growing demand for professional Registered Dietitian Nutritionists (RDNs). It prepares highly motivated students with an interest in nutrition and dietetics to sit for the Commission on Dietetic Registration national Registration Examination for Dietitians upon graduation.

A registered dietitian nutritionist (RDN), also known as a registered dietitian (RD), is a credentialed healthcare professional who applies evidence-based information about nutrition and diet to contribute to the health and wellness of individuals, groups, and communities. RDNs work in a variety of sectors including healthcare, public health and other community agencies, commercial industry, professional and collegiate athletics, schools and colleges, corporate wellness, government, research, and private practice. The profession of dietetics is both an art and a science; RDNs apply their knowledge of nutrition science in the context of individualized needs, priorities, and preferences in order to address the goals of their clients, patients, or other constituents.

The MS/RDN program curriculum adheres to ACEND accreditation standards, and through the didactic (classroom) and supervised experiential learning (SEL) courses students are able to demonstrate all required competencies and are assessed according to relevant performance indicators. Students can complete the MS/RDN program in 19 months or five consecutive semesters.

Learning Goals/Outcomes

- Apply foundational sciences to food and nutrition knowledge to meet the needs of individuals, groups, and organizations.
- Apply and integrate client/patient-centered principles and competent nutrition and dietetics practice to ensure positive outcomes.
- Apply food systems principles and management skills to ensure safe and efficient delivery of food and water.
- Apply community and population nutrition health theories when providing support to community or population nutrition programs.
- Demonstrate leadership, business and management principles to guide practice and achieve operational goals.
- Integrate evidence-informed practice, research principles and critical thinking into practice.
- Demonstrate professional behaviors and effective communication in all nutrition and dietetics interactions.

Curriculum: 2 years, 54 credits

Year 1			Year 2		
RDN 537	Culinary Nutrition, Functional Foods, & Diet Planning	3	RDN 681	Nutrition Research	3
RDN 531	Integrative Nutrition Across the Life Cycle	3	SCJU 633	Social Justice Seminar: Systemic Barriers and Challenges	1
RDN 511	Nutritional Biochemistry & Physiology	3	RDN 675L	Nutrition Support (lab)	0.5
RDN 535	Food Science & Safety	3	RDN 714	SEL - Nutrition Counseling Experience	1.5
RDN 571	Medical Nutrition Therapy 1	3	RDN 772	SEL - Clinical Experience 1	3
RDN 661	Management in Nutrition	3	RDN 692	Capstone Course	1
RDN 612	Nutrition Communication, Education, & Leadership	3	RDM 665	Sustainable Nutrition Practice	1
SCJU 631	Social Justice Seminar: Food, Weight, and Health	1	SCJ 634	Social Justice Seminar: Analysis and Advocacy	1
RDN 712	SEL - Nutrition Communication, Education, & Leadership Experience	1	RED 723	SEL - Clinical Experience 2	3
RDN 762	SEL - Food Service and Culinary Experience	1	RED 782	SEL - Individualized Professional Experience	1.5
RDN 671	Medical Nutrition Therapy 2	3	RDN 765	Sustainable Nutrition Experience	0.5
RDN 614	Nutrition Counseling	3	RDN 722	SEL - Public Nutrition Experience	1
RDN 622	Global & Public Health Nutrition	3			
SCJU 632	Social Justice Seminar: Interprofessional Perspectives	0.5			
RDN 771	SEL - Introduction to Nutrition Therapy Experience	1			
RDN 761	SEL - Nutrition Management Experience	1.5			

Physician Assistant Studies

Master of Science (MS)

Program Director	Daniel L. Pavlik, DMS, PA-C, EM-CAQ
Campus	Center City
Website	https://www.jefferson.edu/university/health-professions/departments/physician-assistant-studies/degrees-programs/graduate/ms-center-city/overview.html

Program Description

The program prepares students to become competent physician assistants (PA), a medical professional who works as part of a team with a physician. After graduating from an accredited PA educational program, PAs become nationally certified and state-licensed to practice medicine with the supervision of a physician. All 50 states and the District of Columbia allow PAs to practice and prescribe medications. PAs work in all areas

of medicine, ranging from family practice to surgical subspecialties such as neurosurgery, and they perform physical examinations, diagnose and treat illnesses, order and interpret lab tests, perform procedures, assist in surgery, provide patient education and counseling, and make rounds in hospitals and nursing facilities.

Curriculum: 27 months, 102 credits

YEAR 1 Didactic Year Pre-Fall Semester			YEAR 2 Clinical Year Fall Semester		
PAST 500	Advanced Human Anatomy	5	PAST 601	Internal Medicine Clinical*	5
PAST 510	Patient Communication	1.5	PAST 610	Emergency Medicine Clinical*	5
PAST 520	Introduction to Professional Practice	1	PAST 620	Women's Health Clinical*	5
PAST 522	Legal & Ethical Aspects of Medicine	1	PAST 680	Healthcare I	1
PAST 523	Evidence Based Medicine & Pop Health	1			
	Fall Semester			Spring Semester	
PAST 511	Physical Diagnosis I	1	PAST 630	Behavioral Medicine Clinical*	5
PAST 530	Clinical Medicine I	5	PAST 640	Surgery Clinical*	5
PAST 540	Clinical Skills I	1	PAST 650	Primary Care Clinical*	5
PAST 550	Pharmacology & Clinical Therapeutics I	3	PAST 681	Healthcare II	1
PAST 560	Physiology & Pathophysiology I	2.5	PAST 690	Graduate Project I	0.5
PAST 570	Behavioral Sciences	2	PAST 695	Summative Evaluation Course	0
PAST 581	Health Promotions & Disease Prevention	1	PAST 660	Clinical Rotation 7	5
	Spring Semester		PAST 670	Pediatrics Clinical*	5
PAST 512	Physical Diagnosis II	1	PAST 691	Graduate Project II	0.5
PAST 533	Clinical Medicine II	4	PAST 695	Summative Evaluation Course	0
PAST 534	Clinical Medicine III	4			
PAST 541	Clinical Skills II	3			
PAST 551	Pharmacology & Clinical Therapeutics II	2			
PAST 561	Physiology & Pathophysiology II	2.5			
HQS 500	Intro to Healthcare Quality & Safety	3			
	Summer Semester				
PAST 513	Physical Diagnosis III	1			
PAST 535	Clinical Medicine IV	3.5			
PAST 542	Clinical Skills III	1			
PAST 552	Pharmacology & Clin Therapeutics III	1.5			
PAST 562	Physiology & Pathophysiology III	1.5			
PAST 590	Special Topics in Medicine	6			

*Sequencing of clinical rotations depends on specific student schedules

Physician Assistant Studies

Master of Science (MS)

Program Director Amanda Seymour, MS, PA-C
Campus East Falls & Voorhees
Website <https://www.jefferson.edu/university/health-professions/departments/physician-assistant-studies/degrees-programs/graduate/ms-east-falls.html>

Program Description

The Thomas Jefferson University Physician Assistant Studies Program - East Falls/Vorhees is a comprehensive academic experience that stresses the practical application of current medical theory. All of the program faculty members are actively practicing health care providers with a great depth of knowledge and experience. Students are exposed to the clinical environment throughout their education with patient contact even during the classroom or didactic portion of the program.

Curriculum: 25 months, 113 credits

	<u>Year 1 Summer</u>				<u>YEAR 2 Summer</u>	
PASF 507A	Advanced Human Anatomy A	2		PAST 762	Transition to Clinical Practice	6
	<u>Year 1 Fall</u>				<u>Year 2 Clinical Year</u>	
PASF 507B	Advanced Human Anatomy B	3		PAST 741	Clinical Rotation 2	6
PASF 513	Medical Physiology and Pathophysiology	3		PAST 742	Clinical Rotation 3	6
PASF 511	Applied Behavioral Sciences	3		PAST 743	Clinical Rotation 4	6
PASF 517	Medical History and Physical Diagnosis	5		PAST 744	Clinical Rotation 5	6
PASF 510	Medical and Professional Ethics	2		PAST 745	Clinical Rotation 6	6
PASF 518	Evidence Based Medicine	2		PAST 746	Clinical Rotation 7	6
PASF 521	Medical Genetics, Immunology and Microbiology	2		PAST 759	Clinical Rotation 8	6
	<u>Year 1 Spring</u>			PAST 760	Clinical Rotation 9	6
PAST 605	Clinical Correlations of Public Health	1			General Electives	6
PAST 611	Clinical Medicine	8		PAST 772	Master's Comp Experience	2
PAST 612	Clinical Reasoning	2.5				
PAST 613	Pharmacology & Pharmacotherapeutics	4				
PAST 614	Emergency Medicine	3				
PAST 615	Diagnostic Medicine	2				
	<u>Year 1 Summer</u>					
PAST 621	Clinical Disciplines Overview (Surgery, Pediatrics, Women's Health)	6				
PAST 622	Pharmacotherapeutics Seminar	1				
PAST 623	Advanced Diagnostic Seminar	1				
PAS 561	Physiology & Pathophysiology II	1				
PAST 603	Advanced Physical Assessment	0.5				

Clinical Rotations (5 weeks each)

Internal Medicine	Emergency Medicine
Primary Care I	Psychiatry/Mental Health
Primary Care II	Surgery
Pediatrics	Elective
Women's Health	Medical Surgical Selective

Institute of Emerging Health Professions

Laura Pontiggia, PhD
Director Academic Programs

<https://www.jefferson.edu/IEHP>

About Us

Thomas Jefferson University's Institute of Emerging Health Professions (IEHP) is a first-of-its-kind educational incubator aimed at providing the training and education that workers in healthcare and related disciplines will need tomorrow and creating pathways to jobs and skills of the future.

IEHP offers innovative and unique certificates and master's programs in emerging fields such as Cannabis, Integrative Health and Cardiovascular Perfusion. In all of these programs you will receive cutting-edge education and training from faculty recognized as experts and leaders in their field.

Cardiovascular Perfusion	
Master of Science (MS)	
Program Director	Brian Schwartz, CCP, RN, MBA
Campus	Center City
Website	https://www.jefferson.edu/MSPerfusion

Program Description

The Center for Perfusion and Extracorporeal Technology will produce competent entry-level perfusionists in the cognitive, psychomotor, and affective learning domains. Graduates will be eligible to apply to take the national certification examinations offered by the American Board of Cardiovascular Perfusion.

The mission of the Center for Perfusion and Extracorporeal Technology is to train competent, focused and highly skilled perfusion technicians. Using evidence-based medicine, the program will produce students ready for board examinations and prepare graduates to perform the duties and responsibilities of a cardiovascular perfusionist in a variety of clinical settings.

Learning Domains

1. Cognitive - Mastery of the entry-level body of knowledge regarding the application of clinical perfusion.
2. Psychomotor - Mastery of the fundamental and emergency clinical skills necessary for the safe conduct of clinical perfusion.
3. Affective - Fluency of professional communication, behaviors and attitudes.

Curriculum: 2 years, 85 credits

Year 1 Fall			Year 2 Fall		
PER 500	Perfusion Technology I	4	PER 693	Clinical Application in Perfusion IV	12
PER 510	Human Physiology I	4	PER 540	Medical Ethics	2
PER 520	Cardiovascular Anatomy	3	PER 670	Applied Research Design	3
PER 690	Clinical Application in Perfusion I	3			
PER 650	Organizational Leadership	3			
Year 1 Spring			Year 2 Spring		
PER 600	Perfusion Technology II	4	PER 694	Clinical Application in Perfusion V	12
PER 620	Pharmacology for Perfusion	3	PER 550	Perfusion Basic Science Review	2
PER 610	Human Physiology II	4	PER 700	Perfusion Capstone Project	3
PER 540	Pathophysiology	3			
PER 691	Clinical Application in Perfusion II	4			
PER 660	Foundations of Biostatistical Methods	3			
Year 1 Summer					
PER 640	Applications of ECMO & VAD	1			
PER 692	Clinical Application in Perfusion III	12			
PER 660	Foundations of Biostatistical Methods	3			

Cardiovascular Perfusion Post-Professional

Master of Science (MS)

Program Director Brian Schwartz, CCP, RN, MBA
Campus Online
Website <https://www.Jefferson.edu/MSPerfusion>

Program Description

Jefferson's post professional MS in Cardiovascular Perfusion affords certified cardiovascular perfusionist (CCP), who have graduated from an AC-PE accredited perfusion program, to build upon their current knowledge base and earn a master's degree from one of the nation's most reputable universities. After successfully completing all required courses, conducting research, and presenting an evidence-based project on how to better patient outcomes, students will earn their post professional master's degree.

The program will utilize online technology to provide working professionals the opportunity of obtaining a MS in Cardiovascular Perfusion.

Program Goals

- Allow perfusionists to develop (or build upon current practices) and implement methodologies that are supported by evidence-based medicine to aid in better outcomes for their patients.
- Have students complete a capstone project to enhance their current clinical practices.
- Promote both personal and professional growth to certified perfusionist wishing to further their perfusion education.

Curriculum: 2 years, 15 credits

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
PER 650	Organizational Leadership	3	PER 670	Fundamentals in Health Science Research	3
PER 660	Intro to Biostatistics	3	PER 700	Perfusion Capstone Project	3
PER 540	Medical Ethics	3			

Integrative Health Sciences

Master of Science (MS)

Program Director Mary Gozza-Cohen, PhD
Campus Online
Website <https://www.jefferson.edu/MSIntegrativeHealth>

Program Description

The Master of Science in Integrative Health Sciences degree offers health professionals an opportunity to gain a deep background in integrative health in order to meet the growing demand for wellness-oriented strategies to improve health outcomes and well-being.

Integrative health is an emerging specialty that is of expanding interest. Jefferson is leading the nation in developing a clinical and academic model of integrative healthcare. Key components of the model are highlighted and emphasized in the master's degree curriculum, including advanced nutrition, nutrition-based therapies, innovative mind-body medicine practices, and other scientifically promising modalities.

The MS Degree encompasses 3 stackable Advance Practice certificates in the following areas:

- Mind-Body Medicine
- Integrative Nutrition
- Integrative Health Education & Leadership

Plus a capstone course that delivers a 30-credit MS degree. A research course may be required as determined by the program director.

Learning Goals/Outcomes

- Understand the complex role of nutrition in biochemistry, physiology, illness and health.
- Define biomarkers of nutritional deficiencies and suboptimal nutritional states.
- Construct an integrative nutritional plan for a wide range of patients.
- Understand the complex network that constitutes “mind-body” and construct an integrative mind-body plan for a wide range of patients.
- Explain common mind-body interventions and discuss the evidence and/or lack of evidence supporting their use.
- Utilize a range of Integrative Health Education knowledge, skills, and processes, especially when encountering challenging education situations.
- Understand evidence-based teaching practices, health psychology, dynamics of motivation, and behavior modification.
- Develop integrative treatment plan metrics for outcomes across illness and wellness populations.
- Develop and communicate health education milestones for long-term treatment planning, adherence, and compliance.

Curriculum: 30 credits

Mind-Body Certificate			Integrative Health Education & Leadership Certificate		
MBM 500	Foundations in Mind-Body Medicine	3	IHE 600	Foundations in Integrative Health Education	3
MBM 510	Advanced Mindfulness-Based Stress Reduction	3	IHE 610	Integrative Development Model for Wellness and Leadership Health Education for Wellness and Clinical	3
MBM 520	Advanced Mind-Body Practice: The Neuro Emotional Tech	3	IHE 620	Integrative Health Education Practicum	3
Integrative Nutrition Certificate			Additional Required Courses		
IN 500	Foundations in Integrative Nutrition	3	IHE 700	Integrative Health Master's Program Capstone	3
IN 510	Functional Genomics, Proteomics, and Metabolomics	3			
IN 520	Advanced Concepts in Integrative Nutrition	3			

Medical Cannabis Science and Business

Master of Science (MS)

Program Director Brooke Worster, MD
Campus Online
Website www.jefferson.edu/MSCannabis

Program Description

Designed to provide students with the knowledge in cannabis medicine, science, business, and policies, required to enter the cannabis industry, support patients, add to existing research, and develop innovative cannabis business models.

The MS degree program encompasses three stackable graduate certificates in the following areas:

- Cannabis Medicine (clinical applications, physiological impacts, therapies, and health effects)
- Cannabis Science (botany, chemistry, pharmacology, and toxicology)
- Cannabis Business (regulations, management, operations, financial analysis, and business model innovation)

Learning Goals/Outcomes

- Apply concepts of analytical chemistry, pharmacology, pharmacognosy, and pharmaceuticals and drug development to assure safety and quality of cannabis products, and to develop and manufacture new cannabis strains.

- Explain mechanisms of action, functional roles, and absorption/distribution/metabolism/ excretion of cannabinoids in humans.
- Apply clinical and basic sciences knowledge to identify appropriate cannabis therapies for specific medical conditions, determine proper administration and safe dosing, and identify physical, psychiatric, and psychological effects.
- Blend knowledge and skill sets from different disciplinary areas to develop effective business strategies.
- Apply knowledge of historical and current cultural and policy perspectives to identify, analyze, and advocate for emerging issues related to the cannabis industry.
- Identify areas for future research related to science, health effects, therapeutic and/or business of medical cannabis, and design a grounded research study using the principles of research to address one specific issue.

Curriculum: 33 credits

To earn the MS in Medical Cannabis Science and Business students must satisfy the following requirements:

- 2 courses with prefix CMD (choose from: CMD503, CMD504, CMD505)
- 2 courses with prefix CSC (choose from: CSC511, CSC512, CSC513)
- 2 courses with prefix CBU or iMBA (choose from: CBU501, CBU506, iMBA604)
- CRS600 & CRS610
- 3 remaining courses with prefixes CMD, CSC, CBU, CCT or CSO

Cannabis Courses			
CMD 503	Pathology Potentially Responsive to Cannabis	3	
CMD 504	Conventional & Cannabinoid Therapy of Disease	3	
CMD 505	Health Implications of Medicinal Cannabis	3	
CSC 511	Botany and Chemistry of Cannabis	3	
CSS 512	Forensic Analysis of Cannabis and Cannabis-Derived Products	3	
CSC 513	Cannabinoid Pharmacology	3	
			CBU 501 Emerging Issues in the Cannabis Industry 3
			CBU 506 Essentials of Cannabis Financial and Operations Analysis 3
			iMBA 604 Business Model Innovation 3
			CRC 600 Applied Research Design & Methods 3
			CRC 610 Cannabis Capstone Project Quality Control and Quality Assurance in Med. Cannabis Analysis and Dispensing 3
			CCT 508 Quality Control and Quality Assurance in Med. Cannabis Analysis and Dispensing 3
			CSO 521 Cannabis and Public Health 3
			CSO 522 Cannabis Policy, Politics, and Regulation 3
			CSO 523 Equity Policies: Evaluating impact and Outcome 3

Certificate Programs

		Cannabis Business
		Graduate Certificate
Program Director	Brooke Worster, MD	
Campus	Online	
Website	https://www.jefferson.edu/CannabisBusiness	

Program Description

The Cannabis Business certificate equips graduates with the knowledge, skills and intrapreneurial mindset needed to turn a unique winning idea that fills an unmet need in the cannabis industry into reality

Learning Outcomes

- Understand key regulatory and business issues applicable to the cannabis industry.
- Develop and implement well managed and well executed financial and operations plans.
- Develop a business canvas, pitch deck, and budget for cannabis businesses.
- Design and manage simple and complex innovative projects related to the cannabis industry.

Curriculum: 9 credits

CBU 501	Emerging Issues in the Cannabis Industry	3
CBU 506	Essentials of Cannabis Financial and Operations	3
IMBA 604	Analysis Business Model Innovation	3

Cannabis Medicine

Graduate Certificate

Program Director Brooke Worster, MD
Campus Online
Website <https://www.jefferson.edu/CannabisMedicine>

Program Description

The graduate certificate in Cannabis Medicine is designed to provide an understanding of the underlying science and clinical applications of endocannabinoids, phytocannabinoids, and synthetic cannabinoids.

Learning Outcomes

- Apply clinical and basic sciences knowledge to identify appropriate cannabis therapies for specific medical conditions.
- Explain mechanisms of action, functional roles, and absorption/distribution/metabolism/excretion of cannabinoids in humans.
- Determine medical cannabis/cannabinoids proper administration and safe dosing, and identify its physical, psychiatric, and psychological effects.

Curriculum: 9 credits

CBU 503	Pathology Potentially Responsive to Cannabis	3
CMD 504	Conventional & Cannabinoid Therapy of Disease	3
CMD 505	Health Implications of Medicinal Cannabis	3

Cannabis Science

Graduate Certificate

Program Director Brooke Worster, MD
Campus Online
Website <https://www.jefferson.edu/CannabisScience>

Program Description

The Cannabis Science certificate provides an in-depth view of the botany and chemistry of the cannabis plant, cannabinoids pharmacology and resultant effects, and how to identify and quantify the different chemical components and potential toxicants in cannabis.

Learning Outcomes

- Discover many different ways of working in the cannabis industry
- Learn about the chemistry of the cannabis plant and how plant genetics change over time.
- Understand how cannabis was used in ancient societies over the ages.
- Utilize advanced analytical technologies to identify potential toxins in cannabis and to monitor the concentrations of cannabis constituents to improve the quality of cannabis-based products.
- Describe the mechanisms of action and functional roles of endogenous cannabinoids in humans.
- Understand how plant cannabinoids interact with the endogenous cannabinoid neurotransmitter system to produce both positive and negative effects.

Curriculum: 9 credits

CSC 511	Botany and Chemistry	3
CSC 512	Forensic Analysis of Cannabis and Cannabis-Derived Products	3
CSC 513	Cannabinoid Pharmacology	3

Integrative Health Education & Leadership

Advanced Practice Certificate

Program Director Mary Gozza-Cohen, PhD
Campus Online
Website <https://www.Jefferson.edu/IntegrativeHealthEducation>

Program Description

The Advanced Practice Certificate in Integrative Health Education & Leadership focuses on the theories, evidence for and practice of integrative health education approaches and prepares students to meet patients' growing demand of complementary practices. This program builds on existing knowledge of Integrative Health. It is for individuals who have significant background in the field, or for those who have taken or are enrolled in the other two Integrative Health advanced practice certificates: Mind-Body Medicine and Integrative Nutrition.

Learning Outcomes

- Understand evidence-based teaching practices, health psychology, dynamics of motivation, and behavior modification.
- Develop integrative treatment plan metrics for outcomes across illness and wellness populations.
- Develop and communicate health education milestones for long term treatment planning, adherence, and compliance.
- Utilize a range of Integrative Health Education knowledge, skills, and processes, especially when encountering challenging education situations.

IHE 600	Foundations in Integrative Health Education	3
IHE 610	Integrative Developmental Model for Wellness and Leadership	3
IHE 620	Integrative Health Education Practicum	3

Integrative Nutrition

Advanced Practice Certificate

Program Director Mary Gozza-Cohen, PhD
Campus Online
Website <https://www.jefferson.edu/IntegrativeNutrition>

Program Description

The Integrative Nutrition Advanced Practice Certificate is unique in that it provides a foundation in nutritional science, as well as clinical and integrative applications of diets and specific nutrients. With an increasingly high-demand for nutrition education among physicians and many other health professionals, learners will be better equipped to address nutrition as a tool for improving overall health outcomes across a wide range of patients.

Learning Outcomes

- Understand the complex role of nutrition in biochemistry, physiology, illness and health
- Describe the role of macro and micro nutrients in regard to nutritional status
- Explain the differences among common dietary approaches and discuss the evidence and/or lack of evidence supporting their use
- Define biomarkers of nutritional deficiencies and suboptimal nutritional states
- Construct and integrative nutritional plan for a wide range of patients. Understand the complex role of nutrition in biochemistry, physiology, illness and health.

Curriculum: 9 credits

IN 500	Foundations in Integrative Nutrition	3
IN 510	Functional Genomics, Proteomics and Metabolomics	3
IN 520	Advanced Concepts in Integrative Nutrition	3

Mind-Body Medicine

Advanced Practice Certificate

Program Director Mary Gozza-Cohen, PhD
Campus Online
Website <https://www.jefferson.edu/MindBodyMedicine>

Program Description

With an increasingly high-demand for mind-body education among health professionals, learners will be better equipped to incorporate these modalities into practice to improve overall health outcomes across a wide range of patients. Upon completion of this certificate, students will fulfill the foundational course requirements needed for Mindfulness-Based Stress Reduction (MBSR) and the Neuro-Emotional Technique (NET) basic training.

Learning Outcomes

- Understand the complex network that constitutes “mind-body”
- Describe the role of stress in health outcomes
- Explain common mind-body interventions and discuss the evidence and/or lack of evidence supporting their use
- Define the relationship between nutrition and mind-body well-being
- Construct an integrative mind-body plan for a wide range of patients

Curriculum: 9 credits

MBM 500	Foundations in Mind-Body Medicine	3
MBM 510	Advanced Mindfulness-Based Stress Reduction	3
MBM 520	Advanced Mind-Body Practice: The Neuro Emotional Technique	3



**COLLEGE OF
HUMANITIES & SCIENCES**

Dean: Barbara Kimmelman, PhD | 215- 951-2612 | Jefferson.edu/JCHS

About Us

Our students tackle real-world issues through collaborative and experiential studies, exploring their passions as they develop communication skills and learn ethical professional practices.”

Human interactions with social, natural, and physical environments are the focus of the College of Humanities & Sciences, where we take an interdisciplinary approach to learning at the intersections of the liberal arts with the social and behavioral sciences to form a truly innovative curriculum.

Our students explore their passions, develop communication skills, and learn ethical professional practices. They tackle real-world issues through collaborative and experiential study. With attentive advising, community engagement, and participation in faculty research, our students are prepared to succeed in the professional realm in a wide range of careers, or to continue their academic studies in graduate and professional programs. Whatever career path they choose, our graduates are valued for their integrative thinking, collaborative worth ethic and global perspective.

Hallmarks Program for General Education

Jefferson pursues its mission of professional education with a broad and innovative approach to general education that advances a set of shared learning goals across the general education core curriculum (the Hallmarks Core), the majors, and co-curricular activities such as internships and study abroad. The Hallmarks Program for General Education coordinates these three dimensions of the Jefferson undergraduate experience to deliver our value proposition for general education.

The Hallmarks Program for General Education prepares Jefferson students to imagine and realize better futures, empowering them to:

- **Question**-based on rigorous inquiry and critical analysis
- **Adapt**-based on contextual communication and global perspectives
- **Contribute**-based on intercultural insight and collaborative creation
- **Act**-based on intellectual risk-taking and ethical reflection

This statement identifies eight Hallmarks outcomes that we consider vital to our students' personal and professional success. These also serve as the learning goals for the Hallmarks Program Core curriculum:

RIGOROUS INQUIRY	Create strategies for expanding knowledge through reflection and research
CRITICAL ANALYSIS	Challenge concepts, practices and experts with reasoning and evidence.
CONTEXTUAL COMMUNICATION	Develop and share insights using appropriate means of expression.
GLOBAL PERSPECTIVES	Navigate diverse environments and complex issues by managing multiple systems of knowledge and behavior.
INTERCULTURAL INSIGHT	Consider multiple perspectives in order to relate to others and strengthen communities.
COLLABORATIVE CREATION	Achieve goals by integrating skills and knowledge in a team setting.
INTELLECTUAL RISK-TAKING	Take creative and intellectual risks when exploring ideas and real-world problems.
ETHICAL REFLECTION	Affirm an ethical compass to guide personal, civic and professional life.

Within this framework of learning outcomes, our Hallmarks Program advances and tracks student achievement through a coherent and comprehensive general education core curriculum (the Hallmarks Core) and process of reflective curation of their learning experiences (the Hallmarks Pathway). The Hallmarks Core sets the foundation for these 8 outcomes and develops them progressively across four years of study. These outcomes are reinforced and given professional context in each student's major and they are given personal meaning in co-curricular activities like study abroad, student organizations, and internships. The Hallmarks Pathway is the digital space where students collect and post evidence of their progress towards fulfilling the 8 Hallmarks outcomes. This dossier allows students to display "artifacts" of their learning for each outcome in all three components of their educational experience: their major, the Hallmarks Core and their co-curricular activities.

Key Capabilities	Hallmarks Learning Goals: your “Power Skills”	Two samples of your work for each learning goal, taken from 2 different parts of your Jefferson learning experience: your major, the Hallmarks Core, or your co-curricular experience.	
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Question	Rigorous Inquiry	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Critical Analysis	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Adapt	Contextual Communication	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Global Perspectives	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Contribute	Intercultural Insight	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Collaborative Creation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Act	Intellectual Risk-Taking	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Ethical Reflection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The Hallmarks Core

The Hallmarks Core, our general education core curriculum, guides Jefferson students through an integrated education in the liberal arts and sciences and advances their mastery of the eight Hallmarks learning outcomes, in partnership with the broader Hallmarks Program for General Education. The Hallmarks Core also supports and supervises our students in the completion of their Hallmarks Pathway, with “touchstone” courses in each year of the curriculum where faculty review the progress of each student’s learning portfolio.

The “touchstone” courses are AMST 114 Topics in American Studies, WRIT 201/202 Writing Seminar II: Multimedia Communication, CGIS 300 Contemporary Global Issues, and PHIL 499 Philosophies of the Good Life.

Key Capabilities

Year One	Year Two	Year Three	Year Four
4 “touchstone” courses			
Topics in American Studies	Writing Seminar II	Contemporary Global Issues	Philosophies of the Good Life
Writing Seminar I	American Diversity	Integrative Seminar	
First Year Seminar (1 credit)	Ethics		
	Global Citizenship		
	Global Diversity		
Scientific Understanding			
Mathematics			
Mathematics or Scientific Understanding			

The curriculum chart below identifies the prerequisites and course options for the different requirement categories in the Hallmarks Core. The Hallmarks Core sequences its requirements over four years in order to build skills, knowledge and learning outcomes progressively. In most cases, majors have scheduled these requirements in specific years or semesters within their curricula. Students should consult with their academic advisors before registering each semester and use the chart provided here to ensure that they are on track in terms of sequencing and prerequisites.

First Year	Sophomore Year	Junior Year	Senior Year
<p>First Year Seminar</p> <p><i>FYS 100 Pathways Seminar: Preparing for Academic and Professional Success (1 credit)</i></p>	<p>Writing Seminar II: Multimedia Communication</p> <p>WRIT 201/202: Writing Seminar II</p> <p>(Prereq: WRIT 101/101G)</p> <p>Global Diversity</p> <p>GDIV 221 The Environment and World Cultures GDIV 229 Intercultural Encounters GDIV 231 Cultures of the Spanish Speaking World GDIV 233 World Cinemas GDIV 235 World Religions GDIV 333 Pop Culture in Global Society</p> <p>(Prereq: AMST 114, WRIT 101/101G)</p> <p>World Languages: FREN 101/201/301/401: Italian I-IV JAPN 101/201/301/401: Japanese I-IV SPAN 101/201/301/401: Spanish I-IV SPAN 202: Medical Spanish SPAN 302: Intermediate Medical Spanish</p>	<p>Contemporary Global Issues</p> <p>CGIS 300 Contemporary Global Issues</p> <p>(Prereq: WRIT 201/202, GDIV 2xx or GCIT 2xx)</p> <p>Integrative Seminars</p> <p>ISEM 300/DECM 300 Ethnographic Research Methods</p> <p>ISEM 301 Animals and Society ISEM 302 Telling Stories, Selling Stories ISEM 303 Perspectives on Psychoanalysis ISEM 304 Cultures of Health and Illness ISEM 305 Healthcare Economics and Policy ISEM 313 Conspiracy Theories ISEM 340 Sustainable Development in the Global South, ISEM 360 Human Behavior and the Physical Environment</p> <p>(Prereq: WRIT 201/202, GDIV 2xx or GCIT 2xx)</p>	<p>Philosophies of the Good Life</p> <p>PHIL 499 Philosophies of the Good Life</p> <p>(Prereq: CGIS 300, ISEM 3xx, ETHC 2xx, ADIV 2xx, GCIT 2xx, MATH 1xx, Scientific Understanding)</p>
<p>Writing Seminar I: Written Communication</p> <p>WRIT 101/101G Writing Seminar I</p>	<p>Ethics</p> <p>ETHC 200 Bioethics ETHC 201 Honors Moral Philosophy ETHC 202 Environmental Ethics ETHC 204 The Ethics of Apocalypse: Dystopian Film and Literature ETHC 215 Evil and Good</p> <p>(Prereq: AMST 114, WRIT 101/101G)</p> <p>American Diversity</p> <p>ADIV 200 American Social Justice ADIV 201 Defining American Voices ADIV 202 Immigrant America ADIV 203 Thomas Jefferson in a Diverse America ADIV 204 Red and Blue America ADIV 206 Gender and Diversity in the U.S. ADIV 211 African American Studies ADIV 212 Asian American Studies ADIV 213 Jewish American Studies ADIV 214 Race in America ADIV 215 Latinx American Studies ADIV 216 LGBTQIA American Studies ADIV 217 Muslim American Studies ADIV 218 Studying Philadelphia: Diversity in the City of Brotherly Love</p> <p>(Prereq: AMST 114, WRIT 101/101G)</p>		
<p>Topics in American Studies</p>	<p>Global Citizenship</p> <p>GCIT 200 War and Political Violence GCIT 210 Human Rights</p>		

AMST 114 Topics in American Studies	GCIT 211 The Global Economy GCIT 214 Global Environmental Citizenship GCIT 215 Global Immigration GCIT 225 Global Politics (Prereq: AMST 114, WRIT 101/101G) World Languages FREN 101/201/301/401 French I-IV GER 101/201 German I-II ITAL 101/201/301/401 Italian I-IV JAPN 101/201/301/401 Japanese I-IV SPAN 101/201/301/401 Spanish I-IV SPAN 202 Medical Spanish SPAN 302 Intermediate Medical Spanish	
Mathematics MATH 100/101 Finite Math MATH 102 Pre-Calculus MATH 103 Introduction to Calculus MATH 104 Analytical Geometry MATH 110 Precalculus for Science and Engineers MATH 111 Calculus I		
Scientific Understanding SCI 101 Environmental Science SCI 102 Exploring Science SCI 106 Biology for Design SCI 108 Sustainability and Eco-Innovation SCI 110 Landscape Ecology BIOL 101 Current Topics in Biology	CHEM 101 General Chemistry PHYS 101 Gen. Physics CHEM 103 Chemistry I (4 cr.) BIOL 103 Biology I (4 cr.) PHYS 201 Physics I (4 cr.)	
Mathematics OR Scientific Understanding Any third course from the above two categories (or STAT 201 in some majors - please consult the check sheet for your program)		

Introductory and Fundamentals courses:

Some students begin the Hallmarks Core sequence with appropriate preparatory courses in reading, writing and mathematics (determined by placement testing). Courses at the 100-level (WRTG 100 Introduction to Academic Writing, WRTG 100G Introduction to Academic Writing: Global, and TXIS 100 Textual Analysis for International Students) carry academic credits that apply towards graduation. Courses at the 099-level (MATH 099 Fundamentals of College Mathematics) carry credits that do not apply towards graduation.

Arlen Specter Center

The (Senator) Arlen Specter Center at Jefferson facilitates and promotes public service and civic education in a cross-disciplinary, nonpartisan setting. The Center is also home to Senator Specter's historic archive of papers, photographs and political documents for the benefit of researchers, scholars and the public.

The Specter Center Includes:

- Arlen Specter Collection
- Roxboro Roundtables
- Knowledge Exchange
- Special Events
- Research Fellowship
- Historic Roxboro House

Academic Programs

Undergraduate

Biopsychology	BS
Communication & Media Studies	BS
Interdisciplinary Studies	BS
Law & Society	BS
Psychology	BS

Accelerated/Dual Degree

BS Psychology & MS Community & Trauma Counseling	BS & MS *See Program Director for Plan of Study
BS Psychology & MS Occupational Therapy	BS & MOT *See Program Director for Plan of Study

Biopsychology

Bachelor of Science (BS)

Program Director	John D Pierce, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/humanities-sciences/degree-programs/biopsychology.html

Program Description

In this program, you will study psychology alongside biology, chemistry, anatomy & physiology, making this an ideal first step into further studies in a variety of experimental psychology settings, neuroscience, health fields, and scientific research. You will work closely with faculty to develop an avenue of career possibilities. First, you select a concentration option - pre-medical or graduate school - allowing you to adapt your curriculum to your career goals and interests. You will also learn to conduct professional-level research, completing an independent research project your senior year. During your time in the program, you can further enrich your education with internships in research, legal and educational settings; or study abroad anywhere in the world.

Learning Goals/Outcomes

- Analyze and apply the scientific process to psychology.
- Locate, retrieve, critically evaluate and communicate scientific data and knowledge.
- Communicate effectively and professionally.
- Express expertise in specific content areas of psychology.
- Display knowledge of the ethical standards, personal integrity and professional responsibilities of psychologists.
- Apply principles and practice of core information and values in a psychology practice environment through internships and applied research.

Curriculum: 4 year, 120-130 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	GCIT 2XX	Global Citizenship	3
WRIT 101	Written Communication	3	CGIS 300	Contemporary Global Issues	3
AMST 114	Topics in American Studies	3	ISEM 3XX	Integrative Seminar	3
MATH 1XX	Math 100, 101,102,103, or 111	3-4	BIOL 201/L	Anatomy and Physiology I/Lab	4
	Quant Reasoning II or Elective	3-4	STAT 220	Stats for Behavioral Sciences	3
BIOL 103	Biology I/Lab	4	PSYC 240	Comparative Psychology	3
BIOL 104	Biology II/Lab	4	PSYC 322	Research Method Behavioral Sci	3
PSYC 101	Introduction to Psychology	3	PSYC 2XX	Select: PSYC 240, 241,242	3
PSYC 213	Developmental Psychology	3	PSYC XXX	PSYC Concentration course	3-4
PSYC 103	Physiological Psychology	3	PSYC XXX	PSYC Concentration course	3-4
				General Electives	3
<u>Year 2</u>			<u>Year 4</u>		
ETHC 2XX	Ethics	3	PHIL 499	Philosophies of Good Life	3
GDIV 2XX	Global Diversity	3	PSYC 391	Adv Research in Psychology	3
WRIT 201	Multimedia Communication	3	PSYC 410	Sr. Colloquium in Psychology	3
ADIV 2XX	American Diversity	3	PSYC 2XX	Select: PSYC 240, 241,242	3
CHEM 103/L	Chemistry I/Lab	4	PSYC XXX	PSYC Concentration course	3-4
CHEM 104/L	Chemistry II/Lab	4	PSYC XXX	PSYC Concentration course	3-4
PSYC 2XX	Select: PSYC 240, 241,242	3	PSYC XXX	PSYC Concentration course	3-4
PSYC XXX	Concentration Course	3-4		General Electives	9
PSYC XXX	Concentration Course	3-4			

Psychology Concentration Option

(See academic advisor before selecting one of the following)

Pre-Med Option

(students must take MATH 111 & MATH 112 to fulfill the Math requirement)

CHEM 201/201L, CHEM 202/202L, PHYS 201/201L, PHYS 203/203L, and three additional advanced courses from Biology and Psychology (see advisor)

Graduate Study Option

Select seven advanced courses from Biology and Psychology areas (at least three from each area; see advisor)

Introductory and Fundamentals Courses:

(Fundamental "099" courses do **not** count toward graduation requirements. However, WRTG-100 **can** be used toward graduation credits as a General Elective.

Communication & Media Studies

Bachelor of Science (BS)

Program Director	Letrell Crittenden, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/humanities-sciences/degree-programs/communication.html

Program Description

The Jefferson Communication & Media Studies program prepares students for today's media marketplace through a broad-based education that emphasizes storytelling, critical thinking, and creative problem-solving and multimedia skills development.

The program tailors itself to the unique career goals of each student, and provides the key skills necessary to transition into new areas of communications, as the marketplace continues to change and grow.

Learning Goals/Outcomes

- Planning and Process: apply a process of self-reflection and self-evaluation in order to plan their course of study and professional path in Communication [integration]
- Visual Literacy: read, interpret, and analyze visual information in multiple forms of 153 media [visual]
- Idea Invention: engage in generative and iterative processes to develop and communicate original ideas to achieve specific communication goals [rhetoric, practice, visual, integration]
- Rhetoric and Writing: identify and apply written techniques of argument and persuasion appropriate to specific tasks, audiences, and platforms [rhetoric, practice]
- Visual/Verbal Presentation: synthesize & understanding of visual and verbal communication techniques and technologies to create effective presentations for specific audiences [rhetoric, practice, visual, integration]
- Narrative Creation: identify and apply written and visual narrative strategies to the invention and communication of persuasive stories for specific audiences [rhetoric, practice, visual, integration]
- History/Theory: explore the relationship between meaning and context through analysis of historical and contemporary communicative expressions [rhetoric, practice, visual integration]

Curriculum: 4 year, 122-128 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	GCIT 2xx	Global Citizenship	3
WRIT 101	Writing I: Written Communication	3	ISEM 3XX	Integrative Seminar	3
DBTU 114	Debating U.S. Issues	3	MKTG 102	Principles of Marketing	3
MATH XXX	Mathematics	3-4	MKTG XXX	Marketing Elective	3
	Scientific Understanding	3-4	COM 316	Journalism in Multimedia World	
	Scientific Understanding/Math/STAT	3-4		Com Related Minor 1	3-4
COM 101	Intro to Communication	3		Com related Minor 2	3-4
COM 202	Research Methods	3		Com Related Minor 1	3-4
COM 107	Radio Production	1		Com Related Minor 2	3-4
COM 102	Public Speaking	3		General Elective	3
COM 204	Social Media Strategies	3			
	General Elective	3			
<u>Year 2</u>			<u>Year 4</u>		
ADIV 2XX	American Diversity	3	HALLMK 499	Capstone Folio Workshop	3
ETHC 1XX	Ethics	3	ETHC 1XX	Ethics	3
WRIT 20X	Multimedia Communication	3	COM 402	Pro Ethics in Communication	3
GDIV 1XX	Global Diversity	3	COM 404	Communication Capstone	3
PHTO 205	Comm as Photography	3		Com Related Minor 3	3-4
COM 206	Strategic Communication	3		Com Related Minor 4	3-4
COM 300	Text, Sound and Image	3		Com Elective/Open Minor 3	3-4
DBTG 300	Debating Global Issues	3		Com Elective/Open Minor 4	3-4
COM 307	Fund. of Web Programming	3		General Electives	9
COM 200	Visual Communications	3			

Interdisciplinary Studies

Bachelor of Science (BS)

Program Director	Valerie Hanson, PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/humanities-sciences/degree-programs/interdisciplinary-studies.html

Program Description

Interdisciplinary Studies majors become effective professionals who are skilled communicators and solvers of complex social, civic, and professional issues—in local, national or global contexts. Through experience in a variety of liberal arts and professional methodologies, you will become a skilled researcher and thinker who not only knows where to look for information but also is able to assess how to apply disciplinary strengths in innovative ways to a variety of existing and emerging professions.

Customize your degree by choosing a specialization in one of Jefferson's interdisciplinary areas—Global Studies, Diversity Studies, Sustainability and Environmental Studies, Medicine and Society, or propose your own specialization.

This program can be completed in as little as 3 years with classes available throughout the summer semesters.

Learning Goals/Outcomes

- Employ a variety of interdisciplinary methodologies to better understand individual, social, civic, and professional issues.
- Select and employ interdisciplinary methodologies to address and develop solutions to complex individual, social, civic, and professional issues.
- Recognize and apply appropriate communication strategies for various contexts and settings.
- Articulate interrelated individual, social, civic, and professional responsibilities in global society.
- Recognize gaps in knowledge and select and apply appropriate research strategies from a variety of disciplines to close those gaps.
- Explain the relevance and value of interdisciplinary studies as it relates to and informs students' overall course of study and individual professional career preparation.

Curriculum: 3-4 years, 121 credits

Select area of Specialization:

- Global Studies
- Diversity Studies
- Sustainability
- Environmental Studies

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathway Seminar	1		Specialization course	3
IDSC xxx	Intro to Interdisciplinary Studies	3		Specialization course	3
	Disciplinary Electives (courses within JCHS majors)	3	GCIT 3XX	Global Citizenship	3
	Disciplinary Electives (courses within JCHS majors)	3		Global Diversity selection	3
	Disciplinary Electives (courses within JCHS majors)	3	ADIV 2XX	American Diversity	3
WRIT 101	Written Communication	3	ISEM 3XX	Integrative Seminar	3
	Topics in American Studies	3	ETHC 3XX	Ethics	3
	Science	3-4		Minor course	3
	Mathematics	3-4		General Elective	3
	Science or Statistics or Mathematics	3-4			
	General Elective	3			
<u>Year 2</u>			<u>Year 4</u>		
IDSC XXX	Interdisciplinary Methods		IDSC XXX	Interdisciplinary Studies Capstone	3
	Specialization courses	3		Specialization course	3
	Specialization course	3		Specialization course	3
	Disciplinary elective	3		Specialization course	3
	Global Diversity	3		Specialization course	3
GCIT 3XX	Global Citizenship	3	PHIL 499	Philosophies of the Good Life	3
WRIT 201	Multimedia Communication	3		Minor course	3
ISEM 3XX	Integrative Seminar	3		Minor course	3
ADIV 2XX	American Diversity	3		Minor course	3
	General Elective	3		General Elective	3

Law & Society

Bachelor of Science (BS)

Program Director Evan Laine, JD, MA
Campus East Falls
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/humanities-sciences/degree-programs/law-society.html>

Program Description

Interdisciplinary program that encourages active student participation and debate on issues concerning how competing powers create law, for what purpose, and how these laws are implemented and why they are followed. The program develops leadership by building critical thinking and communication skills in an energetic, practically oriented environment. Graduates are prepared broadly for careers in the legal profession, such as law school, paralegal and legal assistantships, and for positions in criminal justice, law enforcement, politics, nonprofits and government organizations

Learning Goals/Outcomes

- Experience in a broad interdisciplinary major
- Obtain an understanding of the structures and functions of the legal systems in both the American and global context
- Have strong experiences in writing across contexts
- Ability to apply understanding and skills to the recognition and resolution of problems in contemporary society
- Prepared for graduate & professional careers, within the legal system and without, as well as a variety of public and private settings
- Understanding of the historical, philosophical, political, and social foundations of the law and its roles in society, and its relationship to economic, political, social and cultural structures and values in contemporary world

Curriculum: 4 years, 121 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	DBTG 300	Debating Global Issues	3
WRIT 101	Written Communication	3	GCIT 3XX	Contemporary Global Issues	3
DBTU 114	Debating U.S. Issues	3	GCIT 3XX	Global Citizenship	3
	Science I	3-4	ISEM 3XX	Integrative Seminar	3
MATH XXX	Mathematics	3-4	LAW 300	International Law	3
LAW 101	Intro to Law & Society	3	LAW 306	Legal Research, Wrtg & Moot Court	3
LAW 103	Crime And Justice	3	LAW 302	Law and Ethics	3
LAW 105	American Government	3	LAW 304	Law, Media and Society	3
	General Elective	9		Minor Courses	6
<u>Year 2</u>			<u>Year 4</u>		
ETHIC 1XX	Ethics	3	HALLMK 499	Capstone Folio Workshop	3
	Science II	3-4	LAW 499	Sr Cap: Public Policy Advocacy	3
WRIT 201	Multimedia Communication	3		Minor Courses	6
ADIV 2XX	American Diversity	3		Designated Law Electives	6
GDIV 2XX	Global Diversity or Lang	3	LAW 411	First Amendment: Senior Seminar	3
LAW 203	Comparative Legal Systems	3		General Electives	9
LAW 201	Constit Law/Supreme Court	3			
LAW 313	Conspiracies Theories	3			
	Designated Electives	9			
	General Elective	3			

Psychology

Bachelor of Science (BS)

Program Director	John Pierce Jr., PhD
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/humanities-sciences/degree-programs/psychology.html

Program Description

The scientific study of behavior, is a remarkably diverse and far-reaching field. The Bachelor of Science in Psychology is designed to provide an overview of the many areas of the field, with an emphasis on the scientific nature of psychology. The comprehensive curriculum provides students with an in-depth understanding of the principles of behavior and the scientific methods used to derive those principles. The curriculum covers the discipline from academic and applied perspectives. Students graduating from the psychology program are well prepared for graduate work in psychology or for starting careers outside of academic psychology. Students take a core group of courses that emphasize the research-based nature of psychology and select additional courses in psychology depending upon their interests and goals. At the senior level, students conduct an advanced research project and may pursue internships at local counseling centers, human-services agencies, hospitals, residential treatment centers or other locations.

Psychology graduates may choose to work in professions such as counseling, social work, education or research. Other positions available to psychology majors include human resource management, rehabilitation, community counseling and crisis intervention. The major allows students the flexibility to pursue graduate studies in related disciplines such as education, occupational therapy and management.

Learning Goals/Outcomes

- Analyze and apply the scientific process to psychology
- Locate, retrieve, critically evaluate and communicate scientific data and knowledge
- Communicate effectively and professionally
- Express expertise in specific content areas of psychology
- Display knowledge of the ethical standards, personal integrity and professional responsibilities of psychologists
- Apply principles and practice of core information and values in a psychology practice environment through internships and applied research.

Curriculum: 4 years, 121-129 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	GCIT 2XX	Global Citizenship	3
WRIT 101	Written Communication	3	ISEM 3XX	Integrative Seminar	3
AMST 114	Topics in American Studies	3	CGIS 300	Contemporary Global Issues	3
	Scientific Understanding I	3	STAT 220	Statistics for Behavioral Sciences	3
MATH 1XX	Math 100, 102, 103, or 111	3-4	PSYC 322	Research Methods Behavioral Sci	3
	Quantitative Reasoning I	3-4			
	Quantitative Reasoning II or General Elective	3-4	PSYC XXX	Psych. Electives (Designated)	9
PSYC 101	Introduction to Psychology	3		Minor Course	3-4
PSYC 103	Physiological Psychology	3		General Electives	3
PSYC 213	Developmental Psychology	3			
	Science Elective (Designated)	3-4			
	General Elective	3			
<u>Year 2</u>			<u>Year 4</u>		
ETHC 2XX	Ethics	3	PHIL 499	Philosophies Good Life	3
GDIV 2XX	Global Diversity	3	PSYC 391	Advanced Research in Psychology	3
WRIT 201	Multimedia Communication	3	PSYC 410	Senior Colloquium in Psychology	3
ADIV 2XX	American Diversity	3		PSYC Electives (Designated)	9
PSYC 201	Abnormal Psychology	3		Minor Courses	6-8
PSYC XXX	Psych. Electives (Designated)	6		General Electives	6
	Minor Course	3-4			
	General Electives	6			

Psychology Distribution Electives (select two courses from each area)					
<u>Experimental Psychology</u>			<u>Social/Organizational Psychology</u>		
PSYC 210	Forensic Psychology	3	PSYC 221	Personality Theory	3
PSYC 211	Learning Theory	3	PSYC 230	Industrial/Organizational Psy	3
PSYC 212	Cognitive Psychology	3	PSYC 231	Psychological Assessment	3
PSYC 214	History of Psychology	3	PSYC 232	Social Psychology	3
PSYC 215	Sports Psychology	3	PSYC 233	Interpersonal Relations & Small Group Dynamics	3
			PSYC 234	Cultural and Social Diversity	3
<u>Clinical Psychology</u>			<u>Biological Bases of Behavior</u>		
PSYC 220	Clinical Psychology	3	PSYC 240	Comparative Psychology	3
PSYC 222	Counseling Psychology	3	PSYC 241	Psychopharmacology	3
PSYC 223	Marriage and Family	3	PSYC 242	Sensations and Perceptions	3
PSYC 224	Psychology of Addiction	3	PSYC 243	Human Sexuality	3
PSYC 226	Psychology of Trauma	3			
PSYC 227	Intro to Art Therapy	3			

COLLEGE OF LIFE SCIENCES



Dean: Gerald B. Grunwald, PhD | 215- 503-4400 | Jefferson.edu/JCLS

About Us

The mission of the Jefferson College of Life Sciences (JCLS) is to “Train Tomorrow’s Scientific Leaders Today” by providing the highest quality undergraduate, graduate and postdoctoral education and research training in the life sciences, in order to prepare our students and fellows to make significant contributions to the progress of life science through careers including academia, industry, and government. To achieve this goal, our academic programs span both the Jefferson-East Falls Campus, home of our Department of Biological and Chemical Sciences, and the Jefferson-Center City Campus, home of our Jefferson Graduate School of Biomedical Sciences. JCLS and its faculty offering courses and programs across a wide field of basic and translational sciences, leading to the BS degree, PhD degree, the MS degree and graduate certificate programs. In addition, JCLS offers a Post baccalaureate Pre-Professional Program for candidates interested in completing their prerequisite course work for medical and professional schools. The College also coordinates postdoctoral training programs across the campus. Additionally, JCLS, in conjunction with the Sidney Kimmel Medical College, offers a combined MD/PhD program.

Our education and training programs provide a solid foundation for our graduates, who have gone forward to continue with additional graduate and professional education and training programs or directly on to successful careers including positions at colleges and universities, pharmaceutical and biotechnology companies, healthcare settings, government agencies, and many other professional venues.

Research

Biomedical research and training at Jefferson is anchored by a large and diverse portfolio of active research programs with extensive outside grant support. That foundation, combined with Jefferson’s clinical research and patient-care programs, provides opportunities for basic and translational research in a challenging, exciting and satisfying graduate training environment. Research Areas include:

- Biochemistry & Molecular Pharmacology
- Cell & Developmental Biology
- Genetics, Genomics & Cancer Biology
- Immunology & Microbial Pathogenesis
- Integrative Physiology
- Neuroscience

Office of Postdoctoral Affairs

The Office of Postdoctoral Affairs works with the academic departments to determine human resource needs and training opportunities for postdoctoral fellows. Jefferson postdocs create a thriving community, where postdoctoral training encompasses not only research, but also many aspects of professional development and personal growth. These include, but are not limited to:

- Working with the human resources department to implement salary and benefits guidelines
- Creating a database of postdoctoral fellows
- Coordinating career and professional development workshops
- Being a central resource for postdoctoral fellows as well as departmental administrators and PIs

Accreditations

• American Chemical Society (ACS) Chemistry (BS)	www.acs.org
• Accreditation Council for Genetic Counseling (ACGC) Human Genetics and Genetics Counseling (MS)	www.gceducation.org

Academic Programs

Undergraduate

Biochemistry	BS
Biology	BS
Chemistry	BS
Pre-Medical Studies	BS

Graduate

Biomedical Sciences	MS
Cell & Developmental Biology	MS
Clinical Research	MS
Forensic Biology	MS
Forensic Toxicology	MS
Human Genetics & Genetic Counseling	MS
Microbiology & Immunology	MS
Pharmacology	MS
Biochemistry & Molecular Pharmacology	PhD
Cell Biology & Regenerative Medicine	PhD
Genetics, Genomics & Cancer Biology	PhD
Immunology & Microbial Pathogenesis	PhD
Integrative Physiology	PhD
Neuroscience	PhD

Certificate

Clinical Research & Trials: Implementations	Graduate Certificate
Clinical Research: Operations	Graduate Certificate
Human Clinical Investigation: Theory	Graduate Certificate
Infectious Disease Control	Graduate Certificate
Patient-Centered Research	Graduate Certificate

Accelerated/Dual Degree

Medicine & Research	MD & PhD (SKMC)
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Biochemistry

Bachelor of Science (BS)

Program Director	Niny Rao, PhD
Campus	East Falls
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/undergraduate-programs/biochemistry.html

Program Description

This active and collaborative program will prepare you for what's next. You start collecting chemical knowledge and skills through core courses and shadowing faculty and upper-level student researchers. As a sophomore, you will start helping with authentic, real-world research projects - experience many biochemistry students don't get until graduate programs. This is possible thanks to the individual attention you get in our small classes and our well-equipped research laboratories.

Learning Goals/Outcomes

- Describe laws & theories of chemistry pertaining to the properties of matter, chemical reactions and their stoichiometry, properties of gases, solution chemistry and acid/base chemistry.
- Describe chemistry of organic molecules including functional group structure and properties, structure and stereochemistry of alkanes, nucleophilic substitution and elimination reactions of alkyl halides, the structure/synthesis/reactions of alkenes, alcohols, aromatic compounds, amines, carboxylic acids, carboxylic acid derivatives and aldehydes/ketones.
- Summarize chemical thermodynamics, chemical kinetics & quantum mechanics and relate information to modern day chemistry.
- Develop language, terms & critical thinking/problem solving skills to use and understand analytical instrumentation used in chemistry and biochemistry today.
- Acquire laboratory skills, including knowledge of laboratory safety, proper laboratory behavior, and to be functional with laboratory equipment and techniques.
- Describe the chemistry of inorganic compounds, to include symmetry and group theory, molecular orbital theory, coordination chemistry, main group element chemistry and the chemistry of the solid state.
- Describe metabolism (including signaling mechanisms, basic biochemistry of DNA and RNA and mechanisms of control of gene expression), protein structure-function and laboratory techniques used in biochemical research.
- Garner information and critically analyze information (Information Literacy skills in general).
- Effectively communicate in written formats germane to the sciences.
- Successfully use their garnered research skills to probe new avenues of scientific inquiry.
- Utilize communication skills to disseminate research to both the general public and the scientific community.

Curriculum: 4 year, 124-125 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 1XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
DBTU 114	Debating U.S. Issues	3	DBTG 300	Debating Global Issues	3
CHEM 103	Chemistry I/Lab	4	ISEM 3XX	Integrative Seminar	3
BIOL 103	Biology I/Lab	4	BCHEM 312	Biochemistry I/Lab	4
MATH 111	Calculus	4	BCHEM 313	Biochemistry II/Lab	4
MATH 112	Calculus II	4	CHEM 305	Physical Chemistry	4
CHEM 104	Chemistry II/Lab	4	CHEM 323	Instrumental Method Analysis	4
BIOL 104	Biology II/Lab	4			
<u>Year 2</u>			<u>Year 4</u>		
ETHC 1XX	Ethics	3	HALLMK 499	Capstone Folio Workshop	3
WRIT 201	Multimedia Communication Global	3	CHEM 309	Inorganic Chemistry	4
GDIV 1XX	Diversity	3		General Electives	9-10
MATH 213	Calculus III	4		General Electives	12
STAT 301	Biostatistics	4			
PHYS 201	Physics I/Lab	4			
PHYS 203	Physics II/Lab	4			
CHEM 201	Organic Chemistry I/Lab	4			
CHEM 202	Organic Chemistry II/Lab	4			

Biology

Bachelor of Science (BS)

Program Director Jeffrey Klemens, PhD
Campus East Falls
Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/undergraduate-programs/biology.html>

Program Description

With an innovative curriculum providing broad scientific study, the BS in Biology program allows undergraduates to explore their passions. Students receive hands-on instruction through field work in the Philadelphia area. Study abroad opportunities give students a global perspective.

Learning Goals/Outcomes

- Select and apply elementary and advanced biological principles to projects at multiple levels
- Prepare oral presentations based on laboratory work or literature review information
- Interpret and employ graphical and tabular presentations of data
- Execute and perfect laboratory skills
- Prepare comprehensive laboratory reports in manuscript format
- Synthesize content and skills in planning a research project
- Identify, summarize and compare contrasting expert viewpoints on biological subjects
- Integrate critical review of biological literature in support of a research project 232
- Recognize the diversity of professions available to persons trained in biological sciences
- Display professional conduct in a variety of academic and professional environments in the biological sciences

Curriculum: 4 year, 122-132 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 2XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
DBTU 114	Debating U.S. Issues	3	DBTG 300	Contemporary Global Issues	3
CHEM 103	Chemistry I/Lab	4	ISEM 3XX	Integrative Seminar	3
BIOL 103	Biology I/Lab	4	PHYS 201	Physics I/Lab	4
MATH 111	Calculus	4	PHYS 203	Physics II/Lab	4
MATH 112	Calculus II	4	BIOL 208	Biodiversity	3
CHEM 104	Chemistry II/Lab	4	BIOL XXX	Advanced Biology Electives	6-8
BIOL 104	Biology II/Lab	4		General Elective	3
<u>Year 2</u>			<u>Year 4</u>		
ETHC 200	Ethics	3	PHIL 499	Philosophies of Good Life	3
WRIT 2XX	Multimedia Comm.	3	STAT 301	Biostatistics	3
GDIV 2XX	Global Diversity	3	SCI 402	Science Seminar	3
CHEM 201	Organic Chemistry II/Lab	4		Advanced Biology Electives	9-12
CHEM 202	Environmental Issues	4		General Electives	9-12
BIOL 105	Medicinal Plants	3			
BIOL 207	Principles of Genetics/Lab	4			
	General Elective	3-4			

Chemistry

Bachelor of Science (BS)

Program Director
Campus
Website

Niny Rao, PhD
East Falls
<https://www.jefferson.edu/university/life-sciences/degrees-programs/undergraduate-programs/chemistry.html>

Program Description

You will be a sought-after candidate for scientific careers or graduate programs, thanks to professional research and presentation experience, and close faculty mentorship.

This active and collaborative program will prepare you for what's next. You start collecting chemical knowledge and skills through core courses and shadowing faculty and upper-level student researchers. As a sophomore, you will start helping with authentic, real-world research projects - experience many biochemistry students don't get until graduate programs. This is possible thanks to the individual attention you get in our small classes and our well-equipped research laboratories.

Learning Goals/Outcomes

- Describe the laws and theories of chemistry pertaining to the properties of matter, chemical reactions and their stoichiometry, properties of gases, solution chemistry and acid/base chemistry.
- Describe the chemistry of organic molecules including functional group structure and properties, structure and stereochemistry of alkanes, nucleophilic substitution and elimination reactions of 233 alkyl halides, the structure/synthesis/reactions of alkenes, alcohols, aromatic compounds, amines, carboxylic acids, carboxylic acid derivatives and aldehydes/ketones.
- Summarize chemical thermodynamics, chemical kinetics, and quantum mechanics and relate this information to modern day chemistry.
- Develop the language, terms and critical thinking/problem solving skills to use and understand analytical instrumentation used in chemistry and biochemistry today.
- Acquire the necessary laboratory skills, including knowledge of laboratory safety, proper laboratory behavior, and to be functional with laboratory equipment and techniques.
- Describe the chemistry of inorganic compounds, to include symmetry and group theory, molecular orbital theory, coordination chemistry, main group element chemistry and the chemistry of the solid state.
- Describe metabolism (including signaling mechanisms, basic biochemistry of DNA and RNA and mechanisms of control of gene expression), protein structure-function and laboratory techniques used in biochemical research.
- Garner information and critically analyze information (Information Literacy skills in general).
- Effectively communicate in written formats germane to the sciences.
- Successfully use their garnered research skills to probe new avenues of scientific inquiry.

Curriculum: 4 years, 126-129 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ADIV 1XX	American Diversity	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
DBTU 114	Debating U.S. Issues	3	CGIS 300	Contemporary Global Issues	3
CHEM 103/L	Chemistry I/Lab	4	ISEM 3XX	Integrative Seminar	3
BIOL 103 /L	Biology I/Lab	4	BIOC 312/L	Biochemistry I/Lab	4
MATH 111	Calculus I	4	BIOC 313/L	Biochemistry II/Lab	4
MATH 112	Calculus II	4	CHEM 323	Instrumental Methods of Analysis	4
CHEM 104/ L	Chemistry II /Lab	4	CHEM 305	Physical Chemistry I	4
BIOL 104/ L	Biology II/Lab	4	CHEM 306	Physical Chemistry II	4
<u>Year 2</u>			<u>Year 4</u>		
ETHIC 2XX	Ethics	3	PHIL 499	Philosophies Good Life	3
WRIT 201	Multimedia Com	3	CHEM 309	Inorganic Chemistry	4
GDIV 1XX	Global Diversity	3		Advanced Chemistry Electives	12-14
MATH 331	Mathematical Methods	3		General Electives	9
PHYS 201 /L	Physics I /Lab	4			
PHYS 203/ L	Physics II/Lab	4			
CHEM 201 /L	Organic Chemistry I/Lab	4			
CHEM 202/L	Organic Chemistry II/Lab	4			
	General Electives	6			

Pre-Medical Studies

Bachelor of Science (BS)

Program Director	Diana Cundell, PhD
Campus	East Falls
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/undergraduate-programs/pre-medical-studies.html

Program Description

Pre-medical studies is an “umbrella major” providing academic and professional training to students planning to attend medical school as well as other graduate health care institutions. The major is distinguished by a series of unique upper-level science courses whose case history and problem-based learning approach mirrors that of first-year graduate students in the health care professions, and which are designed to develop students’ proficiency in interpreting complex scientific data. Students spend 100 hours developing their empathic, professional and clinical evaluation skills through two hands-on, off-campus preceptorship experiences performed with licensed health care practitioners. Our graduates are nationally competitive, as evidenced by their MCAT, GRE and DAT scores, and more than 90 percent of our students to date have gone on to various successful careers as physicians, dentists, physical therapists, veterinarians, pharmacists, optometrists, podiatrists and chiropractors.

Learning Goals/Outcomes

- knowledge of health care through hands-on training in HIPAA law, taking history and basic physical measurements and professional conduct with patients
- Demonstrate oral and written communication skills with both lay people and professionals
- Recognize and use medical terminology
- Formal, analytical, synthetic & problem-solving science skills
- Synthesize information from diverse sources to make decisions
- Recognize the social challenges faced in both national and global medical practice
- Comprehend and be able to explain a variety of commonly used clinical laboratory techniques
- Recognize and employ the professional empathy needed in an effective health care professional
- Demonstrate an optimal performance on national standardized graduate school exams (MCAT, GRE, DAT etc.)
- Recognize the varied health care careers and their spheres of expertise

Curriculum: 4 years, 127-128 credits

<u>Year 1</u>			<u>Year 3</u>		
FYS 100	Pathways Seminar	1	ISEM 3XX	Integrative Seminar	3
WRIT 101	Written Communication	3	GCIT 2XX	Global Citizenship	3
DBTU 114	Debating U.S. Issues	3	ETHC 2XX	Ethics	3
CHEM 103/L	Chemistry I/Lab	4	PHYS 201/L	Physics I/Lab	4
BIO 103/L	Biology I/Lab	4	PHYS 203/L	Physics II /Lab	4
MATH 111	Calculus I	4	BIOC 312/L	Biochemistry I/Lab	4
CHEM 104/L	Chemistry II/Lab	4	BIOC 313/L	Biochemistry II	4
BIOL 104/L	Biology II/Lab	4		General Electives	6-8
<u>Year 2</u>			<u>Year 4</u>		
ADIV-2XX	American Diversity	3	CGIS 300	Contemporary Global Issues	3
WRIT 201	Multimedia Com	3	PHIL 499	Philosophies of Good Life	3
STAT 301	Biostatistics	3	BIOL 207/L	Principles of Genetics/Lab	4
GDIV 2XX	Global Diversity	3	BIOL 221/L	Microbiology	4
ADIV 2XX	American Diversity	3	BIOL 413	Pathology	4
CHEM 201/L	Organic Chemistry I/Lab	4		Designated Science Elective	3
CHEM 202/L	Organic Chemistry II/Lab	4		General Electives	9-12
MATH 112	Calculus II	4			
BIOL 201/L	Anatomy & Physiology I/Lab	4			
BIOL 202/L	Anatomy & Physiology I/Lab	4			
<u>Year 2 Summer</u>					
BIOL 493	Preceptorship I	3			
BIOL 494	Preceptorship II	3			

Biomedical Sciences

Master of Science (MS)

Program Director Charles Scott, PhD
Campus Center City
Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/biomedical-sciences.html>

Program Description

The Master of Science Program in Biomedical Sciences prepares graduates for positions in the pharmaceutical/biotechnology industry or medical toxicology, such as:

- Managers of clinical laboratories
- Consultants
- Research associates
- Research scientists
- Graduates of the program have been accepted into PhD and professional doctoral programs.

Curriculum: 1.5- 4 years, 40 credits

- Full-Time and Part-Time options

<u>Core Courses</u>			<u>Management Courses (select two)</u>		
BI 550	Topics Biomedical Chemistry	3	GC 510	Database Design and Management	2
GC 660	Biostatistical Methods of Data Analysis	3	GC 525	Information Technology Decision Making	3
GC 715	MS Basic Sciences Seminar	1	GC 600	Management Skills	3
GC 680	Lab Techniques-Molecular Biology	3	GC 605	Performance Improvement	2
GC 560	Principles of Cell Biology	3	GC 610	Strategic Mgt.: Increasing R&D Productivity	2
BI 870	Master's Research	1-6	GC 617	Mgt. of Pharm Drug Development Projects	2
BI 880	Master's Research	1-6	GC 620	Fundamentals of Financial Management	3
BI 890	Master's Research	1-6	GC 621	Biotechnology Venture Management	2
	Electives (Designated)	15-17	GC 635	Fundamentals of Clinical Trials Mgt.	2
			GC 636	Principles of Career Management	2

Cell & Developmental Biology

Master of Science (MS)

Dean
Campus
Website

Gerald Grunwald, PhD
Center City
<https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/cell-developmental-biology.html>

Program Description

This program consists of a core basic science curriculum in cell and developmental biology, supplemented with elective courses suited to individual career interests in the basic sciences or in management. Students in our program receive training in theoretical, experimental and practical aspects of normal cell development as well as abnormal aspects of these processes, which may cause birth defects or disease.

Learning Goals/Outcomes

- Prepares its graduates for positions in research and development in academia, industry and government
- Graduates may be employed as basic research scientists in academic institutions and industrial positions, or may go on to further study in PhD and professional doctoral programs.
- Graduates of the program have been accepted into PhD and professional doctoral programs.

Curriculum: 1.5- 4 years, 40 credits

- Full-Time and Part-Time options

<u>Core Courses</u>			<u>Management Courses (select two)</u>		
BI 550	Topics in Biomedical Chemistry	3	GC 510	Database Design and Management	2
GC 660	Biostatistical Methods of Data Analysis	3	GC 525	Information Technology for Decision Making	3
CB 615	Embryology	3	GC 600	Management Skills	3
CB 560	Principles of Cell Biology	3	GC 605	Performance Improvement	2
CB 635	Gene-Environment Interactions in Birth Defects & Disease	3	GC 610	Strategic Mgmt: Increasing R&D Productivity	2
BI 870	Master's Research	1-6	GC 617	Mgmt of Pharm Drug Development Projects	2
BI 880	Master's Research	1-6	GC 620	Fundamentals of Financial Management	3
BI 890	Master's Research	1-6	GC 621	Biotechnology Venture Management	2
	Electives (Designated)	15-17	GC 635	Fundamentals of Clinical Trials Mgt.	2
			GC 636	Principles of Career Management	2

Clinical Research

Master of Science (MS)

Program Director Melissa McCarey, MPH
 Campus Center City
 Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/clinical-research-MS.html>

Program Description

Created to prepare students for the wide array of career opportunities in the clinical research industry. This program is well suited for career changers with a background in life, physical or clinical sciences that would like to break into the field of clinical research. It is also appropriate for individuals already in the industry and looking for additional graduate-level training.

The field of clinical research is rapidly expanding and knowledgeable professionals are needed to coordinate, manage, and administer clinical trials. This master of science degree will provide students with the foundation needed to be successful in the field of clinical research.

Learning Goals/Outcomes

- Understand experimental design, statistical analysis and interpretation, and regulatory and ethical issues pertaining to human clinical research and trials
- Read, understand, & critique published reports of clinical trials
- Acquire management skills that will enable them to successfully manage multi-disciplinary teams involved in clinical research projects
- Prepare for employment in the pharmaceutical industry, as well as academic and hospital clinical research settings.

Curriculum: 2 years, 36 credits

<u>Core Courses</u>			<u>Management Courses (select two)</u>		
GC 660	Statistical Methods of Data Analysis	3	GC 720	Scientific Writing	2
GC 630	Fundamentals of Clinical Trials	3	GC 617	Mgmt. of Pharm Drug Dev Projects	2
GC 635	Intro to Clinical Trials Management	2	GC 600	Managerial and Teamwork Skills	3
GC 637	Advanced Clinical Trials Management	2	GC 615	Grants and Contracts Management	2
GC 640	Research Ethics & Responsible Conduct	1	GC 510	Database Design and Management	2
GC 690	Regulatory Issues in Scientific Research	2		General Electives	12

Forensic Biology

Master of Science (MS)

Program Director	Heather E. McKiernan, PhD
Campus	Center City/CFSRE laboratory Willow Grove, PA
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/forensic-biology.html

Program Description

Full-time, two-year program with courses taught at both the Jefferson Center City campus as well as at CFSRE laboratory in Willow Grove, PA. Designed to position students for advancement and professional development in the specific field of forensic biology.

One of the aspects, which sets our forensic biology program apart from other universities, is that students will be working adjacent to a fully functioning, ISO-17025 accredited, private DNA

Laboratory. Instead of spending the duration of the program in a classroom, Jefferson students will be learning within an actual forensic laboratory and working alongside practicing scientists who serve as faculty and mentors. This teaching setting allows our students to engage first-hand in crime lab operation, offering an unparalleled educational experience.

Curriculum: 2 years, 40 credits

Year 1			Year 2		
FB 605	Forensic Serology & Immunology	2	FB 715	Advanced Forensic Genetics	3
FB 606	Forensic Serology & Immunology Lab	1	FB 716	Advanced Forensic Genetics Lab	1
	Management or General Elective	3	FB 620	Forensic Science Forum	1
GE 637	Advanced Human Genetics	3	FB 870	Master's Thesis Research	1
FB 610	Legal Procedure and Ethics	1	FB 717	Journal Club in Forensic Genetics	1
FM 607	Journal Club Forensic Serology & Immunology	1		Management or General Elective	3
FB 705	Forensic Genetics	3	FB 880	Master's Thesis Research	1
FM 706	Forensic Genetics Lab	1		Management or General Elective	3
	Management or General Elective	2	FB 830	Laboratory Clerkship	1
FB 890	Master's Thesis Research	2	FB 890	Master's Thesis Research	1
GC 660	Statistical Methods of Data Analysis	3			
				Minimum two Prof Develop Courses (Designated)	
				Minimum two Elective Courses (Designated)	

Forensic Toxicology

Master of Science (MS)

Program Director Barry K. Logan, PhD, F-ABF
Campus Center City/CFSRE laboratory Willow Grove, PA
Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/forensic-toxicology.html>

Program Description

The MS Program in Forensic Toxicology is a unique program designed to position students for advancement and professional development in the specific field of forensic toxicology. This is a full-time, two-year program with courses taught at both the Thomas Jefferson University campus and CFSRE's Willow Grove, PA location.

Learning Goals/Outcomes:

This partnership will provide our students with expertise in all areas of toxicology, including:

- Workplace drug testing
- Postmortem analysis
- Human performance toxicology
- Legal procedure and ethics
- Business & management coursework

Curriculum: 2 year, 40 credits

<u>Year 1</u>			<u>Year 2</u>		
FT 605	Analytical Forensic Toxicology	3	FT 715	Interpretative Forensic Toxicology	3
FT 606	Analytical Forensic Toxicology Lab	1	FT716	Interpretative Forensic Toxicology Lab	1
	Management or General Elective	2	FT 880	Management or General Elective	3
FT 705	Advanced Analytical Forensic Toxicology	3	FT 880	Master's Thesis Research	1
FT 706	Advanced Analytical Forensic Toxicology Lab	1	FT 620	Forensic Science Forum	1
FT 610	Legal Procedure and Ethics	1		Management or General Elective	3
PR 525	Clinical Pharmacology	3	FT 880	Forensic Science Forum	1
	Management or General Elective	2		Management or General Elective	3
FT 880	Master's Thesis Research	1	FT 810	Laboratory Clerkship	3
GC 660	Statistical Methods of Data Analysis	3	FT 815	Regulatory Issues in Forensic Toxicology	1
			Minimum two Prof Develop Courses (Designated)		
			Minimum two Elective Courses (Designated)		

Human Genetics & Genetic Counseling

Master of Science (MS)

Program Directors	Rachael Brandt, PhD, MS, LCGC & Zohra Ali-Khan Catts, MS, LCGC
Campus Website	Center City https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/genetic-counseling.html

Program Description

The Human Genetics and Genetic Counseling MS program will provide students integrative education and training to become compassionate and knowledgeable genetic counselors.

The program in Human Genetics & Genetic Counseling is a participant in the Genetic Counseling Admissions Match through National Matching Services (NMS).

Learning Goals/Outcomes: Genetics Expertise & Analysis

- Demonstrate & utilize a understanding and knowledge of genetics and genomics core concepts and principles
- Integrate knowledge of psychosocial aspects of conditions with a genetic component to promote client well- being
- Construct relevant, targeted and comprehensive personal and family histories and pedigrees
- Identify, assess, facilitate, and integrate genetic testing options in genetic counseling practice
- Assess individuals' and their relatives' probability of conditions with a genetic component or carrier status based on their pedigree, test result(s), and other pertinent information
- Demonstrate skills necessary to manage genetic counseling case
- Critically assess genetic/genomic, medical and social science literature and information

Learning Goals/Outcome: Psychosocial and Counseling Skills

- Establish a mutually agreed upon genetic counseling agenda with the client

- Employ active listening and interviewing skills to identify, assess, and empathically respond to stated and emerging concerns
- Use range of genetic counseling skills & models to facilitate informed decision-making & adaptation to genetic risks or conditions
- Promote client-centered, informed, non-coercive and value-based decision-making
- Understand how to adapt genetic counseling skills for varied service delivery model
- Apply genetic counseling skills in a culturally responsive and respectful manner to all clients

Learning Goals/Outcome: Education

- Educate clients about a wide range of genetics and genomics information based on their needs, their characteristics and the circumstances of the encounter
- Write concise and understandable clinical and scientific information for audiences of varying educational backgrounds
- Give a presentation on genetics, genomics and genetic counseling issue

Learning Goals/Outcome: Prof Development & Practice

- Use Ethical, legal, philosophical principles & values
- Demonstrate understanding of the research process
- Advocate for individuals, families, communities profession
- Demonstrate a self-reflective, evidenced-based and current approach to genetic counseling practice
- Understand the methods, roles and responsibilities of the process of clinical supervision of trainee
- Establish and maintain professional interdisciplinary relationships in both team and one-on-one settings, and recognize one's role in the larger healthcare system

Curriculum: 2 years, 64 credits

<u>Year 1</u>			<u>Year 2</u>		
HG 501	Intro to Genetic Counseling	2	HG 802	Thesis II	2
GE 636	Human Genetics	3	HG 531	Genetic Counsel: Workshop & Seminar I	2
CB 615	Embryology	3	HG 512	Genetic Counsel: Theory & Practice II	2
HG 670	Clinical Cardiovascular Genetics	1	HG 532	Metabolic Genetics II	2
HG 601	Medical Genetics I	2	HG 690	Genetic Basis of Neurologic & Psychiatric Disease	1
HG 550	Clinical Applications I	2	HG 704	Clinical Rotation 3 days/wk	3
HG 701	Lab/Clinical Observer Rotation	1	HG 803	Thesis III	2
GE 651	Pathobiology of Cancer	2	HG 532	Genetic Counsel: Workshop & Seminar II	2
HG 680	Clinical Cancer Genetics	2	HG 705	Clinical Rotation 3 days/wk	3
HG 602	Medical Genetics II	2	<u>Supplemental</u>		
HG 502	Psych Issues Genetic Counseling	4	Thesis		
HG 551	Clinical Applications II	1	HG 706	Clinical Rotation	
HG 702	Clinical Rotation 1 day/week - Prenatal	1	Curriculum Review Modules		
CB 635	Gene Environment Interactions Birth Defects & Disease	3			
HG 611	Metabolic Genetics I	2			
STAT 220	Applied Statistics for the Biomedical Sciences	2			
HG 570	Research Design & Methods for Genetic Counselors	2			
HG 552	Clinical Applications III	1			
HG 703	Clinical Rotation 2 days/wk - Cancer	2			
HG 511	Genetic Counseling: Theory & Practice I	2			
HG 580	Practical Issues in Genetic Counseling	1			
HG 801	Thesis I	2			
HG 704	Clinical Rotation 3 days/wk - Peds	3			

Microbiology & Immunology

Master of Science (MS)

Program Director	Aleksandra Snyder, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/microbiology.html

Program Description

The MS in Microbiology & Immunology Program offers choices for career specialization with flexible schedules, professional training for academic credit and academic preparation for national professional certification.

Learning Goals & Outcomes

The broad-based curriculum includes a minimum of 40 credits. Course content includes:

- The biology of microorganisms
- Immunology
- Epidemiology
- Pathology
- Biostatistics
- Management
- Clerkship
- Master's research thesis or, alternatively, a Non-Thesis Option

Curriculum: 2 year, 40 credits

<u>Core Curriculum</u>			<u>Management Curriculum</u>		
MI 505	Biochemistry of Microorganisms	3	GC 510	Database Design & Management	2
MI 521	Intro to Immunology	2	GC 525	Info Technology for Decision Making	3
MI 580	Principles of Epidemiology	3	GC 600	Managerial & Teamwork Skills	3
MI 582	Diagnostic Microbiology	3	GC 605	Performance Improvement	2
GC 640	Research Ethics	1	GC 610	Strategic Management: Increasing R&D Productivity	2
GC 660	Statistical Methods for Data Analysis	3	GC 617	Management of Pharma Drug Development Projects	2
CB 570	Pathologic Aspects Disease	3	GC 620	Fundamentals of Financial Management	3
MI 870	Master's Research	1-6	GC 621	Biotechnology Venture Management	2
MI 880	Master's Research	1-6	GC 635	Fundamentals of Clinical Trials Mgmt.	2
MI 890	Master's Research	1-6	GC 636	Principles of Career Management	2
				Designated Electives	10-12

Pharmacology

Master of Science (MS)

Program Director Carol Beck, PhD
Campus Center City
Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/master-programs/pharmacology.html>

Program Description

The MS Program in Pharmacology prepares graduates for positions in:

- Research and development
- Research management
- Clinical trials and toxicology review and assessment
- Graduates have been accepted into PhD and professional degree programs

The MS Pharmacology Program also offers a track in Human Investigation. This track is for residents and fellows doing post-graduate clinical training

Curriculum: 1.5- 4 year (FT/PT), 40 credits

- Full-Time and Part-Time options

Core Courses			Human Investigation Track		
BI 550	Topics in Biomedical Chemistry	3	BI 550	Topics in Biomedical Chemistry**	3
GC 660	Biostatistical Methods of Data Analysis	3	PR 522	General Pharmacology**	3
GC 715	MS Basic Sciences Seminar	1	CB 570	Pathologic Aspects of Disease**	3
PR 522	General Pharmacology	3	CB 510	Database Design & Management	2
PR 525	Clinical Pharmacology	3	GC 630	Fundamentals of Clinical Trials	3
PR 870	Master's Research	1-6	GC 640	Research Ethics and Responsible Conduct	1
PR 880	Master's Research	1-6	GC 650	Economic Analysis Healthcare Interventions	3
PR 890	Master's Research	1-6	GC 654	Pharmacoepidemiology	2
	Mgt. Electives (Designated)	4-6	GC 660	Biostatistical Methods of Data Analysis	3
	General Electives	15-17	GC 690	Regulatory Issues in Scientific Affairs	2
			MI 580	Regulatory Issues in Scientific Affairs	2
			PR 525	Epidemiology	3
			PR 810	Clinical Pharmacology	3
			PR 820	Laboratory Clerkship	1-3
			PR 830	Laboratory Clerkship	1-3
			PR 870	Laboratory Clerkship	1-3
			PR 880	Master's Research	1-6
			PR 890	Master's Research	1-6

*Nine credits transferred from medical/clinical education

Biochemistry & Molecular Pharmacology

Doctor of Philosophy (PhD)

Program Director	Edward Winter, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/biochemistry-pharmacology.html

Program Description

Employs a multidisciplinary approach to train students in the rigors of experimental biomedical sciences & prepare them for independent research careers. The curriculum is designed to convey the fundamentals of biochemistry, structural biology, molecular pharmacology, cell biology and genetics.

Learning Goals & Outcomes

- The education is reinforced at the bench in advanced research laboratories broadly grouped into three research emphases: Molecular & Cellular Pharmacology, Chemical & Structural Biology and Molecular Biology & Gene Regulation.
- In addition to extensive basic equipment found in each laboratory, students have access to numerous specialized resources, including genomic and multiplex sequencing, microarray analysis, flow cytometry and cell sorting, confocal and TIRF microscopy, X-ray crystallography and macromolecular characterization (surface plasmon resonance, calorimetry, circular dichroism and fluorescence spectroscopy).
- Students graduating from this program will have the comprehensive scientific foundation and technical expertise to excel in all areas of biomedical research

Curriculum: 2 years, 180 credits

Year 1			Year 2		
CS 550	Foundations of Biomedical Sciences	10		Elective	
BI 511	Research Rotation 1	3	GC 730	Planning & Writing a Research Grant	1
BI 710	Seminar in Biochemistry & Molecular Pharmacology	1	BI 710	Seminar in Biochemistry & Molecular Pharmacology	2
BI 910	Research		BI 715	Journal Club	1
BI 521	Research Rotation 2	3	BI 910	Research	
BI 525	Biochem - Genetics Info Transfer	3		General Elective	
PR 613	Macromolecular Structure	3	BI 720	Seminar in Biochemistry & Molecular Pharmacology	2
GC 640	Research Ethics	1	BI 725	Journal Club	1
BI 720	Seminar in Biochemistry & Molecular Pharmacology	1	BI 730	Seminar: Biochemistry & Molecular Pharmacology	2
BI 725	Journal Club	1	BI 735	Journal Club	1
	General Elective		BI 920	Research	
BI 531	Research Rotation 3	3	BI 930	Research	
NS 740	Applied Statistics	2		General Elective	
BI 730	Seminar in Biochemistry & Molecular Pharmacology	1			
BI 735	Journal Club	1			
BI 920	Research				
BI 930	Research				

Course requirements are usually completed by end of second year, and students spend an average of another two to three years to complete thesis projects

Cell Biology & Regenerative Medicine

Doctor of Philosophy (PhD)

Program Directors	Nancy Philip, PhD Makarand Risbud, PhD
Campus Website	Center City https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/cell-biology.html

Program Description

The PhD Graduate Program in Cell Biology & Regenerative Medicine (CBRM) provides students with a background, training and experience that are necessary to launch careers as independent scientific investigators in the field of cancer cell biology, systems biology, computational medicine, matrix biology, neuro-degenerative disorders, vision, mitochondrial metabolism and pathology.

CBRM seeks students with a strong interest and background in science and engineering, particularly cell biology, biochemistry, developmental biology and bioengineering. Students are offered comprehensive coursework, seminars, journal clubs and research discussion groups to further enrich their academic experience.

The Graduate Program boasts an outstanding faculty and state-of-the-art research facilities, which offers students a wide range of advanced research opportunities. Students' research and education is supported through NIH training grants, endowed fellowships and investigator-initiated research grants. Graduates of the CBRM program have successfully pursued career options in both academia and industry, with several obtaining faculty positions after post-doctoral training. There are five major areas within the program:

- Cancer Biology
- Computational Biology & Systems Biology
- Matrix Biology, Musculoskeletal & Connective Tissue
- Mitochondrial Metabolism & Pathology
- Neurodegenerative Disorders & Vision
- Tissue Engineering & Regenerative Medicine

Curriculum: 3 years, 180 credits

<u>Year 1 (Certificate)</u>			<u>MS (Grad Certificate + Courses Below)</u>		
GC 550	Foundations in Biomedical Sciences	10	CB 616	Current Topic: Journal Club & Research in Progress	1
GC 640	Research Ethics	1	CB 710	Seminar: Grand Round, Showcase Seminar, MPM's	1
GD 750/760	PhD Laboratory Rotations	3	CB 910	Research	
CB 616	Current Topic: Journal Club & Research in Progress	1	CB 626	Current Topic: Journal Club & Research in Progress	1
CB 710	Seminar: Grand Round, Showcase Seminar, MPM's	1	CB 720	Seminar: Grand Round, Showcase Seminar, MPM's	1
CB 910	Research		CB 920	Research	
CB 620	Research Rotations II		CB 636	Current Topic: Journal Club & Research in Progress	1
CB 626	Current Topic: Journal Club & Research in Progress	1	CB 730	Seminar: Grand Round, Showcase Seminar, MPM's	1
CB 720	Seminar: Grand Round, Showcase Seminar, MPM's	1	CB 930	Research	
CB 920	Research				
	General Elective	3			
CB 529	Lab Animal Science	2			
GC 645	Genomics and Bioinformatics	3			
CB 630	Research Rotations III				
CB 636	Current Topic: Journal Club & Research in Progress	1			
CB 730	Seminar: Grand Round, Showcase Seminar, MPM's	1			
GC 720	Scientific Writing	2			
CB 930	Research				
	<u>Year 2</u>				
CB 616	Current Topic: Journal Club & Research in Progress	1			
CB 710	Seminar: Grand Round, Showcase Seminar, MPM's	1			
CB 910	Research				
TE 624	Extracellular Matrix	2			
GD 660	Statistical Methods	3			
	General Elective				

Genetics, Genomics & Cancer Biology

Doctor of Philosophy (PhD)

Chair Cancer Biology Campus Website	Lucia Languino, PhD Center City https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/genetics.html
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Program Description

The PhD Program in Genetics, Genomics & Cancer Biology provides aspiring students with the background, training and experience necessary to launch careers as independent scientific investigators and scholars in the field of molecular genetics of disease, genomics and cancer biology.

The Program is designed to take a multidisciplinary approach to the field by providing the student with a strong basic knowledge of genetics, biochemistry, cell biology and molecular biology, with additional exposure to other areas of related interest. Additionally, the Program provides sufficient flexibility so that graduating students can pursue research careers

in either an academic or industrial setting.

Typical areas of research include:

functional genomics and epigenetics, analysis of the human genome, genetics of cancer susceptibility, genetics of the immune system, molecular genetics of animal models of human disease, molecular genetics of hematopoietic neoplasias and solid tumors, mechanisms of altered growth regulation by oncogenes and tumor suppressor genes, transcriptional regulation, chromatin organization and the control of gene expression, translational research, molecular therapeutics and personalized medicine

Curriculum: 4-5 years, 180 credits

<u>Year 1</u>			<u>Year 2</u>		
GC 550	Found of Biomedical Sciences	10	GE 636	Regulation of Cell Cycle and Apoptosis	3
GE 710	Current Literature I	1		Elective	
GE 715	Seminar I	1	GC 730	Planning & Writing a Research Grant	1
GE 511	Lab Rotation 1	3	GE 710	Current Literature I	1
GE 910	Research	5	GE 715	Seminar I	1
BI 525	Biochemistry-Genetics Information Transfer	3	GE 910	Research	
GC 640	Research Ethics	1	GE 652	Molecular Basis of Cancer	2
GE 637	Human Genetics	3	GE 720	Current Literature II	1
GE 720	Current Literature II	1	GE 725	Seminar II	1
GE 725	Seminar II	1	IMP 505	Fundamentals of Immunology	2
GE 521	Lab Rotation 2	3	GC 675	Cancer Immunology	2
GE 612	Genetics of Model Organisms	2	GC 645	Genomics & Bioinformatics	3
GE 730	Current Literature III	1	GE 730	Current Literature II	1
GE 725	Seminar II	1	GE 735	Seminar II	1
GE 531	Lab Rotation 3	3	GE 920	Research	
NS 740	Applied Statistics in Neuroscience	2	GE 930	Research	
GE 920	Research				
GE 930	Research				
			<u>Year 3</u>		
			GE 710	Current Literature I	1
			GE 715	Seminar I	1
			GE 910	Research	
			Preliminary Exam		
			GE 720	Current Literature II	1
			GE 725	Seminar II	1
			GE 730	Current Literature III	1
			GE 735	Seminar III	1
			GE 920	Research	
			GE 930	Research	
			<u>Year 4-5</u>		
				Thesis	

Immunology & Microbial Pathogenesis

Doctor of Philosophy (PhD)

Program Directors	Fabienne Paumet, PhD Christopher Snyder, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/immunology.html

Program Description

The PhD Program in Immunology & Microbial Pathogenesis provides aspiring students with the background, training and experience necessary to launch careers as independent scientific investigators in the fields of immunology, microbiology, biochemistry, cell biology and molecular biology.

- A multidisciplinary approach to the field by providing the student with a strong, basic knowledge of immunology, microbiology, biochemistry, cell biology and molecular biology, with additional exposure to other areas of related interest.

The ultimate goal of this program is to provide aspiring students with the background, training and experience necessary to launch careers as independent scientific investigators.

Curriculum: 4-5 years, 180 credits

<u>Year 1</u>			<u>Year 2</u>		
CG 550	Foundations of Biomedical Sciences	10	IMP 530 or IMP 605	Infection & Immunity or Adv Cellular & Molecular Immunology	3
IMP 710	Seminar	1	GC 730	Plan & Writing a Research Grant	1
IMP 610	Lab Rotation 1	3	IMP 710	Seminar	1
IMP 910	Research		IMP 712	Current Literature	1
IMP 505A	Fundamentals of Immunology	2	IMP 910	Research	TBD
IMP 600A	Bacteriology, Mycology, & Parasitology	2		Elective(s)	
IMP 720	Seminar	1	IMP 720	Seminar	1
IMP 722	Current Literature	1	IMP 722	Current Literature	1
IMP 620	Lab Rotation 2	3		Elective(s)	
ETHC 2XX	Ethics	3	IMP 730	Seminar	1
IMP 505B	Immune System Health & Disease	2	IMP 732	Current Literature	1
IMP 600B	Virology	3	IMP 920	Research	
IMP 730	Seminar	1	IMP 930	Research	
IMP 732	Current Literature	1		<u>Year 3</u>	
IMP 630	Lab Rotation 3	3	IMP 530 or IMP 605	Infection & Immunity or Advanced Cellular & Molecular Immunology	3
NS 740	Applied Statistics in Neuroscience	2	IMP 710	Seminar	1
IMP 920	Research		IMP 712	Current Literature	1
IMP 930	Research		IMP 910	Research	
				Comprehensive Exam	
			IMP 720	Seminar	1
			IMP 722	Current Literature	1
			IMP 730	Seminar	1
			IMP 732	Current Literature	1
			IMP 920	Research	TBD
			IMP 930	Research	TBD

Integrative Physiology

Doctor of Philosophy (PhD)

Program Director Ulhas P. Naik, PhD
Campus Center City
Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/integrative-physiology.html>

Program Description

The PhD Program in Integrative Physiology employs a multidisciplinary approach to train students in the rigors of experimental biomedical sciences and to prepare them for careers across a broad array of academic, industry, and government careers. The main theme of the program is in Cardiovascular Physiology, and many of the faculty are drawn from the Cardeza Foundation - Division of Hematology, and the Center for Translational Medicine, of the

Department of Medicine at Sidney Kimmel Medical College. However, the program includes faculty from across many academic departments, divisions and research centers across Jefferson, whose research interests encompass a broad spectrum of basic and translational topics and model systems including cellular and molecular physiology, and normal and pathophysiology of the cardiovascular, pulmonary and gastrointestinal systems.

Curriculum: 4-5 years, 180 credits

Year 1			Year 2		
CG 550	Foundations of Biomedical Sciences	10		Elective	
PS 511	Research Rotation 1		PS 710	Seminar Integrative Physiology	1
PS 710	Seminar in Integrative Physiology	1	PS 730	Current Topics Physiology Journal Club	1
PS 730	Current Topics Phyc Journal Club	1	PS 910	Research	
PS 910	Research		GC730	Plan & Writing Research Grant	1
PS 521	Research Rotation 2			Elective	
PS 525	Biochemistry - Genetics Info Transfer	3	PS 720	Seminar Integrative Physiology	1
PS 655	Integrative Physiology	3	PS 731	Current Topics Physiology Journal Club	1
GC 640	Research Ethics	1		Elective	
PS 720	Seminar in Integrative Physiology	1	PS 730	Seminar Integrative Physiology	2
PS 731	Current Topics Integrative Physiology Journal Club	1	PS 732	Current Topics Physiology Journal Club	1
PSXXX	Advanced Cardiovascular Physiology	3	PS 920	Research	
PS 531	Research Rotation 3		PS 930	Research	
NS 740	Applied Statistics	2		<u>Year 3</u>	
PS 730	Seminar in Integrative Physiology	1	PS 710	Seminar Integrative Physiology	1
PS 732	Current Topics Physiology Journal Club	1	PS 730	Current Topics Physiology Journal Club	1
PS 920	Research		PS 910	Research	
PS 930	Research		PS 720	Seminar in Integrative Physiology	2
			PS 731	Current Topics Physiology Journal Club	1
			PS 920	Research	
			PS 730	Seminar Integrative Physiology	2
			PS 732	Current Topics Physiology Journal Club	1
			PS 930	Research	
				<u>Year 4-5</u>	
				Thesis	

Neuroscience

Doctor of Philosophy (PhD)

Program Directors	Kyunghee Koh, PhD & Angelo Lepore, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/neuroscience.html

Program Description

The PhD Graduate Program in Neuroscience (GPN) provides high-level, scholarly, scientific training to qualified individuals interested in pursuing diverse careers to research, foster, disseminate and facilitate an in-depth understanding of the nervous system under normal and pathological conditions.

Curriculum of study includes neurophysiology, neuroanatomy, cell biology, biochemistry and molecular biology. Requires completion of a research thesis under the tutelage of internationally recognized GPN faculty.

- Provides high-level, scholarly, scientific training
- disseminate and facilitate an in-depth understanding of the nervous system under normal and pathological conditions

Curriculum: 4-5 years, 180 credits

<u>Year 1</u>			<u>Year 2</u>		
CG 550	Foundations Biomedical Sciences	10	NS 616	Journal Club	1
NS 601	Profiles in Neuroscience	1	NS 710	Seminar	1
NS 616	Journal Club	1	NS 910	Research (Variable)	
NS 710	Seminar	1	NS 626	Journal Club	1
NS 610	Research Rotation		NS 720	Seminar	1
NS 910	Research (Variable)		NS 690	Neuropharmacology	3
NS 700	Cellular Neurophysiology	4	NS 636	Journal Club	1
GC 640	Research Ethics	1	NS 730	Seminar	1
NS 626	Journal Club	1	NS 530	Neuroanatomy	4
NS 720	Seminar	1	NS 740	Applied Statistics in Neuroscience	2
NS 620	Research Rotation II		GC 730	Grant Writing	1
NS 920	Research (Variable)		NS 920	Research (Variable)	
NS 715	Cellular & Molecular Neuroscience	3		General Elective	
NS 636	Journal Club	1	NS 930	Research (Variable)	
NS 730	Seminar	1		Comprehensive Examination	
NS 630	Research Rotation III			<u>Year 3 -5</u>	
NS 920	Research (Variable)			Continue/complete Thesis Research	
	General Elective				
NS 920	Research (Variable)				

Clinical Research & Trials: Implications

Graduate Certificate

Program Director Melissa McCarey, MPH
Campus Center City
Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/graduate-certificate/research-trials.html>

Program Description

The Certificate Program in Clinical Research & Trials: Implementation provides the core competencies and skills needed by professionals in the field of clinical trials. The Program trains individuals in administration, coordination and management of clinical research studies focused on developing new drugs, medical devices and treatment regimens. This certificate is complementary to the certificate in Human Clinical Investigation: Theory.

Learning Goals & Outcomes

- Introduce the roles and responsibilities of investigators and sponsors
- Educate on the regulations governing clinical research
- Train for managing clinical trials

Curriculum: 1 year, 15 credits

<u>Core Curriculum</u>		
GC 625 or GC 617	Drug Development or Management of Pharmaceutical Drug Development Projects	2
GC 630	Fundamentals of Clinical Trials (GC 660 is pre-req)	3
GC 635	Fundamentals of Clinical Trial Management	2
GC 660	Statistical Methods of Data Analysis	3
	General Elective	5

Clinical Research: Operations

Graduate Certificate

Program Director	Melissa McCarey, MPH
Campus	Center City
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/graduate-certificate/clinical-trials-operations.html

Program Description

The Certificate Program in Clinical Research: Operations trains individuals in the administration, coordination and management of clinical research studies.

Clinical research is a rapidly expanding field, with diverse employment opportunities in settings such as universities, hospital systems, and the pharmaceutical industry. Human subjects research is complex and requires an understanding of funding sources, regulatory issues, project management, study design, and data analysis

Learning Goals & Outcomes

This program is designed to introduce students to careers in Clinical Research.

- The Certificate in Clinical Trials: Operations will provide students with foundational knowledge of the clinical trials process.
- Introduce students to project, financial, and data management of clinical trials.
- Provide education on the regulations and ethical issues that surround human subject research

Curriculum: 1 year, 18 credits

<u>Core Curriculum</u>			<u>Select Elective</u>		3
GC 510	Database Design and Management	2	AHE 509	Epidemiology Outcomes Research	
GC 615	Grants and Contracts Management	2	GC 650	Economic Analysis of Healthcare Interventions	
GC 620 or GC 631	Financial Management or Comparative Effectiveness & Patient Centered Outcomes Research	3	GC 630	Fundamentals of Clinical Trials (GC 660 is pre-req)	
GC 635	Fundamentals of Clinical Trials Management	2			
GC 640	Research Ethics	1			
GC 660 or PBH 504	Statistical Methods or Fundamentals of Health Statistics	3			
GC 690	Regulatory Issues in Human Subject Research	2			

Human Clinical Investigation: Theory

Graduate Certificate

Program Director Carol Beck, PhD
Campus Center City
Website <https://www.jefferson.edu/university/life-sciences/degrees-programs/graduate-certificate/clinical-investigation.html>

Program Description

Clinicians trained in the basics of human clinical investigation are needed to design and initiate clinical trials in academic medicine and in the pharmaceutical industry. This certificate focuses on the theory rather than the implementation. This certificate program is the didactic component of the MS Pharmacology Program, Human Clinical Investigation track. No thesis is required for the certificate.

Learning Goals & Outcomes

The Certificate Program in Human Clinical Investigation: Theory provides the core competencies and skills needed for those interested in clinical research or careers in academic medicine. This program is designed for clinicians, but could be taken by others interested in understanding the theory behind clinical trial design.

- Provide the theory behind the design of human clinical studies and appropriate design and use of databases
- Educate on the ethics and regulations governing clinical research
- Provide a background in statistics and epidemiology necessary for human clinical investigation

Curriculum: 17 credits

<u>Core Curriculum</u>			<u>Select Elective</u>		3
GC 660	Statistical Methods of Data Analysis	3	PR 525	Clinical Pharmacology	
GC 630	Fundamentals of Clinical Trials (GC 660 is pre-req)	3	GC 650	Economic Analysis of Healthcare Interventions	
MI 580	Epidemiology (GC 660 is pre-requisite)	3	GC 654	Pharmacoepidemiology (GC 660, MI 580 are pre-requisites)	
GC 510	Database Design and Management	2	PR 810, 820, 830	Pharmacology Clerkship	
GC 640	Research Ethics and Responsible Conduct	1			
GC 690	Regulatory Issues in Human Subject Research	2			

Infectious Disease Control

Graduate Certificate

Program Director	Aleks Snyder, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/graduate-certificate/disease-control.html

Program Description

The curriculum for the Graduate Certificate in Infectious Disease Control is built from core courses and expertise in microbiology and immunology.

Learning Goals & Outcomes

- Key areas: Microbiology of Antimicrobial & Antiviral Agents, Vaccinology & Immunotherapeutics, Epidemiology and Management skills
- The certificate program comprise about one-third of the requirement for a Master of Science degree
- Degree candidates may also pursue certificates as part of their graduate curriculum

Curriculum: 1 year, 15 credits

Core Curriculum		
GC 660	Statistical Methods in Data Analysis	3
MI 540	Microbiology of Antimicrobial and Antiviral Agents	2
MI 580	Epidemiology (GC 660 is prerequisite)	3
MI 522	Vaccinology and Immunotherapeutics	2
	General Elective(s)	5

Patient-Centered Research

Graduate Certificate

Program Director	Carol Beck, PhD
Campus	Center City
Website	https://www.jefferson.edu/university/life-sciences/degrees-programs/graduate-certificate/patient-centered-research.html

Program Description

The Graduate Certificate in Population Health Pharmacy is designed to train students in the principles and methods of patient-centered outcomes research (PCOR) and comparative effectiveness research (CER). Students in the Program may come from clinical or scientific backgrounds.

Learning Goals & Outcomes

Educate and train the next generation of health service researchers in the principles and methods of:

- Patient-centered outcomes research (PCOR)
- Comparative effectiveness research (CER)
- The certificate program comprise about one-third of the requirement for a Master of Science degree
- Degree candidates may also pursue certificates as part of their graduate curriculum

Curriculum: 1 year, 18 credits

<u>Core Curriculum</u>		
GC 660	Statistical Methods in Data Analysis	3
MI 580 or	Principles of Epidemiology or	3
AHE 509	Epidemiology for Outcomes Research	
AHE 506	Subjective Outcomes in Healthcare Evaluation	3
GC 631	Comparative Effectiveness & Patient-Centered Outcomes Research	3
GC 652	Decision Support and Shared Decision Making in Health Care	2
GC XXX	Integrative Seminar in Population Health Pharmacy	1
	General Elective	3

SIDNEY KIMMEL MEDICAL COLLEGE



Dean: Mark L. Tykocinski, MD | 215- 955-6983 | Jefferson.edu/SKMC

About Us

Founded in 1824, Jefferson Medical College, now the Sidney Kimmel Medical College (SKMC), has awarded more than 31,000 medical degrees and has more living graduates than any other private medical school in the nation. It offers both undergraduate medical education programs and innovative joint degree programs to more than 1,000 students each year.

The Sidney Kimmel Medical College is recognized for its balanced approach to medical education, and approximately **one out of four** to **one out of five** applicants throughout the U.S. apply to Sidney Kimmel.

Mission We improve lives by preparing physicians through inclusive education, incisive inquiry, and compassionate care.

Values Put People First; Be Bold and Think Differently; Do the Right Thing.

Medical Departments of SKMC

Anesthesiology	Molecular Physiology & Biophysics	Pathology, Anatomy & Cell Biology
Biochemistry & Molecular Biology	Neurological Surgery	Pediatrics
Cancer Biology	Neurology	Pharmacology & Experimental Therapeutics
Dermatology & Cutaneous Biology	Neuroscience	Psychology & Human Behavior
Emergency Medicine	Obstetrics & Gynecology	Radiation Oncology
Family & Community Medicine	Oral & Maxillofacial Surgery	Radiology
Integrative Medicine & Nutritional Sciences	Ophthalmology	Rehabilitation Medicine
Medical Oncology	Orthopedic Surgery	Surgery
Medicine	Otolaryngology / Head & Neck Surgery	Urology
Microbiology & Immunology		

Programmatic Research Domains

Oncological Sciences	The Sidney Kimmel Medical Center
Neuroscience	The Vickie and Jack Farber Institute for Neuroscience
Fibrosis & Pulmonary Biology	Center for Translational Medicine
Mitochondria, Metabolism & Bioenergetics	MitrCare Center
Orthopedics	Departments of Orthopedic Surgery
Hematology & Vascular Biology	The Cardeza Center

Accreditation

Liaison Committee on Medical Education (LCME)
Medicine (MD)

www.aamc.org

Academic Programs

MD	Our innovative curriculum prepares future doctors to learn actively and think critically as they develop core professional competencies to prepare them to make positive, impactful changes on healthcare. https://www.jefferson.edu/jeffmd
MD/PHD	Our students provide patient care, lead research discovery, advocate for basic and translational research and assume leadership roles in biomedical research and the delivery of health care. https://www.jefferson.edu/university/skmc/programs/md-phd.html
Post-baccalaureate/Pre-Health	Programs for students who have a Baccalaureate degree but need to complete additional course work to meet the prerequisites for entry into medical school. https://www.jefferson.edu/university/skmc/programs/pbph.html
Physician Shortage Area Program	An admissions and educational program designed to increase the supply and retention of physicians in rural areas and small towns, especially in Pennsylvania and Delaware. https://www.jefferson.edu/university/skmc/programs/physician-shortage-area-program.html
Penn State Accelerated BS/MD	A seven-year, cooperative BS/MD program, run by SMMC and Pennsylvania State University . https://www.jefferson.edu/university/skmc/programs/penn-state-accelerated.html
IDEA Program	The IDEa Program invites Princeton University sophomores pursuing non-traditional pre-med majors or concentrations, such as architecture, engineering and computer science, to apply for early admission to SKMC. https://www.jefferson.edu/university/skmc/programs/idea.html
Delaware Institute of Medical Education & Research	The Delaware Institute of Medical Education and Research created the DIMER Program to provide an opportunity for Delaware residents to obtain a high-quality medical education. https://www.jefferson.edu/university/skmc/programs/dimer.html
University of Delaware Medical Scholars	An educational collaboration between the University of Delaware and Sidney Kimmel Medical College, which links college to medical school with an early admission process for qualified students. https://www.jefferson.edu/university/skmc/programs/msp.html
Joint MD/MBA-MHA	A joint five-year MD/MBA (and MHA) program is offered in collaboration with Widener University . An additional MD/MBA opportunity is available through the University of Delaware at its main campus. These joint MD/MBA-MHA programs are under the direction of the Jefferson College of Population Health. https://www.jefferson.edu/university/skmc/programs/md-mba-mha.html
Dual MD/MPH	In conjunction with the Jefferson College of Population Health, medical students have the opportunity to earn the master of public health (MPH) degree as part of their SKMC education. https://www.jefferson.edu/university/skmc/programs/md-mph.html

Vice Dean, Academic Affairs
Campus
Website

Steven Herrine, MD
Center City
<https://www.jefferson.edu/jeffmd>

Program Description

Contribute to SKMC's proud tradition of excellence. You will have many opportunities to develop as a leader in your profession – in clinical settings, research labs and community service. JeffMD, SKMC's curriculum, will support you by giving you sound fundamentals, combined with elements you can customize to your interests. You will find strong integration of clinical experience and science instruction throughout your four years here. In keeping with modern medical practice, you will gain the analytical skills to evaluate changing data and treatment options, sharpened emotional intelligence, and comfort working in multi-specialty teams. The study of medicine has always been one of the most deeply satisfying, exciting – and challenging – ways you could develop your talents. JeffMD deepens all these truths at SKMC.

Graduation Competencies

Patient Care	Physicians should provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
Knowledge for Practice	Physicians should demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.
Practice Based Learning & Improvement	Physicians should demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.
Interpersonal & Communication Skills	Physicians should demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.
Professionalism	Physicians should demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.
System Based Practice	Physicians should demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.
Interprofessional Collaboration	Physicians should demonstrate the ability to engage in an interprofessional team in a manner that optimizes safe, effective patient and population-centered care.
Personal & Professional Development	Physicians should demonstrate the qualities required to sustain lifelong personal and professional growth.

See additional information about Graduation Competencies on the SKMC Student Resources webpage: <https://www.jefferson.edu/academics/colleges-schools-institutes/skmc/undergraduate-medical-education/student-resources.html>

Curriculum:

At SKMC, our innovative curriculum prepares future doctors to learn actively and think critically as they develop core professional competencies to prepare them to make positive, impactful changes on healthcare.

Phase I

PHASE 1 is focused on basic science and foundational clinical science. Phase 1 consists of four course sequences: Clinical Experience (JMD 151 & 251); Foundations of Medicine (JMD 101, 102, 201, & 202); Humanities Selectives (JMD 152 & 252); and Scholarly Inquiry (JMD 150 & 250). These four course sequences, taken concurrently, create a bedrock of knowledge, clinical and critical thinking skills with a patient-centered focus that the student apply during their clinical years in medical school and beyond. Our Humanities Selectives and

Scholarly Inquiry courses enable students to explore and concentrate on areas of their own interest.

- Length: 21 Months
- Focus on foundational science
- Clinical experience, appropriate to student's level, starts shortly after matriculation
- Scholarly Inquiry activities begin with choice of concentration and first project
- Two months of vacation
- Prep for USMLE Step 1

Phase II

During Phase 2, students are exposed to core clinical specialties of medicine. They will learn to evaluate patients with a variety of conditions across age, gender, and psychosocial spectra.

Students will partake in team-based patient care and learn to interpret data, build differential diagnoses, and use literature to guide treatment. Phase 2 starts with a one-week Transition to Clerkships course that will prepare students for the immersive experience the core clerkships offer. During Phase 2, students will rotate through four twelve-week blocks of paired clerkships:

Family Medicine with Psychiatry, Pediatrics with Obstetrics and Gynecology, General Surgery and subspecialties with Emergency Medicine, and Internal Medicine with Neurology.

- Length: 12 Months
- Core clinical activities complimented by related science
- Research and humanities threads continue
- Four weeks of vacation

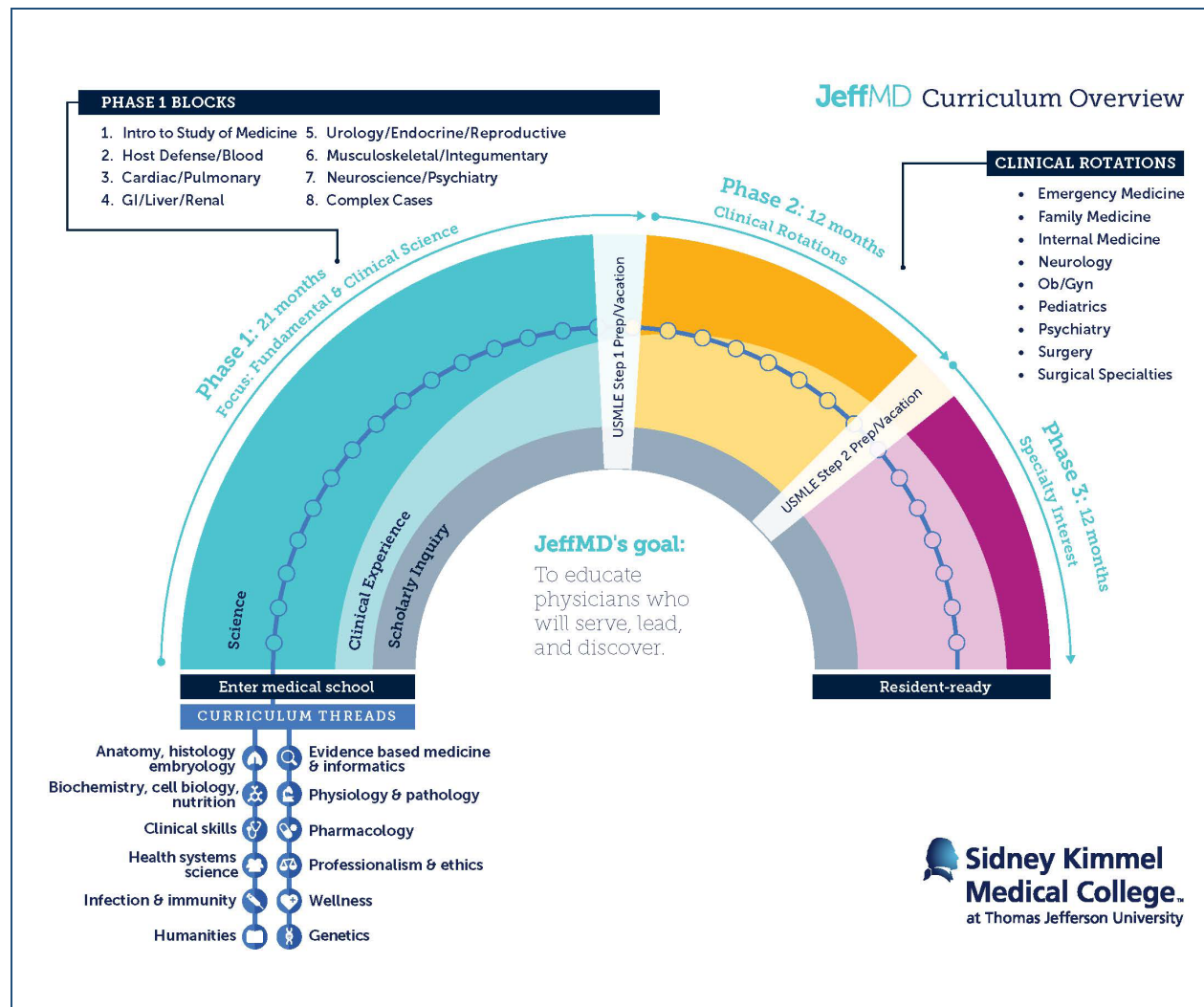
Phase III

Phase 3 of the curriculum is 12 weeks longer than the fourth year of a traditional curriculum, which allows students more time to prepare their residency applications and to take electives appropriate to their specialty interest. (Phase 1 is correspondingly 12 weeks shorter than years 1-2 in a traditional curriculum). Phase 3 begins in the spring of third year, allowing ample time for career exploration and development of specialty-specific skills.

All students complete core rotations and must fulfill all SKMC competencies.

- Length: 12 Months
- Students encouraged to identify specialty interest
- Science and skills training deepen exploration of specialty interest
- Students continue to work on common and specialty competencies for residencies
- Time included to prep for USMLE Step 2 and take vacation
- Program of scholarly inquiry wraps up
- Apply for post-graduate training

JeffMD Curriculum Diagram



Thomas Jefferson, Sidney Kimmel Medical College (MD)/ Università Cattolica Sacro Cuore (MD)/ Thomas Jefferson College of Health Professions (MS)

Thomas Jefferson University and the Università Cattolica Sacro Cuore offer the opportunity for highly qualified students enrolled in the 6-year International English track in Medicine at the UCSC campus in Rome to apply for admission to the College of Population Health and Sidney Kimmel Medical College. Students who meet UCSC and Jefferson requirements interrupt their education at UCSC at the end of year 3, and enroll at SKMC to complete all four years of the SKMC curriculum. Upon graduation from SKMC, students return to UCSC to complete requirements for the UCSC MD degree. Students complete requirements for the degree of Master of Science (MS) in Health Policy during Year 1 and Year 2 summer semester breaks at UCSC, non-required elective or summer break time at SKMC, and after completion of the requirements for the SKMC MD degree.

COLLEGE OF NURSING



Dean: Marie Ann Marino, EdD, RN, FAAN
Center City 215-503-8890 | Horsham 215-481-5500 | Jefferson.edu/JCN

About Us

Jefferson offers unparalleled advantages to students who have the desire and aptitude to become successful nurses, and to nurses who are ready to explore their career potential for growth and advancement. We offer an exceptional continuum of accredited nursing degree programs, from baccalaureate through doctoral levels.

Jefferson College of Nursing is an integral part of a premier academic health center. Our partner in clinical care education, Thomas Jefferson University Hospital (TJUH), is one of the top-ranked hospitals in the nation and recognized by the American Nurses Credentialing Center as a Magnet® hospital for quality patient care, nursing excellence, and innovations in professional nursing practice.

Our faculty are outstanding clinicians and exemplary teachers, many of whom maintain a clinical practice at TJUH or elsewhere in Jefferson Health. Their commitment to the goals of the successful student is evident in our classroom and clinical settings. Equally important, our low student-to-faculty ratio fosters a nurturing environment where mentorship, shared learning, and camaraderie flourish.

Jefferson Nursing graduates enter the practice world with excellent clinical skills, real-world nursing experience, and confidence in their ability to work effectively with peers and team members.

Locations

- Jefferson Center City 901 Walnut Street, Philadelphia PA
- Jefferson Dixon 300 Lakeside Drive, Horsham PA

Accreditations

Commission on Collegiate Nursing Education (CCNE)
Nursing (BSN); Nursing (MSN); Nursing Practice (DNP)

www.aacnnursing.org

Council on Accreditation of Nurse Anesthesia Educational Programs (COA)

Nurse Anesthesia (DNP)

www.coacrna.org

Academic Programs

Undergraduate

Nursing	BSN
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Graduate

Nursing Specialties:	MSN (Nurse Practitioner & post BSN-DNP)
<ul style="list-style-type: none"> • Adult Gerontology- Acute Care NP • Adult Gerontology -Primary Care NP • Community Systems Administration • Family/Individual Across Lifespan NP • Informatics • Neonatal NP • Pediatric Primary Care NP • Psychiatric Mental Health NP • Women's Health Gender-Related NP 	
Nursing	DNP (Post-BS Entry & Post-MS Entry)
Nursing	PhD
Nurse Anesthesia	DNP
Transformative Systems Leadership	MSN

Certificate

Academic Nursing	Post-Graduate Certificate
Advanced Headache Diagnosis & Management	Post-Graduate Certificate
Emergency Nurse Practitioner (NP)	Post-Graduate Certificate
Nurse Practitioner (All NP Pathways)	Post-Graduate Certificate
Transformative Systems Leadership	Post-Graduate Certificate

Undergraduate Degree Programs

Nursing	
Bachelor of Science (BSN)	
Office of Admissions	215-895-5918
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/bachelor-science-nursing.html

Educational Options

Options for High School Seniors	Bachelor of Science in Nursing (BSN) Traditional Program
Options for College Students	Bachelor of Science in Nursing (BSN) Traditional Program FACT 1 & FACT 2 programs (for students holding a prior bachelor's degree in a non-nursing major) Master of Science in Nursing (MSN) Doctor of Nursing Practice (DNP) - Post Master's Entry DNP - Post Baccalaureate Entry Post-Graduate Certificate Program

Program Description

Jefferson's Bachelor of Science in Nursing (BSN) degree program offers an accredited prelicensure option that is a proven pathway to a successful nursing career. Jefferson graduates are recognized throughout the country as leaders in education, research, healthcare delivery and community service. Request information to receive a link to your personal website via email.

The BSN Traditional Track Program is for students with a high school diploma and 55 prerequisite college credits.

In addition, for students who hold non-nursing bachelor's degrees, Jefferson offers two accelerated pathways to the Bachelor of Science in Nursing:

- Full-time Accelerated Coursework Track (FACT) - 1 Year
- Full-time Accelerated Coursework Track (FACT) - 2 Year

Program Highlights

- The pass rate for BSN graduates who took the National Council Licensure Examination for Registered Nurses is higher than the national average.
- Jefferson BSN graduates have been pursued by employers in the Philadelphia region and across the nation.
- Starting salary range for BSN graduates is \$50,000 to \$65,000.

Curriculum: 2 years,67 credits

- Bachelor of Science in Nursing (BSN) full-time, two year, traditional pathway, requires (55) approved prerequisite college credits

<u>Year 1 Semester 1</u>			<u>Year 2 Semester 4</u>		
NU 315	Health Assessment Across the Lifespan	3	NU 496	Clinical Judgement Applications	10
NU 340	Medication Calculations in Nursing	1	NU 497	Transitions to Professional Practice & NCLEX-RN Prep	3
NU 341	Foundations in Nursing	4			
NU 342	Health Promotion Applications Across the Lifespan I	7.5			
NU343	Pathophysiology	3			
<u>Semester 2</u>					
NU 345	Pharmacology	3			
NU 346	Professional Practice in Nursing	2			
NU 347	Discovery and Evidence-based Practice	2			
NU 495	Health Promotion Applications Across the Lifespan III: Childbearing & Childrearing Families	9.5			
<u>Semester 3</u>					
NU 344	Health Promotion Applications Across the Lifespan II	10			
NU 493	Perspective Seminar	2			
NU 494	Population Health and Care Transition Management	4			

Curriculum: 59.5 credits

- BSN Full-time, FACT-1 pathway
- Requires 60 approved prerequisite college credits

<u>Semester 1</u>			<u>Semester 3</u>		
NU 315	Health Assessment Across the Lifespan	3	NU 605	Role of the Advanced Practice Nurse	3
NU 340	Medication Calculations in Nursing	1	NU 494	Population Health and Care Transition Management	4
NU 341	Foundations in Nursing	4	NU 496	Clinical Judgement Applications	10
NU 342	Health Promotion Applications Across the Lifespan I	7.5	NU 497	Transitions to Professional Practice & NCLEX-RN Prep	3
NU 343	Pathophysiology	3			
NU 346	Professional Practice in Nursing	2			
NU 603	Research for Advanced Practice Nursing I	3			
<u>Semester 2</u>					
NU 344	Health Promotion Applications Across the Lifespan II	10			
NU 345	Pharmacology	3			
NU 696	Leadership and Critical Decision Making	3			
NU 495	Health Promotion Applications Across the Lifespan III: Childbearing & Childrearing Families	9.5			

Curriculum: 69 credits

- Nursing BSN Full-time, FACT-2 pathway
- Requires 60 approved prerequisite credits

<u>Year 1 Semester 1</u>			<u>Year 2 Semester 3</u>		
NU 315	Health Assessment Across the Lifespan	3	NU 696	Leadership and Critical Decision Making	3
NU 340	Medication Calculations in Nursing	1	NU 494	Population Health and Care Transition Management	4
NU 341	Foundations in Nursing	4	NU 344	Health Promotion Applications Across the Lifespan II	10
NU 342	Health Promotion Applications Across the Lifespan I	7.5	NU 496	Clinical Judgement Applications	3
NU 343	Pathophysiology	3	NU 497	Transitions to Professional Practice & NCLEX-RN Prep	3
	<u>Year 1 Semester 2</u>		NU 605	Role of the Advanced Practice Nurse	3
NU 495	Health Promotion Applications Across the Lifespan III: Childbearing & Childrearing Families	9.5			
NU 345	Pharmacology	3			
NU 346	Professional Practice in Nursing	2			
NU 603	Research for Advanced Practice Nursing I	3			

Graduate Degree Programs

Nursing	
Master of Science (MSN)	
Office of Admissions Campus Website	215-895-5918 Center City https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/bachelor-science-nursing.html

Curriculum: MSN, Core Curriculum, 18 credits

- Students admitted prior to Fall 2021

NU 602	Health Policy, Legal & Ethical Dimensions of Practice	3	NU 605	Role of the Advanced Practice Nurse	3
NU 603	Research For Advanced Nursing Practice I	3	NU 625	Epidemiology for Health Professions	3
NU 604	Research for Advanced Nursing Practice II	3	NU 672	Informatics for Advanced Nursing Practice	3

Curriculum: MSN, Core Curriculum, 18 credits

- Students admitted Fall 2021 and later

NU 602	Health Policy, Legal & Ethical Dimensions of Practice	3	NU 605	Role of the Advanced Practice Nurse	3
NU 603	Research For Advanced Nursing Practice I	3	NU 696	Leadership and Critical Decision Making	3
NU 704	Philosophy, Foundations and Methods for Evidence-Based Practice	3	NU 705	Advanced Topics in Health Informatics	3

Curriculum: MSN, Adult- Gerontology, Acute Care Nurse Practitioner

NU 560	Advanced Pharmacotherapeutics	3	NU 632	Diagnostic Reasoning and Clinical Decision-Making for Acute Care Advanced Practice Nurse II	3
NU 570	Pathophysiology of Human Disease/Pathologic Aspects of Disease	3	NU 633	Diagnostic Reasoning and Clinical Decision-Making for Acute Care Advanced Practice Nurse III	3
NU 631	Diagnostic Reasoning and Clinical Decision- Making for Acute Care Advanced Practice Nurse I	3	NU 673	Comprehensive Assessment for Clinical Decision Making	3

Curriculum: MSN, Community Systems Administration

NU 681	Community Systems Administration I	3	NU 691	Healthcare Economics and I Financial Management for Nurses	3
NU 682	Community Systems Administration II	3		General Elective	3
NU 690	Nursing/Healthcare Informatics: Project Management	3		General Elective	3

Curriculum: MSN. Adult- Gerontology, Primary Care Nurse Practitioner

NU 560	Advanced Pharmacotherapeutics	3	NU 673	Comprehensive Assessment for Clinical Decision Making	3
NU 570	Pathophysiology of Human Disease/Pathologic Aspects of Disease	3	NU 674	Management of Common Health Problems in Primary Care	3
NU 630	Diagnostic Reasoning and Clinical Decision-Making for Adult Care Advanced Practice Nurse	3	NU 676	Management of the Adult and Older Adult in Ambulatory Care	3

Curriculum: MSN, Family Individual Across Lifespan Nurse Practitioner

NU 560	Advanced Pharmacotherapeutics	3	NU 674	Management of Common Health Problems in Primary Care	3
NU 570	Pathophysiology of Human Disease/ Pathologic Aspects of Disease		NU 675	Management of Women and Children in Ambulatory Care	3
NU 673	Comprehensive Assessment for Clinical Decision Making	3	NU 676	Management of the Adult and Older Adult in Ambulatory Care	3

Curriculum: MSN, Informatics

NU 689	Healthcare Informatics: Ethics, Issues and Trends	3	NU 694	Nursing Informatics Seminar and Practicum II	3
NU 690	Nursing/Healthcare Informatics: Project Management	3		Elective	3
NU 693	Nursing Informatics Seminar and Practicum I	3		Elective	3

Curriculum: MSN, Neonatal Nurse Practitioner

NU 570	Pathophysiology Human Disease/Pathologic Aspects of Disease	3	NU 664	Diagnostic Reasoning and Clinical Decision-Making Neonatal Nurse Practitioner III	3
NU 662	Diagnostic Reasoning and Clinical Decision-Making for Neonatal Nurse Practitioner I	3	NU 665	Comprehensive Assessment for Clinical Decision Making for the Mother and the Neonate	3
NU 663	Diagnostic Reasoning and Clinical Decision-Making Neonatal Nurse Practitioner II	3	NU 667	Advanced Pharmacotherapeutics for Neonatal Nurse Practitioners	3

Curriculum: MSN, Pediatric Primary Care Nurse Practitioner

NU 560	Advanced Pharmacotherapeutics	3	NU 641	Diagnostic Reasoning and Clinical Decision-Making for Pediatric Advanced Practice Nurse II	3
NU 570	Pathophysiology of Human Disease/ Pathologic Aspects of Disease		NU 642	Diagnostic Reasoning and Clinical Decision-Making for Pediatric Advanced Practice Nurse III	3
NU 640	Diagnostic Reasoning and Clinical Decision-Making for Pediatric Advanced Practice Nurse I	3	NU 673	Comprehensive Assessment for Clinical Decision-Making	3

Curriculum: MSN, Psychiatric Mental Health Nurse Practitioner

NU 560	Advanced Pharmacotherapeutics	3	NU 613	Diagnostic Reasoning and Clinical Decision-Making for Psychiatric Mental Health Nurse Practitioner I	3
NU 570	Pathophysiology of Human Disease/ Pathologic Aspects of Disease		NU 614	Diagnostic Reasoning and Clinical Decision-Making for Psychiatric Mental Health Nurse Practitioner II	3
NU 673	Comprehensive Assessment for Clinical Decision-Making	3	NU 615	Diagnostic Reasoning and Clinical Decision-Making for Psychiatric Mental Health Nurse Practitioner III	3

Curriculum: MSN, Women's Health-Gender Related Nurse Practitioner

NU 560	Advanced Pharmacotherapeutics	3	NU 591	Diagnostic Reasoning and Clinical Decision-Making for Women's Health Care Nurse Practitioner II	3
NU 570	Pathophysiology of Human Disease/Pathologic Aspects of Disease	3	NU 592	Diagnostic Reasoning and Clinical Decision-Making for Women's Health Care Nurse Practitioner III	3
NU 590	Diagnostic Reasoning and Clinical Decision Making for Women's Health Care Nurse Practitioner	3	NU 673	Comprehensive Assessment for Clinical Decision-Making	3

Transformative Systems Leadership

Masters of Science (MSN)

Chair

Campus

Website

Ksenia Zukowsky, PhD, APRN, NNP-B

Hybrid- Center City/Online

<https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/bachelor-Center for Forensic Science Research & Education-nursing.html>

Program Description

The Masters of Science in Nursing (MSN) in Transformative Systems Leadership (TSL) is designed for nurses who aspire to advance their leadership skills, build their networks, and prepare for current and future-oriented strategic leadership roles in the ever-changing health care environment.

This flexible and highly collaborative program integrates current evidence, innovative strategies and tools to prepare students as skilled systems thinkers, communicators, creative problem-solvers, and effective change agents within local, regional, national, or global health care contexts. Students are able to pursue rich and varied clinical placements based on self-defined leadership goals. Through exposure to a robust selection of coursework students gain skills and insights that are readily transferable to current work settings and to their career advancement. Graduates are eligible, depending on employment role and work history, to apply for nursing administration/executive certification exams offered through the American Nurses Credentialing Center of the American Nurses Association and the American Organization for Nursing Leadership.

Program Highlights

- Network with Jefferson Enterprise Leadership
- Prepare for AONL Certification
- Based on new Essentials of AACN Competencies

Curriculum: 36 credits

<u>Semester 1</u>			<u>Semester 3</u>		
NU 603	Research for Advanced Practice Nursing I	3	NU 705	Advanced Topics in Health Informatics	3
NU 607	Transforming Healthcare Delivery: A Systems Perspective for Innovation	3	NU 609	Health Economics, Finance, and Policy	3
NU 707	Leadership and Inter-professional Collaboration	3	NU 612	Leadership Practicum/Seminar II	3
	General Elective	3		General Elective	3
<u>Semester 2</u>					
NU 608	Leadership and Management for Operational Excellence	3			
NU 696	Leadership and Critical Decision Making	3			
NU 610	Strategic Communication in the Workplace	3			
NU 611	Leadership Practicum/Seminar I	3			

Doctorate Nurse Practitioner (DNP)

Program Director Campus Website	Janice Miller, DNP, CRNP, CDE Center City https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/bachelor-Center for Forensic Science Research & Educatio-nursing.html
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Program Description

The Doctor of Nursing Practice (DNP) is a practice focused doctorate that prepares professional nurses for scholarly practice. Our graduates are clinical and health system experts that create, reform and lead improvements in practice, policy, populations, organizations, and government. In addition to the traditional DNP-Post Master's Entry, Jefferson offers a DNP-Post Baccalaureate Entry. Part time and full time plans of study are available. Enter our DNP Program and engage in inter-professional leadership across the health care continuum. Our nationally recognized, expert faculty will mentor you to design, implement and evaluate a year-long doctoral project aligned with your career interests and goals.

Program Outcomes

- Synthesize knowledge from ethics and the biophysical, psychosocial, analytical, and organizational sciences into the conceptual foundation of advanced nursing practice at the doctoral level. (Essential I)
- Employ organizational and systems-level leadership principles in the development and evaluation of care delivery approaches that meet the current and future needs of communities and populations. (Essential II)
- Design, direct and evaluate scholarly inquiries that incorporate evidence appraisal, research translation, and standards of care to improve practice and the practice environment. (Essential III)
- Analyze ethical and legal issues in the use of information, information technology, communication networks, and patient care technologies used to support safe, high-quality patient care. (Essentials II, IV)
- Influence policy makers through active participation on committees, boards, or task forces at the institutional, local, state, regional, national, and/or international levels to improve health care delivery and outcomes. (Essential V)
- Integrate skills of effective communication, collaboration, shared decision-making, and leadership with interprofessional teams to create change in health care. (Essential VI)

Curriculum: 69 credits

- Post-Baccalaureate Entry*
- Students admitted prior to Fall 2021

NU 560	Advanced Pharmacotherapeutics	3	NU 702	Practice Inquiry: Design, Methods and Analysis	3
NU 570	Pathophysiology of Human Disease/Pathologic Aspects of Disease	3	NU 703	Theoretical Foundations for Organizational Change in Healthcare Systems	3
NU 602	Health Policy, Legal and Ethical Dimensions of Practice	3	NU 704	Philosophy, Foundations, and Methods for Evidence- Based Practice	3
NU 603	Research for Advanced Practice Nursing I	3	NU 705	Advanced Topics in Health Informatics	3
NU 605	Role of the Advanced Practice Nurse	3	NU 706	Healthcare Quality and Patient Safety	3
NU 625	Epidemiology for the Health Professions	3	NU 707	Leadership and Inter-professional Collaboration	3
NU XXX	Clinical I	3	NU 708	Clinical Prevention and /Population Health for Improving the Nation's Health	3
NU XXX	Clinical II	3	NU 709	Current Issues in Health and Social Policy: Planning, Participating and Policy Making	3
NU XXX	Clinical III	3	NU 710	Practicum I	3
NU 672	Informatics for Advanced Nursing Practice	3	NU 711	Practicum II	3
NU 673	Comprehensive Assessment for Clinical Decision-Making	3	NU 712	Practicum III	3
NU 701	Scientific Underpinnings for Nursing Practice	3			

Curriculum: 66 credits

- Post-Baccalaureate Entry*
- Students admitted Fall 2021 and later

NU 560	Advanced Pharmacotherapeutics	3	NU 702	Practice Inquiry: Design, Methods and Analysis	3
NU 570	Pathophysiology of Human Disease/Pathologic Aspects of Disease	3	NU 703	Theoretical Foundations for Organizational Change in Healthcare Systems	3
NU 602	Health Policy, Legal and Ethical Dimensions of Practice	3	NU 704	Philosophy, Foundations, and Methods for Evidence- Based Practice	3
NU 603	Research for Advanced Practice Nursing I	3	NU 705	Advanced Topics in Health Informatics	3
NU 605	Role of the Advanced Practice Nurse	3	NU 706	Healthcare Quality and Patient Safety	3
NU 696	Leadership and Critical Decision Making	3	NU 707	Leadership and Inter-professional Collaboration	3
NU XXX	Clinical I	3	NU 708	Clinical Prevention and /Population Health for Improving the Nation's Health	3
NU XXX	Clinical II	3	NU 709	Current Issues in Health and Social Policy: Planning, Participating and Policy Making	3
NU XXX	Clinical III	3	NU 710	Practicum I	3
NU 672	Informatics for Advanced Nursing Practice	3	NU 711	Practicum II	3
NU 673	Comprehensive Assessment for Clinical Decision-Making	3	NU 712	Practicum III	3
NU 701	Scientific Underpinnings for Nursing Practice	3			

*Refer to JCN Student Handbook & Course Catalog 20221-20232 for specific Advanced Practice Registered Nurse (APRN) pathways.

The post-Baccalaureate to DNP program for graduates of accelerated BSN programs requires completion of 69 credits and will culminate with a Doctor of Nursing Practice (DNP) degree. Graduates of accelerated BSN programs will have transcripts from their baccalaureate program reviewed by the Chair of Graduate Programs for potential transfer credit and advanced standing in the post-Baccalaureate to DNP plan of study. The MSN degree will be conferred at the point students complete the American Association of Colleges of Nursing’s (AACN) Essentials of Master’s Education in Nursing (2011).

The post-Baccalaureate to DNP program for graduates of traditional Pre-licensure BSN programs requires completion of 69 credits and will culminate with a Doctor of Nursing Practice (DNP) degree. The MSN degree will be conferred at the point students complete the American Association of Colleges of Nursing’s (AACN) Essentials of Master’s Education in Nursing (2011).

Curriculum: 2 years

- Post-Master’s Entry*
- **DNP Core Curriculum, 27 credits**
- Part-time and full-time plans of study are available.

<u>Year 1</u>			<u>Year 2</u>		
NU 701	Scientific Underpinning for Nursing Practice	3	NU 706	Healthcare Quality and Patient Safety	3
NU 702	Practice Inquiry: Designs, Methods and Analyses	3	NU 707	Leadership & Interprofessional Collaboration	3
NU 703	Theoretical Foundations Organizational Change Healthcare Systems	3	NU 708	Clinical Prevention and Population Health Improving the Nation’s Health	3
NU 704	Philosophy, Foundations and Methods for Evidence Based Practice	3	NU 709	Current Issues Health and Social Policy: Planning, Participating & Policy	3
NU 705	Advanced Topics in Health Informatics	3			

DNP Practicum Sequence, 9 credits

NU 710	Practicum I	3
NU 711	Practicum II	3
NU 712	Practicum III	3

Curriculum: 3 years, 92 credits

- DNP, Anesthesia Program

<u>Year 1</u>			<u>Year 3</u>		
NU 560	Advanced Pharmacotherapeutics	3	NU 755	Clinical Practice V	3
NU 603	Research for Advanced Practice Nursing I	3	NU 756	Clinical Practice VI	3
NU 724	Chemistry and Physics Related to Anesthesia	2	NU 705	Advanced Topics in Health Informatics	3
NU 625	Epidemiology for the Health Professions	3	NU 711	Practicum II	3
NU 706	Healthcare Quality & Patient Safety	3	NU 757	Clinical Practice VII	3
NU 673	Comprehensive Assessment Clinical Decision-Making	3	NU 712	Practicum III	3
NU 570	Pathophysiology of Human Disease/ Pathologic Aspects of Disease	3			
NU 748	Basic Principles Anesthesia	3			
NU 700	Pharmacokinetics and Dynamics of Anesthesia Agents	3			
NU 750	Orientation to Clinical Practice	0			
NU 775	Pathologic Aspects of Disease II	3			
NU 758	Advanced Principles of Anesthesia	3			
NU 751	Clinical Practice I	3			
NU 707	Leadership & Inter-professional Collaboration	3			
NU 709	Current Issues in Health and Social Policy: Planning, Participating, and Policy Making	3			
NU 703	Theoretical Foundations for Organizational Change in Healthcare Systems	3			
NU 701	Scientific Underpinnings for Nurse Practice	3			
	<u>Year 2</u>				
NU 768	Advance Principles Anesthesia II	3			
NU 752	Clinical Practice II	3			
NU 702	Practice Inquiry: Design, Method, and Analyses	3			
NU 605	Role of Advanced Practice Nurse	3			
NU 753	Clinical Practice III	3			
NU 706	Healthcare quality and Patient Safety	3			
NU 704	Philosophy, Foundations, and Methods for Evidenced-Based Practice	3			
NU 754	Clinical Practice IV	3			
NU 707	Leadership and Inter-professional Collaboration	3			
NU 708	Clinical Prevention and Population Health for Improving the Nation's Health	3			
NU 710	Practicum I	3			

Office of Admissions	215-895-5918
Campus	Center City
Contact	Bobbie Posmontier, PhD, CNM, PMHNP-BC
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/phd-in-nursing.html

Program Description

The PhD in Nursing program is 56 credits and provides a novel approach preparing nurse scientists at the highest level of education to generate new scientific knowledge, address healthcare problems, and educate the next generation of nurses. The program is embedded in an educational framework that promotes interdisciplinary collaboration and reimagines education and discovery by encouraging collaboration among students during the formative stages of PhD education. The PhD in Nursing program embraces diversity and inclusion through its commitment to eliminate structural racism and unconscious bias in the recruitment and admission process, and advancement of a school wide culture of intolerance for systemic oppression of marginalized persons and groups.

Program Highlights

- Participate in research labs across the university
- Work with interprofessional research teams
- Earn a dual PhD/MPH or public health certificate or an academic nursing (teaching) certificate
- Learn how to conduct research that embraces social justice and health equity
- Develop your own independent research with mentorship from expert nurse scientist faculty.
- 56 credit courses completed over 4 years with full-time study. Part-time study options are available.
- Hybrid format

Curriculum: 4 years, 56 credits

	<u>Year 1 Fall</u>				<u>Year 3 Fall</u>
NU 800	Philosophy of Science in Nursing	3		NU 831	Dissertation Seminar 3
PHS 605	Advanced Statistical Methods for Data Analysis	3			General Elective 3
NU 802	Foundations of Scientific Writing	3			General Elective 3
	<u>Year 1 Spring</u>				Defend Dissertation Proposal end of Fall Semester
Nu 801	Theoretical Approaches to Research	3			<u>Year 3 Spring</u>
NU 810	Quantitative Methods	3		NU 840	Dissertation Advisement 1
NU 820	Determinant Models of Human Health	3			<u>Year 3 Summer</u>
GC 640	Research Ethics: The Responsible Conduct of Research	1		NU 841	Dissertation Advisement 1
	<u>Year 1 Summer</u>				
NU 678	Academic Nursing I: Facilitating Learner Centric Development & Socialization	3			<u>Year 4 Fall</u>
	Write Qualifying Examination			NU 842	Dissertation Advisement 1
	<u>Year 2 Fall</u>				
PBH 512	Qualitative Research Methods	3			<u>Year 4 Spring</u>
NU 821	Ways of Thinking	3			Dissertation Defense
PHS 710	Advanced Health Behaviors Methods & Measurement	3			
	<u>Year 2 Spring</u>				
NU 812	Data Based Design and Management	3			
NU 811	Team Science for Biomedical Research	3			
PH 650	Evaluation and Outcomes Research and Design	3			
	<u>Year 2 Summer</u>				
NU 830	Research Residency	1			
	General Elective	3			
	Write Dissertation Proposal				

Nurse Practitioners

Post-Graduate Certificate

Contact
Campus
Website

Office of Admissions
Hybrid- Center City & Online
<https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/graduate-certificates/post-masters-degree-certificate-programs.html>

Curriculum: 18 credits

- Nurse Practitioners

NU 560	Advanced Pharmacotherapeutics	3	NU 6XX	Specialty Clinical Course I	3
NU 570	Pathophysiology of Human Disease/Pathologic Aspects of Disease	3	NU 6XX	Specialty Clinical Course II	3
NU 673	Comprehensive Assessment for Clinical Decision Making	3	NU 6XX	Specialty Clinical Course III	3

Academic Nursing

Post-Graduate Certificate

Program Director	Maureen Fitzgerald, EdD, MSN, RNC-NIC
Campus	Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/graduate-certificates/post-masters-degree-certificate-programs/academic-nursing.html

Program Description

The Post-graduate Academic Nursing Certificate Program is designed for nurses with a master's or doctoral degree seeking faculty positions in entry-level or graduate nursing education programs to teach in the classroom, clinical environment or online. Courses focus on contemporary curriculum design, instructional methodologies, student assessment, and program evaluation methods. Completion of two preceptor-facilitated practicums provides students the opportunity to transfer knowledge to the actual academic environment.

This flexible, highly interactive, online, asynchronous program awards a post-graduate certificate after completion of 9 credits. Graduates are eligible to sit for the National League of Nursing (NLN) Certified Nurse Educator (CNE) examination. NLN - CNE designation indicates exceptional proficiencies in the field of nursing education.

Program Highlights

- 3 online courses (9 graduate credits) using interactive e-learning modules coupled with asynchronous online collaboration/activities
- 90 hours of expert academician preceptor-facilitated experiential learning: 45 hours in Academic Nursing Seminar (ANS) II and III
- Program outcomes incorporate the National League for Nursing (NLN) competencies for nurse educators
- Professional growth and career trajectory towards successful transition into the faculty role in an academic setting

Curriculum: 9 credits

NU 678	Academic Nursing Seminar I: Facilitating Learner-Centric Development and Socialization	3
NU 680	Academic Nursing Seminar II: Contemporary Curriculum Design and Role Execution Practicum	3
NU 684	Academic Nursing Seminar III: Measuring Learning Outcomes and Role Execution Synthesis	3

Advanced Headache Diagnosis and Management

Post-Graduate Certificate

Program Director Hannah R Smith, PhD
Campus Hybrid: Center City & Online
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/graduate-certificates/headache-diagnosis-management.html>

Program Description

The Post-Graduate Certificate Program in Advanced Headache Diagnosis and Management brings clinically important and novel information to a diverse group of clinical learners to improve patient care and outcomes related to headache disorders.

Three online didactic courses (10 graduate credits) impart knowledge of pathogenesis, clinical diagnosis, pharmacological and non-pharmacological treatment options, psychiatric and sleep disorders, and business management for clinical practice. A weekend onsite intensive provides opportunities to practice case simulations and procedures, participate in interprofessional discussions, and engage in active learning directly with headache medicine experts.

Learning Goals/Outcomes

- Teach clinically important and novel information to improve patient care and morbidity related to headache disorders
- Produce practitioners with expertise in headache medicine
- Teach a diverse group of clinical learners
- Encourage learners to bring enthusiasm for, expertise in, and accessibility to headache medicine management and treatment to their communities

Curriculum: 10 credits

NU 685	Headache Course I: A Case-Based Approach to the Diagnosis and Pathophysiology of Headache Disorders	4
NU 686	Headache Course II: Current and Emerging Treatment and Procedural Skills for Headache Disorders	4
NU 687	Headache Course III: Psychological Factors in Headache Medicine with an Introduction to Business Management	2
<u>On-site Intensive Weekends</u>		
Winter & Spring		

Emergency Nurse Practitioner

Post-Graduate Certificate

Program Director	Sharon Rainer, PhD, APRN, FNP-BC, ENP-C
Campus	Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/graduate-certificates/emergency-nurse-practitioner.html

Program Description

Designed for the family nurse practitioner (FNP) who currently works in an emergency care setting or who desires to make a change, the Emergency Nurse Practitioner - Post-Graduate Certificate program provides the knowledge and skills needed for the fast-paced, highly technical emergency setting. The program provides high-quality education and procedural skills necessary to competently and confidently practice as a nurse practitioner in the emergency and urgent care settings. Jefferson's highly skilled, board-certified faculty provides a rigorous program designed to prepare you to perform the necessary diagnostic and therapeutic procedures needed to be eligible for board certification as an emergency nurse practitioner.

Learning Goals/Outcomes

Opportunities include:

- Interdisciplinary learning experiences with medical students, physician assistants, and emergency residents
- A state-of-the-art simulation center
- Clinical experiences in a Level I Regional Trauma Center
- Classroom and on-site intensives for skills needed in emergency and urgent care settings, including disaster preparedness.

Curriculum: 12 credits

NU 643	Emergency Nurse Practitioner Role / Emergency Care I	4
NU 644	Emergency Nurse Practitioner Procedures / Emergency Care II	4
NU 645	Collaborative Management / Advanced Emergency Care III	4

Transformative Systems Leadership

Post-Graduate Certificate

Program Director	Catherine Harris, PhD, MBA, AGACNP, ANP, FNP-BC
Campus	Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/master-science-nursing/degrees/transformative-systems-leadership.html

Program Description

The Post Graduate Certificate Program (PGCP) in Transformative Systems Leadership (TSL) is designed for nurses who aspire to advance their leadership skills, build their networks, and prepare for current and future-oriented strategic leadership roles in the ever-changing health care environment.

This flexible and highly collaborative program integrates current evidence, innovative strategies and tools to prepare students as skilled systems thinkers, communicators, creative problem-solvers, and effective change agents within local, regional, national, or global health care contexts. Students are able to pursue rich and varied clinical placements based on self-defined leadership goals.

Through exposure to a robust selection of coursework students gain skills and insights that are readily transferable to current work settings and to their career advancement. Graduates are eligible, depending on employment role and work history, to apply for nursing administration/executive certification exams offered through the American Nurses Credentialing Center of the American Nurses Association and the American Organization for Nursing Leadership.

Learning Goals/Outcomes

- Network with Jefferson Enterprise Leadership
- Prepare for AONL Certification
- Based on new Essentials of AACN Competencies

Curriculum: 9 credits

NU 607	Transforming Healthcare Delivery: A Systems Perspective for Innovation	3
NU 608	Leadership and Management for Operational Excellence	3
NU 609	Health Economics, Finance, and Policy	3

COLLEGE OF PHARMACY



Dean: Rebecca S. Finley, PharmD, MS | 215-503-9000 | Jefferson.edu/Pharmacy

About Us

Welcome to the Jefferson College of Pharmacy (JCP), an integral part of one of the nation's premier academic healthcare centers.

Founded in 2008, we have built an innovative Doctor of Pharmacy program that effectively prepares our graduates for interesting and challenging pharmacy practice roles across the health care continuum. Underpinning our curriculum is an accomplished and diverse team of healthcare leaders, teachers, researchers and preceptors (practitioners) who make up our faculty. Collectively, this group brings a broad range of experiences and perspectives to our students, and they are recognized for their leadership in national and international pharmacy and healthcare membership organizations as well as their research in pharmaceuticals, pharmacology, health outcomes, the clinical sciences and related fields.

Our classroom, laboratory and pharmacy-practice experiences at the Jefferson College of Pharmacy are complemented by a wide range of co-curricular and extracurricular activities designed to enable our student pharmacists to become competent and confident practitioners who apply their knowledge and skills to care for individual patients as well as improve the overall health of our community. With a strong emphasis on leadership skills and social responsibility, JCP graduates are prepared to make an impact!

Interprofessional Education

Since matriculating its first class in the Fall of 2008, the Jefferson College of Pharmacy has embraced inter-professional education (IPE) and has been an active member of the Jefferson Center for Interprofessional Practice and Education. Beginning their first semester on campus, JCP student pharmacists participate in required IPE activities. These activities include students from many other Jefferson programs including couple and family therapy, medical laboratory sciences, medicine, nursing, occupational therapy, physical therapy and physician's assistant. In addition to the formal IPE activities, students may also participate in numerous co-curricular IPE activities. We also have affiliations with a broad range of clinical practice sites where team-based collaborative care is the standard of practice. JCP student pharmacists have the opportunity to observe and practice team-base collaborative care at increasing levels of engagement as they proceed through the four-year Doctor of Pharmacy curriculum.

As a result of its efforts in IPE, JCP faculty have been invited to numerous national meetings to share what they have learned and to showcase IPE activities. Numerous JCP student pharmacists have also had the opportunity to present or publish reports of their IPE experiences. Many prospective student pharmacists have identified Jefferson's IPE as a reason for selecting Jefferson as their Pharmacy College of choice. In addition, many incoming students have identified the ability to work with inter-professional healthcare teams among their top ten reasons for attending Jefferson.

Accreditation

Accreditation Council for Pharmacy Education (ACPE)

www.acpe-accredit.org

Thomas Jefferson University's Doctor of Pharmacy program is fully accredited until June 30, 2026 by: Accreditation Council for Pharmacy Education

135 South LaSalle Street,
Suite 4100
Chicago, IL 60503
(312) 664-3575
(312) 664-4652 fax

Academic Programs

Graduate

Doctor of Pharmacy	PharmD
Population Health Pharmacy	MS
Pharmaceutical Sciences	MS

Certificate

Population Health Pharmacy	Graduate Certificate
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Accelerated/Dual Degree

Doctor of Pharmacy & Masters in Public Health	PharmD/MPH
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<h1>Pharmacy</h1>	
Doctor of Pharmacy (PharmD)	
Campus Website	Center City https://www.jefferson.edu/university/pharmacy/doctor-of-pharmacy.html

- **Accreditation:** Council for Pharmacy Education

Program Description

The JCP Doctor of Pharmacy (PharmD) curriculum prepares its graduates to provide patient-centered and population-based care that ensures optimal health outcomes to practice in diverse patient care environments and become valued members of healthcare team. JCP graduates will embrace life-long, self-directed learning.

Throughout the curriculum, faculty incorporate active learning, simulated patient-care experiences, and other strategies to facilitate the continued development and application of critical thinking and clinical skills. Team-based learning is also used extensively throughout the curriculum. The curriculum has been created vertically such that material learned in earlier years is further developed and built upon in the later years. Student pharmacists participate in interprofessional education and diverse co-curricular activities, and if interested, have opportunities for research and scholarly activities that contribute to their personal and professional growth.

The Accreditation Council for Pharmacy Education (ACPE) accredited the Doctor of Pharmacy program through June 30, 2026.

Learning Goals/Outcomes

- The knowledge, understanding and application of biomedical sciences, pharmaceutical sciences, social/behavioral /administrative sciences and clinical sciences
- The ability to think critically and problem solve
- Effective communication through written and verbal means
- The highest level of professional, legal and ethical behavior
- The professional acumen to identify & analyze emerging health-related issues
- A working knowledge of how legislation, regulations and related programs affect the practice of pharmacy

Curriculum: 4 years, 140 credits

	<u>Year 1 Fall</u>			<u>Year 3 Fall</u>		
PHRM 510	Biochemistry	3		PHRM 539	Pharmacology III	3
PHRM 512	Preventive Healthcare and Self-Care Issues	2		PHRM 544	Clinical Diagnosis / Pharmacotherapy IV: Infectious Diseases Module	3
PHRM 514	Pathophysiology I	3		PHRM 545	Pharmacy Practice Lab II	1
PHRM 516	Pharmacy Practice I	1		PHRM 550	Interprofessional Grand Rounds	2
PHRM 519	Healthcare Delivery Systems	2		PHRM 557	Clinical Diagnosis /Pharmacotherapy III: Cardiovascular / Pulmonary Module	3
PHRM 522	Introductory to Pharmacy Practice Experience: Healthcare Related Service Learning	1		PHRM 558	Introductory to Pharmacy Practice Experience: Direct Inpatient Care	2
PHRM 525	Immunology	3			General Elective(s)	2-3
PHRM 559	Introduction to Pharmacy Practice Lab I	1				
	<u>Year 1 Spring</u>				<u>Year 3 Spring</u>	
PHRM 511	Biostatistics	3		PHRM 546	Clinical Diagnosis /Pharmacotherapy V: Neurology-Psychology Module	3
PHRM 513	Medicinal Chemistry	2		PHRM 547	Clinical Diagnosis /Pharmacotherapy VI: Oncology Module	3
PHRM 515	Pathophysiology II	3		PHRM 548	Pharmacy Practice Lab III	1
PHRM 517	Pharmacy Practice II	1		PHRM 551	Pharmacoeconomics and Health Outcomes	3
PHRM 520	Molecular and Cell Biology	3		PHRM 552	Integrated Practice Applications	1
PHRM 523	Introductory to Pharmacy Practice Experience: Community Pharmacy	1		PHRM 553	Professional Seminar I	2
PHRM 526	Physical Assessment & Clinical Skills	1		PHRM 568	Introductory to Pharmacy Practice Experience: Selective Site	2
PHRM 592	Introduction to Pharmacy Practice Lab II	1		PHRM 610	Pharmacy Law	1
PHRM 584	Student Pharmacist Enrichment I	0.25		PHRM 586	Student Pharmacist Enrichment III	0.25
					General Elective(s)	2-3
	<u>Year 2 Fall</u>				<u>Year 4 Summer/Fall/Spring</u>	
PHRM 521	Pharmaceutical Calculations	2		PHRM 589	Board Review Course	1
PHRM 527	Drug Information & Lit Evaluation	3		PHRM 630	Advanced Pharmacy Practice Experience: Community Pharmacy	6
PHRM 528	Introductory to Pharmacy Practice Experience: Hospital Pharmacy	1		PHRM 640	Advanced Pharmacy Practice Experience: Hospital Pharmacy	6
PHRM 529	Medication Safety	2		PHRM 650	Advanced Pharmacy Practice Experience: Ambulatory Care	6
PHRM 530	Pharmaceutics & Drug Delivery Systems	3		PHRM 660	Advanced Pharmacy Practice Experience: Direct Inpatient Care	6
PHRM 531	Pharmaceutics Lab	1		PHRM 670	Advanced Pharmacy Practice Experience: Direct Patient Care	6
					Advanced Pharmacy Practice Experience Elective	

PHRM 533	Pharmacy Management: Theory and Applications	3	PHRM 680	Advanced Pharmacy Practice Experience: Elective	6
PHRM 534	Pharmacy Practice III	1	PHRM 587	Student Pharmacist Enrichment IV	0.25
PHRM 549	Pharmacology I	3			
	<u>Year 2 Spring</u>				
PHRM 535	Biopharmaceutics and Principles of Clinical Pharmacokinetics	3			
PHRM 537	Introductory to Pharmacy Practice Experience: Ambulatory Care Clinic	1			
PHRM 538	Pharmacy Practice IV	1			
PHRM 542	Pharmacy Practice Lab I	1			
PHRM 554	Clinical Diagnosis /Pharmacotherapy I: Introductory Pharmacotherapy Principles / Endocrine Module	2			
PHRM 555	Clinical Diagnosis /Pharmacotherapy II: Renal / Gastrointestinal Module	2			
PHRM 556	Pharmacology II	3			
PHRM 585	Student Pharmacist Enrichment II Elective(s)	0.25 2-3			

Pharmaceutical Sciences

Master of Science (MS)

Program Director
Campus
Website

Alok Bhushan, PhD
Center City
<https://www.jefferson.edu/university/pharmacy>

Program Description

The MS program in Pharmaceutical Sciences is housed in the Jefferson College of Pharmacy (JCP) and offered in collaboration with Jefferson College of Life Sciences. The program may be completed on either a full-time or part-time course of study and students enrolling in this 34 credit MS program may select either a thesis or non-thesis track.

The curriculum provides instruction in all phases of the drug and biologic development process, including preclinical drug discovery and development (computational design and synthesis of new molecular entities and molecular characterization), screening and formulation, analytical support for clinical trials, health care pharmacogenomics profiling, metabolite analysis, pharmacokinetic characterization and pharmacodynamics.

Learning Goals/Outcomes

- Graduates will demonstrate expertise in the design and application of research methodologies to meet the needs of the evolving biomedical and pharmaceutical industries and academic laboratories.
- Graduates of this program will be prepared for employment as Research Technicians/Assistants in various laboratories in academic institutions and the pharmaceutical industry.
- Graduates will be prepared to pursue further education and training, including Ph.D degree programs.

Curriculum: 2 years, 34 credits

- Thesis Track

<u>Year 1</u>			<u>Year 2</u>		
PSCI 704	Molecular Pharmaceutical Sciences	3	PHRM 581	Pharmaceutical Biotechnology and Drug Development	2
PHARM 577	Drug Discovery	2		Elective	2
GC 660	Statistical Methods of Data Analysis	3	GC 720	Scientific Writing	2
PSCI 703	Pharmaceutical Sciences Rotation	1	PSCI 799	Pharmaceutical Sciences Research	4
PSCI 705	Biological Pharmaceutical Sciences	3	PSCI 701	Pharmaceutical Sciences Seminar	1
PSCI 702	Research Foundation and Ethics	1		General Elective	2
PSCI 799	Pharmaceutical Sciences Research	3		General Elective	2
PSCI 706	Special Techniques in Pharmaceutical Sciences	2			
	<u>Summer</u>				
PSCI 799	Pharmaceutical Sciences Research	1			

Curriculum: 2 years, 34 credits

- Non-Thesis Track

<u>Year 1</u>			<u>Year 2</u>		
PSCI 704	Molecular Pharmaceutical Sciences	3	PHRM 581	Pharmaceutical Biotechnology and Drug Development	2
PHRM 577	Drug Discovery	2		General Elective	2
GC 660	Statistical Methods of Data Analysis	3	GC 720	Scientific Writing	2
PSCI 703	Pharmaceutical Sciences Rotation	1	PSCI 798	Pharmaceutical Sciences Practicum	4
PSCI 705	Biological Pharmaceutical Sciences	3	PSCI 701	Pharmaceutical Sciences Seminar	1
PSCI 702	Research Foundation and Ethics	1		General Elective	2
PSCI 798	Pharmaceutical Sciences Practicum	3		General Elective	2
PSCI 706	Special Techniques in Pharmaceutical Sciences	2			
PSCI 798	Pharmaceutical Sciences Practicum	1			

Population Health Pharmacy

Master of Science (MS)

Program Director	Emily R. Hajjar, PharmD, MS, BCPS, BCACP, BCGP
Campus	Online
Website	https://www.jefferson.edu/university/pharmacy/ms-in-population-health-pharmacy.html

Program Description

Population Health Pharmacy focuses on the impact of the distribution of health determinants on those receiving medication management services by pharmacists. This also includes the strategies used to improve health outcomes associated with medication use. With the rising health care costs and limited resources, pharmacists play an integral role in population health and there is an increasing demand for pharmacists with this expertise. The Population Health Pharmacy degree is a collaborative effort between the Jefferson College of Pharmacy and the Jefferson College of Population Health designed to give practicing pharmacists expertise in population health pharmacy. By leveraging pharmacy-specific knowledge with population health principles, these graduates will be poised to meet the needs of the current resource-limited, fragmented US health care system.

The MS in Population Health Pharmacy requires completion of 33 credits and includes a capstone presentation following completion of all coursework.

Students can begin the program in the Fall (September) or Spring (January) terms. All courses will be offered online in an asynchronous manner by experienced faculty. Two, 7-week terms will be offered for the Fall, Spring, and Summer semesters. Courses will be offered in a manner that allows students to graduate in as little as 2 years.

Learning Goals/Outcomes

- Assess the impact of the determinants of health on medication use outcomes.
- Evaluate medication use in diverse populations using pharmacy informatics, biostatistical, pharmacoepidemiologic, and pharmaco-economic principles.
- Design and optimize strategies to improve health outcomes associated with medication use.

Curriculum: 33 credits

HPL 500	US Healthcare Organization & Delivery*	3
POP 500	Essentials of Population Health*	3
HQS 500	Intro to HC Quality and Safety	3
HPL 506	Health Policy: Analysis & Development	3
PHP 501	Pharmacoepidemiology*	3
PHP 502	Applied Pharmacoeconomics	3
PHP 503	Evidence-Based Medicine and Care Pathway Development	3
PHP 504	Pharmacy Informatics and Healthcare Data Analytics*	3
PHP 505	Pharmacy Benefit Design*	3
PHP 506	Capstone Seminar	3
PHP 507	Capstone	3

*Required for the Graduate Certificate in Population Health Pharmacy

<h1>Population Health Pharmacy</h1>	
Graduate Certificate	
Program Director	Emily R. Hajjar, PharmD, MS, BCPS, BCACP, BCGP
Campus	Online
Website	https://www.jefferson.edu/university/pharmacy/ms-in-population-health-pharmacy.html

Program Description

The Graduate Certificate in Population Health Pharmacy requires completion of 15 credits, all of which can be applied to the MS in Population Health Pharmacy.

Students can begin the program in the Fall (September) or Spring (January) terms. All courses will be offered online in an asynchronous manner by experienced faculty. Two, 7-week terms will be offered for the Fall, Spring, and Summer semesters. Courses will be offered in a manner that allows students to graduate in as little as 2 years.

Curriculum: 15 credits

- can be applied to the MS in Population Health Pharmacy

HPL 500	US Healthcare Organization & Delivery	3
POP 500	Essentials of Population Health	3
PHP 501	Pharmacoepidemiology*	3
PHP 504	Pharmacy Informatics and Healthcare Data Analytics	3
PHP 505	Pharmacy Benefit Design	3

<h1>Doctor of Pharmacy & Public Health</h1>	
Dual PharmD/MPH	
Program Director	Elena Umland, PharmD and Rosemary (Rosie) Frasso, PhD, MSc, CPH
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/public-health/Pathways/dual-degrees/PharmDMPH.html

Program Description

The PharmD/MPH recognizes the growing synergy between pharmacy services and public health services and reflects the growing interest among professionals to seek advanced graduate training in research methods, leadership, and population health.

PharmD/MPH students may apply to the MPH degree program anytime following their matriculation into the PharmD program during their 4th year or within 3 years of graduation.

Students may complete the degree on a full-time or part-time basis. PharmD/MPH students complete 45 credits of MPH coursework. Of note, 12 credits of this are transferred from the PharmD curriculum. A graduate certificate in public health may be obtained following the completion of 17 MPH course credits. Students work closely with faculty to design and complete an independent research project on a topic of their choice.



**COLLEGE OF
POPULATION HEALTH**

Dean: Willie H. (Billy) Oglesby, PhD, MBA, MSPH, FACHE
215-503-0174 | Jefferson.edu/PopulationHealth

About Us

As the first college of population health established in the United States, we have an unwavering focus on improving population health in the United States and around the world. We prepare leaders with the knowledge and skills necessary to transform the delivery of health services by working within and across these critical stakeholder groups: healthcare providers and delivery systems; health insurance companies and third-party payers; drug and device manufacturers; technology companies; management consulting firms; and community organizations.

We offer graduate programs in all key areas of population health improvement:

- Applied Health Economics and Outcomes Research
- Health Data Science
- Health Policy
- Healthcare Quality and Safety
- Operational Excellence
- Population Health Science
- Population Health
- Public Health

Adopting a population health perspective is more than just understanding clinical operations, insurance policies or health education resources. It is about integrating all of the factors that affect a person's health to inform and improve the healthcare delivery system. Since our founding in 2008, Jefferson College of Population Health's faculty and staff have defined (and refined) what it means to study population health. The College has launched two doctoral programs and seven masters and certificate programs in the discipline; maintained one of the nation's premier Health Economics and Outcomes Research Fellowship programs, and recruited healthcare professionals from across the country to immerse themselves in the study and practice of population health.

Our mission is to help prepare leaders for the dramatic changes occurring in our nation's public health and healthcare systems. These systems are going through a radical transformation and we are excited to be doing our part to prepare the leaders of today—and tomorrow! At JCPH, you will explore the policies and forces that define the health and well-being of populations. Through your studies, you will develop the knowledge and skills necessary to examine the social determinants of health and to evaluate, develop, and implement health policies and systems that will improve the health of populations. The faculty and staff at JCPH are committed to providing guidance and support, not only as you progress through the program, but beyond, as well.

Innovations in Education

Since the debut of the online programs in 2010, Jefferson College of Population Health (JCPH) has drawn upon best practices in online education to enhance learning and expand each student's critical thinking skills. In addition to enjoying the independence and flexibility these programs offer, students expand their professional networks through the College's thriving online communities. They grow as leaders in Population Health.

The engaging, practice-oriented experience of online study at JCPH begins with a comprehensive orientation to our unique model of online instruction, providing a smooth transition into each program's coursework, and connecting students with their faculty and peers.

Throughout a student's course of study, each online classroom's learning community centers its activities around weekly discussions. Course lessons, the framework for these conversations, are developed and curated in a proprietary content management system, GRAVITAS. Through GRAVITAS instructors and their support teams work together designing timely, state-of-the-art online courses. GRAVITAS accelerates the delivery of content from expert to student through built-in course templates, lesson design guidelines, and proven methods for delivery of professional education online.

JCPH also offers diverse learning opportunities for professionals to enhance their skills and update their awareness of the issues and challenges inherent in today's evolving health care environment:

- Jefferson College of Population Health Forum
- Population Health Academy Workforce Development Programs
- Population Health Colloquium
- Dr. Raymond C. Grandon Lecture
- Innovation in Personalized Medicine and Population Health Speaker Series
- PopTalk Webinar Series
- COVID-19: Spread the Science, NOT the Virus Webinar Series
- Continuing Pharmacy Education
- Quality Improvement & Patient Safety Leadership Development Program (QIPS)

Accreditation

Council on Education for Public Health (CEPH)
Public Health (MPH)

www.ceph.org

Commission on Accreditation of Healthcare Management
Education (CAHME) Healthcare Quality & Safety (HQS)

<https://cahme.org>

Academic Programs

Graduate Degree

Applied Health Economics & Outcomes Research	Online	MS
Health Data Science	Online	MS
Health Policy	Online	MS
Healthcare Quality & Safety	Online	MS
Operational Excellence	Online	MS
Population Health	Online	MS
Population Health Science	Hybrid	PhD
Population Health	Hybrid	DHSc
Public Health	Center City	MPH

Graduate Certificates

Applied Health Economics & Outcomes Research	Online	Graduate Certificate
Health Data Science	Online	Graduate Certificate
Health Policy	Online	Graduate Certificate
Health Quality & Safety	Online	Graduate Certificate
Operational Excellence	Online	Graduate Certificate
Population Health	Online	Graduate Certificate
Public Health	Center City	Graduate Certificate

Advanced Practice Certificates

Healthcare Quality & Safety	Online	Advanced Practice Certificate
Healthcare Quality & Safety Education	Online	Advanced Practice Certificate
Health Systems Science	Online	Advanced Practice Certificate
Health Systems Science Education	Online	Advanced Practice Certificate
Operational Excellence	Online	Advanced Practice Certificate
Operational Excellence Education	Online	Advanced Practice Certificate
Population Health	Online	Advanced Practice Certificate
Population Health Education	Online	Advanced Practice Certificate
<u>Dual Degrees</u>	Online	Advanced Practice Certificate

Emergency & Disaster Medicine & Public Health *Center City- on campus *East Falls- on campus or online	Center City & East Falls	MS/MPH
Medicine (SKMC) & Public Health (MPH)	On Campus	MD/MPH (See SKMC)
Social Work (MSS) & Public Health (MPH)	On Campus	MSS/MPH
Pharmacy (PharmD) & Public Health (MPH)	On Campus	PharmD/MPH
Law (JD) & Public Health (MPH)	On Campus	JD/MPH

Applied Health Economics & Outcomes Research

Graduate Certificate & Master of Science (MS)

Program Director	Vittorio Maio, PharmD, MSPH
Campus	Online
Website	https://www.jefferson.edu/university/population-health/degrees-programs/applied-health-economics.html

Program Description

Applied Health Economics & Outcomes Research (AHEOR)

- is an academic discipline that establishes the efficacy of a product, service, or treatment
- compares its effectiveness to other interventions
- considers its incremental cost efficiency to determine optimal clinical application and overall economic value.

Graduate Certificate

The Graduate Certificate focuses on the foundations of AHEOR. This option contains five online courses and can be completed in one year.

Master's Degree

The Masters of Science (MS) builds upon the foundation concepts presented in the Graduate Certificate and focuses on the advanced application of concepts necessary for the modern practice of AHEOR in research and industry settings. This option contains ten online courses and a capstone project, which is specifically designed to enhance the student's career trajectory. This option can be completed in two years.

Two track options allow students to focus their studies in AHEOR:

Industry Track- The industry track will prepare students to manage HEOR research in the industry (e.g., Pharma, Insurance, Payers). It will provide students with information on up-to-date HEOR tools, competencies in HEOR analysis and interpretation, as well as applicability and meaningfulness of HEOR evidence. The target audience will include individuals who wish to start a career in the healthcare industry, individuals in industry who want to expand/advance/re-tool their career, individuals in payer/insurance environment who want to learn how HEOR fits in their sector, and individuals in pharmacy space who want to expand/advance/re-tool their career.

Research Track- The research track will prepare students to conduct HEOR research. It will provide students with strong analytical and statistical competencies. The targeted audience will include individuals with a BS who want to perform HEOR research in industry/consulting firm/insurance, and individuals interested in pursuing a PhD program but still undecided.

Program Outcomes

The AHEOR program prepares graduates to be successful in the ever-changing healthcare environment driven by data and analytics by preparing them to:

Graduate Certificate

- Compare historical trends to current issues in U.S. healthcare organization, delivery and financing.
- Explore the impact of government policies on health insurance products.
- Examine the strengths and weaknesses of research design and statistical methods in evaluating product or service efficacy.
- Discuss the key concepts and applications of quantitative modeling in economic evaluations in health care.

Master's Degree (above plus)

Apply analytic methods (e.g., burden of illness, evidence evaluation, statistics and research design, financial impact, cost-effectiveness, and decision analysis) to inform resource allocation, relative value assessments, and policy initiatives.

- Interpret and apply conceptual frameworks used in HEOR, such as economic metrics (e.g., cost-effectiveness), quality of life evaluations (e.g., utilities and patient-reported outcomes) and healthcare technology assessment evaluations from an international perspective (e.g., budget impact analysis, guidelines, formularies, and utilization incentives and disincentives).
- Communicate policy implications to various stakeholders and decision-makers that reflect AHEOR concepts and techniques.
- Conduct and manage HEOR projects in real-world healthcare settings
- Assume leadership roles in the decision process regarding the allocation of healthcare resources.

Curriculum: 1 year

<u>Graduate Certificate</u>		
AHE 501	Economics of Health Insurance	3
AHE 502	Statistics I	3
AHE 504	Economic Modeling I	3
AHE 506	Subjective Outcomes in Health Evaluation	3
AHE 509	Epidemiology for Outcomes Research	3

Curriculum: 2 years

Industry Track

<u>Master of Science</u>		
Graduate Certificate courses plus:		
AHE 505	Statistics II	3
AHE 510	Advanced Research Methods for Applied Observational Studies	3
AHE 512	Economics Modeling II	3
AHE 507	Claims-Based AHEOR	3
AHE 508	International Health Technology Assessment Evaluation & Evidence Generation/Synthesis	3
AHE 652	Strategic Capstone Portfolio & Presentation	3

Research Track

<u>Master of Science</u>		
Graduate Certificate courses plus:		
AHE 505	Statistics II	3
AHE 510	Advanced Research Methods for Applied Observational Studies	3
AHE 512	Economics Modeling II	3
HDS 500	Fundamentals of Data Wrangling	3
HDS 502	Advanced Data Analytics	3
AHE 651	Capstone Research Project	3

Health Data Science

Graduate Certificate &
Master of Science (MS)

Program Director	Karen Walsh, DHSc, MS, MBA
Campus	Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/health-data-science.html

Program Description

Health Data Science (previously known as Population Health Intelligence) is an ever-evolving multi-disciplinary field that involves using statistical inference, algorithmic development, and technology to make insights about data.

To uncover actionable insights, skilled healthcare data scientists are needed to:

- Combine large disparate data sources
- Build statistical and predictive models
- Create effective data visualizations
- Communicate findings to technical and non-technical audiences

Graduate Certificate

The Graduate Certificate focuses on the foundations of HDS. This option contains five online courses and can be completed in one year.

Master's Degree

The Master's of Science (MS) builds upon the foundation concepts presented in the Graduate Certificate and focuses on the advanced application of HDS concepts necessary for the applied practice of health data science in industry and research settings. This option contains 10 online courses and a capstone project, which is specifically designed to enhance the student's career trajectory. This option can be completed in two years.

Two track options allow students to focus their studies in HDS:

Management Track- The Management Track will prepare students to manage HDS projects and research in the industry. It will provide students with competencies in HDS data, statistics, predictive analytics, and the ability to interpret the results and gain insights on data. It will expose students to the current software in HDS. The target audience will include individuals who wish to start a career in the healthcare industry and individuals in healthcare who want to expand or advance their career.

Research Track- The Research Track will prepare students to conduct HDS research. It will provide students with the strong data wrangling, statistical, and predictive analytics competencies to work on HDS projects. The targeted audience will include individuals who want to perform HDS research in industry.

Program Outcomes

The HDS program prepares graduates to be successful in the ever-changing healthcare environment that is driven by data and analytics by preparing them to:

Graduate Certificate

- Explores the vital roles of data, information, and information systems in the implementation and evaluation of healthcare and value-based care initiatives
- Provides a comprehensive overview of data science, the practice of obtaining, modeling and interpreting data
- Adopt data visualization techniques that contribute to effective presentations and dashboards
- Provides a foundation for population health beginning with a working definition, incorporating public health science and policy.

Master's Degree (above plus)

All Tracks

- Evaluate and apply multivariate statistical methodologies for various study designs of efficiency and effectiveness in healthcare

Management Track

- Apply management and leadership skills to data-driven decision-making and learn to communicate with technical and non-technical audiences
- Manage HDS projects in real-world healthcare settings
- Addresses implementation science and presents a multidisciplinary framework and methodology to promote the integration of scientific evidence into healthcare practice, policy and research

Research Track

- Learn key programming techniques for data wrangling, statistical modeling and predictive analytics
- Learn advanced data science methods including supervised and unsupervised learning algorithms
- Conduct HDS research in real-world healthcare settings

Curriculum: 1 year

<u>Graduate Certificate</u>		
AHE 501 or POP 500	Economics of Health Insurance or Essentials of Population Health	3
AHE 502	Statistics I	3
HDS 501	Health Information & Analytics	3
HDS 518	Data Science I	3
HDS 532	Data Visualization	3

Curriculum: 2 years

Management Track

<u>Master of Science</u>		
Graduate Certificate courses plus:		
AHE 505	Statistics II	3
AHE 509	Epidemiology & Evidenced for Outcomes Research	3
HDS 538	Implementation Science	3
HDS 527	Analytics Leadership	3
	Elective *(approval from PD)	3
HDS 652	Strategic Capstone Portfolio & Presentation	3

Research Track

<u>Master of Science</u>		
Graduate Certificate courses plus:		
AHE 505	Statistics II	3
HDS 500	Fundamentals of Data Wrangling	3
HDS 502	Advanced Data Analytics	3
HDS 519	Data Science II	3
	Elective -approval from PD	3
HDS 651	Capstone Research Project	3

Both tracks culminate in a Capstone Project, which incorporates knowledge and skills gained through the Master's Program education. The Capstone should advance knowledge which can be applied to the student's discipline and/or organization.

Health Policy

Graduate Certificate
Master of Science (MS)

Interim Program
Director
Campus
Website

Billy Oglesby, PhD, MBA, MSPH, FACHE
Online
<https://www.jefferson.edu/university/population-health/degrees-programs/health-policy.html>

Program Description

Health Policy explores the advancement and implementation of health law, regulations, or voluntary practices that influence systems development, organizational change, and individual behavior to promote improvements in health.

Our Health Policy program has two degree options and the master's degree has three tracks. All coursework is 100% online and uses an accelerated semester format specifically designed for working professionals. This enables students to focus on building one set of skills at a time, but still graduate at the same pace as traditional graduate degree programs.

Graduate Certificate

The Graduate Certificate focuses on the foundations of policy-driven solutions to population health improvement. This option contains five online courses, and can be completed in one year.

Master's Degree

The Master of Science (MS) degree builds upon the foundational concepts presented in the Graduate Certificate, and prepares graduates to be health policy leaders who possess advanced analytic and advocacy skills for problem identification and actionable policy solutions and implementation.

Our program offers options for students to focus on health policy principles in the U.S. or in different environments around the world.

U.S. Health Policy Track-Students planning to practice in the United States will learn the unique landscape of health policy decision-making in the U.S., and be able to develop, analyze, and advocate for comprehensive policy solutions that can address population health problems.

Global Health Policy Track-Students wishing to practice outside the United States will learn how health and healthcare services are organized, financed, and delivered in other countries, and will develop advanced analytical skills needed to drive policy-oriented solutions to population health problems around the world.

MD/MD/MS in Health Policy with Concentration in International Health & Medicine (Cattolica/SKMC program)

This program is for students in the Cattolica MD program completing the SKMC MD and the MS in Health Policy, concentrating in International Health & Medicine. There is a pathway to complete the MS if a student completes only the Cattolica MD, and an option to earn an APC for those who do not complete either MD

Program Outcomes

Graduates of our Health Policy program are able to:

Graduate Certificate

- Identify the inter-relationship among key stakeholders in U.S. health and health care, including health care delivery systems, public health, financing systems, advocacy organizations, and the political system, with a focus on policy-making bodies.
- Examine the influence of social, economic, behavioral and political factors on health outcomes.
- Explore the general theoretical principles of economics and their application in the healthcare sector.
- Understand the legal, legislative, and regulatory processes that influence health policy development, implementation, and financing.
- Understand the role of information systems and data analysis in the policy-making process.

Master's Degree (above plus)

- Design, conduct, and evaluate health policy briefs, statements, analyses, and research.
- Apply data driven analytical skills to identify problems, model solutions, and predict outcomes.
- Develop system-wide approaches that consider market forces and multiple stakeholder positions in the development of actionable policy solutions.
- Develop competencies in multi-sector collaboration.
- Explore approaches to developing and financing policies to address the social determinants of health.
- Select and integrate information systems and technology to support decision-making and workflow within and across settings and sectors.
- Learn effective approaches to communication and dissemination of information and data.
- Apply advanced management and leadership skills to develop policies that manage costs of health care and that improve access, quality and safety.

Curriculum: 1 year

<u>Graduate Certificate</u>		
HPL 500	U.S. Healthcare Org & Delivery	3
POP 500	Essentials of Population Health	3
HPL 504	Health Law and Regulatory Issues	3
HPL 505	Legislative, Executive, and Regulatory Processes	3
HPL 506	Health Policy Analysis and Development	3

Curriculum: 2 years

U.S Health Policy Track

<u>Master of Science</u>		
Graduate Certificate courses plus:		
HPL 550	Comparative Health Systems	3
HPL 511	Policy Approaches to Addressing Social Determinants of Health	3
HPL 512	Medicare and Medicaid	3
HPL 513	Effective Communication and Dissemination of Data	3
HPL 520	Fundamentals of Practice-based Statistics	3
HPL 650	Capstone	3
	Elective -Program Director approval needed	3

Global Health Policy Track

<u>Master of Science</u>		
Graduate Certificate courses plus:		
HPL 513	Effective Communication and Dissemination of Data	3
HPL 515	Refugee and Migrant Health	3
HPL 516	Delivering Health Services in Resource-Limited Countries	3
HPL 520	Fundamentals of Practice-based Statistics	3
HPL 650	Capstone	3
	Global Health Elective -Program Director approval needed)	3

Healthcare Quality & Safety

Graduate Certificate

Master of Science (MS)

Advanced Practice Certificates (APC)

Contact	Mary Reich Cooper, MD, JD
Campus	Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/healthcare-quality-safety.html

Program Description

Healthcare Quality and Safety (HQS) is the study and prevention of adverse events, suboptimal care, ineffective treatments, inefficient processes and unnecessary clinical variation in health systems.

Graduate Certificate

The Graduate Certificate focuses on the foundations of HQS. This option contains five online courses and can be completed in one year.

Master's Degree

The Master of Science (MS) builds upon the foundation concepts presented in the Graduate Certificate and focuses on the advanced application of HQS concepts necessary for the analysis, management, and improvement of HQS and the systems that deliver healthcare services. This option contains 10 online courses and a capstone project, which is specifically designed to enhance the student's career trajectory. This option can be completed in two years.

Science Track - Students wishing to practice within the United States will learn how to apply HQS concepts to the organization, delivery and financing of healthcare services specific to the unique aspects of the U.S. healthcare system.

International Track- Students wishing to practice outside the U.S. will learn to apply HQS concepts to other healthcare environments, such as socialized and nationalized healthcare models and resource constrained healthcare systems with diverse regulatory requirements.

Management Track-Students with an MBA, MHA, or qualifying education from the our program partners will combine their prior management training with HQS program concepts to lead quality improvement and patient safety in large, complex organizations

Advanced Practice Certificate

The Advanced Practice Certificates focus on building knowledge and skills in healthcare quality and safety or health system science. The primary audiences include: health professions students, medical residents and fellows, clinical faculty, and healthcare professionals interested in moving into administrative roles. Students have the choice of earning the APC in:

- Healthcare Quality & Safety
- Healthcare Quality & Safety Education
- Health Systems Science
- Health Systems Science Education

Program Outcomes

The HQS program prepares graduates to lead the transition of healthcare delivery towards high-value care by preparing them to:

Graduate Certificate

- Apply management and leadership skills to develop policies related to measurement and improvement of HQS
- Integrate change management theory into project management program design to improve healthcare quality and patient safety
- Distinguish the various factors that influence risk in health care and discuss the legal principles and regulatory mechanisms that relate to it
- Apply the foundational concepts of quality and safety measurement, improvement and analysis within the framework of collaborative team dynamics and change management

Master's Degree (above plus)

- Produce evidence to support healthcare policy development and change
- Integrate quality, safety, and transformation/change management tools to promote patient safety
- Design and implement performance improvement strategies at a system level
- Assimilate interprofessional collaboration into an organizational strategic plan for compliance with internal and external influences on quality and safety
- Evaluate effectiveness of various performance improvement interventions and outcomes
- Develop systematic approaches to drive broad-impacting improvements in clinical outcomes across the healthcare continuum

Curriculum: 1 year

<u>Graduate Certificate</u>		
HPL 500	U.S. Healthcare Org & Delivery	3
HQS 500	Intro to Healthcare Quality & Safety	3
HQS 509	Applied Principles of Healthcare Quality	3
HQS 515	Applied Principles of Patient Safety	3
	General Elective	3

<u>Graduate Certificate International Track</u>		
HPL 550	Comparative Health Systems	3
HQS 502	Introduction to International Healthcare Quality & Safety	3
HQS 509	Applied Principles of Healthcare Quality	3
HQS 515	Applied Principles of Patient Safety	3
	Elective -Program Director approval needed	3

Curriculum: 2 years

<u>Master of Science</u>		
Graduate Certificate courses plus:		
OPX 520	Change Management	3
HPL 520	Fundamentals of Practice-Based Statistics	3
HQS 512	Business Case for Quality	3
HQS 505	Advanced Tools & Methods HQS	3
HQS 507	Advanced Applications of HQS in Clinical Settings	3
HQS 650	Capstone	3

- Students enrolled in the international track of Healthcare Quality and Safety, and ISQua Fellows, will take HPL 550: Comparative Health Systems in place of HPL 500
- Waived for ISQua Fellows.
- Waived for members of the National Association for Healthcare Quality (NAHQ) who hold the Certified Professional in Healthcare Quality (CPHQ) credential.

- Waived for members of the Society of Hospital Medicine (SHM) who have completed qualifying courses in the SHM Leadership Academy.
- Members of the American Association for Physician Leadership (AAPL) who have completed the master's pre-requisites, or graduates of an accredited MBA/MHA program apply to the Master of Science in Healthcare Quality and Safety Management program and are able to waive HPL 500 & the elective. Please contact Program Director Dr. Mary Reich Cooper for more information. Not applicable to Certificate.
- **The capstone project is designed by the student and is tailored to his/her career trajectory.

Curriculum: 9 credits

Healthcare Quality & Safety

<u>Advanced Practice Certificate</u>		
HQS 500	Introduction to Healthcare Quality & Safety	3
HQS 509	Applied Principles of Healthcare Quality	3
HQS 515	Applied Principles of Patient Safety	3

Healthcare Quality & Safety Education

<u>Advanced Practice Certificate</u>		
HQS 509	Applied Principles of Healthcare Quality	3
HQS 515	Applied Principles of Patient Safety	3
HQS 516	Teaching Quality & Safety	3

Health Systems Science

<u>Advanced Practice Certificate</u>		
HPL 500	U.S. Healthcare Organization & Delivery	3
HQS 500	Introduction to Healthcare Quality & Safety	3
	General Elective	3

Health Systems Science Education

<u>Advanced Practice Certificate</u>		
HQS 500	Introduction to Healthcare Quality & Safety	3
HQS 517	Teaching Health Systems Science	3
	General Elective	3

Operational Excellence

Graduate Certificate
Master of Science (MS)
Advanced Practice Certificate

Program Director	Mary Reich Cooper, MD, JD
Campus	Online
Website	https://www.jefferson.edu/university/population-health/degrees-programs/operational-excellence.html

Program Description

Operational Excellence (OpX) is the academic and professional field focused on developing and implementing evidence-based performance improvement methodologies needed to promote value and efficiency in healthcare. OpX professionals lead healthcare transformation by focusing on eliminating waste and improving system performance.

Graduate Certificate

The Graduate Certificate focuses on the foundations of OpX. This option contains five online courses and can be completed in one year.

Master's Degree

The Masters of Science (MS) builds upon the foundational concepts presented in the Graduate Certificate and focuses on the advanced application of OpX concepts necessary for the analysis, management, and improvement of processes and the systems that deliver healthcare. This option contains 10 online courses and a capstone project, which is specifically designed to enhance the student's career trajectory. This option can be completed in two years.

Advanced Practice Certificate (APC)

The Advanced Practice Certificates focus on building knowledge and skills in operational excellence. The primary audiences include: health professions students, medical residents and fellows, clinical faculty, and healthcare professionals interested in moving into administrative roles. Students have the choice of earning the APC in:

- Operational Excellence
- Operational Excellence Education

Program Outcomes

The OpX program prepares leaders to be effective agents of change within their organizations by equipping them with the knowledge and skills to facilitate and lead system and process-level improvements. Graduates will be able to:

Graduate Certificate

- Apply the foundational concepts of quality and safety measurement, improvement, and analysis
- Utilize project management tools and framework to design and implement improvement projects
- Distinguish the various evaluation methods used to externally and internally assess a healthcare organization's performance
- Identify and evaluate appropriate healthcare situations to utilize operational excellence tools

Master's Degree (above plus)

- Evaluate the effectiveness of various performance improvement evaluation approaches as well as improvement interventions
- Integrate quality, safety, and transformation/change management tools to promote quality, safety, and process efficiency
- Design and implement operational excellence tools and strategies at a system level
- Develop systematic approaches to drive broad-impacting improvements across a healthcare organization

Curriculum: 1 year

<u>Graduate Certificate</u>		
HPL 500	U.S. Healthcare Organization & Delivery	3
HQS 500	Introduction to Healthcare Quality & Safety	3
OPX 520	Change Management	3
OPX 532	Project Management Essentials	3
OPX 525	Executing Lean Improvements	3

Curriculum: 2 years

<u>Master of Science</u>		
Graduate Certificate courses plus:		
HQS 512	Business Case for Quality	3
HPL 520	Fundamentals of Practice-Based Statistics	3
OPX 535	Strategic Execution	3
OPX 531	Evaluating Healthcare Organizations	3
	Elective - Program Director approval	3
OPX 650	Capstone	3

Curriculum: 1 year

Operational Excellence

<u>Advanced Practice Certificate</u>		
HQS 500	Introduction to Healthcare Quality & Safety	3
OPX 520	Change Management	3
OPX 532	Project Management Essentials	3

Operational Excellence Education

<u>Advanced Practice Certificate</u>		
OPX 520	Change Management	3
OPX 532	Project Management Essentials	3
OPX 516	Teaching Operational Excellence	3

Population Health

Graduate Certificate
Advanced Practice Certificate
Master of Science (MS)

Program Director	Mitchell Kaminski, MD, MBA
Campus	Online
Website	https://www.jefferson.edu/university/population-health/degrees-programs/population-health.html

Program Description

Population Health (PopH) is an academic and professional field that draws upon diverse disciplines to create a new paradigm for health improvement that engages all key stakeholders that impact the delivery of health services. Health systems in the U.S. and around the world are shifting from volume to value.

Graduate Certificate

The Graduate Certificate focuses on the foundations of population health. This option contains five online courses and can be completed in one year. Three certificate tracks are offered which are designed to align with the MS degree tracks described below.

Master's Degree

The Master of Science (MS) degree builds upon the foundational concepts presented in the Graduate Certificate and focuses on the advanced applications of population health science and management. This option contains 10 online courses and a capstone project, which is specifically designed to enhance the student's career trajectory. This option can be completed in two years.

The three track options allow students to focus their studies on the science of population health improvement or the population health management strategies used in healthcare.

Science Track- This track provides critical knowledge and skills to effectively address population health issues across a spectrum of populations. It is a broad education applicable to administrative leadership positions in healthcare delivery organizations, health insurance companies, government, public health agencies, and health-related non-profit organizations. It is also ideal for general education of professionals new to or considering population health endeavors.

Management Track- This track is designed for professionals in healthcare and provides a deeper focus on the clinical application of population health principles both for strategy and management.

Employer Track- This track is designed for professionals in business and healthcare and provides a deeper focus on the application of population health principles for employee populations within organizations. All tracks teach skills to lead value-based population health-focused enterprise-level change across a variety of healthcare organizations and systems.

Advanced Practice Certificate (APC)

The Advanced Practice Certificates focus on building knowledge and skills in population health. The primary audiences include: health professions students, medical residents and fellows, clinical faculty, and healthcare professionals interested in moving into administrative roles. Students have the choice of earning the APC in:

- Population Health
- Population Health Education

Program Outcomes

Graduates of the Graduate Certificate in Population Health are able to:

- Articulate U.S. Healthcare organization and delivery, and how it impacts strategy and operations for achieving value-based care.
- Define population health, and describe how public health resources can align to address social determinants of health in order to improve health care outcomes.
- Incorporate principles of healthcare quality and safety to improve the care of patients and populations.
- Apply principals of economics, risk, and finance to the development and implementation of health care strategies.
- Describe how policy, medicolegal, and regulatory factors inform and impact health care systems. (Science track)
- Organize and implement clinical programs while understanding the role of analytics and principles of implementation science. (Management track)

Graduates of the Master of Science in Population Health Program are able to achieve the above competencies plus:

All Tracks:

- Apply quantitative and qualitative analytic skills to develop, implement, and evaluate programs that address population health issues at the institutional, community, regional, and national levels.
- Apply principles of change management to more successfully influence healthcare programs and outcomes.

Science Track

- Assess and interpret healthcare policies, legal precedents, statutes, and regulations.
- Analyze the impact of socio-cultural factors on access to health care and adjust health promotions and interventions accordingly.
- Apply social, behavioral and organizational science to the diagnosis, development and implementation of organizational change
- Participate in structured simulations that demonstrate the breadth of population health

Management Track

- Discuss and design clinical programs and initiatives which demonstrate understanding of social, clinical, and financial factors impacting population health.
- Apply leadership strategies for effective change to clinical operations.

Population Health for Employers Track

- Strategize and execute to maximize workforce health and wellness
- Understand the application of data science to maximize population health program benefits
- Focus on wellness, prevention, and chronic disease management for the workforce
- Prepare for the future by studying new models and how they can benefit employee health care

All three tracks culminate in a capstone project which incorporates knowledge and skills gained through the Master's Program education. The Capstone should advance knowledge which can be applied to the student's discipline and/or organization.

Curriculum: 1 year

Population Health Science

<u>Graduate Certificate</u>		
HPL 500	U.S. Healthcare Org & Delivery	3
POP 500	Essentials of Population Health	3
HQS 500	Intro to Healthcare Quality & Safety	3
HPL 504	Health Law & Regulatory Issue	3
POP 510	Health Economics, Risk, & Finance	3

Population Health Management

<u>Graduate Certificate</u>		
POP 500	Essentials of Population Health	3
POP 510	Health Economics, Risk, & Finance	3
HQS 509	Applied Principles of Healthcare Quality	3
HDS 501	Health Informatics & Analytics	3
HDS 538	Implementation Science	3

Population Health for Employers

<u>Graduate Certificate</u>		
HPL 500	U.S. Healthcare Org & Delivery	3
POP 500	Essentials of Population Health	3
POP 510	Health Economics, Risk, & Finance	3
HQS 500	Intro to Healthcare Quality & Safety	3
POP 541	Population Health for Employers	3

Curriculum: 2 years

Population Health Science

<u>Master of Science</u>		
HPL 500	U.S. Healthcare Organization & Delivery	3
POP 500	Essentials of Population Health	3
HQS 500	Introduction to Healthcare Quality & Safety	3
POP 510	Health Economics, Risk, & Finance	3
HPL 504	Health Law & Regulatory Issues	3
HDS 501	Health Informatics & Analytics	3
AHE 509	Epidemiology & Evidence for Outcomes Research	3
HPL 506	Health Policy: Analysis & Development	3
OPX 520	Change Management	3
	Elective (Program Director approval needed)	3
POP 650	Capstone	3

Population Health Management

<u>Master of Science</u>		
POP 500	Essentials of Population Health	3
POP 510	Health Economics, Risk, & Finance	3
HDS 501	Health Informatics & Analytics	3
OPX 520	Change Management	3
HQS 509	Applied Principles of Healthcare Quality	3
HDS 538	Implementation Science	3
POP 560	Population Health Strategy & Management I	3
POP 561	Population Health Strategy & Management II	3
OPX 530	Applied Leadership Strategies for Effective Change	3
	Elective - Program Director approval needed	3
POP 650	Capstone	3

Population for Employers

<u>Master of Science</u>		
HPL 500	US Healthcare Organization & Delivery	3
POP 500	Essentials of Population Health	3
POP 510	Health Economics, Risk, & Finance	3
HQS 500	Introduction to Healthcare Quality & Safety	3
POP 541	Population Health for Employers	3
POP 542	Population Health Analytics for Employers	3
POP 543	Wellness, Prevention, & Chronic Disease Management for Employees	3
POP 544	New Models and Employee Health Care	3
POP 545	Health Law & Regulatory Issues for Employers	3
	Elective - Program Director approval needed	3
POP 650	Capstone	3

Curriculum: 9 credits

Population Health

<u>Advanced Practice Certificate</u>		
HPL 500	U.S. Healthcare Organization & Delivery	3
POP 500	Essentials of Population Health	3
POP 510	Health Economics, Risk, & Finance	3

Population Health Education

<u>Advanced Practice Certificate</u>		
POP 500	Essentials of Population Health	3
POP 510	Health Economics, Risk, & Finance	3
POP 516	Teaching Population Health	3

Public Health

Graduate Certificate & Master of Public Health (MPH)

Contact	Rosemary (Rosie) Frasso, PhD, MSc, CPH
Campus	Center City
Website	https://www.jefferson.edu/university/population-health/degrees-programs/public-health.html

Program Description

Public Health is an interdisciplinary field of study and practice with three primary goals:

- address pressing and emerging threats to health and well-being;
- prevent illness, disease and injury; and
- promote and protect human health.

In achieving these goals, public health emphasizes social justice, supports human rights and respects the dignity of individuals and the integrity of communities.

Graduate Certificate

Students earning the Graduate Certificate in Public Health (18 credits) will identify 3 core courses and 3 additional courses in consultation with the Program Director. The three additional courses may be core or elective courses, assuming pre-requisites have been met.

Master of Public Health

The Master of Public Health is a 45-credit degree. The MPH degree requires the completion of 27 credits of core courses (including a non-crediting bearing clerkship) and 18 credits of concentration and elective courses.

Classes are held onsite at Thomas Jefferson University's Center City Philadelphia campus. They are offered during the day and after 5 pm, accommodating working adults.

Concentration Options:

The MPH program offers four engaging concentration options. Each concentration offers elective courses that address specific competencies. Students are encouraged to complete their Clerkship-Applied Practice Experience and Capstone-Integrated Learning Experience on topics related to their concentration. Students in each concentration take 6 elective courses.

Public Health Analytics- Focuses on bolstering students' epidemiological and statistical expertise through advanced coursework giving students the ability to collect, analyze, interpret and visualize data.

Public Health Policy & Advocacy- Gives students the skillset to promote public health policy at the local, state, federal and international levels.

Healthcare Quality & Safety- Focuses on integrating public health knowledge and skills in the clinical space. This concentration is particularly of interest to students currently in or intending to enter the medical field.

Public Health Practice (Generalist) - Gives students the most freedom to choose electives that appeal to them. Academic advisors will support students in determining which electives support their career goals.

Curriculum: 27 credits

- Core Courses All Concentrations

PBH 501	Foundations of Public Health	3
PBH 500	Foundations of US Healthcare System	3
PBH 502	Society, Behavior & the Environment	3
PBH 504 or PBH 505	Fundamentals of Health Statistics or Fundamentals of Statistics for Research	3
PBH 506	Fundamentals of Epidemiology	3
PBH 509	Foundations of Policy & Advocacy	3
PBH 510	Health Research Methods	3
PBH 520	Program Planning, Implementation & Evaluation	3
PBH 651	Clerkship-Applied Practice Experience (C-APE)	0
PBH 611/612 or 613/614	Capstone-Integrative Learning Experience (C-ILE)	3

Concentrations, 18 credits

Public Health Analytics

PBH 512	Qualitative Research Methods	3
PBH 605	Advanced Statistics	3
PBH 606	Advanced Epidemiology	3
PBH 609	GIS Mapping	3
	Electives (two)	6

Public Health Practice (Generalist)

Electives (six)	18
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Healthcare Quality & Safety

HQS 500	Intro to Healthcare Quality & Safety	3
HQS 509	Applied Principles of Healthcare Quality	3
HQS 515	Applied Principles of Patient Safety	3
OPX 532	Project Management Essentials	3
	Electives (two)	6

Public Health Policy & Advocacy

PBH 507	Fundamentals of Environmental Health	3
PBH 513	Public Health Law & Ethics	3
PBH 518	Applied Policy & Advocacy	3
AHE 501	Economics of Health Insurance	3
	General Electives	6

Public Health Advanced Standing Pathway

The Advanced Standing pathway is designed to increase the number of healthcare professionals who have advanced training in public health, with the goal of promoting wellness, assuring quality and addressing the social determinants of health in the healthcare setting and in the community.

The Advanced Standing pathway complements the College's existing efforts to train healthcare practitioners to be more effective and to contribute to population and community health. This program provides medical school graduates with an opportunity to pursue a Master of Public Health (MPH) degree. Physicians with an MPH degree are prepared to make a difference at the patient's side and in the community. The program provides training in leadership, epidemiology, biostatistics, research, health behavior, healthcare delivery, healthcare quality and

safety, policy, advocacy, wellness and prevention. Physicians with an MPH degree assume leadership positions in the healthcare setting, in state and local public health departments, non-governmental health organizations, and in the global context.

Advanced Standing students complete 33 credits (11 courses) of MPH coursework. Jefferson supports Advanced Standing students by providing a host of structured activities to augment classroom learning. These activities focus on the intersection of public health and health care, and include a lecture series and an enhanced field experience. Additionally, students work closely with faculty to design and complete an independent research project on a topic of their choice.

Curriculum: 33 credits

PBH 500	Foundations of US Healthcare System	3
PBH 502	Society, Behavior & the Environment	3
PBH 504	Fundamentals of Statistics for Research	3
PBH 506 or PBH 606	Fundamentals of Epidemiology Advanced Epidemiology	3
PBH 509	Foundations of Policy & Advocacy	3
PBH 510	Health Research Methods	3
PBH 660	Clinical Public Health	0
PBH 651	Clerkship-Applied Practice Experience (C-APE)	0
PBH 613 and PBH 614	Capstone-Integrative Learning Experience (C-ILE)	3
	General Electives	12

Public Health Bridge Programs

The bridge pathway is for undergraduate students at our partner institutions who will to start taking MPH classes while earning their bachelor's degree.

Curriculum: 45 credits

Students on the Bridge Pathway are required to:

- Provide their undergraduate transcript to Jefferson upon graduation
- Maintain active status in the MPH program
- Maintain a GPA of 3.0 or higher
- Complete the 120-hour applied practice field experience (Clerkship)
- Complete an independent Capstone Project of publishable quality

Population Health Science

Doctor of Philosophy (PhD)

Program Director
Campus
Website

Richard W. Hass, PhD
Hybrid: Center City/Online
<https://www.jefferson.edu/university/population-health/degrees-programs/doctorate-degree.html>

Program Description

Our PhD in Population Health Science prepares leaders to analyze the determinants of health and to develop, implement, and evaluate health interventions, and health policies and systems that improve the health and quality of life of populations.

Program Specializations

Classes are a mix of onsite courses, held at Thomas Jefferson University's Center City campus, and online classes. Onsite courses are offered during the day and evening, accommodating working adults. Online courses are offered asynchronously using best practices and interactive learning, and are taught by faculty with years of experience and recognized expertise.

The PhD in Population Health Science requires completion of a minimum of 62 credits, including competency examination and dissertation. Students specialize in one of five areas:

- Applied Health Economics & Outcomes Research (AHEOR)
- Health Behavior Science
- Health Data Science
- Health Policy
- Healthcare Quality & Safety (HQS)

Program Outcomes

Graduates of the PhD program are able to:

- Demonstrate advanced knowledge and application of population health frameworks and concepts
- Apply knowledge of the structures, performance, quality, policy, and environmental context of health care to the formulation of solutions to, and prevention of, population health problems
- Formulate population health research questions that are informed by relevant theoretical and conceptual models; systematic reviews of the literature; valid, reliable, and generalizable data; and stakeholder needs
- Select appropriate study designs to address specific population health research questions
- Collect, analyze, and/or interpret data obtained either prospectively (by survey, surveillance, qualitative, or mixed methods) or retrospectively through existing public and private sources to identify determinants of health
- Conduct ethical and responsible research in the design, implementation, and dissemination of population health research through implementation of research protocols with standardized procedures
- Apply appropriate design and analytic methods to clarify associations between variables and to identify causal inferences
- Communicate findings and implications of population health science research through multiple modalities to academic, professional, and lay audience

Curriculum:

Pre-Matriculation Requirements (Grade of B or above)

Basic Biostatistics	3
Research Methods	3

Core Coursework: Methods (12 credits)

Specialization: AHEOR		
PHS 605	Advanced Statistical Methods for Data Analysis	3
PHS 615	Advanced Statistics for Population Health Science: Multi-Level Modeling	3
AHE 509	Epidemiology & Evidence for Outcomes Research	3
AHE 510	Advanced Research Methods for Applied Observational Studies	3
Specializations: Health Behavior Science, Health Policy, HQS, and HDS		
PHS 605	Advanced Statistical Methods for Data Analysis	3
PHS 615	Advanced Statistics for Population Health Science: Multi-Level Modeling	3
PHS 606 OR AHE 509	Advanced Epidemiology or AHE 509: Epidemiology & Evidence for Outcomes Research	3
PHS 650	Evaluative & Outcomes Research & Design	3

Core Coursework: Population Health Fundamental (16 credits)

All Specializations		
HPL 500	U.S. Healthcare Organization & Delivery	3
POP 500	Essentials of Population Health	3
AHE 501	Economics of Health Insurance	3
PBH 502	Society, Behavior, & Environment	3
PHS 602	Bioethics	1
PHS 620	Teaching & Learning Seminar	3

Integrative & Mentored Research (7 credits)

All Specializations		
PHS 700	Integrative Research Seminar (1 credit each, four times)	4
PHS 660	Mentored Research Experience	1-3

Specialization Coursework (15 credits)

Applied Health Economics & Outcomes Research (select 5 courses)

AHE 502	Statistics I	3
AHE 505	Statistics II	3
AHE 504	Economic Modeling I	3
AHE 512	Economic Modeling II	3
AHE 506	Subjective Outcomes in Health Evaluation	3
AHE 507	Claims-Based AHEOR	3
AHE 508	International Health Technology Assessment: Evaluations & Evidence Generation/Synthesis	3
PHS 650	Evaluative & Outcomes & Research Design	3
HDS 500	Fundamentals of Data Wrangling	3
HDS 502	Advanced Data Analysis	3

Health Behavior Science (all)

PBH 602	Advanced Social & Behavioral Theories & Interventions (prerequisite of PBH 502)	3
PBH 512	Qualitative Research Methods	3
PBH 515	Cultural Humility & Competence	3
PHS 710	Advanced Health Behavior Methods & Measurement	3
PHS 680	Advanced Analytic Methods for Health Behavior Science	3

Health Policy (select 5 courses)

HPL 506	Health Policy: Analysis & Development	3
HPL 504	Health Law & Regulatory Issues	3
HPL 505	Legislative, Executive & Regulatory Processes	3
HPL 511	Policy Approaches to Addressing Social Determinants of Health	3
HPL 512	Medicare & Medicaid	3
HPL 513	Effective Communication & Dissemination of Data	3
OPX 520 or	Change Management or	3
OPX 530	Applied Leadership Strategies for Effective Change	3
HPL 550	Comparative Health Systems	3

Healthcare Quality & Safety (select 5 courses)

HQS 500	Introduction to Healthcare Quality and Safety	3
HQS 509	Applied Principles of Healthcare Quality	3
HQS 512	Business Case for Quality	3
HQS 515	Applied Principles of Patient Safety	3
HQS 505	Advanced Tools & Methods for Healthcare Quality & Safety	3
HQS 507	Advanced Applications of HQS in Clinical Settings	3
OPX 520	Change Management	3

Health Data Science (select 5 courses)

AHE 502	Statistics I	3
AHE 505	Statistics II	3
HDS 500	Fundamentals of Data Wrangling	3
HDS 502	Advanced Data Analysis	3
HDS 532	Data Visualization	3
HDS 518	Data Science I	3
HDS 519	Data Science II	3

Examination & Dissertation (12 credits)

All Specializations		
PHS 800	Comprehensive Exam Prep	1
PHS 801	Comprehensive Exam	1
PHS 805	Dissertation Proposal Seminar	3
PHS 807	Dissertation Proposal	1
PHS 810	Dissertation Progress	3
PHS 811	Dissertation Progress	3
PHS 812	Dissertation Progress (if needed)	1

Population Health Science

Doctor of Health Science (DHSc)

Program Director	Alexis Skoufalos, EdD
Campus	Hybrid: Center City/Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/dhsc-in-population-health.html

Program Description

Our DHSc in Population Health is designed for working professionals who are determined to transform the healthcare system. This cohort-based program is small, interactive and focused on creating a community of practice among the participants as they develop their knowledge and skills.

This 3-year cohort-based program combines the best of online content delivery, while also providing students with intensive mentoring, coaching and soft skills practice in face-to-face sessions with some of the best and brightest minds from across the country.

Students begin in Fall and will complete the program in Summer I of the third year. Online courses are offered asynchronously using best practices and interactive learning.

Program requirements include two in-person residencies (spring and fall) in each year. They are offered over the course of 4 days (bridging a weekend) on Jefferson's Center City campus in Philadelphia.

The in-person residency programs allow students to receive personalized attention and mentoring from faculty - an ideal opportunity to develop dissertation proposals, receive career coaching and build their professional network of contacts. There are also sessions devoted to career planning, board governance, and opportunities to interact with industry experts.

Curriculum: 51 credits

<u>Year 1 Fall</u>			<u>Year 3 Fall</u>		
DHS 750	Beginning Residency	1	DHS 754	Fall Residency	1
HPL 512	Medicare & Medicaid	3	DHS 800	Dissertation I	3
DHS 700	Observational Research Methods	3	<u>Year 3 Spring</u>		
<u>Year 1 Spring</u>			DHS 801	Dissertation II	3
DHS 751	Spring Residency	1	<u>Year 3 Summer</u>		
HPL 550	Comparative Health Systems	3	DHS 755	Summer Residency	1
DHS 701	Experimental Research Methods	3	DHS 802	Dissertation III	3
<u>Year 1 Summer</u>					
DHS 702	Population Health Management Strategies	3			
DHS 703	Systematic Reviews & Analysis	3			
<u>Year 2 Fall</u>					
DHS 752	Fall Residency	1			
DHS 704	Population Health Implementation Science I	3			
HPL 520	Fundamentals of Practice-Based Statistics	3			
<u>Year 2 Spring</u>					
DHS 753	Spring Residency	1			
DHS 705	Population Health Implementation Science II	3			
AHE 502	Statistics I	3			
<u>Year 2 Summer</u>					
OPX 530	Applied Leadership Strategies for Effective Change	3			
DHS 706	Academic & Professional Writing	3			

<h2 style="margin: 0;">Medicine/ Public Health</h2> <p style="margin: 0; color: #A52A2A;">MD/MPH and DO/MPH</p>	
<p>Program Directors</p> <p>Campus</p> <p>Website</p>	<p>Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH</p> <p>Center City</p> <p>https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/public-health/Pathways/dual-degrees.html</p>

Program Description

The MD/MPH and DO/MPH are designed to increase the number of healthcare professionals who have advanced training in public health, with the goal of promoting wellness, assuring quality, and addressing the social determinants of health in the healthcare setting and in the community.

Out Program provides training in leadership, epidemiology, biostatistics, research, health behavior, healthcare delivery, healthcare quality and safety, policy, advocacy, wellness, and prevention. Jefferson supports dual medical students by providing a host of structured activities to augment classroom learning. These activities focus on the intersection of public health and health care and include a lecture series and an enhanced field experience.

Medical students from across the U.S. have the opportunity to pursue an accelerated MPH by taking one year out of medical school. This Time

Curriculum: 33 credits

- Dual degree medical school students complete 33 credits (11 courses) of MPH coursework. Additionally, students work closely with faculty to design and complete an independent research project on a topic of their choice.

PBH 500	Foundations of US Healthcare System	3
PBH 502	Society, Behavior & the Environment	3
PBH 504	Fundamentals of Statistics for Research	3
PBH 506 or PBH 606	Fundamentals of Epidemiology or Advanced Epidemiology	3
PBH 509	Foundations of Policy & Advocacy	3
PBH 510	Health Research Methods	3
PBH 660	Clinical Public Health	0
PBH 651	Clerkship-Applied Practice Experience (C-APE)	0
PBH 613 and PBH 614	Capstone-Integrative Learning Experience (C-ILE)	3
	General Electives	12

Emergency and Disaster Management /Public Health

Master of Science (MS) & Master of Public Health (MPH)

Program Directors	Disaster Medicine & Management- Jean Bail, EdD, RN, MSN, CEN, MEP, EMT-P Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH
Campus Website	Center City (On Campus)/ East Falls (On Campus or Online) https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/public-health/Pathways/dual-degrees/dmm-mph.html

Program Description

The dual MS in Emergency and Disaster Management and Master of Public Health degree (DMM/MPH) offers an opportunity for students to prepare to work at the intersection of public health and disaster emergency management. When a disaster strikes or health emergency arises, nimble, well-trained professionals need to be ready to restore order, organize response, and quickly establish interventions to protect health and address pressing needs to food, water, or health care in affected communities.

Curriculum: 63 credits

- sequence varies

<u>MPH</u>			<u>DMM</u>		
PBH 501	Foundations of Public Health	3	EDM 610	610 Foundations in Emergency Management	3
PBH 500	Foundations of the US Healthcare System	3	EDM 631	Organizational Management and Communications in Disasters	3
PBH 502	Society, Behavior & the Environment	3	EDM 635	Psychological Aspects of Disasters	3
PBH 504 or PBH 505	Fundamentals of Statistics	3	EDM 639	Disaster Exercise and Drills	3
PBH 506	Fundamentals of Epidemiology	3	EDM 640	Logistic Management for Disasters	3
PBH 509	Foundations of Policy & Advocacy	3	EDM 643	Public Health Implications of Disasters	3
PBH 510	Health Research Methods	3	RDM 755	Capstone Experience in DMM (joint with MPH)	3
PBH 520	Program Planning, Implementation & Evaluation	3		General Electives	6
PBH 651	Clerkship- Applied Practice Experience (joint with DMM)	0			
PBH 609	GIS Mapping	3			
	General Electives	9			

Social Work / Public Health

Master of Social Services (MSS) & Master of Public Health (MPH)

Program Directors Campus Website	Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH Center City https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/public-health/Pathways/dual-degrees/MSSMPH.html
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Program Description

The Master of Social Services/Master in Public Health (MSS/MPH) dual degree option is open to students enrolled at the Graduate School of Social Work and Social Research (GSSWSR) at Bryn Mawr College's Master of Social Services (MSS) program and JCPH's MPH program.

skills in serving populations in need. The dual degree prepares students to work across siloes and in collaboration with communities and multidisciplinary teams of practitioners, researchers, lawyers, educators, and policy makers working to improve health.

The MSS/MPH recognizes the long-standing synergy between social service/social work and public health. It accommodates the growing interest of professionals to seek advanced graduate training to enhance their

Curriculum: 36 credits

- MSS/MPH students complete 36 credits (12 courses) of MPH coursework. Additionally, students work closely with faculty to design and complete an independent project on a topic of their choice.

MSS/MPH (Analytics Concentration)					
PBH 500	Foundations of the US Healthcare System	3	PBH 512	Qualitative Research Methods	3
PBH 501	Foundations of Public Health	3	PBH 605	Advanced Statistics	3
PBH 502	Society, Behavior & the Environment	3	PBH 606	Advanced Epidemiology	3
PBH 504	Fundamentals of Statistics for Research	3	PBH 613	LPHT Capstone-ILE, Part 1	3
PBH 506	Fundamentals of Epidemiology	3	PBH 614	LPHT Capstone-ILE, Part 2	0
PBH 509	Foundations of Policy & Advocacy	3	PBH 651	Clerkship-Applied Practice Experience	0
PBH 520	Program Planning, Implementation & Evaluation	3		Transferred credits	9

<u>MSS/MPH (Public Health Practice Generalist), Public Health Policy & Advocacy, Healthcare Quality & Safety concentrations)</u>					
PBH 500	Foundations of the US Healthcare System	3	PBH 512	Qualitative Research Methods	3
PBH 501	Foundations of Public Health	3	PBH 613	LPHT Capstone-ILE, Part 1	3
PBH 502	Society, Behavior & the Environment	3	PBH 606	Advanced Epidemiology	3
PBH 506	Fundamentals of Epidemiology	3	PBH 614	LPHT Capstone-ILE, Part 2	0
PBH 509	Foundations of Policy & Advocacy	3	PBH 651	Clerkship-Applied Practice Experience	0
PBH 520	Program Planning, Implementation & Evaluation	3		Transferred credits	9

Pharmaceutical Science / Public Health

Doctor of Pharmacy (PharmD) & Master of Public Health (MPH)

Program Directors
Campus
Website

Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH
Center City
<https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/public-health/Pathways/dual-degrees/PharmDMPH.html>

Program Description

The PharmD/MPH recognizes the growing synergy between pharmacy services and public health practices and reflects the growing interest among professionals to seek advanced graduate training in research methods, leadership, and population health.

Curriculum:

- Students may complete the degree on a full-time or part-time basis. PharmD/MPH students complete 33 credits (11 courses) of MPH coursework. Additionally, students work closely with faculty to design and complete an independent Capstone project on a topic of their choice.

PharmD/MPH Public Health Practice Generalist					
PBH 501 or POP 500	Foundations of Public Health or Essentials of Population Health	3	PBH 613	LPHT Capstone-ILE, Part 1	3
PBH 502	Society, Behavior & the Environment	3	PBH 614	LPHT Capstone-ILE, Part 2	0
PBH 504 or POP 505	Fundamentals of Statistics for Research or Fundamentals of Statistics for Practice	3	PBH 651	Clerkship-Applied Practice Experience	0
PBH 506	Fundamentals of Epidemiology	3		Transferred credits & Program Requirements	12
PBH 509	Foundations of Policy & Advocacy	3			
PBH 520	Program Planning, Implementation & Evaluation	3			

Law/ Public Health

Juris Doctor (JD) & Master of Public Health (MPH)

Program Directors Campus Website	Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH Widener University & Center City https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/public-health/Pathways/dual-degrees/JDMPH.html
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Not accepting new students into this program

Program Description

The JD/MPH dual degree option is open to students enrolled at Widener University Delaware Law School's Family Health Law & Policy Institute and in JCPH's MPH program.

The JD/MPH supports individuals seeking to enhance careers in health law practice, advocacy and policy. Admission to the JD and MPH programs is determined independently. Students must meet the admissions requirements for each school.

Law students complete two years of their legal education before beginning the MPH program. JCPH MPH students generally apply for law school after earning their degree

For more information, contact the JCPH Admissions & Recruitment Manager at (215) 503-5305 or Admissions at The Delaware Law School at (302) 477-2703.

Curriculum: 36 credits

JD/MPH complete 36 credits or 12 courses of MPH coursework. Additionally, students work closely with faculty to design and complete an independent research project on a topic of their choice.

JD/MPH Public Health Practice Generalist					
PBH 500	Foundations of the US Healthcare System	3	PBH 520	Program Planning, Implementation & Evaluation	3
PBH 501	Foundations of Public Health	3	PBH 520	Program Planning, Implementation & Evaluation	3
PBH 502	Society, Behavior & the Environment	3		General Electives	9
PBH 504 or	Fundamentals of Statistics for Research or	3	PBH 613	LPHT Capstone-ILE, Part 1	3
PBH 505	Fundamentals of Statistics for Practice				
PBH 506	Fundamentals of Epidemiology	3	PBH 614	LPHT Capstone-ILE, Part 2	0
PBH 509	Foundations of Policy & Advocacy	3	PBH 651	Clerkship-Applied Practice Experience	0
PBH 510	Health Research Methods	3		Transferred credits	9

Physician Assistant/ Public Health

Physician Assistant (PA) & Master of Public Health (MPH)

Program Directors	Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH Physician Assistant- Michelle Zawora, MD
Campus	Center City & East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/public-health/Pathways/dual-degrees/PAMPH.html

Program Description

Physician Assistants with an MPH degree are prepared to make a difference at the patient's side and in the community. The degree provides advanced training in research, policy, advocacy, leadership, global health, health equity and quality and safety. Additionally, MPH training informs clinical practice with diverse and underserved populations and prepares students to address emerging population health challenges and work effectively on interdisciplinary teams.

Curriculum: 36 credits

- PA/MPH students complete the bulk of their MPH coursework before taking PA classes. PA/MPH students complete 36 credits or 12 courses of MPH coursework.

PBH 501	Foundations of Public Health	3
PBH 500	Foundations of the US Healthcare System	3
PBH 502	Society, Behavior & the Environment	3
PBH 504 or	Fundamentals of Statistics for Research or	3
PBH 505	Fundamentals of Statistics for Practice	
PBH 506	Fundamentals of Epidemiology	3
PBH 509	Foundations of Policy & Advocacy	3
PBH 510	Health Research Methods	3
PBH 520	Program Planning, Implementation & Evaluation	3
PBH 550 or	Clinical Care & Public Health	3
Gen Elective		
PBH 651	Clerkship-Applied Practice Experience	0
	General Electives	9



**COLLEGE OF
REHABILITATION SCIENCES**

Dean: Steven Williams, MD | Jefferson.edu/JCRS

About Us

Jefferson College of Rehabilitation Sciences brings together Occupational Therapy, Physical Therapy, Athletic Training, and Speech-Language Pathology. Our goal is to provide programs that are unique in terms of educating students to provide high-quality care that will integrate people back into their communities.

The College of Rehabilitation Sciences is proud to be home to two programs ranked by U.S. News & World Report: Occupational Therapy and Physical Therapy. Both programs offer students opportunities to participate in research, clinical, and educational experiences.

The College is committed to becoming a recognized leader in innovative educational, clinical and research programs

Accreditation

Accreditation Council for Occupational Therapy Education (ACOTE) Occupational Therapy (MSOT); Occupational Therapy Doctorate (OTD) Associate in Occupational Therapy Assistant (ASOT)	https://acoteonline.org/
Commission on Accreditation of Athletic Training Education Athletic Training (MS)	www.caate.net
Commission on Accreditation of Physical Therapy Education (CAPTE) Physical Therapy (DPT)	www.capteonline.org
Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA)	https://caa.asha.org/

Academic Programs

Undergraduate

Occupational Therapy Assistant	ASOT
Exercise Science	BS

Graduate

Athletic Training	MSAT
Occupational Therapy (Master's Degree) Center City	MSOT
Occupational Therapy (Master's Degree) East Falls	MSOT
Occupational Therapy (Doctoral Degree) Center City	OTD
Occupational Therapy (Post Professional)	PPOTD
Physical Therapy	DPT
Speech-Language Pathology	MS-SLP

Graduate Certificate

Coaching in Context	Advanced Practice Certificate
Emerging as Leaders in Autism Practice & Research	Advanced Practice Certificate
Hand & Upper Limb Rehabilitation	Advanced Practice Certificate
Life Care Planning	Graduate Certificate
Neuroscience: Advanced Concepts for Evidence Based Practice	Advanced Practice Certificate
Teaching in the Digital Age	Advanced Practice Certificate

Accelerated/Dual Degree

Health Sciences & Athletic Training	BS/MSAT 3+2
Exercise Science & Athletic Training	BS/MSAT 3+2
Exercise Science & Occupational Therapy	BS/OTD 3+3
Exercise Science & Physical Therapy	BS/DPT 3+3
	*See Program Director for Plan of Study
Health Science & Occupational Therapy	BS/MSOT & BS/OTD
Occupational Therapy	BS/MSOT
Psychology & Occupational Therapy	BS/MSOT & BS/OTD

Occupational Therapy

Associate Degree (ASOT)

Contact Campus OTAInfo@jefferson.edu
East Falls

Program Description

The AS in Occupational Therapy prepares graduates to become Certified Occupational Therapy Assistants, or COTAs. COTAs work in collaboration with occupational therapists to provide hands-on services to people of all ages who are learning or relearning ways to succeed in the occupations of life: any tasks one may do on a daily basis for work or leisure. The program is structured for adult learners and provides hands-on learning:

Five 8-week terms per year, with classes two evenings per week and Saturday mornings.

- Additional learning and activities occur through an online format.
- Clinical component, with five total clinical fieldwork experiences required. The first three placements are part-time (36 hours per term), and the final two terms consist of two 8-week, full-time clinical placements—preparing you for your transition into the field.

Curriculum: 69 credits

IT 201	Learning and Technology	3	OTA 310	Environments & Contexts of Occupation	3
WRIT 105	Writing About Workplace Culture	3	OTA 410	Interventions I: Infancy through Adolescence	4
HIST 232	History & Philosophy of OTA Practice	3	OTA 412	Interventions II: Young through Middle Adulthood	4
BIOL 101	Current Topics in Biology	3	MATH 215	College Algebra	3
OTA 300	Anatomy, Physiology & Biomechanics	6	OTA 414	Interventions III: Late Adulthood	4
OTA 101	Intro Psychology and Mental Health for the OTA	3	OTA 400	Leadership and Human Service Systems	3
OTA 302	Occupations Across the Lifespan I: Infancy through Adolescence	3	OTA 406	Fieldwork II A	6
OTA 306	Conditions I: Infancy through Adolescence	3	OTA 402	Ethics and Critical Thinking I	2
OTA 304	Occupations Across the Lifespan II: Adulthood	3	OTA 408	Fieldwork II B	6
OTA 308	Conditions II: Adulthood	3	OTA 404	Ethics and Critical Thinking II	1

Exercise Science

Bachelor of Science (BS)

Chair	Stephen Thomas, PhD, ATC
Contact	215-951-2657
Campus	East Falls
Website	www.jefferson.edu/university/rehabilitation-sciences/departments/exercise-science/degrees-programs/bs-exercise-science/overview.html

Program Description

Designed for high school graduates that are interested in pursuing a career in the health and fitness field. This program provides a high-quality educational experience that couples both classroom and hands-on educational experiences necessary to obtain employment in a variety of health and fitness settings including:

- Personal training
- Strength coach
- Corporate wellness
- Exercise physiologist
- Cardiac rehabilitation
- Clinical exercise specialist
- Human performance
- Sport scientist

Learning Goals/Outcomes

- Demonstrate foundational knowledge in biology, chemistry, mathematics, physics, and psychology.
- Demonstrate practical knowledge in human anatomy/physiology, biomechanics, exercise science, and nutrition for a variety of populations and disease states.

- Conduct pre-participation health screenings and fitness assessments; analyze, interpret, and communicate results; and develop, implement, and instruct individualized training programs for a variety of populations and disease states.
- Develop and implement behavioral and motivational strategies, that incorporate effective communication and educational resources, to optimize participants' adoption and adherence to exercise, fitness, and nutritional programs and other healthy behaviors.
- Create emergency procedures, injury prevention programs and risk assessments for clients, staff, facilities, and business entities.
- Demonstrate knowledge in business management, marketing, and leadership to effectively operate a fitness facility while following safety and legal guidelines, standards and regulations.
- Qualify for national certification exams such as the American College of Sports Medicine's (ACSM) Certified Exercise Physiologist and/or National Strength and Conditioning Association's (NSCA)
- Integrate and apply evidence-based decision-making and critical thinking skills to improve the outcomes of the client.

Curriculum: 4 years, 135 credits

	Year 1 Fall			Year 3 Fall	
FYS 100	Pathways Seminar	1		Integrative Seminar	3
AMST 114	Topics in American Studies	3		BIO 201	Anatomy & Physiology I Lecture
CHEM 103	Chemistry I Lecture	3		BIO 201 L	Anatomy & Physiology I Lab
CHEM 103L	Chemistry I Lab	1		CGIS 300	Contemporary Global Issues
MATH 102 or MATH 110	Quant. Reasoning: Pre-calc or higher	3-4		EXSC 312	Psychological Theory of Health & Exercise
PSYC 101	Introduction to Psychology	3		EXSC 311	Sports Nutrition
BIO 103	Biology I Lecture	3		EXSC 313	Safety, First Aid & Injury Prevention
BIO 103L	Biology I Lab	1			
	Year 1 Spring			Year 3 Spring	
EXSC 110	Intro to Exercise Science	1		BIO 202	Anatomy & Physiology II Lecture
WRIT 101	Written Communication	3		BIO 202 L	Anatomy & Physiology II Lab
PSYCH 213	Developmental Psychology	3		EXSC 330	Internship I
WRIT 202	Multimedia Communication	3		EXSC 310	Exercise Physiology
CHEM 104	Chemistry II Lecture	3			General Elective
CHEM 104L	Chemistry II Lab	1		PHIL 499	Philosophies of Good Life
BIO 104	Biology II Lecture	3			
BIO 104L	Biology II Lab	1		Year 4 Fall	
	General Elective	3		EXSC 301	Biomechanics
	Year 2 Fall				General Elective
	Elective	3		EXSC XXX	Fitness Assessment
GDIV 2XX	Global Diversity (Incl world languages)	3		EXCS XXX	Internship II
PHYS 111	Physics I	4			
STAT 220 or STAT 301	Statistics for the Behavioral Sciences or Biostatistics	3		Year 4 Spring	
WRIT 201	Multimedia Communication	3		EXSC XXX	Exercise for Special Populations
	Year 2 Spring				General Elective
	General Elective	3		EXSC XXX	Entrepreneurship & Leadership
GCIT 2XX	Global Citizenship (Incl world languages)	3			General Elective
ETHIC 2XX	Ethics	3		EXCS 401	Exercise & Prescription
EXSC XXX	American Diversity	3			
PHYS 112	Physics II	4			
EXSC 210	Developing the Inter-professional Team	1			

Athletic Training

Master of Science (MS)

Program Director Kelly D. Pagnotta, PhD, LAT, ATC
Contact 215-951-6332
Campus East Falls
Website www.jefferson.edu/athletictraining

Program Description

Designed to help meet the growing demand for professional Certified Athletic Trainers (ATC). The athletic training program is constructed to prepare highly motivated students with an interest in the medical field to sit for the National Athletic Trainers Association Board of Certification (BOC) examination upon graduation.

Learning Goals & Outcomes

- Participate as a part of a healthcare team by collaborating with colleagues through a complex medical system.
- Use physiological, anatomical and evidence-based knowledge in the clinical settings.
- Behave in a manner consistent with the code of conduct and standards of professional practice set forth by the Athletic Training governing bodies.
- Locate, evaluate and apply evidence-based resources to build knowledge and support athletic training practice.
- Demonstrate administrative duties affiliated with the athletic training profession.
- Identify, describe and develop management plans for individuals with psychosocial disorders and/or mental health emergencies.

Curriculum: 2 years, 65 credits

	<u>Year 1 Fall 1</u>			<u>Year 2 Fall 1</u>		
ATP 600	Emergency Care	4		ATP 661	Practicum in Athletic Training III	3
ATP 602	Scientific Inquiry and Writing	1			<u>Year 2 Fall 2</u>	
ATP 605	Fundamentals of Athletic Training	4		ATP 665	Prevention, Evaluation and Treatment of Athletic Injuries II (Lower Extremity)	4
ATP 610	Basics of Rehabilitation	3		ATP 675	Strength and Conditioning	3
ATP 615	Functional Human Anatomy	3		ATP 685	Organization & Administration AT	2
				ATP 690	General Medical Condition and Pharmacology in Athletic Training	3
	<u>Year 1 Fall 2</u>				<u>Year 2 Spring 1</u>	
ATP 620	Practicum in Athletic Training	2		ATP 662	Practicum in AT IV	3
	<u>Year 1 Spring 1</u>				<u>Year 2 Spring 2</u>	
ATP 625	Prevention, Evaluation and Treatment of Athletic Injuries I (Upper Extremity)	4		ATP 670	Prevention, Evaluation and Treatment of Athletic Injuries III (Spine and advanced techniques)	4
ATP 630	Therapeutic Modalities	3		ATP 695	Psychological Aspects of Injury and Rehabilitation	3
ATP 635	Human Physiology	3		ATP 696	Special Topics in AT 2	2
ATP 645	Motor Control and Human Movement	3		ATP 692	Research/Collaborative Project II	1
	<u>Year 1 Spring 2</u>					
ATP 640	Practicum in Athletic Training II	3				
	<u>Year 1 Summer</u>					
ATP 691	Research / Collaborative Project I	1				
ATP 660	Specialty Practicum in AT	2				

Occupational Therapy

Master of Science- Center City (MSOT-CC)

Dept. Chair	Catherine Verrier Piersol, PhD, OTR/L, FAOTA
Program Director	Stephen Kern, PhD, OTR/L, FAOTA
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/entry-ms-programs.html

Program Description

The MS in Occupational Therapy (MSOT) in Center City is a program for students who have earned a bachelor's degree in a field other than occupational therapy. The curriculum follows a traditional weekday format. The MSOT-CC program is completed in 2 years, including fieldwork.

Curriculum 2 years, 82 credits

- Center City Curriculum

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
OT 302	Applied Anatomy & Kinesiology/Lab	4	OT 440	Interventions: Enhancing Human Performance Fieldwork Level I	2
OT 311	Health and Health Conditions	4	OT 441	Interventions: Enhancing Social Participation, Fieldwork Level I	2
OT 321	Foundations Occupation-Centered Practice I	2	OT 552	Interventions: Enhancing Human Performance/Lab	5
OT 336	Occupation Through Life Span	5	OT 558	Interventions: Enhancing Social Participation/Lab	3
OT 340	Domains Occupational Therapy Practice: Fieldwork Level I	2		Graduate Elective or Independent Study	3
OT 600	Occupational Therapy Prof Seminar	1			
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
OT 308	Neuroscience Foundations Occupational Therapy	4	OT 480	Fieldwork Level II A	6
OT 322	Foundations of Occupation-Centered Practice II	2	OT 578	Evidence-Based Practice I	1
OT 357	Evaluation Process	4			
OT 560	Interventions: Environmental Competence	3	<u>Year 2 Summer</u>		
OT 561	Environmental Competence Lab	1	OT 482	Fieldwork Level II B	6
OT 562	Environmental Competence in Action	1	OT 579	Evidence-Based Practice II	1
OT 577	Historical Perspectives on Theory-Based Practice	3	OT 627	Program Design & Evaluation	3
<u>Year 1 Summer</u>			OT 670	Advanced Practice Seminar	3
OT 341	Occupational Analysis & Evaluation: Fieldwork Level I	2	OT 682	Clinical Leadership	3
OT 467	Health Services Administration	2			
OT 603	Research Mentorship and Methods	4			

Occupational Therapy

Master of Science-East Falls (MSOT-EF)

Dept. Chair	Catherine Verrier Piersol, PhD, OTR/L, FAOTA
Program Director	Audrey, Zapletal, OTD, OTR/L, CLA
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/ms-programs-east-falls.html

Program Description

The MS in Occupational Therapy (MSOT) in East Falls is a program for students who have completed a bachelor's degree in any academic discipline. The curriculum follows a blended-learning format that includes an intensive weekend delivery.

Students attend on-campus class meetings eight weekends/semester (Friday and Saturday, generally every other weekend). Between on-campus sessions, students engage through distance education technology. The MSOT-EF program is completed in 2.5 years, including fieldwork.

Curriculum: 2.5 years, 74 credits

- East Falls Curriculum

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
OCC 610	Evolving Professional Seminar	1	OCC 748	Assessment and Intervention: Adults	5
OCC 611	Foundations for Practice	3	OCC 745	Level I Fieldwork B (32-40 hours)	1
OCC 613	Functional Anatomy	4	OCC 749	Children & Youth A	3
OCC 621	Occupational Competence	3	OCC 754	Environmental Dimensions of Occupation	3
OCC 625	Clinical Skills A	1			
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
OCC 616	Assistive Technology Design	2	OCC 759	Children and Youth B	3
OCC 628	Introduction to Evaluation	1	OCC 755	Level I Fieldwork C (32-40 hours)	1
OCC 623	Applied Neuroanatomy	4	OCC 767	Critical Inquiry I	2
OCC 635	Clinical Skills B	1	OCC 751	Professional Issues and Trends	3
OCC 741	Interpersonal Relations and Groups	3	OCC 757	Innovative Practice in Occupational Therapy	3
OCC 645	Clinical Skills C	1			
<u>Year 1 Summer</u>			<u>Year 1 Summer</u>		
OCC 626	Evidence-Based Practice	3	Classes conducted in 6-week intensive schedule including Thursdays		
OCC 766	Older Adults: Enabling Participation	2	OCC 769	Critical Inquiry II	1
OCC 746	Psychosocial Interventions	4	OCC 764	Specialty Practice: Upper Extremity Rehab	2
OCC 735	Level I Fieldwork A	1	OCC 784	Mastery	1

Two, 12-week Full-Time Clinical Fieldwork Rotations (complete Track A or B)

<u>Track A July-December</u>			<u>Track B September - March</u>		
OCC 778	Level II Fieldwork A	6	OCC 778	Level II Fieldwork A	6
OCC 779	Level II Fieldwork B	5	OCC 779	Level II Fieldwork B	6

Occupational Therapy

Doctorate (OTD-CC)

Dept. Chair	Catherine Verrier Piersol, PhD, OTR/L, FAOTA
Program Director	Tina DeAngelis, EdD, OTR/L
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/doctorate.html

Program Description

The Doctor of Occupational Therapy (OTD) in Center City is a program for students who have earned a bachelor's degree in a field other than

occupational therapy. The curriculum follows a traditional weekday format. The OTD program is completed in 3 years, including fieldwork.

Curriculum: 3 years, 115 credits

- Center City Curriculum

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
OT 302	Applied Anatomy & Kinesiology /LB	4	OT 440	Interventions: Enhancing Human Performance, Fieldwork Level I	2
OT 311	Health & Health Conditions	4	OT 441	Interventions: Enhancing Social Participation: Fieldwork Level I	2
OT 321	Foundations of Occupation-Centered Practice I	2	OT 552	Interventions: Enhancing Human Performance Practicum/Lab	5
OT 336	Occupation Through Life Span	5	OT 558	Interventions: Enhancing Social Participation/Lab	3
OT 340	Domains OT Practice: Fieldwork L I	2	OT 703	Professional Practice & Inquiry in Occupational Therapy	3
OT 700	Developing Your OTD Practice Toolkit	1		Elective or Independent Study	3
<u>Year 1 Spring</u>			<u>Year 2 Spring</u>		
OT 308	Neuroscience Foundations of Occupational Therapy	4	OT 480	Fieldwork Level II A (January through March)	6
OT 322	Found of Occupation- Practice	2	OT 704	Evidence-Based Practice I (online January-March)	3
OT 357	Evaluation Process	4	<u>Year 2 Summer 1</u>		
OT 577	Historical Perspectives on Theory-Based Practice	3	OT 482	Fieldwork Level II B (April through June)	3
OT 560	Interventions: Environmental Competence	3	OT 704B	Evidence-Based Practice II (online April-June)	3
OT 561	Environmental Competence Lab	1	<u>Year 2 Summer 2</u>		
OT 562	Environmental Competence in Action	1	OT 705	Advanced Evidence-Based Practice for the OTD Student	4
OT 701	Exploration of Doctoral Level Occupational Therapy Practice: The Faculty-Mentored Experience	1	OT 706	Visionary Practice: Creating & Measuring Outcomes of Therapeutic Programs	3
<u>Year 1 Summer 1</u>			OT 707	The Doctoral Capstone: Preparing for the Capstone Experience and Project	2
OT 341	Occupational Analysis & Evaluation - Fieldwork Level I	2	<u>Year 3 Fall</u>		
OT 467	Health Services Administration	2	OT 720	Doctoral Capstone Seminar A	12
OT 603	Research Mentorship and Methods	4	<u>Year 3 Spring</u>		
OT 702	OTD Leadership: National and Global Perspectives	1	OT 721	Doctoral Capstone Seminar B	12

Occupational Therapy

Post-Professional (PP-OTD)

Dept. Chair	Catherine Verrier Piersol, PhD, OTR/L, FAOTA
Program Director	Marie-Christine Potvin, PhD. OTR/L
Campus	Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/post-professional.html

Program Description

The PP-OTD prepares students to lead and innovate in health care and human services. Students also learn to translate enhanced knowledge and skills into evidence-based, leading edge practice that demonstrates the distinct value of occupational therapy. The PP-OTD program provides opportunities for occupational therapists to use their knowledge and skills in a specific practice area functioning as a direct care provider, consultant, educator, manager, leader, researcher and advocate for the profession and consumers.

Doctoral students complete an 80-hour Fellowship designed to immerse the student in advanced practice, program development, and/or policy and provide opportunities for professional growth in an identified area of interest. The Fellowship is a substantive project that advances knowledge and skills in program development and evaluation, ability to create new practice models, approaches to occupational therapy education, and/or clinical research. For their Capstone, students prepare a manuscript for dissemination in a peer-reviewed journal and/or share their work at state, national and international conferences.

Curriculum: 39-55 credits

Students entering without Masters' Degree (13 credits)				
OT 603	Research Methods & Mentorship	3	All semesters except Summer II	4
OT 680	Leading Edge Occupational Therapy Practice	3	Fall & Spring	3
OT 681	Advanced Occupational Therapy Practicum	3	All semesters except Summer II	6

All Students (33 credits)				
Core Courses				
OT 778	Advanced Level Evidence Based Practice		Fall	3
OT 782	Leadership Move Beyond Traditional Roles		Spring	3
OT 727	Visionary Practice Develop & Evaluation		Fall & Spring	3
OT 798	Seminar A		All	1
OT 798	Seminar B		All	1
OT 798	Seminar C		All	1
OT 799	Seminar in clinical Research		All	3
Elective Courses				
OT 797	Cultural Competence & Humility		Summer	3
OT 786	Health Literacy		Summer	3
Clinical Fellowship & Capstone Courses				
OT 800	Clinical Fellowship		All	3-6
OT 801	Capstone Project		All	3

*< 3 years of experience in occupational therapy = 6 credits

≥ 3 years of experience in occupational therapy = 3 credits

Physical Therapy

Doctoral Degree (DPT)

Program Chair	Jane Fedorczyk, PT, PhD, CHT
Contact	215-503-6019
Campus	Center City
Website	https://www.jefferson.edu/university/rehabilitation-sciences/departments/physical-therapy/doctor-of-physical-therapy.html

Program Description

The Doctor of Physical Therapy (DPT) Program is a 3-year (10 semester) full-time program. The curriculum is built on a strong basic science foundation with emphasis on evidence-based physical therapy practice, and integrated part-time experiential learning activities and 36 weeks of full-time clinical education.

- Graduates are prepared to examine and treat musculoskeletal and neuromuscular problems and develop injury prevention & health maintenance programs for people at all stages of life.
- Graduates are prepared to apply scientific knowledge, humanistic values, critical analysis and a systematic approach to patient care when making clinical decisions.

Learning Outcomes

- Graduates apply the best evidence in reflective decision-making, skilled performance and professional behavior to basic principles within patient-client management to achieve optimal outcomes.
- Graduates participate in interprofessional, patient centered care to meet patient's diverse needs and perspectives.
- Graduates pursue professional development opportunities throughout their professional career.
- Graduates engage in leadership and advocacy roles in a diverse patient and professional environment.

Curriculum: 3 years, 121 credits

<u>Year 1 Pre-Fall</u>			<u>Year 2 Fall</u>		
PT 507	Advanced Human Anatomy	6	PT 608	Musculoskeletal Physical Therapy II	4
PT 534	Practice Issues: Intro to the PT profession	1	PT 612	Cardiovascular and Pulmonary PT II	3
PT 536	Practice Issues: Language of Practice (online)	1	PT 621	Neuromuscular Physical Therapy I	5
PT 527	Critical Inquiry I	3	PT 628	Capstone Project in Physical Therapy I	1
<u>Year 1 Fall</u>			PT 645	Integrated Clinical Experience (ICE) III (1/2 class)	1
PT 516	Neuroscience	3	PT 670	Prosthetics and Orthotic Intervention	3
PT 506	Biomechanics and Kinesiology	4	PT 680	Introduction to Clinical Education	1
PT 533	Introduction to PT Examination	5	<u>Year 2 Spring A</u>		
PT 539	PT Practice Issues: Clin Decision Making	1	Pt 682	Clinical Education I	4
PT 538	PT Practice Issues: Psychosocial Aspects of PT & PTs as Teachers and Learners	2	<u>Year 2 Spring B</u>		
PT 545	Integrated Clin Experience (ICE) I	1	PT 609	Musculoskeletal III	4
<u>Year 1 Spring</u>			PT 622	Neuromuscular II	4
PT 513	Pathophysiology I	3	PT 710	Capstone in PT II	1
PT 624	Critical Inquiry II	2	<u>Year 3 Pre-Fall</u>		
PT 546	Integrated Clin Experience (ICE) II	1	PT 781	Clinical Education II	6
PT 553	Biophysical Agents	3	<u>Year 3 Fall</u>		
PT 556	Therapeutic Interventions	3	PT 632	Healthcare Delivery Sys	3
PT 518	PT Practice & Movement System	2	PT 764	Pediatric Physical Therapy Practice	3
<u>Year 2 Pre-Fall</u>			PT 700	Differential Diagnosis	2
PT 514	Pathophysiology II	3	PT 705	Comprehensive Case Analysis I	2
PT 607	Musculoskeletal Physical Therapy I	4	PT 711	Capstone in PT III	1
PT 611	Cardiovascular and Pulmonary PT I	2	PT 736	Business and Leadership in Physical Therapy Practice	3
PT 613	Pharmacology	2	PT 774	Geriatric PT Practice	3
PT 661	PT for the Integumentary System	3	<u>Year 3 Spring</u>		
			PT 707	Comprehensive Case Analysis II	1
			PT 782	Clinical Education III	8

Speech-Language Pathology

Master of Science (MS-SLP)

Department Chair	Patricia A. Remshifski PhD, CCC-SLP
Contact	215-503-7992
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/speech-language-pathology.html

Program Description

The Master of Science in Speech-Language Pathology (MS-SLP) program is a two-year, 60-credit, program designed to provide diverse academic and clinical experiences in

communication sciences and disorders to ensure that graduates have the competencies to excel as independent clinicians and as members of collaborative clinical teams.

Curriculum: 2 years, 60 credits

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
SLP 610	Language Disorders of Early Childhood	3	SLP 603	Clinical Practicum 3	2
SLP 611	Neural Bases of Communication	1	SLP 622	Cognitive Communication Disorders	3
SLP 612	Speech Sound Disorders in Children	3	SLP 623	Disorders of Fluency	3
SLP 613	Aphasia and Other Acquired Neurological Language Disorders	3	SLP 624	Augmentative and Alternative Communication	2
SLP 614	Clinical Methods in Speech-Language Pathology	3	<u>Year 2 Spring</u>		
SLP 615	Pediatric Feeding and Swallowing Development and Disorders	3	SLP 604	Clinical Practicum 4	5
SLP 605	Seminar I - Interprofessional Ed.	1	SLP 625	Genetics in Communication Disorders	3
<u>Year 1 Spring</u>			SLP 609	Seminar V - Professional Issues in Speech-Language Pathology	1
SLP 601	Clinical Practicum 1	2	SLP 626	Capstone Portfolio (non-credit bearing)	0
SLP 616	Research Methods in Speech-Language Pathology	3			
SLP 617	Language Disorders of Late Childhood and Adolescence	3			
SLP 618	Diagnosis and Management of Dysphagia in Adults	3			
SLP 619	Disorders of Voice and Resonance	3			
SLP 606	Seminar II-Clinical Practice in Early Intervention and Educational Settings	1			
<u>Year 1 Summer</u>					
SLP 602	Clinical Practicum 2 (continues through Summer 1 and Summer 2)	2			
<u>Summer I</u>					
SLP 620	Motor Speech Disorders	3			
SLP 607	Seminar III Clinical Practice in Medical Settings	1			
<u>Summer 2</u>					
SLP 621	Advanced Audiology & Aural Rehab	2			
SLP 608	Seminar IV Evidence- Based Practice	1			

Occupational Therapy

Bachelor of Science & Master of Science (BS/MSOT-CC)

Department Chair	Catherine Verrier Piersol, PhD, OTR/L, FAOTA
Program Director	E. Adel Herge, OTD, OTR/L, FAOTA
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/bs-ms-programs.html

Program Description

The BS in Occupation and Health/MS in Occupational Therapy (BS/MSOT) in Center City is a program for transfer students who have completed two years (58 credits) of college-level

prerequisite coursework. The curriculum follows a traditional weekday format. The MSOT-CC program is completed in 3 years, including fieldwork.

The Jefferson College of Rehabilitation Sciences has suspended admission to this program.

BS/MSOT-CC Curriculum: 120 UG credits +35 GR credits

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
OT 300	Intro Applied Science	1	OT 440	Interventions: Enhancing Human Performance, Fieldwork Level I	3
OT 302	Applied Anatomy & Kinesiology /LB	4	OT 441	Interventions: Enhancing Social Participation: Fieldwork Level I	2
OT 311	Health & Health Conditions	4	OT 522	Interventions: Enhancing Human Performance Practicum/Lab	5
OT 321	Foundations of Occupation-Centered Practice I	2	OT 558	Interventions: Enhancing Social Participation/Lab	3
OT 330	Using Occupational Therapy Lens in Clinical: Fieldwork Level I	2		Gen Elective or Independent Study	3
OT 336	Occupation Through Life Span	5	<u>Year 2 Spring</u>		
	<u>Year 1 Spring</u>		OT 400	Inter-professional Care Planning	3
OT 308	Neuroscience Foundation OT	4	OT 306	Understanding Research Principles	3
OT 322	Found of Occupation- Practice II	2	OT 560	Interventions: Environ Competence	3
OT 340	Domains OT Practice: Fieldwork L I	2	OT 561	Environmental Competence Lab	1
OT 357	Evaluation Process	4	OT 562	Environmental Competence in Action	1
OT 577	Historical Perspectives on Theory-Based Practice	3	OT 600	Occ Therapy Professional Seminar	1
				Undergraduate Elective	3
	<u>Year 1 Summer</u>		<u>Year 2 Summer</u>		
OT 341	Occ Analysis & Eval: Fieldwork L I	2	OT 467	Health Service Administration	2
OT 390	Participation Occupation & Health	3	OT 603	Research Mentorship & Methods	4
			<u>Year 3 Pre-Fall</u>		
			OT 480	Fieldwork Level II A	6
			OT 578	Evidence-Based Practice (online)	1
			<u>Year 3 Fall</u>		
			OT 482	Fieldwork Level II B	6
			OT 579	Evidence Based Practice II (on-line)	1
			<u>Year 3 Spring</u>		
			OT 682	Clinical Leadership	3
			OT 627	Program Design & Evaluation	3
			OT 670	Advanced Research Seminar	3

Occupational Therapy

Bachelor of Science (BS)/ Master of Science (BS/MSOT-EF)

Dept. Chair	Catherine Verrier Piersol, PhD, OTR/L, FAOTA
Program Director	Audrey Zapletal, OTD, OTR/L, CLA
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/accelerated-bs-msot-east-falls.html

Program Description

The BS/MSOT Program in East Falls is for high school students who are committed to becoming an Occupational Therapist. The first three years of the undergraduate experience is known as the pre-professional phase. During this period, the major requirements for the BS degree and OT program prerequisites are completed.

Students who meet the admission criteria matriculate into the MSOT program. The professional phase begins in the fourth year of undergraduate studies and is delivered in a hybrid online/in-person format.

Year 1 (4th Year)

September-April Fall & Spring coursework
 May-June Summer coursework

Year 2 (5th Year)

September-April Fall & Spring coursework
 May-June Summer coursework

2.5 Track A

July-September Fieldwork A
 October-December Fieldwork B

2.5 Track A

October-December Fieldwork A
 January-March Fieldwork B

Curriculum: 74 credits

- East Falls Curriculum

<u>Year 1 Fall</u>		<u>Year 2 Fall</u>	
OCC 610	Evolving Prof Seminar 1	OCC 745	Level 1 Fieldwork B 1
OCC 611	Foundations for Practice 3	OCC 748	Assessment and Intervention: Adults 5
OCC 613	Functional Anatomy 4	OCC 749	Children & Youth A 3
OCC 621	Occupational Competence 3	OCC 754	Environmental Dimensions of Occupation 3
OCC 625	Clinical Skills 1		
<u>Year 1 Spring</u>		<u>Year 2 Spring</u>	
OCC 616	Assistive Technology Design 2	OCC 751	Professional Issues and Trends 3
OCC 623	Applied Neuroanatomy 4	OCC 755	Level I Fieldwork C 1
OCC 628	Intro to Evaluation 1	OCC 757	Innovative Practice in OT 3
OCC 635	Clinical Skills B 1	OCC 759	Children & Youth B 3
OCC 645	Clinical Skills C 1	OCC 767	Critical Inquiry I 2
OCC 741	Interpersonal Relationships & Groups 3		
<u>Year 1 Summer</u>		<u>Year 2 Summer</u>	
OCC 626	Evidence-Based Practice 3	OCC 764	Specialty Practice: Upper Extremity Rehab 2
OCC 735	Level I Fieldwork A 1	OCC 769	Critical Inquiry II 1
OCC 746	Psychosocial Interventions 4	OCC 784	Mastery 1
OCC 766	Older Adults: Enabling Participation 2	<u>Year 2.5</u>	
		OCC 778	Level II Fieldwork (Summer or Fall) 6
		OCC 779	Level II Fieldwork (Fall or Spring) 6

Exercise Science / Athletic Training

Bachelor of Science (BS) & Master of Science (MSAT)

Chair	Stephen Thomas, PhD, ATC
Contact	215-951-2657
Campus	East Falls
Website	www.jefferson.edu/university/rehabilitation-sciences/departments/exercise-science/degrees-programs/exercise-science-to-doctor-of-occupational

Program Description

Designed for high school graduates that are interested in pursuing a career in athletic training. This program provides an accelerated degree path that shortens the time to graduation by one full year, while still delivering a high quality high-quality educational experience that couples both classroom and clinical based educational

experiences necessary to earn a Bachelor of Science in exercise science and a masters in athletic training. The exercise science aspect will provide graduates with foundational knowledge in science, anatomy, physiology, biomechanics and exercise prescription.

Curriculum: Years 1-3

<u>Year 1 Fall</u>			<u>Year 2 Spring</u>		
FYS 100	Pathways Seminar	1		Concentration coursework	3
AMST 114	Topics in American Studies	3	GCIT 2XX	Global Citizen (World lang)	3
CHEM 103	Chemistry I	3	ETHC 2XX	Ethics	3
CHEM 103L	Chemistry I Lab	1	EXSC XXX	American Diversity	3
MATH 102 or MATH 110	Quant. Reason: Pre-calc or higher	3-4	PHYS 112	Physics II	4
PSYC 101	Introduction to Psychology	3	EXSC 210	Develop Interprofessional Team	1
BIO 103	Biology I	3			
BIO 103L	Biology I Lab	1			
<u>Year 1 Spring</u>			<u>Year 3 Fall</u>		
EXSC 110	Intro to Exercise Science	1	BIO 201	Anatomy & Physiology I	3
WRIT 101	Written Communication	3	BIO 201 L	Anatomy & Physiology I Lab	1
PSYCH 213	Developmental Psychology	3	CGIS 300	Contemporary Global Issues	3
WRIT 202	Multimedia Communication	3	EXSC XXX	Health Behavior Theory & Practice	3
CHEM 104	Chemistry II	3	EXSC XXX	Nutrition (for fitness)	3
CHEM 104L	Chemistry II Lab	1	EXSC XXX	Safety, First Aid & Injury Prevention	3
BIO 104	Biology II	3			
BIO 104L	Biology II Lab	1			
	General Elective	3	<u>Year 3 Spring</u>		
	General Elective	3	BIO 202	Anatomy & Physiology II	3
GDIV 2XX	Global Diversity (Incl world lang)	3	BIO 202L	Anatomy & Physiology II Lab	1
PHYS 111	Physics I	4	EXSC 330	Internship	3
STAT 220 or STAT 301	Statistics for the Behavioral or Sciences or Biostatistics	3	EXCS 310	Exercise Physiology	3
WRIT 201	Multimedia Communication	3		General Elective	3
				Integrative Seminar	3
			PHIL 499	Philosophies of Good Life	4

Curriculum: Years 4-6

- Professional Phase

	<u>Year 1 Fall 1</u>				<u>Year 2 Fall 1</u>	
ATP 600	Emergency Care	4		ATP 661	Practicum in Athletic Training III	3
ATP 602	Scientific Inquiry and Writing	1			<u>Year 2 Fall 2</u>	
ATP 605	Fundamentals of Athletic Training	4		ATP 665	Prevention, Evaluation and Treatment of Athletic Injuries II (Lower Extremity)	4
ATP 610	Basics of Rehabilitation	3		ATP 675	Strength and Conditioning	3
ATP 615	Functional Human Anatomy	3		ATP 685	Organization & Administration AT	2
				ATP 690	General Medical Condition and Pharmacology in Athletic Training	3
	<u>Year 1 Fall 2</u>				<u>Year 2 Spring 1</u>	
ATP 620	Practicum in Athletic Training	2		ATP 662	Practicum in AT IV	3
	<u>Year 1 Spring 1</u>				<u>Year 2 Spring 2</u>	
ATP 625	Prevention, Evaluation and Treatment of Athletic Injuries I (Upper Extremity)	4		ATP 670	Prevention, Evaluation and Treatment of Athletic Injuries III (Spine and advanced techniques)	4
ATP 630	Therapeutic Modalities	3		ATP 695	Psychological Aspects of Injury and Rehabilitation	3
ATP 635	Human Physiology	3		ATP 696	Special Topics in AT 2	2
ATP 645	Motor Control and Human Movement	3		ATP 692	Research/Collaborative Project II	1
	<u>Year 1 Spring 2</u>					
ATP 640	Practicum in Athletic Training II	3				
	<u>Year 1 Summer</u>					
ATP 691	Research / Collaborative Project I	1				
ATP 660	Specialty Practicum in AT	2				

Exercise Science / Doctor of Occupational Therapy

Bachelor of Science/Doctor of Occupational Therapy (BS/OTD)

Chair	Stephen Thomas, PhD, ATC
UG Coordinator	E. Adel Herge, OTD, OTR/L, FAOTA
Contact	215-951-2657
Campus	East Falls
Website	www.jefferson.edu/university/rehabilitation-sciences/departments/exercise-science/degrees-programs/exercise-science-to-doctor-of-occupational

Program Description

Designed for high school graduates that are interested in pursuing a career in occupational therapy. This program provides an accelerated degree path that shortens the time to graduation by one full year, while still delivering a high-quality educational experience that couples both classroom and clinical based educational experiences necessary to earn a Bachelor's of

Science in exercise science and a doctorate in occupational therapy. The exercise science aspect will provide graduates with foundational knowledge in science, anatomy, physiology, biomechanics and exercise prescription

Curriculum: Years 1-3

<u>Year 1 Fall</u>			<u>Year 2 Spring</u>		
FYS 100	Pathways Seminar	1		General Elective	3
AMST 114	Topics in American Studies	3	GCIT 2XX	Global Citizen (World Lang)	3
CHEM 103	Chemistry I	3	ETHC 2XX	Ethics	3
CHEM 103L	Chemistry II Lab	1	ADKV 2XX	American Diversity	3
MATH 102 or MATH 110	Quant. Reason: Pre-calc or higher	3-4	PHYS 112	Physics II	4
PSYC 101	Introduction to Psychology	3	EXSC 210	Develop Inter-professional Team	1
BIO 103	Biology I	3			
BIO 103L	Biology I Lab	1			
<u>Year 1 Spring</u>			<u>Year 3 Fall</u>		
EXSC 110	Intro to Exercise Science	1	BIO 201	Anatomy & Physiology I	3
WRIT 101	Written Communication	3	BIO 201 L	Anatomy & Physiology I Lab	1
PSYCH 213	Developmental Psychology	3	CGIS 300	Contemporary Global Issues	3
WRIT 202	Multimedia Communication	3	EXSC 312	Psychological Theory of Health & Exercise	3
CHEM 104	Chemistry II	3	EXSC 311	Sports Nutrition	3
CHEM 104L	Chemistry II Lab	1	EXSC 313	Safety, First Aid & Injury Prevention	3
BIO 104	Biology II	3		Integrative Seminar	3
BIO 104L	Biology II Lab	1			
	General Elective	3			
<u>Year 2 Fall</u>			<u>Year 3 Spring</u>		
	Concentration coursework	3	BIO 202	Anatomy & Physiology II	3
GDIV 2XX	Global Diversity (Incl world lang)	3	BIO 202 L	Anatomy & Physiology II Lab	1
PHYS 111	Physics I	4	EXSC 330	Internship I	3
STAT 220 or SAT 301	Statistics for the Behavioral or Sciences or Biostatistics	3	EXSC 310	Exercise Physiology	3
WRIT 201	Multimedia Communication	3		General Elective	3
			PHIL 499	Philosophies of Good Life	4

OTD Curriculum: Years 4-6

Program Director: Tina DeAngelis, EdD, OTR/L

<u>Year 1 Fall</u>			<u>Year 2 Fall</u>		
OT 302	Applied Anatomy & Kinesiology /LB	4	OT 440	Interventions: Enhancing Human Performance, Fieldwork Level I	2
OT 311	Health & Health Conditions	4	OT 441	Interventions: Enhancing Social Participation: Fieldwork Level I	2
OT 321	Foundations of Occupation-Centered Practice I	2	OT 552	Interventions: Enhancing Human Performance Practicum/Lab	5
OT 336	Occupation Through Life Span	5	OT 558	Interventions: Enhancing Social Participation/Lab	3
OT 340	Domains OT Practice: Fieldwork L I	2	OT 703	Professional Practice & Inquiry in Occupational Therapy Elective or Independent Study	6 3
OT 700	Developing Your OTD Practice Toolkit	1	<u>Year 2 Spring</u>		
<u>Year 1 Spring</u>			OT 480	Fieldwork Level II A (January through March)	6
OT 322	Found of Occupation- Practice II	2	OT 482	Fieldwork Level II B (April through June)	6
OT 357	Evaluation Process	4	OT704A	Evidence-Based Practice I (online January-March)	3
OT 577	Historical Perspectives on Theory-Based Practice	3	OT 704B	Evidence-Based Practice II (online April-June)	3
OT 560	Interventions: Environmental Competence	3	<u>Year 2 Summer</u>		
OT 561	Environmental Competence Lab	1	OT 705	Advanced Evidence-Based Practice for the OTD Student	4
OT 562	Environmental Competence In Action	1	OT 706	Visionary Practice: Creating & Measuring Outcomes of Therapeutic Programs	3
OT 701	Exploration of Doctoral Level Occupational Therapy Practice: The Faculty-Mentored Experience	1	OT 707	The Doctoral Capstone: Preparing for the Capstone Experience and Project	2
OT 308	Neuroscience Foundations of Occupational Therapy	4	<u>Year 3 Fall</u>		
<u>Year 1 Summer</u>			OT 720	Doctoral Capstone Seminar A	12
OT 341	Occupational Analysis & Evaluation - Fieldwork Level I	2	<u>Year3 Spring</u>		
OT 467	Health Services Administration	2	OT 721	Doctoral Capstone Seminar B	12
OT 603	Research Mentorship and Methods	4			
OT 702	OTD Leadership: National and Global Perspectives	1			

Exercise Science / Physical Therapy

Bachelor of Science (BS) & Doctoral Physical Therapy (DPT)

Chair	Stephen Thomas, PhD, ATC
Contact	215-951-2657
Campus	East Falls
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/exercise-science/degrees-programs/exercise-science-to-doctor-of-physical-therapy.html

Program Description

Designed for high school graduates that are interested in pursuing a career in physical therapy. This program provides an accelerated degree path that shortens the time to graduation by one full year, while still delivering a high-quality educational experience that couples both classroom and clinical based educational

experiences necessary to earn a Bachelor of Science in exercise science and a doctorate in physical therapy. The exercise science aspect will provide graduates with foundational knowledge in science, anatomy, physiology, biomechanics and exercise prescription.

Curriculum: Years 1-3

<u>Year 1 Fall</u>		<u>Year 2 Spring</u>	
FYS 100	Pathways Seminar 1		Concentration Coursework 3
AMST 114	Topics in American Studies 3	GCIT 2XX	Global Citizenship 3
CHEM 103	Chemistry I 3	ETHIC 2XX	Ethics 3
CHEM 103L	Chemistry I Lab 1	ADIV 2XX	American Diversity 3
BIO 103	Biology I 3	PHYS 112	Physics II 4
BIO 103L	Biology I Lab 1	EXSC 210	Developing the Interprofessional Team 1
MATH 102 or MATH 110	Quantitative Reasoning: Pre-calculus or higher 3		
PSYC 101	Intro to Psychology 3		
	<u>Year 1 Spring</u>		<u>Year 3 Fall</u>
EXSC 110	Intro to Exercise Science 3	ISEM 3XX	Integrative Seminar 3
PSYC 213	Developmental Psychology 3	BIO 201	Anatomy & Physiology I 3
CHEM 104	Chemistry II 3	BIOL 201L	Anatomy & Physiology I Lab 1
CHEM 105	Chemistry II Lab 1	CGIS 300	Contemporary Global Issues 3
BIO 103	Biology II 3	EXSC 311	Sports Nutrition 3
BIOL 103L	Biology II Lab 1	ES 313	Safety, First Aid & Injury Prevention 3
WRIT 101	Written Communication 3		
	Concentration Coursework 3		
	<u>Year 2 Fall</u>		<u>Year 3 Spring</u>
	Concentration Coursework 3	BIO 202	Anatomy & Physiology II 3
GDIV 2XX	Global Diversity 3	BIO 202L	Anatomy & Physiology II Lab 1
WRIT 201	Multimedia Communication 3	EXSC 310	Exercise Physiology 3
PHYS 111	Physics I 4	ES 330	Internship I 3
STAT 220 or STAT 301	Statistics for the Behavioral Sciences or Biostatistics 3		Concentration Coursework 3
		PHIL 499	Philosophies of the Good Life 4

DPT Curriculum: Years 4-6

Program Chair: Jane Fedorczyk, PT, PhD, CHT

<u>Year 4 Pre-Fall</u>			<u>Year 5 Fall</u>		
PT 507	Human Anatomy	3	PT 608	Musculoskeletal Physical Therapy II	4
PT 527	Critical Inquiry I	3	PT 612	Cardiovascular and Pulmonary PT II	3
PT 534	PT Issues: Intro to the Profession	1	PT 621	Neuromuscular Physical Therapy I	5
PT 536	PT Issues: The Language of Practice	1	PT 628	Capstone Project Physical Therapy I	1
<u>Year 4 Fall</u>			PT 645	Integrated Clinical Experience (ICE) III (1/2 class)	2
PT 506	Biomechanics and Kinesiology	4	PT 670	Prosthetics and Orthotic Intervention	3
PT 516	Neuroscience	3	PT 680	Introduction to Clinical Education	1
PT 533	Introduction to Physical Therapy Examination	5	<u>Year 5 Spring A</u>		
PT 538	PT Practice Issues: Psychosocial Aspects of PT & PTs as Teachers and Learners	2	PT 682	Clinical Education I	4
PT 539	PT Practice Issues: Clinical Decision Making	1	<u>Year 5 Spring B</u>		
PT 545	Integrated Clinical Experience (ICE) I	1	PT 609	Musculoskeletal III	4
<u>Year 4 Spring</u>			PT 622	Neuromuscular II	3
PT 513	Pathophysiology I	3	PT 710	Capstone in PT II	1
PT 518	Physical Therapy Practice and the Movement System	2	<u>Year 6 Pre-Fall</u>		
PT 546	Integrated Clinical Experience (ICE) II	1	PT 781	Clinical Education II	6
PT 553	Biophysical Agents	3	<u>Year 6 Fall</u>		
PT 556	Therapeutic Interventions	3	PT 632	Healthcare Delivery Systems	3
PT 624	Critical Inquiry II	2	PT 764	Pediatric Physical Therapy Practice	3
<u>Year 5 Pre- Fall</u>			PT 700	Differential Diagnosis	2
PT 514	Pathophysiology II	2	PT 705	Comprehensive Case Analysis I	2
PT 607	Musculoskeletal Physical Therapy I	4	PT 711	Capstone in PT III	1
PT 611	Cardiovascular and Pulmonary PT I	2	PT 736	Business and Leadership in Physical Therapy Practice	3
PT 613	Pharmacology	2	PT 774	Geriatric PT Practice	2
PT 661	PT for the Integumentary System	3	<u>Year 6 Spring</u>		
			PT 707	Comprehensive Case Analysis II	1
			PT 782	Clinical Education III	8

<h1 style="margin: 0;">Coaching In Context</h1> <p style="margin: 0; color: #C8513D;">Advanced Practice Certificate</p>	
<p>Contact Campus Website</p>	<p>Marie-Christine Potvin, PhD. OTR/L Online https://www.jefferson.edu/university/rehabilitation-sciences/departments/outcomes-measurement/education/health-coaching-in-context.html</p>

Program Description

This Advanced Practice Certificate (APC), Coaching in Context was designed and created to provide healthcare professionals with specific skills and training to use coaching as an intervention within their practice.

- Coaching provides clients a means to identify and solve issues that are potential barriers to their performance in their life roles through goal focused problem solving.
- Students will discover coaching evidence, principles, methods and practice, develop skills to implement evidence-based coaching within their practice, coach with fidelity reflecting standards and evolve to provide mentorship to other coaches.

The Coaching in Context APC is built on evidence from positive psychology and principles of health coaching. We will focus on coaching that promotes self-efficacy and problem solving to support client’s autonomy so that clients can live their best lives regardless of health circumstances

Curriculum 16 months, 12 credits

<u>Core Curriculum</u>		
JCRS 760	Introduction & Development	3
JCRS 761	Skills for Evidenced Based Coaching	3
JCRS 762	Reflection on Coaching Standards	3
JCRS 763	Coaching Evolution and Mentorship	3

Emerging Leaders in Autism Practice & Research

Advanced Practice Certificate

Program Director	Roseann C. Schaaf, PhD, OTR/L, FAOTA
Campus	Online
Website	https://www.jefferson.edu/university/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/advanced-practice-certificates/autism/overview.html

Program Description

This advanced practice certificate offers registered and licensed occupational therapists advanced knowledge about Autism Spectrum Disorders (ASD) and skills for working with persons who have ASD.

- Courses are taught by experts in the field
- Four graduate-level courses (12 credits)
- Courses are designed to interface with our OTD program, and may be used for graduate credit toward a Doctorate degree

Curriculum: 16 months, 12 credits

<u>Core Curriculum</u>		
OT 761	Autism: The State of the Field	3
OT 766	Assessment and Intervention Strategies for Individuals with Autism Spectrum Disorder	3
OT 751	Neuroscience Foundations for Practice	3
OT 770	Knowledge Translation to Promote Best Practice	3

Hand & Upper Limb Rehabilitation

Advanced Practice Certificate

Program Director
Campus
Website

Jane Fedorczyk, PT, PhD, CHT
Center City
<https://www.jefferson.edu/university/rehabilitation-sciences/departments/hand-upper-limb-rehabilitation.html>

Program Description

The Advanced Practice Certificate in Hand and Upper Limb Rehabilitation is designed for physical therapists and occupational therapists who wish to participate in advanced practice education in the examination, assessment, and management of clients that present with conditions associated with hand and upper limb dysfunction.

- The curriculum consists of four graduate level courses, offered in a convenient online format with integrated onsite weekend sessions to practice psychomotor skills required for advanced practice.
- Graduate credits (12) may be applied toward our Post-Professional OTD program.
- Elevate and expand hand therapy services through clinical decision-making that is consistent with the concepts of client-center care and evidence-informed practice.

Curriculum: 16 months, 12 credits

<u>Core Curriculum</u>		
JCRS 750	Foundations in Hand Therapy	3
JCRS 751	Nerve Injuries of the Hand and Upper Limb	3
JCRS 752	Joint Pathology of the Hand and Upper Limb	3
JCRS 753	Diseases That Affect the Hand and Upper Limb	3

Life Care Planning

Graduate Certificate

Contact
Campus
Website

MJ Mulcahey, PhD, OTR/L, CLCP
Online
<https://www.jefferson.edu/academics/colleges-schools-institutes/rehabilitation-sciences/departments/outcomes-measurement/education/life-care-planning-graduate-certificate.html>

Program Description

The Life Care Planning Graduate Certificate is designed for inter-disciplinary professionals with a minimum of a bachelor's degree with a desire to develop and use a Life Care Plan (LCP).

Professionals involved in health care and education would benefit from this program, as the Life Care Planning Graduate Certificate will provide an overview of concepts and disease\diagnoses-specific considerations to include in the LCP, and training on how to present and defend LCP content. For those working with persons with catastrophic injuries and chronic conditions in hospitals, rehabilitation centers, community-based practices and in the home, the Life Care Planning Graduate Certificate will provide an overview of LCP concepts and of how the medical, nursing and therapy teams contribute to the LCP.

Those who complete the Graduate Certificate will understand the purpose, content, process of development, and utilization of the LCP, and will be able to contribute to a LCP.

After successfully completing the four courses, students will receive a post-professional certificate of completion. The credits may be applied to the Post Professional OTD program offered in the Jefferson College of Rehabilitation Sciences and may be used toward pre-certification training hours to qualify for the Certified Life Care Planner (CLCP) credential through the International Commission on Health Care Certification (ICHCC).

Curriculum: 1 year, 12 credits

Core Curriculum		
JCRS 730	Introduction to Life Care Planning	3
JCRS 731	A Primer on Catastrophic Injuries & Chronic Conditions for Life Care Planning	3
JCRS 732	Specialty Topics in Life Care Planning	3
JCRS 733	Life Care Planning Practicum	3

Neuroscience: Advanced Concepts for Evidence Based Practice

Graduate Certificate

Program Director Alison Bell, OTD, OTR/L
Campus Online
Website <https://www.jefferson.edu/university/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/advanced-practice-certificates/neuroscience.html>

Program Description

This advanced practice certificate is designed for registered and licensed occupational therapists, physical therapists and other rehabilitation professionals who wish to participate in advanced study of neuroscience and neuro-based rehabilitation intervention strategies.

- Credits may be applied toward Doctoral degree

Curriculum: 16 months, 12 credits

<u>Core Curriculum</u>		
OT 751	Neuroscience Foundations for Practice	3
OT 753	Advanced Concepts in Neuroscience I	3
OT 770	Knowledge Translation to Support Best Practice	3
OT 778	Advanced Evidence-Based Practice	3

Teaching in the Digital Age

Advanced Practice Certificate

Program Director
Campus
Website

Susan Toth-Cohen, PhD, OTR/L
Online
<https://www.jefferson.edu/university/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/advanced-practice-certificates/teaching.html>

Program Description

As the need for occupational therapists increases, so does the demand for qualified OT educators to prepare the future workforce.

- Courses are designed to interface with our OTD program and may be used for graduate credit toward a Doctorate degree
- Fundamental knowledge and skills to teach OT curricula in schools and other applied settings

Curriculum: 16 months, 12 credits

<u>Core Curriculum</u>		
OT 782	Leadership: Moving Beyond Traditional Roles (Spring)	3
OT 783	Bridging the Gap between Classroom and Clinical Practice (Summer 1)	3
OT 784	College Teaching in the Digital Age (Fall)	3
OT 785	The Evidence Base of Teaching: Advanced Curriculum Development (Fall)	3

SCHOOL OF CONTINUING & PROFESSIONAL STUDIES

Trauma Counseling

Dean: Shelley Osagie, EdD | 215-951-2900 | Jefferson.edu/SCPS

Jefferson’s School of Continuing and Professional Studies is uniquely prepared to help you attain a degree or certificate of choice. Organizational leaders and consultants, business professionals, healthcare professionals, human resource managers, IT managers, medical office managers, medical coders, paramedics, firefighters, and occupational therapy assistants are just some of the positions our students aspire to or currently hold.

With an eye towards accessibility, we offer convenient locations, accelerated 8-week courses, flexible class times (evening and Saturday), and online and hybrid course options. Our flexible approach, coupled with our personalized advising model, meets each student where they are and empowers them to attain their academic goals.

Locations

- Jefferson Center City 901 Walnut Street, Philadelphia, PA
- Jefferson East Falls 4201 Henry Avenue, Philadelphia, PA
- Jefferson Online online.jefferson.edu

Educational Programs Offered

Accelerated Programs	Certificate, associate’s, bachelor’s, master’s, and doctoral programs
Corporate Training	Assist a range of enterprises, from large corporations to small businesses, creating specific skills and training programs to bring employees up-to-speed in various skill areas.
Non-Degree Courses	Students interested in taking individual courses or completing prerequisites can register as a non-degree student. Credits earned are transferrable to appropriate degree programs.
Professional Development Certificates	Short courses and certificate programs to provide up-to-date training, hands-on experience, and tools that will keep you at the forefront of your field, or help you explore a new interest.

Academic Programs

Certificate Programs

Healthcare Information Systems	Undergraduate Certificate
Medical Coding and Data Quality	Undergraduate Certificate
Medical Practice Management	Undergraduate Certificate

Associate's Degree Programs

Health & Human Services	AS
Health & Human Services-Radiologic Technology	AS

Bachelor's Degree Programs

Behavioral & Health Services	BS
Business Management	BS
Health Sciences	BS
Health Services Management	BS
Health Studies	BS
Human Resource Management	BS
Information Technology	BS
Organizational Leadership	BS

Graduate Degree Programs

Organizational Leadership	MS
Strategic Leadership	DMgt- closed to new applicants

Creativity and Leadership Core

Each SCPS bachelor's degree curriculum includes a Creativity and Leadership Core, which is designed to help students to think creatively and lead in life, work, and the community. Many of us believe that creativity is for people in the arts and that leadership is for people with certain job titles. The truth is creative thinking can be enhanced and tools and techniques in creativity can be learned. Similarly, leadership can be practiced at any level of an organization and in any setting, including your family and your community. Modern employers are seeking well-rounded employees who demonstrate creativity and leadership, serving as conduits of positive change. The Creativity and Leadership Core, which aligns with the University's Creativity Core, is comprised of five courses:

CLC 310 or CLCX 310	Creativity Foundations and Applications	3
CLC 330 or CLCX 330	Project Management	3
CLC 340 or CLCX 340	Leading Diverse Organizations	3
CLC 350 or CLCX 350	Creative Leadership	3
CLC 360 or CLCX 360	Leadership in the Digital Age	3

Undergraduate Certificate Programs

Healthcare Information Systems

Undergraduate Certificate

Contact	CPSAdmissions@Jefferson.edu
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/professional-development/certificates/healthcare-management-information-systems.html

Program Description

The 21 credit Certificate in Healthcare Information Systems provides competency in key areas of healthcare information. All credits earned may be transferred to our baccalaureate program in information technology.

Curriculum: 21 credits

CMST 212	Database Management	3	HMIS 401	Network Management	3
HCA 300	Health Services Delivery and Organization	3	HMIS 402	Systems Design	3
HMIS 310	Management Information Systems in Healthcare	3	HMIS 420	Informatics Analysis and Utilization in HSOs	3
HMIS 311	Informatics Resources & Technology for Health Services	3			

Medical Coding & Data Quality

Undergraduate Certificate

Contact	CPSAdmissions@Jefferson.edu
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/professional-development/certificates/medical-coding-and-data-quality.html

Program Description

The 34 credit Medical Coding and Data Quality Certificate Program at Jefferson combines traditional academic coursework, state-of-the-art technology, and supervised fieldwork with expert certified medical coders. The program emphasizes ethical and regulatory policies necessary to produce accurate high-quality coding data that support the economic vitality of the US healthcare system. The Coding Certificate will help you succeed in the Health Information

Management field, which is expected to grow by over 8% (twice the average for all occupations) through 2029, according to the Bureau of Labor Statistics. Students in our Medical Coding & Data Quality Certificate program are prepared for entry-level medical coding positions in a physician's practice, hospital, rehabilitation center, skilled nursing facility and other healthcare settings.

Curriculum: 34 credits

HSC 120	Medical Terminology	3	CODP 203	CPT Coding Concepts	3
HSC 200	Structure and Function of the Human Body	3	CODP204	Application of CPT Coding	3
HSC 201	Human Disease and Treatment	3	CODP 205	ICD-10 PCS	3
HSM 303	Healthcare Law	3	CODP 206	ICD-10 Principles/Applications	1
CODP 100	Intro Health Information & Data Quality	3	CODP 207	Reimbursement Methodology	3
CODP 202	ICD-10-CM	3	CODP 210	Coding PPE	3

Medical Practice Management

Undergraduate Certificate

Contact	CPSAdmissions@Jefferson.edu
Campus	Center City
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/professional-development/certificates/medical-practice-management.html

Program Description

The 36 credit Certificate in Medical Practice Management provides comprehensive preparation for the management and administration of day-to-day operations of a health professional practice. The program includes enhanced skills in computer applications, managerial accounting and management as well as presentation of legal issues related to healthcare practice. All courses are transferable to the BS in Health Services Management.

Curriculum: 36 credits

ACCT 101	Financial Accounting	3	HCA 302	Healthcare Classification Systems	3
ACCT 102	Managerial Accounting	3	HCA 303	Business & Healthcare Law	3
CMST 201	Technology Apps for Healthcare	3	HCA 410	Medical Practice Management	3
ENGL 101	Composition I	3	HSC 120	Medical Terminology	3
ENGL 103	Business and Technical Writing		MGMT 101	Principles of Management and Organizational Behavior	3
HCA 300	Health Services Delivery and Organization	3	MGMT 102	Human Resources Management	3

Health & Human Services	
Associate of Science (AS)	
Contact	CPSAdmissions@Jefferson.edu
Campus	Restricted Enrollment: District 1199C Training & Upgrading Fund
Website	https://www.jefferson.edu/university/continuing-professional-studies

Program Description

This 60-credit program builds on technical training programs that have been approved by the Pennsylvania Department of Education for post-secondary credit and that have articulation agreements with the University.

Curriculum: 60 credits

<u>General Education Core</u>			<u>Major Courses</u>		
WRIT 101AC	Writing Seminar I	3	PSYC 251	Abnormal Psychology	3
COMM 320	Professional Comm Skills	3	PSYC 263	Interpersonal Relations and Small Group Dynamics	3
MATH 215	College Algebra	3	PSYC 254	Psychology of Addiction	3
SCI 101	Environmental Science	3	COMM 310	Comm Theory and Practice	3
HIST 114AC	America in Focus: Themes in U.S. History	3	BHLT 290	Clinical Interactions in Behavioral Health	3
PSYC 100	Introduction to Psychology	3	BHLT 1199C	Behavioral Health Technician Training Program	21
HLSV 210	Ethical Issues for Health & Human Services Providers	3			
IT 101	Intro to Computer Applications	3			

Health & Human Services: Radiologic Technology

Associate of Science (AS)

Contact CPSAdmissions@Jefferson.edu
Campus Restricted Enrollment: Einstein
Website <https://www.jefferson.edu/university/continuing-professional-studies>

Program Description

This 63-credit program builds on transferable credits earned through successful completion of specified **Albert Einstein Medical Center School of Radiologic Technology** coursework.

- Block Transfer Segment 1: Radiologic Technology Technician Program 5 credits
- Block Transfer Segment 2: Radiologic Technology Technician Program 20 credits
- Block Transfer Segment 3: Radiologic Technology Technician Program 17 credits

Curriculum: 63 credits (includes block transfer)

<u>General Education Core</u>		
WRIT 105	Writing About Workplace Culture	3
PLA 100	Scientific Reasoning	3
MATH 215	College Algebra	3
HIST 114AC	America in Focus: Themes in U.S. History	3
PSYC 100	Introduction to Psychology	3
HUMN 301 or	Art in Context or	3
HUMN 310	Globalization & World Politics	
IT 201	Learning and Technology	3

Behavioral & Health Services

Bachelor of Science (BS)

Contact	CPSAdmissions@Jefferson.edu
Campus	East Falls & Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/behavioral-and-health-services.html https://online.jefferson.edu/online-degrees/bs-behavioral-health-services/

Program Description

The BS in Behavioral and Health Services covers the major theories and concepts in behavioral health and enables students to apply various intervention approaches used in the delivery of behavioral and health services. Mental health policies, legal and ethical matters, social justice concerns, delivery systems, service settings,

target populations, and service approaches also are covered. Graduates are prepared for entry-level positions in mental health settings and for graduate programs, such as Jefferson's MS in Community and Trauma Counseling and the MS in Couple and Family Therapy.

Curriculum: 120 credits

SCPS General Education Requirements			Major Requirements		
	Written Communication Elective	3	PSYC 251/ PSYX 251	Abnormal Psychology	3
	Written Communication Elective	3	PSYC 253/ PSYX 253	Developmental Psychology	3
STAT 211/ STAX 211	Finding & Evaluating Statistical Data	3	PSYC 254/ PSYX 254	Psychology of Addiction	3
	Science elective	3	PSYC 256/ PSYX 256	Psychology of Trauma	3
COMM 220/ COMX 220	Speaking to Lead in the Digital Age	3	PSYC 262/ PSYX 262	Counseling Psychology	3
PHIL 222/ PHLX 222	Applied Professional Ethics	3	PSYC 263/ PSYX 263	Interpersonal Relations & Small Group Dynamics	3
PSYC 100/ PSXY 100	Introduction to Psychology/ Fundamentals of Psychology	3	BHS 351/ BHSX 351	Behavioral Health Policies & Services	3
	Foundation Requirements		BHS 353/ BHSX 353	Human Services Administration	3
CCSE 101/ CSSX 101	Learning Across the Lifespan	3	BHS 361/ BHSX 361	Applications of Behavioral Health Research	3
	Creativity & Leadership Core		BHS 498/ BHSX 498	Behavioral & Health Services Capstone	3
CLC 310/ CLCX 310	Creativity Foundations and Applications	3		General Electives	51
CLC 330/ CLCX 330	Project Management	3			
CLC 340/ CLCX 340	Leading Diverse Organizations	3			
CLC 350/ CLCX 350	Creative Leadership	3			
CLC360/ CLCX 360	Leadership in the Digital Age	3			

Business Management

Bachelor of Science (BS)

Contact Campus Website	<p>CPSAdmissions@Jefferson.edu East Falls & Online https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/business-management.html https://online.jefferson.edu/online-degrees/bs-business-management/</p>
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Program Description

The BS in Business Management covers traditional functional areas of business such as accounting, economics, finance, marketing, operations management, and technology, as well as current topics that are in demand such as creative leadership, project management, and business analytics. The capstone is an integrative course that enables students to analyze a firm's

strategy and to make professional recommendations. The program, which covers both management and leadership, prepares students to change careers or to advance in their current field. For those interested in graduate study, several required courses satisfy foundation courses in Jefferson's iMBA program.

Curriculum: 120 credits

<u>SCPS General Education Requirements</u>			<u>Creativity & Leadership Core</u>		
	Written Communication Elective	3	CLC 310/ CLCX 310	Creativity Foundations and Applications	3
	Written Communication Elective	3	CLC 330/ CLCX 330	Project Management	3
STAT 211/ STAX 211	Finding & Evaluating Statistical Data	3	CLC 340/ CLCX 340	Leading Diverse Organizations	3
	Science elective	3	CLC 350/ CLCX 350	Creative Leadership	3
COMM 220/ COMX 220	Speaking to Lead in the Digital Age	3	CLC 360/ CLCX 360	Leadership in the Digital Age	3
PHIL 222/ PHLX 222	Applied Professional Ethics	3			
	Social Science Elective	3			
<u>Foundation Requirements</u>			<u>Major Requirements</u>		
CCSE 101/ CSSX 101	Learning Across the Lifespan	3	MIS 211/ MISX 211	Management Information Systems	3
ACCT 111/ ACCX 111	Financial Accounting	3	FIN 323/ FINX 323	Financial Decision Making	3
ACCT 112/ ACCX 112	Managerial Accounting	3	MGMT 321/ MGTX 321	Operations Management	3
BLAW 211/ BLWX 211	Business Law	3	MGMT 322/ MGTX 322	Business Analytics and Visualization	3
ECON 231/ ECNX 231	Economic Decision Making	3	BUS 498/ BUSX 498	Business Management Capstone	3
MGMT 212/ MGTX 212	Principles of Management	3		General Electives	48
MKTG 211/ MKTX 211	Principles of Marketing	3			

Health Sciences

Bachelor of Science (BS)

Contact CPSAdmissions@Jefferson.edu
Campus East Falls & Online
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/health-sciences.html>

Program Description

The BS in Health Sciences provides knowledge and skills for career paths in clinical and non-clinical roles. You will be prepared for roles that require critical thinking, data analysis, and leadership skills in contexts such as hospitals, clinics, insurance companies, pharmaceutical companies, research labs, or community agencies. You also will complete prerequisite coursework for entry into graduate programs in a variety of health professions.

Curriculum: 120 credits

<u>SCPS General Education Requirements</u>			<u>Creativity & Leadership Core</u>		
	Written Communication Elective	3	CLC 310	Creativity Found and Appl	3
	Written Communication Elective	3	CLCX 310	Project Management	3
STAT 211	Finding & Evaluating Stat Data	3	CLCX 330	Leading Diverse Organizations	3
BIOL 121/122	General Biology I/Lab	4	CLC 340	Creative Leadership	3
COMM 220	Speaking to Lead in the Digital Age	3	CLCX 340	Leadership in the Digital Age	3
PHIL 222	Applied Professional Ethics	3	CLC 350		
	Social Science Elective	3	CLCX 350		
			CLC 360/ CLCX 360		
				<u>Health Sciences Electives</u>	6
				Choose electives from biological & physical sciences, social sciences, or health professions	
				<u>Major Requirements</u>	
CCSE 101	Learning Across the Lifespan	3	HSC 201	Human Disease & Treatment	3
BIOL 110/113	Anatomy and Physiology I/Lab	4	HSM 301	Health Systems & Policy	3
BIOL 111/114	Anatomy and Physiology II/Lab	4	HSM 350	Public Health & Epidemiology	3
BIOL 123/124	Biology II/Lab	4	HSM 412	Healthcare Quality Improvement	3
CHEM 110/111	Chemistry I/Lab	4	HSC 498	Health Sciences Capstone	3
HSC 110	Intro to Health Professions	3		General Electives	37
HSC 120	Medical Terminology	3			

Health Services Management

Bachelor of Science (BS)

Contact	CPSAdmissions@Jefferson.edu
Campus	East Falls & Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/health-services-management.html
	https://online.jefferson.edu/online-degrees/bs-health-services-management/

Program Description

The BS in Health Services Management prepares individuals for entry-level management positions in a wide variety of healthcare settings. Health services managers plan, organize, coordinate and supervise the delivery of healthcare services. They may be generalists who manage or help to

manage entire facilities or systems, or specialists who manage clinical departments or services specific to the healthcare industry. You will learn to be familiar with and adapt to changes in healthcare policies, laws, regulations, and technology.

Curriculum: 120 credits

<u>General Education Requirements</u>			<u>Creativity & Leadership Core</u>		
	Written Communication Elective	3	CLC 310/ CLCX 310	Creativity Foundations and Applications	3
	Written Communication Elective	3	CLC 330/ CLCX 330	Project Management	3
STAT 211/ STAX 211	Finding and Evaluating Statistical Data	3	CLC 330/ CLCX 330	Project Management	3
	Science Elective	3	CLC 340/ CLCX 340	Leading Diverse Organizations	3
COMM 220/ COMX 220	Speaking to Lead in the Digital Age	3	CLC 350/ CLCX 350	Creative Leadership	3
PHIL 222/ PHLX 222	Applied Professional Ethics	3	CLC 360 / CLCX 360	Leadership in the Digital Age	3
	Social Science Elective	3			
<u>Foundation Requirements</u>			<u>Major Requirements</u>		
CSSE 101/ CSSX 101	Learning Across Lifespan	3	HSM 301/ HSMX 301	Health Systems and Policy	3
FIN 201/ FINX 201	Accounting & Finance for Nonfinancial Leaders	3	HSM 303/ HSMX 303	Business & Healthcare Law	3
ECON 231/ ECNX 231	Economic Decision Making	3	HSM 311/ HSMX 311	Health Informatics	3
			HSM 350/ HSMX 350	Public Health & Epidemiology	3
			HSM 351/ HSMX 351	Strategic Planning and Marketing for HSOs	3
			HSM 407/ HSMX 407	Financial Management of HSOs	3
			HSM 412/ HSMX 412	Healthcare Quality Improvement	3
			HSM 498/ HSMX 498	Health Services Management Capstone	3
				General Electives	51

Health Studies

Bachelor of Science (BS)

Contact CPSAdmissions@Jefferson.edu
Campus East Falls & Online
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/health-studies.html>
<https://online.jefferson.edu/online-degrees/bs-health-studies/>

Program Description

The BS in Health Studies serves the needs of students who are interested in a health professions-related program, but who desire maximum flexibility in designing their curriculum. Health Studies majors often have varied backgrounds and future interests that cannot be captured in a singularly-focused health-related degree. The BS in Health Studies

will provide you with a solid major core in health studies, including timely topics such as health systems & policy and public health & epidemiology, while enabling you to leverage your prior college coursework and to tailor your health studies electives and general electives to personal goals.

Curriculum: 120 credits

<u>SCPS General Education Requirements</u>		<u>Creativity & Leadership Core</u>			
	Written Communication Elective	3	CLC 310/ CLCX 310	Creativity Foundations and Applications	3
	Written Communication Elective	3	CLC 330/ CLCX 330	Project Management	3
	Math Elective	3	CLC 340/ CLCX 340	Leading Diverse Organizations	3
	Science Elective	3	CLC 350/ CLCX 350	Creative Leadership	3
COMM 220/ COMX 220	Speaking to Lead in the Digital Age	3	CLC 360/ CLCX 360	Leadership in the Digital Age	3
PHIL 222/ PHLX 222	Applied Professional Ethics	3			
	Social Science Elective	3			
				<u>Health Studies Electives</u>	30
				Choose electives from biological sciences, physical sciences, social sciences, or health professions	
	<u>Foundation Requirements</u>			<u>Major Requirements</u>	
CCSE 101/ CSSX 101	Learning Across the Lifespan	3	HSC 201/ HSCX 201	Human Disease & Treatment	3
HSC 120/ HSCX 120	Medical Terminology	3	HSM 301/ HSMX 301	Health Systems and Policy	3
HSC 200/ HSCX 200	Structure & Function of the Human Body	3	HSM 350/ HSMX 350	Public Health & Epidemiology	3
			NUTR 301/ NUTX 301	Nutrition	3
			HST 498/ HSTX 498	Health Studies Capstone	3
				General Electives	30

Human Resource Management

Bachelor of Science (BS)

Contact	CPSAdmissions@Jefferson.edu
Campus	East Falls & Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/human-resource-management.html https://online.jefferson.edu/online-degrees/bs-human-resources-management/

Program Description

The BS in Human Resource Management will enable you to become a knowledgeable human resource professional through a curriculum informed by professional organizations that lead the field including the Society for Human Resource Management (SHRM). Courses in the functional areas of human resources such as staffing and recruitment, compensation and

benefits, training and development, and employment law are complemented by integrative courses such as global human resource management and the capstone course. Graduates are prepared for entry-level positions in a variety of organizations or for graduate-level study in business or organizational leadership.

Curriculum: 120 credits

<u>SCPS General Education Requirements</u>			<u>Creativity & Leadership Core</u>		
	Written Communication Elective	3	CLC 310/ CLCX 310	Creativity Foundations and Applications	3
	Written Communication Elective	3	CLC 330/ CLCX 330	Project Management	3
	Math Elective	3	CLC 340/ CLCX 340	Leading Diverse Organizations	3
	Science Elective	3	CLC 350/ CLCX 350	Creative Leadership	3
COMM 220/ COMX 220	Speaking to Lead in the Digital Age	3	CLC 360/ CLCX 360	Leadership in the Digital Age	3
PHIL 222/ PHLX 222	Applied Professional Ethics	3		<u>Major Requirements</u>	
	Social Science Elective	3	HRM 201/ HRMX 201	Intro to Human Resource Management	3
	<u>Foundation Requirements</u>		HRM 305/ HRMX 305	Staffing & Recruitment	3
CCSE 101/ CSSX 101	Learning Across the Lifespan	3	HRM 307/ HRMX 307	Compensation & Benefits	3
FIN 201/ FINX 201	Accounting & Finance for Nonfinancial Leaders	3	HRM 308/ HRMX 308	Training & Development	3
ECON 231/ ECNX 231	Economic Decision Making	3	HRM 341/ HRMX 341	Employment Law	3
			HRM 343/ HRMX 343	Global Human Resource Management	3
			HRM 345/ HRMX 345	Organizational Development & Change	3
			HRM 498/ HRMX 498	Human Resource Management Capstone	3
				General Electives	51

Information Technology

Bachelor of Science (BS)

Contact CPSAdmissions@Jefferson.edu
Campus East Falls & Online
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/information-technology.html>

<https://online.jefferson.edu/online-degrees/bs-information-technology-management/>

Program Description

Building on foundational courses in information systems, hardware, operating systems, and software development, the curriculum covers major information technology (IT) domains

including database, systems analysis and design, networking, cloud, and cybersecurity. The program concludes with integrative courses in IT process and service management and the capstone course.

Curriculum: 120 credits

<u>SCPS General Education Requirements</u>			<u>Major Requirements</u>		
	Written Communication Elective	3	IT 211/ ITX 211	Intro to Information Systems	3
	Written Communication Elective	3	IT 221/ ITX 221	Hardware and Operating Systems	3
	Science Elective	3	IT 241/ ITX 241	Software Development	3
	Math Elective	3	IT 320/ ITX 320	Database Management	3
COMM 220/ COMX 220	Speaking to Lead Digital Age	3	IT 321/ ITX 321	Systems Analysis and Design	3
PHIL 222/ PHLX 222	Applied Professional Ethics	3	IT 322/ ITX 322	Network Management	3
	Social Science Elective	3	IT 323/ ITX 323	Cloud Management	3
	<u>Foundation Requirements</u>		IT 324/ ITX 324	Cybersecurity Management	3
CSSE 101/ CSSX 101	Learning Across the Lifespan	3	IT 325/ ITX 325	IT Process and Service Management	3
FIN 201/ FINX 201	Accounting & Finance for Nonfinancial Leaders	3	IT 498/ ITX 498	Information Technology Capstone	3
	<u>Creativity & Leadership Core</u>			General Electives	48
CLS 310/ CLCX 310	Creativity Foundations and Applications	3			
CLS 330/ CLCX 330	Project Management	3			
CLC 340/ CLCX 340	Leading Diverse Organizations	3			
CLC 350/ CLCX 350	Creative Leadership	3			
CLC 360/ CLCX 360	Leadership in the Digital Age	3			

Organizational Leadership

Bachelor of Science (BS)

Contact	CPSAdmissions@Jefferson.edu
Campus	East Falls & Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/organizational-leadership.html
	https://online.jefferson.edu/online-degrees/bs-organizational-leadership/

Program Description

In the BS in Organizational Leadership students learn how organizations function at the interpersonal, team, and organizational levels. The focus is on leading creative and innovative organizations with emotional intelligence, confidence, and integrity. The major requirements are designed to enable students both to improve organizational effectiveness and to be aware of their personal formation and development as leaders.

Curriculum: 120 credits

<u>SCPS General Education Requirements</u>			<u>Creativity & Leadership Core</u>		
	Written Communication Elective	3	CLC 310/ CLCX 310	Creativity Foundations and Applications	3
	Written Communication Elective	3	CLC 330/ CLCX 330	Project Management	3
	Math Elective	3	CLC 340/ CLCX 340	Leading Diverse Organizations	3
	Science Elective	3	CLC 350/ CLCX 350	Creative Leadership	3
COMM 220/ COMX 220	Speaking to Lead in the Digital Age	3	CLC 360/ CLCX 360	Leadership in the Digital Age	3
PHIL 222/ PHLX 222	Applied Professional Ethics	3			
	Social Science Elective	3			
<u>Foundation Requirements</u>			<u>Major Requirements</u>		
CCSE 101/ CSSX 101	Learning Across the Lifespan	3	LDSP 361/ LDSX 361	Leadership Theory & Practice	3
FIN 201/ FINX 201	Accounting & Finance for Nonfinancial Leaders	3	LDSP 365/ LDSX 365	Behavioral Dynamics in Organizations	3
HRM 201/ HRMX 201	Intro to Human Resource Management	3	LDSP 368/ LDSX 368	Organizational Theory & Development	3
			LDSP 375/ LDSX 375	Leadership Development	3
			LDSP 498/ LDSX 498	Organizational Leadership Capstone	3
				General Electives	60

Organizational Leadership

Master of Science (MS)

Contact	CPSAdmissions@Jefferson.edu
Campus	East Falls & Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/ms-organizational-leadership.html

Program Description

The Master of Science in Organizational Leadership (MSOL) prepares professionals from diverse career backgrounds to innovate and ascend to senior-level leadership roles within their organization. Taught by a faculty of industry experts, students in the MSOL program will learn how to manage and institute change, develop and utilize performance metrics, create stakeholder buy-in at all levels, and other areas pertinent to business organizations. As the demand for leaders who are prepared to handle uncertainty, complexity and ambiguity increases, the MSOL program meets those needs by providing education that embraces a volatile environment by teaching necessary skills to meet complexity head on.

Program Learning Outcomes

1. Apply concepts in organizational dynamics, team dynamics, and systems thinking in order to promote the development of a learning organization capable of effective communication, managing conflict, creating innovation, and adaptation
2. Articulate knowledge and application of best practices in leadership, team building, cultural competence and ethical leadership in support of building one's professional identity
3. Evaluate the impact volatility, uncertainty, complexity, and ambiguity have on an organization and strategize opportunities for responsive organizational innovation
4. Develop executive communication skills, both oral and written, that focus on the clear and concise delivery of content and ideas to inform and engage all stakeholders across an organization in working towards satisfying organizational goals

Curriculum: 36 credits

<u>Domain I: Leadership Skills & Knowledge</u>			<u>Domain III: OL Concentration</u>		
LDSP 510	Team Dynamics & Collaboration	3	LDSP 620	Psychology of Global Leadership	3
LDSP 515	Organizational Innovation, Creativity, & Change	3	LDSP 625	Consulting I	3
LDSP 520	Strategic Leadership in a VUCA World	3	LDSP 630	Systems & Design Thinking	3
<u>Domain II: Organizational Knowledge</u>			LDSP 640	Psychology of Conflict and Negotiation in Organizations	3
LDSP 580	Human Relations & Employee Development	3	LDSP 699	Capstone	3
LDSP 590	Organizational Awareness	3			
LDSP 605	Leading in the Digital Age	3			
LDSP 610	Organizational Performance Metrics	3			

Strategic Leadership

Doctor of Management (DMgt)

Contact	CPSAdmissions@Jefferson.edu
Campus	East Falls & Online
Website	https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/doctor-of-management-strategic-leadership.html

This program is no longer accepting new applicants as it is currently being updated. Check our website for the latest updates on the new curriculum and when the application process will reopen.

Program Description

Designed by doctoral students, faculty, corporate, government, and not-for-profit stakeholders, this distinctive systems/complexity-based Doctor of Management (DMgt) degree program uses conceptual, experiential and reflective learning to meet the complex educational and practice needs created by the ever-evolving workplace, rapid expansion of knowledge underlying practice, increased technological advances, and the cultural and geographic diversity of the global workplace. The DMgt in Strategic Leadership is a professional executive research degree that builds a community and network of adult professional students, faculty, scholars,

and practitioners. Executive coaches and research mentors support doctoral students in leadership development, communication skills, and applied research formulation and delivery. The program enables development of leaders who can strategically and effectively navigate situational and organizational complexity, and who can apply tools leading to creative and innovative outcomes. Graduates of the program will have the competency to astutely identify new opportunities, help solve complex organizational problems, and meet the leadership needs of employers and society in the United States and abroad.

Curriculum: 45 credits

<u>Conceptual Requirements</u>			<u>Conceptual Electives (Select 3)</u>			9
DSL 700	Strategic Leadership Frameworks	3	DSL 703	Military and Civilian Strategic Leadership		
DSL 701	Systems and Design Thinking	3	DSL 705	Enabling Info Technology		
DSL 702	Applied Research Methods I	3	DSL 707	Theory of Constraints		
DSL 704	Complex Project Leadership and Management	3	DSL 709	Leading in the Digital Transformation Age		
DSL 706	Applied Research Methods II	3	DSL 713	Patterns of Strategy		
DSL 708	Strategic Organization Development and Change	3	DSL 714	Survey Research Methods		
<u>Project-Based Requirements</u>			<u>Project-Based Elect (Select 2)</u>			6
DSL 801	Strategic Leadership Research	3	DSL 710	Advanced Independent Study		
DSL 802	Strategic Leadership Executive Education	3	DSL 711	Special Topics		
			DSL 712	Strategic Interactive Planning		
			DSL 800	Strategic Consulting		
			<u>Dissertation</u>			
			DSL 900	Dissertation/Capstone Proposal	3	
			DSL 901	Dissertation/Capstone Delivery	3	
			DSL 901E	Dissertation Extension (if needed)	3	



**STUDENT SUPPORT
OFFICES & CONTACTS**

Student Support Contact Information

“The difference between success and failure is a great team” (Kerpen, D. 2015).

At Jefferson, we are a team dedicated to support each other in pursuing our individual and shared goals. Below is a sampling of the departments that stand ready to support you in your academic pursuit, personal development and degree completion.

Academic Policies	A-Z index of University-wide Graduate and Undergraduate policies	jefferson.edu/academicpolicies
Accessibility	Collaborating with community members to provide access to all educational opportunities, programs, and services.	<p>Center City 215-503-6335 Edison Bldg, Suite 1120 Jennifer.Fogerty@jefferson.edu</p> <p>East Falls 215-951-6380 https://eastfalls.jefferson.edu/accessibilityservices/ Zoe Gingold, Director ZoeAnn.gingold@jefferson.edu</p>
Advising & Tutoring	Maximize student performance: advising, Tutoring, Writing, Academic Skill Development & Moore	<p>Center City 215-503-6335 Office of Student Affairs Edison Building, Suite 1120 https://www.jefferson.edu/university/academic-affairs/schools/student-affairs/academic-support/academic_support.html</p> <p>East Falls 215-951- 2799 Academic Success Center Haggar Hall http://www.eastfalls.jefferson.edu/successcenter/</p>
Affiliated Hospitals	Excellent clinical setting for our patients and a foundation for learning experience of Jefferson students and residents.	https://www.jefferson.edu/university/jmc/departments/orthopaedic/education/residency/affiliations.html

Athletics	<p>Students have an opportunity to play as hard as they work.</p>	<p>Center City 215-503-7949 Alumni Hall, B 100 https://www.jefferson.edu/university/fitness.html</p> <p>East Falls 215-951- 2700 Gallagher Athletic Center http://jeffersonrams.com/landing/index</p>
Career Services	<p>Assists students and alumni in advancing their Jefferson experience toward securing their professional goals</p>	<p>Center City 215-503-5805 Edison Building, Suite 1120 https://www.jefferson.edu/university/academic-affairs/schools/career-development-center.html</p> <p>East Falls 215-951- 2930 Academic Success Center Kanbar Center, Suite 313 https://www.eastfalls.jefferson.edu/careerservices/index.html</p>
Clubs & Organizations	<p>Take an active role in your community (outside the classroom)</p>	<p>Center City 215-503-7743 Alumni Hall, Room 105 https://www.jefferson.edu/university/student-life-engagement/student_organizations/directory.html</p> <p>East Falls 215-951- 2634 Kanbar Campus Center, Suite 317 and 301 https://www.eastfalls.jefferson.edu/studentengagement/ClubsandOrganizations/index.html</p>
Community & Civic Engagement	<p>For community - conscious leaders at Jefferson</p>	<p>Center City “Leadership Live” student-led organization https://www.jefferson.edu/university/student-life-engagement/leadership_live/leadership_live.html</p> <p>East Falls 215-951- 2634 Kanbar Campus Center, Suite 301 https://www.eastfalls.jefferson.edu/studentengagement/communityService/index.html</p>
Commuter Services	<p>Provides resources and facilities to meet the basic needs of commuter and off-campus students.</p>	<p>Center City 215-955-6417 109 Chestnut St. (inside University Bookstore) https://www.jefferson.edu/university/customer_service/commuter.html</p> <p>East Falls 215-951-2744 Kanbar Campus Center, Suite 301</p>

		http://www.eastfalls.jefferson.edu/nsp/commuters.html
Counseling	Assistance in addressing personal challenges that interfere with academic progress and growth.	<p>Center City 215-955-4357 833 Chestnut St, Suite 230 https://www.jefferson.edu/university/security/counseling_center.html</p> <p>East Falls 215-951-2868 Kanbar Campus Center, Suite 323 http://www.eastfalls.jefferson.edu/counseling/</p>
Creativity Core	Explore individual & collaborative creative aptitude and equips students to yield novel and valuable results	<p>East Falls 215-951-2104</p>
Dining Services	Fresh, made-from-scratch food; we're here to help you eat healthy your way.	<p>Center City Numerous selections from fast-food to fine dining right on campus.</p> <p>East Falls 4 locations on campus https://www.eastfalls.jefferson.edu/diningservices/</p>
Diversity & Inclusion	support and promote an inclusive environment that embraces and celebrates the diversity of our people.	<p>Office of Diversity & Inclusion Initiatives 1025 Walnut Street College Building, Room 119 Philadelphia, PA 19107 (215) 503-4795 (215) 503-4095 fax Diversity@jefferson.edu https://www.jefferson.edu/university/diversity/contact.html</p>
Emergency Fund	Helping with short-term financial assistance in the event of an unforeseen emergency.	<p>Center City Information and application at: https://www.jefferson.edu/university/academic-affairs/schools/student-affairs/jeffsecure.html</p> <p>East Falls Information and application at: http://eastfalls.jefferson.edu/jeffsecure/</p>
Financial-Aid	Assists students in securing federal, state, institutional, & private funding to help meet the cost of pursuing an education at Jefferson	<p>Center City 215-955-2867 Curtis Building, Suite 115 Website being revised summer 2022</p> <p>East Falls 215-951- 2660 White Corners, First Floor</p>

		Website being revised summer 2021
Health	Providing confidential sick and wellness care for our students.	<p>Center City Overview & Application Form https://www.jefferson.edu/university/academic-affairs/schools/student-affairs/sexual-misconduct.html</p> <p>East Falls Overview & Application Form http://eastfalls.jefferson.edu/jeffsecure/</p>
Hallmarks Program for General Education	Advances a set of shared learning goals across the general education core curriculum	<p>East Falls https://www.jefferson.edu/university/hallmarks-program.html</p>
Honors Institute	Platform for academically high-achieving students to discover & pursue academic and interests	<p>East Falls 215-951- 5367 Gutman Library, 102 https://www.eastfalls.jefferson.edu/honorsprogram/</p>
International Affairs	Sets a high priority on the exchange of ideas, research, education and patient care with members of the international community.	<p>Center City 215-503-4335 Alumni Hall, M-70 https://www.jefferson.edu/university/international_affairs.html</p> <p>East Falls 215-951- 2660 Kanbar Campus Center, Suite 102 https://www.eastfalls.jefferson.edu/nsp/international.html</p>
Libraries	Information, technology, study space is at your fingertips	<p>Center City 215-503-6994 Scott Memorial Library http://library.jefferson.edu/scott.cfm</p> <p>East Falls 215-951- 2848 Gutman Library http://library.jefferson.edu/gutman.cfm</p> <p>Montgomery County 214-481-2096 Wilmer Memorial Library (Abington Hospital) https://www.abingtonhealth.org/academic-programs/wilmer-library/#.XO03MmJKg_U</p>
LGBTQ	Providing, Educational Resource, Support, and Social/Professional networking	<p>Center City 215-861-8800 833 Chestnut St., Suite 300 https://www.jefferson.edu/university/student-life-engagement/student_organizations/jeff-lgbtq.html</p>

		<p><u>East Falls</u> Kanbar Campus Center, Suite 317 215-951-2634 https://www.eastfalls.jefferson.edu/studentengagement/lgbtq.html</p>
Nexus Learning	Preparing students for the future of work by ensuring development of critical skills employers seek for tomorrow's work place.	<p>https://nexus.jefferson.edu/</p>
Provost	Provides oversight and support for Programs & policy, and research	<p><u>Center City</u> 215-955-4760 Scott Memorial Library, Suite 643 https://www.jefferson.edu/university/provost.html</p> <p><u>East Falls</u> 215-951- 2740 Reichlin House, 2nd Floor https://www.jefferson.edu/university/provost.html</p>
Registrar	Maintaining the accuracy and integrity of all student & academic records	<p><u>Center City</u> 215-503-8734 Curtis Building, Suite 115 https://www.jefferson.edu/university/academic-affairs/tju/academic-services/registrar.html</p> <p><u>East Falls</u> 215-951-2917 Archer Hall, First Floor http://www.eastfalls.jefferson.edu/registrar/index.html</p>
Residential Life	Provides safe, attractive, and comfortable facilities in an atmosphere that contributes to students' academic success.	<p><u>Center City</u> 215-955-8913 or 811 Orlowitz Residence, Suite 103 https://www.jefferson.edu/university/housing.html</p> <p><u>East Falls</u> 215-951-2741 Kanbar Campus Center, Suite 311 https://www.eastfalls.jefferson.edu/reslife/</p>
Security	Placing the highest priority on the safety of our community.	<p><u>Center City</u> 215- 955-8888 Edison Bldg, Suite 1630 https://www.jefferson.edu/university/security.html</p> <p><u>East Falls</u> 215-951-2999 Ravenhill, next to Partridge Hall https://www.eastfalls.jefferson.edu/security/</p>

Specter Center	Facilitate & promote public service and civic education in a cross-disciplinary, nonpartisan setting	<p>East Falls 215-951- 2847 3240 Netherfield Rd. https://www.jefferson.edu/academics/colleges-schools-institutes/humanities-sciences/student-resources/specter-center.html</p>
Student Accounts		<p>Center City 215-503-7660 Curtis Center, Suite 925E Website being revised summer 2022</p> <p>East Falls 215-951-2708 Archer Hall, First Floor Website being revised summer 2022</p>
Spirituality	Opportunity to connect with people of similar and diverse faiths.	<p>Center City Student-led Organizations https://www.jefferson.edu/university/student-life-engagement/student_organizations/directory.html</p> <p>East Falls Kanbar Campus Center, Suite 317 215-951-2634 https://www.eastfalls.jefferson.edu/studentengagement/SpiritualDevelopment/index.html</p>
Student Engagement (Center City) & Dean of Students (East Falls)	Supporting student life outside the classroom.	<p>Center City Office of Student Life & Engagement 215-503-7743 Alumni Hall, Room 105 https://www.jefferson.edu/university/student-life-engagement.html</p> <p>East Falls 215-951- 2740 Dean of Student Office Kanbar Campus Center, Suite 321 http://www.eastfalls.jefferson.edu/deanofstudents/</p>
Student Government (SGA)	A forum for student expression & involvement in their University.	<p>Center City Several Student-led organizations within the colleges https://www.jefferson.edu/university/student-life-engagement/student_organizations/directory.html</p> <p>East Falls 215-951- 2634 Kanbar Campus Center, Suite 301 https://www.eastfalls.jefferson.edu/studentengagement/ClubsandOrganizations/sga.html</p>
Study Away	Experience the world beyond the borders of our campus and country.	<p>Center City 215-503-4335 Alumni Hall, M-70 https://www.jefferson.edu/university/international_affair/s/contact.html</p>

		<p><u>East Falls</u> 215-951- 2815 Kanbar Campus Center, Suite 102 https://philau.studioabroad.com/</p>
Technology	<p>Analysts in Jefferson’s Information Systems and Technologies team are available to answer your technology questions or issues</p>	<p><u>Center City</u> Information Services & Technology (IS&T) Solution Center 1837 Gibbon 215-503-7975 https://www.jefferson.edu/university/jefferson/email_calendaring/contact.html</p> <p><u>East Falls</u> 215-951-4648 Search Hall, first floor http://eastfalls.jefferson.edu/OIR/TechnologyHelpDesk.html</p>
Textile & Costume Collection	<p>Diverse & wide-ranging museum-quality collection used for teaching, inspiration, research, and scholarship</p>	<p><u>East Falls</u> Design Center http://library.jefferson.edu/gutman/special_collections/collections/costume.cfm</p>
Title IX & Sexual Misconduct	<p>Fostering an environment free of discrimination including sexual harassment and sexual violence.</p>	<p>Title IX Coordinator: Katie Colgan Vodzak, J.D. 215-951-2520 4201 Henry Avenue, Archer Hall 200 Philadelphia, PA 19144 Kathleen.vodzak@jefferson.edu titleix@jefferson.edu http://www.jefferson.edu/titleix</p>

