

Jefferson

Thomas Jefferson University

HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

ACADEMIC CATALOG

2021 - 2022

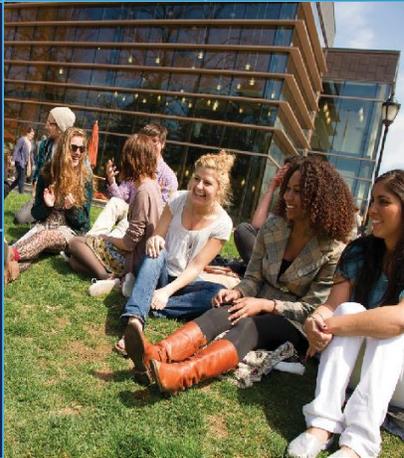
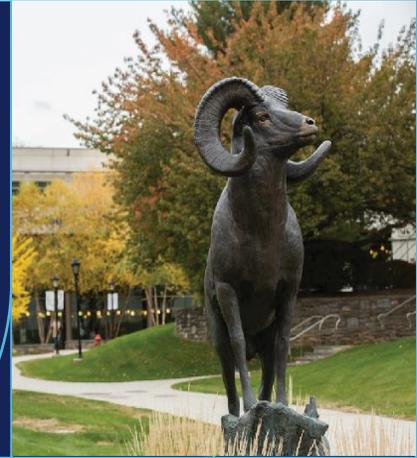


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Welcome to Thomas Jefferson University

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

Stephen K. Klasko, MD, MBA, is President of Thomas Jefferson University and CEO of Jefferson Health. Under his leadership since 2013, Dr. Klasko has steered our university to become one of the fastest growing academic health institutions in the nation based on his vision of re-imagining health care and higher education. In 2017, Dr. Klasko led the merger of Thomas Jefferson University with Philadelphia University to create the pre-eminent professional university that includes top-20 programs in fashion and design, coupled with the first design thinking curriculum in a medical school, and with the nation's leading research on empathy. To learn more about Dr. Klasko and his vision, please visit <https://leadership.jefferson.edu/about/>

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, Main 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: Espaolinfo@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. For more information about the A.S. in Occupational Therapy program or the Bucks County campus visit our website at <https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/associates-occupational-therapy.html>

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, Springhouse, 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, Onli |
| 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, Bucks County, 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 |
|--|--------|------------------------|----------|------|
| Accounting | BS | East Falls | KANBAR | 93 |
| Animation & Digital Media | BS | East Falls | KANBAR | 108 |
| Architectural Studies | BS | East Falls | CABE | 41 |
| Architecture | BArch | East Falls | CABE | 43 |
| Biochemistry | BS | East Falls | JCLS | 260 |
| Biology | BS | East Falls | JCLS | 262 |
| Biopharmaceutical Process Development | BS | Spring House | JCHP/JIB | 197 |
| Biopsychology | BS | East Falls | JCHS | 248 |
| Biotechnology | BS | Center City/JIB | JCHP | 196 |
| Cardiac Sonography | BS | Center City | JCHP | 185 |
| Chemistry | BS | East Falls | JCLS | 263 |
| Communication | BS | East Falls | JCHS | 250 |
| Computed Tomography (CT) | BS | Center City | JCHP | 191 |
| Construction Management | BS | East Falls | CABE | 45 |
| Cytotechnology & Cell Sciences | BS | Center City | JCHP | 202 |
| Engineering | BSE | East Falls | KANBAR | 110 |
| Exercise Science | BS | East Falls | JCRS | 359 |
| Fashion Design | BS | East Falls | KANBAR | 112 |
| Fashion Merchandising and Management | BS | East Falls | KANBAR | 95 |
| Finance | BS | East Falls | KANBAR | 97 |
| General Sonography | BS | Center City | JCHP | 184 |
| Health Sciences | BS | East Falls | JCHP | 163 |
| Health Sciences: Pre-Medical Laboratory Sciences & Biotechnology | BS | East Falls/Center City | JCHP | 168 |
| Health Sciences: Pre Nursing | BS | East Falls/Center City | JCHP | 169 |
| Health Sciences: Pre-Pharmacy | BS | East Falls/Center City | JCHP | 170 |
| Health Sciences: Pre- Medical Imaging & Radiation Sciences | BS | East Falls/Center City | JCHP | 167 |
| Health Sciences: Pre-Physician Assistant | BS | East Falls | JCHP | 172 |
| Industrial Design | BS | East Falls | KANBAR | 113 |
| Interdisciplinary Studies | BS | East Falls | JCHS | 252 |
| International Business | BS | East Falls | KANBAR | 98 |
| Interior Design | BS | East Falls | CABE | 47 |
| Invasive Cardiovascular Technology | BS | Center City | JCHP | 184 |
| Landscape Architecture | BLA | East Falls | CABE | 50 |
| Law & Society | BS | East Falls | JCHS | 254 |
| Magnetic Resonance Imaging | BS | Center City | JCHP | 186 |
| Management | BS | East Falls | KANBAR | 99 |
| Marketing | BS | East Falls | KANBAR | 100 |
| Medical Dosimetry | BS | Center City | JCHP | 186 |
| Mechanical Engineering | BSE | East Falls | KANBAR | 115 |
| Medical Imaging & Radiation Sciences | BS | Center City | JCHP | 182 |
| Medical Laboratory Sciences | BS | Center City | JCHP | 207 |
| Nuclear Medicine | BS | Center City | JCHP | 187 |
| Nursing | BSN | Center City, Dixon | JCN | 297 |
| Pre-Medical Studies | BS | East Falls | JCLS | 265 |
| Psychology | BS | East Falls | JCHS | 255 |
| Radiography | BS | Center City | JCHS | 167 |
| Radiation Therapy | BS | Center City | JCHP | 182 |
| Textile Design | BS | East Falls | KANBAR | 117 |
| Textile Product Science | BS | East Falls | KANBAR | 118 |
| Vascular Sonography | BS | Center City | JCHP | 185 |
| 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 | 324 |
| Architecture | MArch | East Falls | CABE | 51 |
| Architecture | MS | East Falls | CABE | 53 |
| Architecture and Design Research | PhD | East Falls | CABE | 65 |
| Athletic Training | MS | East Falls | JCRS | 361 |
| Biochemistry & Molecular Pharmacology | PhD | Center City | JCLS | 276 |
| Biologic Process Engineering | PhD | Spring House | KANBAR/JIB | 135 |
| Biomedical Sciences | MS | Center City | JCLS | 267 |
| Biopharmaceutical Process Engineering | MS | Spring House | KANBAR/JIB | 137 |
| Biotechnology | MS | Center City | JCHP | 198 |
| Cardiovascular Perfusion | MS | Center City | JCHP | 228 |
| Cardiovascular Perfusion Post-Professional | MS | Online | JCHP | 229 |
| Cell Biology & Regenerative Medicine | PhD | Center City | JCLS | 277 |
| Cell & Developmental Biology | MS | Center City | JCLS | 268 |
| Clinical Research | MS | Center City | JCLS | 269 |
| Community and Trauma Counseling | MS | East Falls | JCHP | 147 |
| Community and Trauma Counseling: Art Therapy | CTC | East Falls | JCHP | 149 |
| | Concentration | | | |
| Community and Trauma Counseling: Child Trauma and Play Therapy | CTC | East Falls | JCHP | 150 |
| | Concentration | | | |
| Community and Trauma Counseling: Trauma, Addiction and Recovery | CTC | East Falls | JCHP | 151 |
| | Concentration | | | |
| Construction Management | MS | East Falls & Online & Hybrid | CABE | 54 |
| Couple & Family Therapy | MFT | Center City | JCHP | 152 |
| Cytotechnology & Cell Sciences | MS | Center City | JCHP | 204 |
| Disaster Medicine and Management | MS | East Falls & Online | JCHP | 160 |
| Engineering, Textile Concentration | MS | East Falls | KANBAR | 120 |
| Forensic Biology | MS | Center City | JCLS | 270 |
| Forensic Toxicology | MS | Center City | JCLS | 271 |
| Genetics, Genomics & Cancer Biology | PhD | Center City | JCLS | 279 |
| 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 | 123 |
| Health Data Science | MS | Online | JCPH | 326 |
| Health Policy | MS | Online | JCPH | 329 |
| Healthcare Quality and Safety | MS | Online | JCPH | 331 |
| Historic Preservation | MS | East Falls | CABE | 57 |
| Human Genetics & Genetic Counseling | MS | Center City | JCLS | 272 |
| Immunology & Microbial Pathogenesis | PhD | Center City | JCLS | 281 |
| Industrial Design | MS | East Falls | KANBAR | 126 |
| Innovation MBA | MBA | East Falls & Center City & Online | KANBAR | 102 |
| Integrative Health Sciences | MS | Online | JCHP | 230 |
| Integrative Physiology | PhD | Center City | JCLS | 282 |
| Interior Architecture | MS | East Falls | CABE | 59 |
| International Fashion Design Management | MS | East Falls | KANBAR | 121 |
| Medical Cannabis Science and Business | MS | Online | JCHP | 231 |
| Medical Laboratory Sciences | MS | Center City | JCHP | 209 |
| Medical Imaging & Radiation Sciences | MS | Center City | JCHP | 190 |
| Medical Physics | MS | Center City | JCHP | 193 |
| Medicine | MD | Center City | SKMC | 292 |
| Microbiology & Immunology | MS | Center City | JCLS | 274 |
| Midwifery | MS | Online | JCHP | 218 |
| Midwifery | DM | Online | JCHP | 219 |
| Neuroscience | PhD | Center City | JCLS | 283 |
| Nursing | MSN | Center City | JCN | 300 |
| •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 | | | | |
| •Women's Health-Gender related NP Direct Care | | | | |
| Nursing | DNP | Center City | JCN | 302 |
| Nurse Anesthesia | DNP | Center City | JCN | 304 |

| | | | | |
|--------------------------------------|----------|-----------------------|--------|-----|
| Nutrition and Dietetic Practice | MS (RDN) | Center City | JCHP | 222 |
| Occupational Therapy | MSOT | Center City | JCRS | 362 |
| Occupational Therapy | MSOT | East Falls | JCRS | 363 |
| Occupational Therapy | OTD | Center City | JCRS | 364 |
| Occupational Therapy | PPOTD | Center City | JCRS | 365 |
| Operational Excellence | MS | Center City | JCPH | 334 |
| Pharmacology | MS | Center City | JCLS | 275 |
| Pharmaceutical Sciences | MS | Center City | JCP | 316 |
| Pharmacy | PharmD | Center City | JCP | 311 |
| Physician Assistant Studies | MS | Center City | JCHP | 224 |
| Physician Assistant Studies | MS | East Falls & Voorhees | JCHP | 225 |
| Physical Therapy | DPT | Center City | JCRS | 366 |
| Population Health | MS | Online | JCPH | 336 |
| Population Health Pharmacy | MS | Online | JCP | 314 |
| Population Health Science | PhD | Center City | JCPH | 343 |
| Population Health Science | DHSc | Online | JCPH | 347 |
| Public Health | MS | Center City | JCPH | 340 |
| Real Estate Development | MS | East Falls & Online | CABE | 60 |
| Speech-Language Pathology | MS | Center City | JCRS | 368 |
| Sustainable Design | MS | East Falls | CABE | 62 |
| Taxation | MS | East Falls | KANBAR | 106 |
| Textile Design | MS | East Falls | KANBAR | 127 |
| Textile Engineering & Science | PhD | East Falls | KANBAR | 129 |
| Textile Technology | MS | East Falls | KANBAR | 128 |
| 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 | 306 |
| Advanced Headache Diagnosis and Management | Post-Graduate Certificate | Hybrid-Center City/Online | JCN | 307 |
| Applied Health Economics & Outcomes Research | Graduate Certificate | Online | JCPH | 325 |
| Biopharmaceutical Process Development | Graduate Certificate | Spring House | KABE/JIB | 140 |
| Biopharmaceutical Process Operations | Graduate Certificate | Spring House | KABE/JIB | 141 |
| Business & Organizational Continuity | Graduate Certificate | Online | JCHP | 161 |
| Cannabis Business | Graduate Certificate | Online | JCHP | 232 |
| Cannabis Medicine | Graduate Certificate | Online | JCHP | 233 |
| Cannabis Science | Graduate Certificate | Online | JCHP | 234 |
| Child Trauma & Play Therapy | Graduate Certificate | Hybrid- East Falls & Online | JCHP | 153 |
| Clinical Chemistry | Graduate Certificate | Center City | JCHP | 213 |
| Clinical Hematology | Graduate Certificate | Center City | JCHP | 214 |
| Clinical Microbiology | Graduate Certificate | Center City | JCHP | 215 |
| Clinical Research & Trials: Implications | Graduate Certificate | Center City | JCLS | 284 |
| Clinical Research: Operations | Graduate Certificate | Center City | JCLS | 285 |
| Coaching in Context | Advance Practice Cert | Online | JHRS | 377 |
| 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) | Undergrad Certificate | Center City | JCHP | 194 |
| Connected Care: Telehealth & Digital Health Innovation | Graduate Certificate | Online | JCHP | 235 |
| 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 |
| Disaster Medicine & Management | Graduate Certificate | Online | JCHP | 160 |
| Emerging Leaders in Autism Practice & Research | Advance Practice Cert | Online | JCRS | 378 |
| 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 | 379 |
| Health Data Science | Graduate Certificate | Online | JCPH | 326 |
| Healthcare Quality & Safety | Graduate Certificate | Online | JCPH | 341 |
| Healthcare Quality & Safety | Advance Practice Cert | Online | JCPH | 333 |
| Healthcare Quality & Safety Education | Advance Practice Cert | Online | JCPH | 331 |
| Health Communication Design | Graduate Certificate | Hybrid- East Falls & Online | KANBAR | 123 |
| Health Policy | Graduate Certificate | Online | JCPH | 329 |
| Health Systems Science | Advance Practice Cert | Online | JCPH | 333 |
| Health Systems Science Education | Advanced Practice Cert | Online | JCPH | 333 |
| Historic Preservation | Graduate Certificate | East Falls | CABE | 76 |
| Human Clinical Investigation: Theory | Graduate Certificate | Center City | JCLS | 286 |
| Immunohematology | Graduate Certificate | Center City | JCHP | 216 |
| Infectious Disease Control | Graduate Certificate | Center City | JCLS | 287 |
| Integrative Health Education | Advance Practice Cert | Online | JCHP | 236 |
| Integrative Nutrition | Advance Practice Cert | Online | JCHP | 237 |
| Midwifery | Advance Practice Cert | Online/Center City | JCHP | 220 |
| Mind-Body Medicine | Advance Practice Cert | Online | JCHP | 238 |
| Molecular Biology | Graduate Certificate | Center City | JCHP | 217 |
| Neuroscience: Advanced Concepts for Evidence Based Practice | Advance Practice Cert | Online | JCRS | 380 |
| Nurse Practitioner •Adult Gerontology, Acute Care •Adult Gerontology, Primary Care •Family-Individual Across the Lifespan •Neonatal •Pediatric Primary Care •Women's Health, Gender-Related | Post-Graduate Certificate | Center City & Online | JCN | 305 |
| Operational Excellence | Advance Practice Cert | Online | JCPH | 334 |
| Operational Excellence Education | Advance Practice Cert | Online | JCPH | 335 |
| Operational Excellence Education | Graduate Certificate | Center City | JCLS | 335 |
| Patient-Centered Research | Graduate Certificate | Center City | JCLS | 288 |

| | | | | |
|---------------------------------------|-------------------------------|------------------------------|--------|-----|
| PET/CT (Positron Emission Tomography) | Undergraduate Certificate | Center City | JCHP | 195 |
| Population Health Pharmacy | Graduate Certificate | Online | JCP | 318 |
| Population Health | Graduate Certificate | Hybrid- Center City & Online | JCP | 336 |
| Population Health | Advance Practice Cert | Online | JCPH | 339 |
| Population Health Education | Advance Practice Cert | Online | JCPH | 339 |
| Population Health Pharmacy | Graduate Certificate | Online | JCP | 318 |
| Public Health | Graduate Certificate | Center City | JCPH | 340 |
| 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 | 133 |
| Sustainability Leadership | Graduate Certificate | East Falls & Online | CABE | 79 |
| Teaching in the Digital Age | Advance Practice Cert | Online | JCRS | 381 |
| Telehealth Facilitator | Undergraduate Certificate/CME | Online | JCHP | 239 |
| Using Design in Healthcare Delivery | Advance Practice Cert | Online | JCRS | 382 |

Accelerated & Dual Programs

| ACADEMIC PROGRAM | DEGREES | CAMPUS | PAGE |
|--|------------|------------------------------------|-----------|
| Architecture & Historic Preservation | BArch/MS | East Falls | 80 |
| Architecture Studies & Historic Preservation | BS/MS | East Falls | 81 |
| Architecture & Interior Architecture | BS/MS | East Falls | 82 |
| Architecture & Real Estate | BArch/MS | Hybrid-East Falls & Online | 83 |
| Biotechnology | BS/MS | Center City | 200 |
| Cell Biology & Regenerative Medicine | MD/ PhD | Center City | 291 |
| Cytotechnology & Cell Sciences | BS/MS | Center City | 206 |
| Construction Management & Real Estate Development | MS/MS | Hybrid- East Falls & Online | 87 |
| Construction Management & Sustainable Design | MS/MS | East Falls | 88 |
| Disaster Medicine & Public Health | MS/MPH | East Falls/Center City, Online | 162 & 350 |
| Exercise Science & Athletic Training | BS/MS | East Falls | 165 & 371 |
| Exercise Science & Occupational Therapy | BS/OTD | East Falls | 373 |
| Exercise Science & Physical Therapy | BS/DPT | East Falls/Center City | 375 |
| Health Sciences & Athletic Training | BS/MS | East Falls | 165 |
| Health Sciences & Community and Trauma Counseling | BS/MS | East Falls | 157 |
| Health Sciences (Psychology) & Community and Trauma Counseling | BS/MS | East Falls | 158 |
| Health Sciences & Medical Laboratory Sciences & Biotechnology | BS/MS | East Falls/Center City | 174 |
| Health Science & Nutrition | BS/MS | East Falls/Center City | 176 |
| Health Sciences & Occupational Therapy | BS/OTD | East Falls- Closed to new students | 178 |
| Health Sciences & Physician Assistant | BS/MS | East Falls | 180 |
| 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 | 353 |
| Landscape Architecture & Geodesign | BLA/MS | East Falls | 86 |
| Medical Laboratory Sciences | BS/MS | Center City | 210 |
| Medicine & Cell Biology & Regenerative Medicine | MD/PhD | Center City | 291 |
| Medicine & Research | MD/ PhD | Center City | 291 |
| Medicine & Public Health | MD/MPH | Center City | 349 |
| Occupational Therapy | BS/MS | Center City | 369 |
| Occupational Therapy | BS/MS | East Falls | 370 |
| Pharmaceutical Sciences & Public Health | PharmD/MPH | Center City | 319 & 352 |
| Physician Assistant & Public Health | PA/MPH | Center City & Partner Institutions | 354 |
| Social Work & Public Health | MSS/MPH | Center City & Partner Institutions | 351 |
| Textile Design | BS/MS | East Falls | 132 |

School of Continuing & Professional Studies Programs

| ACADEMIC PROGRAM | DEGREES | CAMPUS | PAGE |
|---|---------------------------|----------------------------------|------|
| Accounting | BS | Online | 392 |
| Behavioral & Health Services | BS | East Falls & Online | 393 |
| Building & Construction Studies | BS | East Falls | 394 |
| Business Management | BS | East Falls & Online | 395 |
| Health & Human Services | AS | Restricted Enrollment Dist 1199C | 389 |
| Health & Human Services-Radiologic Tech | AS | Einstein Healthcare- Restricted | 390 |
| Health Sciences | BS | Center City & East Falls | 396 |
| Health Services Management | BS | Center City, East Falls & Online | 397 |
| Health Studies | BS | Center City, East Falls & Online | 398 |
| Healthcare Information Systems | Undergraduate Certificate | Center City | 386 |
| Human Resource Management | BS | East Falls & Online | 399 |
| Information Technology | BS | East Falls & Online | 400 |
| Medical Coding & Data Quality | Undergraduate Certificate | Center City | 387 |
| Medical Practice Management | Undergraduate Certificate | Center City | 388 |
| Occupational Therapy | AS | Bucks County | 391 |
| Organizational Leadership | BS | East Falls & Online | 401 |
| Organizational Leadership | MS | Online | 402 |
| Strategic Leadership | DMgt | East Falls | 403 |

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/2021-2022.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. SCPS (School of Continuing & Professional Studies) offers accelerated programs designed to support adult students and working professionals who are looking to earn or complete a degree. Courses are offered in 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 go live at the end of the summer. Please refer back to this document later for website access information.

- **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**
- 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 s/he 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 half-time and full-time credit status.• Students are advised to consult with the Registrar's Office to discuss the appropriate credit minimum necessary for half time enrollment. Half time 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 Center City | Financial Aid East Falls |
|-----------------|---|---|
| Location | Curtis Building, Suite 115 | White Corners, First Floor |
| Phone | 215-955-2867 | 215-951-2940 |
| Email | Under revision (Summer 2021) | Under revision (Summer 2021) |
| Website | *New website going live end of summer (after catalog publication) | *New website going live end of summer (after catalog publication) |
| | Student Accounts Center City | Student Accounts East Falls |
| Location | 1101 Market Street, 29th Floor | Archer Hall, First Floor |
| Phone | (215) 503-7669 | 215-951-5988 |
| Email | Under revision (Summer 2021) | Under revision (Summer 2021) |
| Website | Under revision (Summer 2021) after catalog publication | |

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 (60% 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.

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 is in compliance 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 half time 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.

To view the Federal Title IV refund policy formula and process, see

| | |
|--------------------|--|
| Center City | Website under revision (Summer 2021) after catalog posting |
| East Falls | Website under revision (Summer 2021) after catalog posting |

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 | All matriculated students are required to have health insurance and must complete the enrollment/waiver process for each academic year.* Exemptions: Students who satisfy one of the criteria set forth below may be exempt from the health insurance requirement and no action will be required: <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. Possess a breadth and depth of professional skills informed by the liberal arts and sciences.
2. Apply multidisciplinary and collaborative approaches as a means of succeeding in dynamic, complex career environments.
3. Integrate theory and practice to inform research and guide creative decisions in their professional fields.
4. Interpret and value diversity in both local and global communities
5. Be prepared to be ethically responsible citizens in the personal, professional and civic spheres.
6. Be prepared to bring innovation to their fields and anticipate future directions in their professions by adapting to social, environmental and economic change.

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.

Free Electives

Free 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 free 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 exposure to complex, real-world issues and studies in history, humanities and the social sciences, mathematics and the natural and physical sciences, students become 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 forms the backbone of the undergraduate major 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 includes:
 - 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 free 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

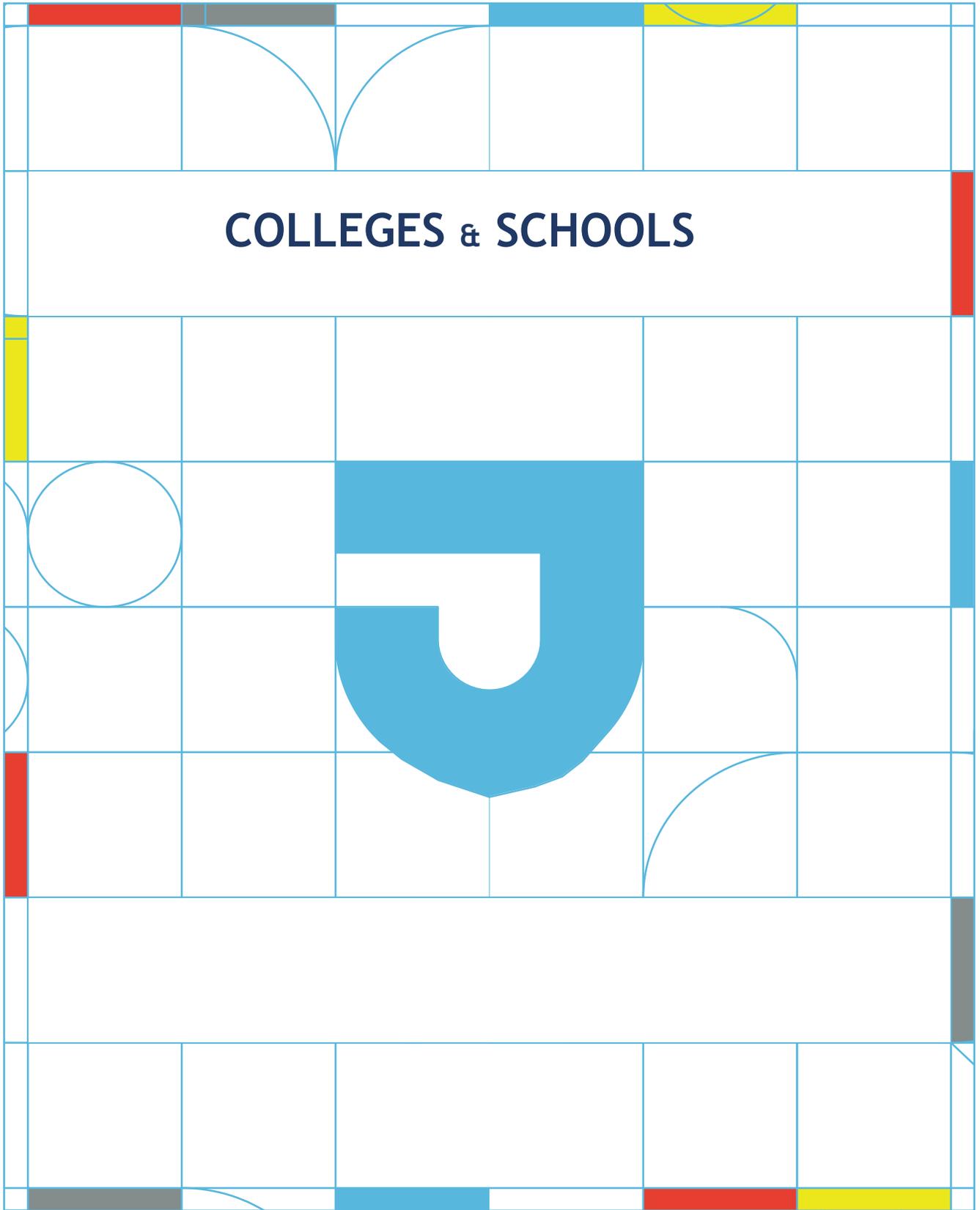
A minor is a set of courses that provides enhanced study in a particular subject area. A student may choose a minor with the assistance of an academic advisor upon completion of 30 semester hours. Options for minors are determined by the academic program and consist of a minimum of 12 credits in the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

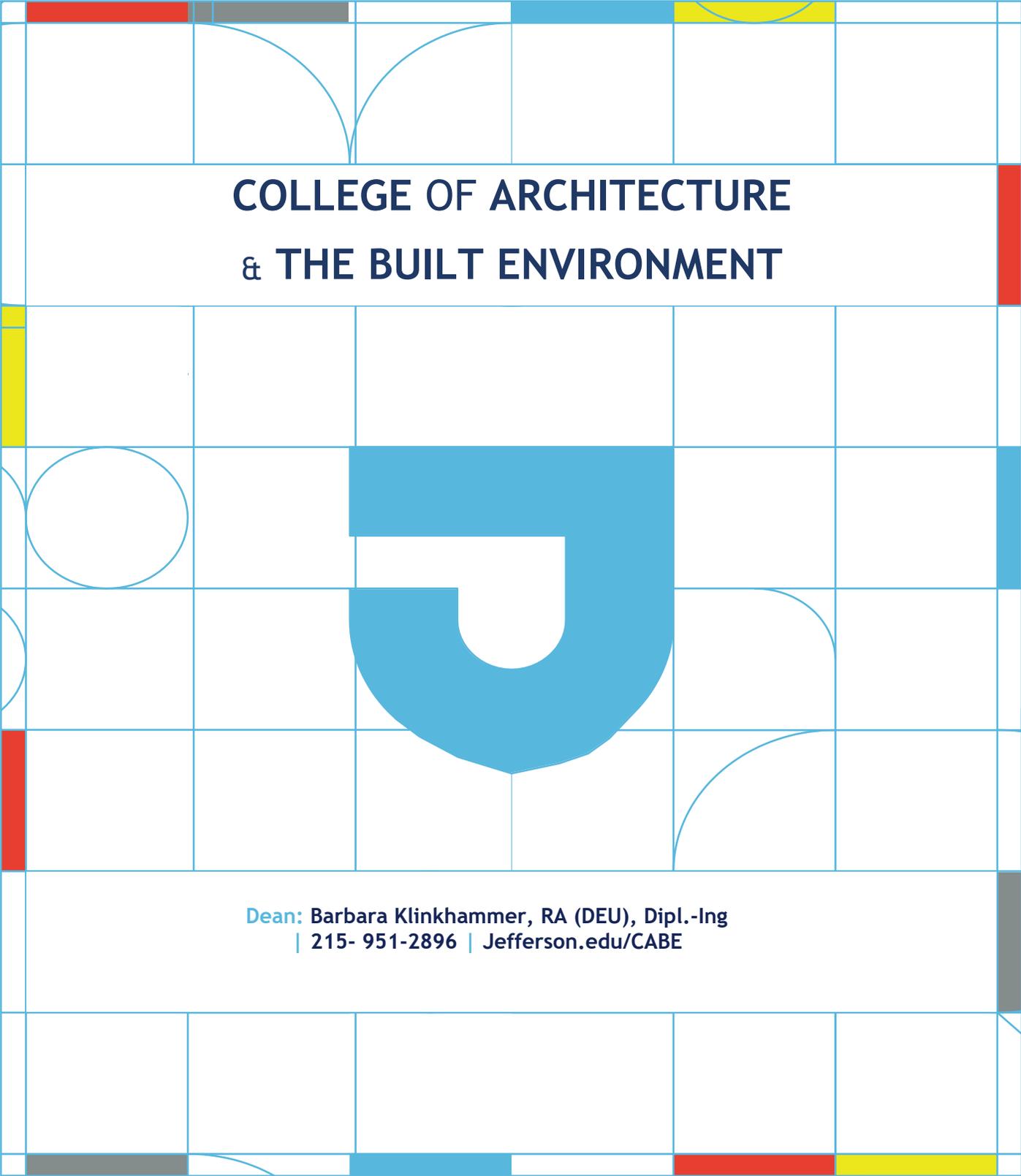
Undergraduate Minors

| | | |
|--|--|---|
| Accounting | Fashion Merchandising and Management | Marketing |
| Animation and Digital Media | Finance | Medical Spanish |
| Applied Business Analytics | Gender & Health Studies | Multimedia and Visualization |
| Architectural History & Theory | Genetics | Photography |
| Building Technology | Geospatial Information Systems (GIS) | Pre-MBA (for BUSN majors) |
| Business | Global Studies | Pre-MBA (for Non-BUSN majors) |
| Business of Healthcare | Graphic Design (for non-design students) | Psychology |
| Communication | Graphic Design (for Animation students) | Public Health |
| Computational Design | Graphic Design for Design Students | Real Estate Development |
| Construction Management | Historic Preservation | Spanish |
| Custom | International Business | Sustainable Design |
| Custom Specialization | Interior Design | Textile Design |
| Diversity Studies | Landscape Design | Textile Product Science |
| Entrepreneurship | Landscape Planning | Web Design & Development (non-VISCM students) |
| Environmental Studies & Sustainability | Law and Society | Web Design & Development (VISCM students) |
| Exercise Science | Management | |

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 free 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 free 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 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); Construction Management (MS) | www.abet.org |
| Council for Interior Design Accreditation Interior (BS); Interior Design (MS) | www.accredit-id.org |
| The American Society of Landscape Architects Landscape Architecture (BS) | www.asla.org |

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 | 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> | |
| BArch Architecture & MS Historic Preservation | 5+1 |
| BS Architectural Studies & MS Historic Preservation | 4+1 |
| BArch Architecture & MS Interior Architecture | 5+1 |
| BS Interior Design & Master of Architecture | 4+2 |
| BArch Architecture & MS Real Estate | 5+1 |
| BS Interior Design & MS Sustainable Design | 4+1 |
| BLA Landscape Architecture & MS Geospatial Technology for Geodesign | 4+1 |
| MS Construction & MS Real Estate Development | 1+1 |
| MS Construction Mgt. & MS Sustainable Design | 1+1 |

Architectural Studies

Bachelor of Science (BS)

| | |
|-------------------------|---|
| Program Director | David Kratzer, 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 (B.S.) 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, common to the Bachelor of Architecture curriculum, students can choose to apply to the five-year architecture program, specialize in one of three tracks--Real Estate Development, Historic Preservation, or XR Game Environments--or explore various architecture-related disciplines from a broad array of available minors. You 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 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, 124-127 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 | Minor 1 | Course for Minor 1/or Track | 3 |
| AMST 114 | Topics in American Studies | 3 | AHST 305 | History 3: Early Modern | 3 |
| SCI 108 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 Free 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 | | Free 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 |
| | Free Elec (Dsn 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 | | Free Elective | 6 |

Architecture

Bachelor of Architecture (BArch)

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

Program Description

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.

The Bachelor of Architecture is a STEM (Science, Technology, Engineering & Mathematics) designated program.

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, 164-165 credits

| <u>Year 1</u> | | | <u>Year 3</u> | | |
|-----------------------|--|-----|---------------|--------------------------------|----|
| 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 | 3 | ARCH 304 | Structures 2 | 3 |
| AMST 114 | Debating U.S. Issues | 3 | AHST 305 | Early Mod Arch & Interiors III | 3 |
| SCI 108 or SCI 110 | Sust. & Eco-innov or Landscape Ecol | 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 | 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 | | | |
| | Visualization Designated Ele | 3 | | | |
| <u>Year 2</u> | | | <u>Year 4</u> | | |
| 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: Docu & 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 | | Free Electives | 6 |
| | | | <u>Year 5</u> | | |
| | | | 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 |
| | | | | Free Electives | 12 |

Construction Management

Bachelor of Science (BS)

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

Mission

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.

Program Description

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
- Law, contract document administration and dispute prevention and resolution
- Materials, labor, and methods of construction
- Finance and accounting principles
- Planning and scheduling
- Cost management including plan reading, quantity takeoffs and estimating
- Project Delivery methods
- 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 at Thomas Jefferson University 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 | Global Citizenship or World Lang. | |
| SCI 108 | Sustainability & Eco-Innovations | 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 |
| GCIT 1XX | 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 | FINC 301 | Financial Management | 3 |
| CMGT 206 | Building Systems | 3 | | Business Electives | 6 |
| CMGT 208 | Materials & Methods of Construct | 3 | | Free 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 |
| Accreditation | CIDA |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/interior-design.html |

Program Description

The Interior Design program is a four-year undergraduate degree program that leads to a Bachelor of Science in Interior Design. The Interior Design program provides an extensive education to meet the demands and challenges of this exciting and creative profession. In preparation for a rapidly evolving, technology- and information-driven society, interior design requires an in-depth understanding of the aesthetic, cultural, technical, environmental, global and socio-economic issues pertaining to the built environment.

The program strives to instill in our graduates the highest standards of professionalism and professional practice, integrity, competence and excellence in design. 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.

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 free electives.

At the program's core 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 space planning, ergonomics, universal design, sustainable design, computer visualization, detailing, design, color theory, furniture design, 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. Each year, the student will build upon earlier courses and integrate functional and cultural issues into the design studio. In the fourth year, the Capstone Experience is the culmination of all previous studies, integrating design research, programming, history, theory, human behavior, technology, innovative design solutions, construction detailing, furniture and materials—all important aspects of creating meaningful interior environments.

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 and socially aware design professionals.

Students may follow secondary specializations such as business, construction management, historic preservation, sustainable design and photography. The Interior Design program also offers valuable opportunities for internships in design firms, memberships in professional organizations, a junior semester studying abroad in the cities of Copenhagen or Rome, and discipline-based community service. The program is grounded in the belief that interior designers should enter the global marketplace as articulate, creative, inspired designers and socially aware professionals. The program seeks to instill in students an awareness and sensitivity to the social, technological, aesthetic, cultural and ethical responsibilities involved in the design of living and working 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 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 108 | Biology for Design or Sustainability & Eco-Innov. | 3 | INTD 304 | Integrated Community Service | 3 |
| PHYC 121 | 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 | AHIST 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 |
| ARFD 103 | 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 |
| ARDS 209 | Vis 3: Digital Modeling | 3 | INTD 487 | Capstone Research & Program | 3 |
| AHIST 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 | | Design Elective | 3 |
| INTD 206 | Interior Building Technology | 3 | | Free Electives | 9 |
| AHIST 206 | History 2: Renaissance/ Baroque | 3 | | | |
| | Free Elective | 3 | | | |

Landscape Architecture

Bachelor of Landscape Architecture (BLA)

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

Program Description

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

| <u>Year 1</u> | | | <u>Year 3</u> | | |
|---------------|-----------------------------------|-----|---------------|--------------------------------------|---|
| 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 | | | |
| <u>Year 2</u> | | | <u>Year 4</u> | | |
| 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 | | Free 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

David Kratzer, 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 program designed to prepare students for professional architectural practice and licensure through the development of critical and creative thinking, sustainable design and technology skills, innovative delivery methods, knowledge of project management, and collaborative experiences in an interdisciplinary environment.

Throughout the program, students employ traditional drawing and fabrication tools and techniques as well as use current digital technologies in representation, fabrication and architectural production. Four elective courses provide exposure to many comprehensive design disciplines within the college, which allows each student to customize their experience.

Balancing current sustainable design practices along with architectural history and theory, the program culminates with an individual final Master's Research and Design Project that balances architectural history and theory along with current sustainable design practices and technological developments.

The Master of Architecture Program is designed for students with undergraduate degrees in any field of study, and offers advanced standing for students with undergraduate degrees in pre-professional architecture or related design programs. The Program is accredited by the National Architectural Accrediting Board (NAAB) and is STEM (Science, Technology, Engineering & Mathematics) designated.

The 49 to 100 credit curriculum can be completed in two to three academic years. Advanced placement is determined by the program director and is based on previous education and experience. Elective courses are from curricula in other College of Architecture and the Built Environment graduate programs, as well as cross-listed NAAB Accredited Bachelor of Architecture courses.

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
- Function collaboratively to connect with disciplines beyond the expertise of architects
- Demonstrate the ability to apply design history and theory, sustainable practices, and technology in 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: 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 | Arch Research Methods | 3 |
| <u>Year 1</u> | | | ARCH 645 | Technology 5 | 3 |
| ARCH 611 | Design 1 | 4 | | Elective | 3 |
| ARCH 603 | Seminar I | 2 | ARCH 616 | Design 6 Thesis Project | 6 |
| ARCH 621 | Visualization 1 | 3 | ARCH 661 | Professional Management | 3 |
| ARCH 631 | History 1 | 3 | | Electives | 6 |
| ARCH 641 | Tech 1 | 3 | | | |
| ARCH 612 | Design 2 | 4 | | | |
| ARCH 604 | MArch 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 | | | |
| | Elective | 3 | | | |

Architecture

Master of Science (MS)

Program Director
Campus
Website

David Kratzer, 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 Science in Architecture 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 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 CABE faculty advisors, students shape a design oriented 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 Project.

Learning Goals/Outcomes

- Critically analyze and synthesize established theories and building science related to 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.

The Master of Architecture is a STEM (Science, Technology, Engineering and Math) designated program

Curriculum: 31-34 credits (depending on track selected)

| <u>Pre-Year 1</u> | | <u>Year 2</u> | | | |
|--|--|---------------|------------------|-----------------------------|---|
| Either course based upon evaluation or waived for students with Architecture degrees | | | | | |
| ARCH 601 | Intro to Design | 3 | ARCH 901 | Graduate Thesis Project I | 3 |
| ARCH 602 | Intro to Visualization | 3 | ARCH 902 | Graduate Research Project 2 | 6 |
| <u>Year 1</u> | | | Focused Elective | | 3 |
| SDN 601 | Principles of Sustainable Design | 3 | | | |
| SDN 622 or ARCH 613 | Sustainable DSN Studio OR Architectural Design | 4 | | | |
| ARCH 630 | Arch Research Methods | 3 | | | |
| | Focused Elective | 3 | | | |
| | Focused Elective | 3 | | | |
| | Focused Elective | 3 | | | |

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

The MS in Construction Management is a STEM (Science, Technology, Engineering & Mathematics) program, 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

| Year 1 | | | Year 2 | | |
|----------|--|---|----------|--|---|
| CMGT 600 | Construction Estimating & Scheduling | 3 | CMGT 612 | Advanced Construction Project Management | 3 |
| CMGT 602 | Construction Information Modeling | 3 | | Elective (CMGT 698 or any SDN) | 3 |
| CMGT 603 | Construction Law: Roles & Responsibilities | 3 | | Elective (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 James L. Querry, Jr., MRP, RLA, ASLA
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 makes a contribution 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

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|---|---|---------------|----------------------------|---|
| 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 |

Program Description

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 | 4 | MHP 605 | Historic Preservation Thesis | 5 |
| 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.

Learning Goals/Outcomes

- Research, analyze and synthesize appropriate contextual information as a means of informing design
- Engage working collaboratively & with multi-disciplinary approach
- Acquire broad understanding of historical and theoretical body of knowledge of the profession
- Develop global view and explain that design decisions are influenced by variations of culture, construction technology, economics, and environmental factors
- Explain and apply ethical and accepted standards of professional practice in the discipline
- Produce innovative designs in response to current cultural, socio-economic & technological conditions & forecasted trends.

Curriculum: 2 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)

| | |
|-------------------------|---|
| Program Director | Troy Hannigan, Assoc. AIA, SEED |
| Campus | East Falls & Online options |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/real-estate-development-ms.html |

Program Description

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 buildings 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.

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 | | | |
| MRE 620 | Case Study Studio: Urban Revitalization, Historic Neighborhoods & Adaptive Reuse | 3 | | Selected Elective | 3 |
| | | | | MRE-602: Intro to Urban Planning or any other CABE graduate course in Architecture, Construction Management, Geodesign, Historic Preservation, Sustainable Design, or Urban Design) | |
| 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 | | | |
| GEOD 625 | Internet GIS for Design and Development | 3 | | | |
| | Summer | | | | |
| SDN 601 | Principles and Methods of Sustainable Design | 3 | | | |
| CMGT 600 | Construction Estimating and Scheduling | 3 | | | |

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 Rob Fleming, AIA, LEED AP
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

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.

The MS in Sustainable Design is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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 | | | 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 | |
| | | | | | Elective | 3 | |

Urban Design- Future Cities (MUD)

Master of Science (MS)

Interim Program Director
Campus
Website

James L. Query, Jr., MRP, RLA, ASLA
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/urban-design-ms.html>

Program Description

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.

The Master of Urban Design - Future Cities is a STEM designated program (CIP Code 15.1001).

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 6xx | Master Studio: Towards Sustainable and Smart Cities | 6 | MUD 6xx | Master Studio: Future Cities | 6 |
| GEOD 615 | Adv GIS: Urban Spatial Analytics I | 3 | MUD 6xx | Architectural Research Methods | 3 |
| MUD 6xx | Modeling Urban Environmental Performance | 3 | MUD 6xx | Graduate Seminar / Focus Elective | 3 |
| <u>Year 1 Spring</u> | | | <u>Year 2 Spring</u> | | |
| SDN 621 | Master Studio: Resilient Cities and Communities | 4 | MUD 6xx | Masters Thesis | 6 |
| SDN 623 | Studio Companion: Ecological Systems for Resilient Cities | 2 | MUD 6xx | Graduate Seminar / Focus Elective | 3 |
| GEOD 617 | Adv GIS: Urban Spatial Analytics II | 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

The Ph.D. 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 Ph.D. 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.

The PhD is a STEM designated program.

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 7XX | Dissertation Research/Writing | 3 |
| | Elective | 3 | | | |
| | Elective | 3 | | | |
| <u>Year 1 Spring</u> | | | <u>Year 3 Spring</u> | | |
| ADR 702 | Research Theories & Methods 2 | 3 | ADR 7XX | Dissertation Research/Writing | 3 |
| | Elective | 3 | | | |
| | Elective | 3 | | | |
| <u>Year 2 Fall</u> | | | <u>Year 4 Fall</u> | | |
| ADR 703 | Directed Research Seminar | 9 | ADR 7XX | Dissertation Research/Writing | 3 |
| | Elective | 3 | | | |
| | Elective | 3 | | | |
| <u>Year 2 Spring</u> | | | <u>Year 4 Spring</u> | | |
| ADR 704 | Dissertation Proposal | 9 | ADR 7XX | Dissertation Research/Writing | 3 |

Graduate Concentrations

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

Program Description

Certain CABE 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 free 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 technologies.

| 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: #C00000;">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

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.

The Construction Management Graduate Certificate is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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 | Rob Fleming, AIA, LEED AP |
| 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

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.

The Design of Living Buildings Graduate Certificate is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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

| <u>Core Curriculum</u> | | |
|------------------------|--|---|
| 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 | Rob Fleming, AIA, LEED AP |
| 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

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.

The Design of Resilient Communities Graduate Certificate is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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

James L. Querry, Jr., MRP, RLA, ASLA
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/graduate-certificates/geographic-information-systems.html>

Program Description

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.

The Geographic Information Systems Graduate Certificate is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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 Campus Website | James L. Querry, Jr., MRP, RLA, ASLA East Falls https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/graduate-certificates/geospatial-technology-for-geodesign.html |
|---------------------------------------|---|

Program Description

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.

The Geospatial Technology for Geodesign Graduate Certificate is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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

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

Green Building Operations

Graduate Certificate

| | |
|------------------|---|
| Program Director | Rob Fleming, AIA, LEED AP |
| 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

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.

The Green Building Operations Graduate Certificate is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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 |

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 |
| <u>Select One</u> | | |
| MPH 626 | Building Conservation & Assessment | 3 |
| ARCH 672 | American Architecture | |

Real Estate Development

Graduate Certificate

Program Director
Campus
Website

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

Program Description

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 |
| MRE 615 | Real Estate Finance and Investment | 3 |
| MRE 620 | Case Study Studio: Urban Revitalization | 3 |
| MRE 638 | Sustainable Affordable Housing | 3 |

Smart Cities & Urban Analytics

Graduate Certificate

Interim Program Director
Campus
Website

James L. Querry, Jr., MRP, RLA, ASLA
East Falls
<https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/graduate-certificates/urban-design.html>

Program Description & Learning Goals

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 6xx | Modeling Urban Environmental Performance | 3 |
| MUD 6xx | Smart Technologies for Cities and Building | 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 | Rob Fleming, AIA, LEED AP |
| 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

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.

The Sustainability Leadership Graduate Certificate is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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 |

| | |
|---|---|
| <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 | 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 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 David Kratzer for more information.

Architecture & Interior Architecture

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

Program Directors David Kratzer, AIA, NCARB 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 program's transdisciplinary nature encourages students to think broadly and envision innovative solutions to design-related problems. 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.

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 David Kratzer for more information.

Architecture & Real Estate Development

Accelerated Bachelor of Architecture (BArch) & Master of Science (MS) Real Estate Development

Program Director David Kratzer, AIA, NCARB and Troy Hannigan
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, Learning Goals & Outcomes

The MS in Real Estate Development is an ideal choice for architects who not only demonstrate entrepreneurial initiative, but also demand design excellence and are cognizant of the economic, social and, significantly, environmental impact of architectural interventions into the built environment. While working toward the Bachelor of Architecture degree, students complete four graduate courses required by the 37-credit MS Real Estate Development program and can complete the remaining 25 credits in one year of full-time study. The MS in Real Estate Development trains architects to take the next step in the complex process of bringing a design project from concept to fruition.

Professional accountability and ethical practices regarding the environmental impact of architecture are values that connect these two programs, making the combination of these two fields an advantageous choice for students. Faculty includes architects who have been successful as developers through innovation and the invention of specific strategies to overcome financial shortcomings and policy roadblocks.

The Accelerated Bachelor of Architecture is a STEM (Science, Technology, Engineering and Mathematics) designated program.

Curriculum: 6 years

- The 5+1 Accelerated Degree Option enables an undergraduate Architecture major to complete four graduate courses required by the Master of Science in Real Estate Development program, for a maximum of twelve graduate course credits, while completing the undergraduate Bachelor of Architecture degree.
- By sub-matriculating, a student achieves advanced standing in the 37 credit MS Real Estate Development program and can complete the MS degree with 25 credits.
- Upon graduation from the Bachelor of Architecture program, a student may fulfill requirements for the MS Real Estate Development in one year of full-time study.

Contact David Kratzer for more information.

Interior Design & Architecture

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

| | |
|--------------------------|---|
| Program Directors | David Kratzer, AIA, NCARB 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 David Kratzer for more information.

Interior Design & Sustainable Design

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

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

Program Description, Learning Goals & Outcomes

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 Fleming 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 & Jim Querry
Campus East Falls
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html>

Program Description, Learning Goals & Outcomes

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 (Free Elective) | 3 | SND 601 | Principles of Sustainable Design | 3 |
| | <u>Year 5 Fall</u> | | | <u>Year 5 Spring</u> | |
| 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 | Troy Hanningan & 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, Learning Goals & Outcomes

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.

The MS Construction Management is a STEM (Science, Technology, Engineering and Mathematics) designated program.

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 Suzanne Singletary or Gulbin Ozcan-Denis for more information.

Construction Management & Sustainable Design

Dual Master of Science (MS) Construction & Sustainable Design

| | |
|--------------------------|---|
| Program Directors | Rob Fleming & Gulbin Ozcan-Deniz |
| Campus | East Falls |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/architecture-and-the-built-environment/programs/accelerated-dual-degrees.html |

Program Description

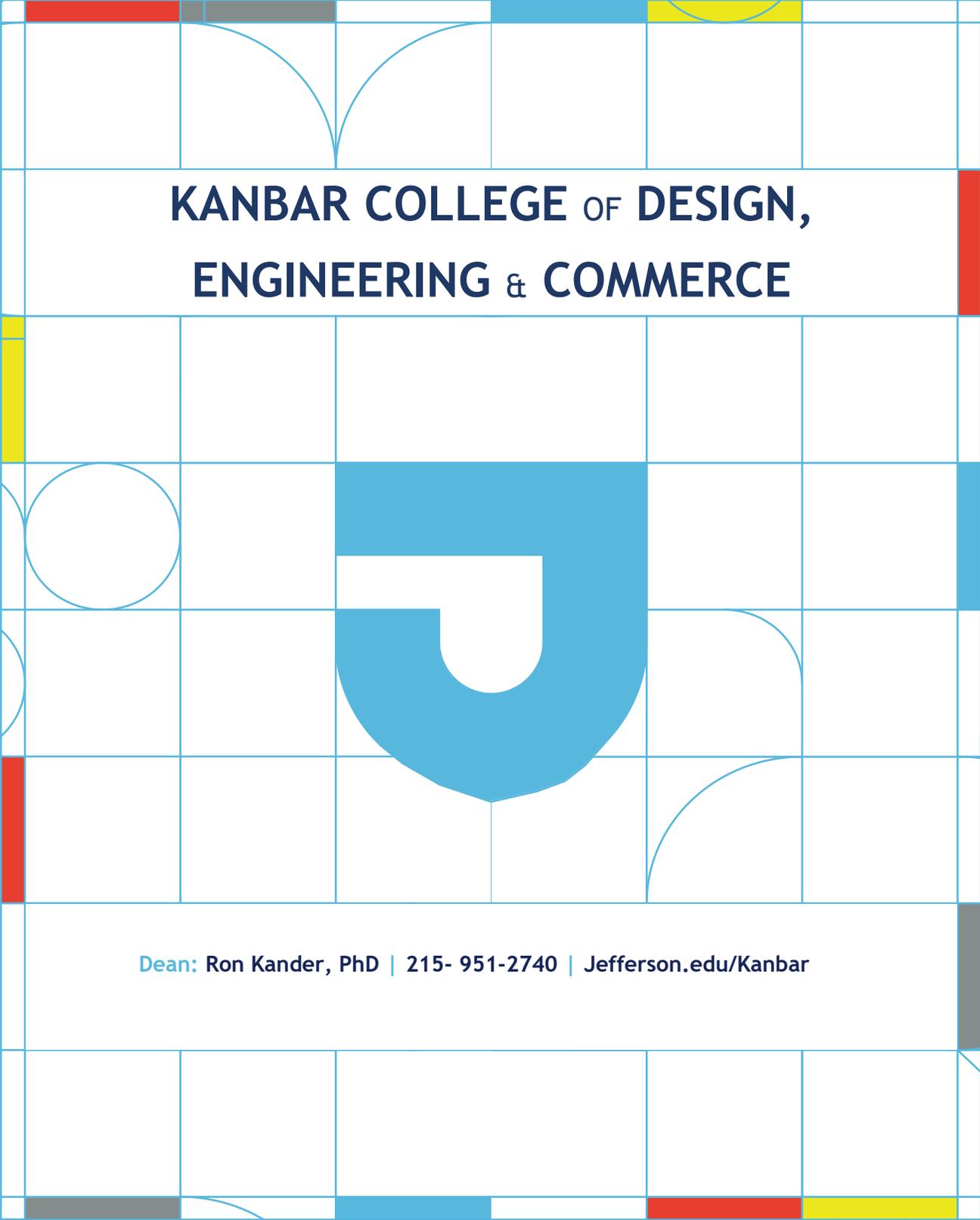
This unique full-time, accelerated dual degree option is intended for students with a passion for both sustainable design and construction practices. Rather than completing both graduate curricula separately and obtaining the degrees independently, this option allows students to better capitalize on 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 includes five courses; four core courses— Integrative Design Process, Business Models, Systems Thinking and Ethnographic Research – that culminate in an integrated senior capstone project. Each course fosters collaboration among designers, engineers, and business majors to give students a breadth of expertise that goes beyond the boundaries of a traditional degree. It's an approach that 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.

| | |
|--------------------------------------|---|
| Integrative Design Processes | Introduces students to dealing with ambiguity through finding problems, prototyping and iterating solutions while working in diverse teams of students. |
| Business Models | Introduces students to the concept of how a value proposition is delivered to customers through infrastructure to create financial, social and environmental value. |
| Systems Thinking | is a holistic problem solving approach, students choose between one of two courses: Sustainability & Eco-Innovation , or Biology for Design , to explore inter-connections of natural and social systems. |
| 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. |

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 Master's 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 analyse, 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 3xx | Data Mining & Predictive Analytics | 3 |
| MGMT 301 | Principles of Management | 3 | | Free 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 4xx | 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 |
| | Free Elective | | | Free Electives or Internship | 12 |
| ABA 201 | Introduction to Business Analytics | 3 | | | |
| ABA 202 | Statistical Data Analytics | 3 | | | |
| FINC 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 | FINC 301 | Financial Management | 3 |
| ECON 205 | Macroeconomics | 3 | ABA 3xx | 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 4xx | 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 | | Free 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 | | | (c)Value Chain & Innovation | | |
| Merchandise Buying/Operations | | | Prototyping | | |
| Product Development & Innovation -Visual Merchandising | | | Integrated Technology | | |
| | | | Value Chain Innovation | | |
| (b)Global Brand Strategy | | | | | |
| Contemporary Brand Mgt. | | | | | |
| Apparel Merchandising Mgt. | | | | | |
| Business Licensing | | | | | |

| | |
|-------------------------|---|
| Program Director | 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 3xx | 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 |
| | Free Electives | 6 | FIN 412 | Financial Modeling | 3 |
| ECON 206 | Microeconomics | 3 | | Free Elective or Internship | 12 |
| ABA 201 | Introduction to Business Analytics | 3 | ABA 4xx | Operations & Data Analytics | 3 |
| ABA 202 | Statistical Data Analytics | 3 | | | |
| FINC 301 | Financial Management | 3 | | | |

International Business

Bachelor of Science (BS)

| | |
|-------------------------|---|
| Area Coordinator | Lloyd Russow, 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

| <u>Year 1</u> | | | <u>Year 3</u> | | |
|---------------|--|-----|---------------|------------------------------------|----|
| 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 | FINC 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 3xx | Data Mining & Predictive Analytics | 3 |
| ACCT 102 | Managerial Accounting | 3 | | Free Elective | 3 |
| MKTG 102 | Principles of Marketing | 3 | | | |
| MGMT 301 | Principles of Management | 3 | | | |
| | <u>Year 2</u> | 3 | | <u>Year 4</u> | |
| ETHIC 2XX | Ethics | 3 | ABA 4xx | Operations & Data Analytics | 3 |
| ADIV 1XX | 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 | | Free 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 | Philip 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/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 | | Free 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 3xx | 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 4xx | Operations & Data Analytics | 3 |
| | Free 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 | | Free Electives | 12 |
| ABA 201 | Introduction to Business Analytics | 3 | | | |
| ABA 202 | Statistical Data Analytics | 3 | | | |
| FINC 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 3XX | 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 | | Free 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 4XX | 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 | | Free 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 | TXT 759 | Product Evaluation | 3 |
| GFEF 501 | Prototyping | 3 | TXF 510 | Digital Imaging for Fashion | 3 |
| IMBF 510 | Operations Management | 1.5 | GFE 791 | Fashion Internship | 3 |
| GFE 600 | Fashion Immersion | 3 | GFE 793 | Global Fashion Networking | 3 |
| GFE 611 | Product Development/Entrepreneurship | 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: Analytics

Provide the analytical skills and knowledge that business professionals need to engage in innovative thinking and to gain competitive edge in the highly competitive global market place. It will also equip students with the tools and techniques they need:

- Leverage the latest information technologies to support the use of information (in the form of data) in management decision-making
- Integrate information and internal controls into cross-functional business information systems.

| <u>Required Courses</u> | | |
|--------------------------------|------------------------------|---|
| IMBA 720 | Data Models and Management | 3 |
| IMBA 721 | Business Analytics Modeling | 3 |
| IMBA 722 | Business Analytics Practicum | 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 Courses</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 Courses</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.

| Required Courses | | |
|-------------------------|--|---|
| 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.

| Required Courses | | |
|-------------------------|--|---|
| 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.

| Required Courses | | |
|-------------------------|---|---|
| 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

| Required Courses | | |
|--|--|---|
| 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. Students may take courses toward the degree or as Continuing Professional Education (CPE) credits to meet state licensing requirements or to enhance their expertise in a specific topic.

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 |
| | | | | 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 |
| Biopharmaceutical Process Operations | Graduate Certificate |
| Health Communication Design | Graduate Certificate |
| Surface Imaging | Advanced Practice Certificate |

Accelerated Program

| | |
|----------------|-------------------|
| Textile Design | Accelerated BS/MS |
|----------------|-------------------|

| | | |
|---|---|--|
|  | | 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 1XXX | American Diversity | 3 |
| WRIT 101 | Written Communication | 3 | GCIT 2xxx | 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 1XXX | Global Diversity | 3 | ANIM 407Z | Adv Topics in 3D Animation | 4 |
| WRIT 201 | Multimedia Communications | 3 | DIGD 370 | Portfolio Development | 1 |
| ETHC 1XXX | 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 | | Free Electives | 6 |
| ANIM 307 | 3D Modeling | 3 | BLAW 301 | Business Law I | 3 |
| DIGD 318 | Media Production | 3 | | | |
| DRAW 206 | Figure Drawing | 3 | | | |
| DEC2XX | 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, pursue graduate studies, or start a business in their specialized concentration or general engineering practice.

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, 127.7- 129.5 credits

| <u>Year 1</u> | | | <u>Year 3</u> | | |
|---------------|--------------------------------------|-----|-------------------|--|-----|
| FYS 100 | Pathways Seminar | 1 | GDIV/ GCIT 2xx | Global Diversity | 3 |
| WRIT 101 | Written Communication I | 3-4 | ISEM 300 | Ethnographic Research Method | 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 |
| ADIV 2XX | American 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 |
| VDES 101 | Design Essentials | 3 | FASD 311 | Pattern Development II | 3 |
| DRAW 101 | Drawing Essentials | 3 | FASD 316 | Fashion Design | 3 |
| FASD 252 | Fashion Design Research | 3 | FASD 322 | Fash Design Problem Solving | 3 |
| DRAW 206 | Figure Drawing | 3 | FASD 335 | Junior Studio | 3 |
| TEXT 101 | Survey of the Textile Industry | 3 | FASD 300 | Technology 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 | Collection Development I | 4 |
| ARTH 314 | History of Costumes & Textiles | 3 | FASD 416 | Collection Development II | 4 |
| ADIV 2XX | American Diversity | 3 | CAD 401 | Apparel CAD/CAM | 3 |
| FASD 211 | Garment Structures | | 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 | | Free Electives | 9 |
| FASD 213 | Pattern Development I | 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, 133-134 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 | | Free 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) | 3-4 |
| 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 | | Free 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 | 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/mechanical-engineering.html |

Program Description

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

- 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 | GDIV/ GCIT 2XX | Global Diversity or Citizenship | 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 -2 | 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 |
| ENGR 371 | Special Topics | 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 expanding international markets, the billion-dollar textile industry cuts across a multiplicity of products and commerce—fashion, home furnishings, medical, performance, retail and technical. 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 theoretical foundations of textile design
- Demonstrate creative talents required of the textile design industry
- Apply a base of liberal arts knowledge to examine textile design issues through acquiring, developing and conveying design ideas and information
- Demonstrate an understanding of textile design business practices, including ethics and law
- Develop design industry marketability through successful completion of the program
- Identify 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 4XX | 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 | | Free Electives or Minor | 12 |
| TEXT 205 | Textile Design Studio 2: Fashion | 3 | TEXT 4XX | 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 | TEXT 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 | | Free Electives | 12 |
| DECS 2XX | Science (Select one DECSYS) | 3 | TEXT 487N | Capstone in TMT | 6 |
| | Free 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 | https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/visual-communication-design.html |

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.

Learning Goals/Outcomes

- Identify communication design problems to support appropriate solutions for intended audiences and context
- Conduct research & analysis to shape solutions
- 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 |
| PHYS 101 | Science | 3 | GRPH 301 | Design V for Graphic Design | 3-4 |
| DECF 102 | Finding and Shaping Opportunity | 3 | GRPH 302 | Design VI for Graphic Design | 3-4 |
| VDES 101 | Design Essentials | 3 | DIGD 206 | Fnd. Web Design & Strategy | 3 |
| DRAW 101 | Drawing Essentials | 3 | DIGD 318 | Media Production | 3 |
| GRPH 102 | Design II Intro to Graphic Design | 3 | GRAPH 308 | Design Theory and Criticism | 3 |
| ARTH 101 | History of Western Art I | 3 | MKTG 102 | Principles of Marketing | 3 |
| GRPH 110 | Digital Imaging | 3 | | | |
| <u>Year 2</u> | | | <u>Year 4</u> | | |
| ETHC 2XX | Ethics | 3 | PHIL 499 | Philosophies of the Good Life | 3 |
| GDIV 1XX | Global Diversity | 3 | GRPH 401 | Design VII for Graphic Design | 6 |
| WRIT 201 | Multimedia Communication | 3 | GRPH 499 | Design VIII Capstone Graphic Design | 6 |
| DECS 20X | Science (Systems) | 3 | | Visual Comm Design Electives | 6 |
| GRPH 201 | Design III for Graphic Design | 3-4 | MKTG 310 | Integrated Marketing Comm. | 3 |
| GRPH 202 | Design IV for Graphic Design | 3-4 | | Free Elective | 9 |
| ARTH 102 | History of Western Art II | 3 | DIGD-498 | Capstone Prep & Prof Practice | 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 | 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/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 Sust. Orgs | 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 Sust. Orgs | 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 | |
| | 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 year, 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 year, 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)

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|---|---|---------------|--------------------------|---|
| | 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 B.S. and Textile Design MS catalog entries for Program Learning Outcomes for both programs.

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

Sample sequence: exact timing is dependent on course scheduling

| <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> | | | <u>Year 5 Summer</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 the first - and only - specialized education and training institute for biopharmaceutical processing in North America that combines commercial single-use processing equipment with the internationally recognized National Institute for Bioprocessing Research and Training (NIBRT) curriculum.

The focus of JIB is hands-on training of industry professionals through workshops and certificates and hands-on 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 and biomanufacturing. We provide a broad-range of trainings in commercial single-use processing equipment with the internationally recognized NIBRT curriculum. In addition, we offer customized trainings that meet the needs of our clients.

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

Undergraduate

| | |
|---------------------------------------|-----------------------------|
| Biopharmaceutical Process Development | BS (See Curriculum in JCHP) |
|---------------------------------------|-----------------------------|

Graduate

| | |
|------------------------------|-----|
| Biologic Process Engineering | PhD |
|------------------------------|-----|

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|---------------------------------------|----|
| Biopharmaceutical Process Engineering | MS |
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Certificate

| | |
|---------------------------------------|----------------------|
| Biopharmaceutical Process Development | Graduate Certificate |
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| Biopharmaceutical Process Operations | Graduate Certificate |
|--------------------------------------|----------------------|

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-offerings/phd-in-biologics-process-engineering.html |

Program Description

This primary goal of the 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 2020 and Spring 2021 schedule 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

| <u>Fall</u> | | |
|---------------|---|-----|
| ENGR XXX | Bioprocess Engineering for Scientist or | 3 |
| BP 601 | Basic Life Sciences for Engineers | |
| ENGR XXX | Principles of Biopharmaceutical Process Engineering | 3 |
| ENGR 607 | Business and Entrepreneurship in Life Sciences | 1.5 |
| ENGR XXX | Biopharmaceutical Process Operations | 3 |
| ENGR XXX | Applied Mathematical and Statistical Methods in Biomanufacturing | 1.5 |
| ENGR 600 | Bioanalytical/Regulatory/Quality Principles | 3 |
| <u>Spring</u> | | |
| BP 605 | Intro to Upstream Unit | 3 |
| BP 604 | 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 |
| <u>Summer</u> | | |
| ENGR 608 | Capstone Project | 6 |

Concentrations (select one concentration)

Protein Replacement Therapies (36 credits)

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 6XX | Vector and Cell Line Design | 3 |
| ENGR 6XX | Emerging Therapeutics | 1.5 |
| ENGR 6XX | Drug Product Development and 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 6XX | Pharmaceutical Good Manufacturing Practices | 1.5 |
| ENGR 6XX | Analytical Quality by Design and Method Validation | 1.5 |
| ENGR 6XX | Biologics and Biosimilars: Regulatory Overview | 1.5 |
| ENGR 6XX | 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 6XX | Vector and Cell Line Design | 3 |
| ENGR 6XX | Emerging Therapeutics | 1.5 |
| ENGR 6XX | Vaccine Formulation | 1.5 |

Biopharmaceutical Commercialization

The concentration in Biopharmaceutical Commercialization 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.

Required

| | | |
|--------|---|-----|
| BP 6XX | Introduction to Biopharmaceuticals and Biologics Production | TBD |
| BP 6XX | Biopharmaceuticals and Biologics: Regulatory and Quality | TBD |
| BP6XX | Biopharmaceutical Commercialization: Strategy and Analytics | TBD |

Biopharmaceutical Process Development

Graduate Certificate

| | |
|---|--|
| Executive Director Campus Campus Partner Website | Parviz Ayazi-Shamlou, PhD Spring House National Institute for Bioprocessing Research & Training (NIBRT) https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/research-and-innovation/institute-for-bioprocessing/academic-offerings/certificate-in-biopharmaceutical-process-development.html |
|---|--|

Program Description

The Jefferson Institute for Bioprocessing is proud to announce the launch of a 12-credit Graduate Certificate in Biopharmaceutical Process Development (BPD Certificate). The 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 Certificate 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. 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 within a full-time, 12-credit residential curriculum.

Curriculum: 12 credits

| | | |
|-----------|--|---|
| BP 601 or | Basic Engineering for Scientists OR | 2 |
| ENGR xxx | 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 |

Biopharmaceutical Process Operations

Graduate Certificate

| | |
|---|---|
| Executive Director Campus Campus Partner Website | Parviz Ayazi-Shamlou, PhD Spring House National Institute for Bioprocessing Research & Training (NIBRT) https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/research-and-innovation/institute-for-bioprocessing/academic-offerings/certificate-in-biopharmaceutical-process-development.html |
|---|---|

Program Description

Thomas Jefferson University is proud to announce the launch of an online 9-credit Graduate Certificate in Biopharmaceutical Process Operations. The required courses will prepare students who have already earned a Bachelor's Degree in Engineering or Life Sciences for a variety of advanced careers in operations in the biomanufacturing industry, including supply chain and project management, regulatory affairs and finance.

Upon completion, candidates will receive a Graduate Certificate in Biopharmaceutical Process Operations. In addition, interested candidates have the option of applying all 9 credits earned towards further credential qualifications, including the 36 credit Master of Science in Biopharmaceutical Process Engineering program.

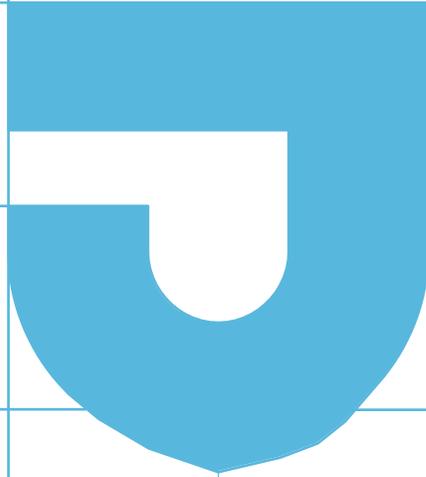
Learning Goals/Outcomes

- Prepare students who have already earned a Bachelor's Degree in Engineering or Life Sciences for a variety of technical jobs in the biomanufacturing operations sector.

Curriculum: 9-10 credits

| | | |
|-------------------------|---|-----|
| ENGR 509 or ENGR 610 | Bioprocess Engineering Fundamentals for Scientists or Basic Life Sciences for Engineers | 3 |
| ENGR 605 | QbD, Process Selection and Optimization | 2.5 |
| ENGR 505 | Process Characterization and Validation | 1.5 |
| ENGR 607 | Business and Entrepreneurship in Life Sciences | 1.5 |

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
- Disaster Medicine & 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); General Sonography (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.naaccls.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

| | |
|--|--------------------------|
| Art Therapy (Certificate & Professional Certificate Tracks) Certificate Only Track (15 credits) Professional Certificate Track (30 credits + Internship) | 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 |

Disaster Medicine & Management

Graduate

| | |
|--------------------------------|----|
| Disaster Medicine & Management | MS |
|--------------------------------|----|

Certificate

| | |
|--------------------------------------|----------------------|
| Business & Organizational Continuity | Graduate Certificate |
| Disaster Medicine & Management | Graduate Certificate |

Accelerated/Dual Degree

| | |
|---------------------------------|--------|
| Disaster Medicine/Public Health | MS/MPH |
|---------------------------------|--------|

Health Sciences

Graduate

| | |
|---------------------------------|--------|
| Nutrition and Dietetic Practice | MS/RDN |
|---------------------------------|--------|

Undergraduate

| | |
|---|------------------|
| Health Sciences | BS |
| Health Sciences: Pre-Medical Lab Sciences & Biotechnology | BS |
| Health Sciences: Pre-Nursing | Pre-Professional |
| Health Sciences: Pre-Pharmacy | Pre-Professional |
| Health Sciences: Pre-Medical Imaging & Radiation Sciences | Pre-Professional |
| Health Sciences: Pre-Physician Assistant Studies | Pre-Professional |

Accelerated/Dual Degree

| | |
|--|------------------------|
| BS Health Sciences & MS Athletic Training | 3+2 |
| BS Health Sciences & MS Community and Trauma Counseling | 3+2 |
| BS Health Sciences & MS Medical Lab Sciences and Biotechnology | 3+2 |
| BS Health Science & MS Occupational Therapy | Closed to new students |
| BS Health Sciences & Occupational Therapy Clinical Doctorate | 3+3 |
| BS Health Sciences & MS Physician Assistant Studies | 3+2 |

Medical Imaging & Radiation Sciences

Undergraduate

| | |
|---------------------------------------|----|
| Cardiac Sonography (Echocardiography) | BS |
| Computed Tomography (CT) | BS |
| General Sonography | BS |
| Invasive Cardiovascular Technology | BS |
| Medical Imaging & Radiation Science | BS |
| Magnetic Resonance Imaging | BS |
| Medical Dosimetry | BS |
| Nuclear Medicine | BS |
| Radiation Therapy | BS |
| Radiography | BS |

| | |
|--|-------------------------------|
| Vascular Sonography | BS |
| Graduate | |
| Medical Imaging & Radiation Sciences | MS (Executive style) |
| Medical Physics | MS |
| Certificate | |
| Computed Tomography | Undergraduate Certificate |
| Positron Emission Tomography & 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 |
| Medicine & Cell Biology & Regenerative Medicine | MD/PhD (see SKMC) |
| Medical Laboratory Sciences | BS/MS |
| Midwifery | |
| Graduate | |
| Midwifery | MS |
| Midwifery | DM |
| Certificate | |
| Midwifery | Advanced Practice Certificate |
| 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 |
| Connected Care: Telehealth & Digital Health | Graduate Certificate |
| Integrative Health Education | Advanced Practice Certificate |
| Integrative Nutrition | Advanced Practice Certificate |
| Mind-Body Medicine | Advanced Practice Certificate |
| Telehealth Facilitator | UG Certificate/CME |

Community & Trauma Counseling

Master of Science (MS)

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|------------------|---|
| Program Director | Kirby L. Wycoff, PsyD, EdM, MPH, NCSP |
| 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)

(Students 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 Spring</u> | | | <u>Year 2 Spring</u> | | |
| CTC 603 | Human Growth and Development | 3 | CTC 609 | Assessment in Counseling | 3 |
| CTC 606 | Social and Cultural Diversity | 3 | CTC 655 | Advanced Clinical Interventions in Trauma Treatment II | 3 |
| CTC 651 | Neurobiology of Trauma | 3 | CTC 792 | Internship II | 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)
(Students 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 Kirby L. Wycoff, PsyD, EdM, MPH, NCSP
Concentration Coordinator Rachel Brandoff, Ph.D., ATR-BC, ATCS, LCAT
Campus East Falls
Website www.jefferson.edu/arttherapy

Curriculum: 2 years, 69 credits (M.S. Degree and Art Therapy Concentration)
(Students 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 | | |
| CTC 520 | Studio and Techniques of Art Therapy 3 | | |
| <u>Year 1 Pre-Fall</u> | | <u>Year 2 Fall</u> | |
| CTC 605 | Foundations of Trauma Counseling 3 | CTC 652 | Childhood Trauma and Play Therapy 3 |
| <u>Year 1 Fall</u> | | CTC 653 | Advanced Interventions I |
| YCTC 601 | Orientation to the Counseling Profession 3 | CTC 791 | Internship I 3 |
| CTC 602 | Practicum I 3 | | |
| CTC 603 | Human Growth and Development 3 | <u>Year 2 Spring</u> | |
| CTC 604 | Psychopathology 3 | CTC 651 | Neurobiology of Trauma 3 |
| CTC 606 | Social and Cultural Diversity 3 | CTC 619 | Art Therapy Assessment (*Replaces CTC 655) 3 |
| CTC 607 | Advanced Counseling Theory and Practice 3 | CTC 792 | Internship II 3 |
| CTC 610 | Counseling Research and Evaluation 3 | | |
| CTC 701 | Practicum II 3 | | |
| <u>Year 1 Summer</u> | | | |
| CTC 609 | Assessment in Counseling 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 Concentration Coordinator Campus Website | Kirby L. Wycoff, PsyD, EdM, MPH, NCSP Katherine Wenocur, DSW, LCSW, RPT-S East Falls www.jefferson.edu/playtherapy |
|--|--|

Curriculum: 2 years, 66 credits (M.S. Degree and Play Therapy Concentration)

| <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 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 Kirby L. Wycoff, PsyD, EdM, MPH, NCSP
 Concentration Coordinator 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 (M.S. Degree and addictions 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 | | CTC 670 | Screening, Assessment and Treatment Planning for Addiction (*Additional Course for Addiction Therapy Concentration) |
| | <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) |
| CTC 610 | Counseling Research and Evaluation | 3 | | CTC 672 | Neurobiology and Psychopharmacology of Addiction (*Replaces CTC 655) |
| 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 502 | Theory & Practice Family Therapy II | 3 | CFTP 602 | Research Couple & Family Therapy | 3 |
| CFTP 503 | Theory and Practice Couple Therapy | 3 | CFTP 603 | Advanced Sex Therapy II * | 3 |
| | | | or | or | |
| CFTP 505 | Life Span Development from a Systemic Perspective | 3 | CFTP 605 | Issues Violence and Abuse Family** | 3 |
| CFTP 506 | Practicum I | 3 | CFTP 606 | Live Supervision II | 3 |
| CFTP 509 | Foundations of Systematic Practice | 3 | CFTP 607 | Practicum IV | 3 |
| <u>Year 1 Spring</u> | | | <u>Year 2 Spring</u> | | |
| CFTP 514 | Group & Community Based Interventions | 3 | CFTP 610 | Professional, Ethical, & Legal Issues Couple & Family Therapy | 3 |
| CFTP 513 | Systemic/Relational Assessment & Mental Health Diagnosis and Treatment | 3 | CFTP 604 | Advanced Sex Therapy* | 3 |
| | | | or | or | |
| CFTP 507 | Practicum II | 3 | CFTP 611 | Medical Family Therapy ** | 3 |
| CFTP 511 | Introduction to Sex Therapy: Concepts in Human Sexuality | 3 | CFTP 612 | Families in Transition | 3 |
| | | | CFTP 613 | Master's Project | 3 |
| <u>Year 1 Summer</u> | | | <u>Year 2 Summer</u> | | |
| CFTP 512 | Live Supervision I | 3 | CFTP 608 | Practicum V | 3 |
| CFTP 508 | Practicum III | 3 | CFTP 608 | Practicum V (if needed)*** | 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

| | |
|----------------|--|
| Campus Website | Hybrid: East Falls & Online 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

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

Community & Trauma Counseling

Advanced Studies Graduate Certificate

| | |
|---------|---|
| Campus | East Falls |
| 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

| | |
|-----------------------|---|
| Campus Website | East Falls https://www.jefferson.edu/university/health-professions/departments/counseling-behavioral-health/programs/community-trauma-counseling/advanced-studies-art-therapy-certificate.html |
|-----------------------|---|

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> | | |
|-------------------------|---|---|---------------------|---|---|
| CTC 510 | Ethics, Standards and Professional Orientation Art Therapy | 3 | <u>Fall</u> | | |
| CTC 512 | Ethics, Standards and Professional Orientation in Art Therapy | 3 | CTC 603 | Human Growth and Development | 3 |
| CTC 520 | Studio and Techniques of Art Therapy | 3 | CTC 652 | Childhood Trauma and Effects | 3 |
| CTC 619 | Art Therapy Assessment (Professional Certificate Only) | 3 | CTC 653 | Advanced Clinical Interventions in Trauma Treatment I | 3 |
| CTC 620 | Advanced Group, Couples and Family Art Therapy Process | 3 | <u>Spring</u> | | |
| CTC 791 | Art Therapy Internship I (Professional Certificate Only) | 3 | CTC 606 | Social and Cultural Diversity | 3 |
| CTC 792 | Art Therapy Internship II (Professional Certificate Only) | 3 | CTC 651 | Neurobiology of Trauma | 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

| | |
|----------------|---|
| Campus Website | 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

| | | |
|---------|---|---|
| CTC614 | <u>Pre-Fall</u> Foundations of Addictive Behavior | 3 |
| CTC 670 | <u>Fall</u> Screening, Assessment and Treatment for Planning for Addiction | 3 |
| CTC 671 | <u>Spring</u> 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

Program Director (Undergrad) Wendy Krupnick, PhD, MBA
 Graduate Director Kirby Wycoff, PsyD, EdM, MPH, NCSP
 Campus East Falls
 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 BS; 48 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 | | Free 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 | | Free Elective | 3 |
| PSYC 213 | Developmental Psych. | 3 | | | |
| | Free 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 | | Free 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

Health Sciences & Community & Trauma Counseling

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

Program Advisor (Undergrad)
Graduate Director
Campus
Website

Dale Michaels, MS, LPC
Kirby Wycoff, PsyD, EdM, MPH, NCSP
East Falls
<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.

Disaster Medicine Programs

| | |
|--|---|
| Disaster Medicine & Management | |
| Master of Science (MS) Graduate Certificate | |
| Program Director | Jean Bail, EdD, RN, MSN, CEN, MEP, EMT-P |
| Campus | East Falls & Online options |
| Website | https://www.jefferson.edu/university/health-professions/departments/programs/disaster-medicine-management/ms.html |

Program Description

Jefferson's Master in Disaster Medicine and 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

| | | |
|---------|-------------------------------------|---|
| DMM 610 | Foundations in Emergency Management | 3 |
| DMM 640 | Logistic Management for Disasters | 3 |
| | Elective | 3 |

MS Curriculum: 1-3 year, 36 credits

| | | | | | |
|--|---|---|--|---|----|
| <u>Core Curriculum</u> | | | | | |
| DMM 610 | Foundations in Emergency Management | 3 | DMM 640 | Logistic Management Disasters | 3 |
| DMM 631 | Organizational Management and Communications in Disasters | 3 | DMM 651 | Applied Research Methods and Statistics | 3 |
| DMM 635 | Psychological Aspects of Disasters | 3 | DMM 755 | Capstone Experience in Disaster Medicine and Management | 3 |
| DMM 639 | Principles Disaster Exercises and Drills | 3 | | Electives (Designated) | 12 |
| DMM 643 | Public Health Implications of Disasters | 3 | In addition to the eight required courses, students are required to complete 100 hours of experiential learning. | | |
| Students select from the following electives: | | | | 3 | |
| DMM 612 Foundations of Homeland Security & Defense | | | | | |
| DMM 613 International and Humanitarian Disaster Management) | | | | | |
| DMM 615 Hazardous Materials & Industrial Safety | | | | | |
| DMM 617 Disaster Mapping | | | | | |
| DMM 619 Natural Disasters | | | | | |
| DMM 623 Weapons of Mass Destruction | | | | | |
| DMM 624 Organizational Risk and Crisis Management | | | | | |
| DMM 625 Business and Crisis Continuity | | | | | |
| DMM 626 Organizational Recovery and Planning | | | | | |
| DMM 627 Principles of Terrorism | | | | | |
| DMM 648 Emergency Preparedness with Special Needs Populations | | | | | |
| DMM 649 Health care Emergency Management | | | | | |
| DMM 653 Clinical Disaster Medicine | | | | | |
| DMM 791 Internship in Disaster Medicine and Management | | | | | |
| DMM 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
<https://www.jefferson.edu/university/health-professions/departments/programs/disaster-medicine-management/business-organizational-continuity-certificate.html>

Program Description

Designed for working professionals and students in the MS in Disaster Medicine and 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> | | |
|------------------------|---|---|
| DMM 625 | Business and Planning for Crisis Continuity | 3 |
| DMM 624 | Organizational Risk and Crisis Management | 3 |
| DMM 626 | Organizational Recovery and Planning | 3 |

Disaster Medicine/Public Health Dual Degree

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

| | |
|--------------------------|---|
| Program Directors | Disaster Medicine- Jean Bail, EdD, RN, MSN, CEN, MEP, EMT-P Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH |
| Campus | Online or East Falls/Center City |
| Website | 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 Disaster Medicine & 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>DMM</u> | | |
|--------------------|---|---|------------|---|---|
| PNH 501 | Foundations of Public Health | 3 | DMN 610 | 610 Foundations in Emergency Management | 3 |
| PBH 500 | Foundations of the US Healthcare System | 3 | DMM 631 | Organizational Management and Communications in Disasters | 3 |
| PBH 502 | Society, Behavior & the Environment | 3 | DMM 635 | Psychological Aspects of Disasters | 3 |
| PBH 504 or PBH 505 | Fundamentals of Statistics | 3 | DMM 639 | Disaster Exercise and Drills | 3 |
| PBH 506 | Fundamentals of Epidemiology | 3 | DMM 640 | Logistic Management for Disasters | 3 |
| PBH 509 | Foundations of Policy & Advocacy | 3 | DMM 643 | Public Health Implications of Disasters | 3 |
| PBH 510 | Health Research Methods | 3 | DMM 755 | Capstone Experience in DMM (joint with MPH) | 3 |
| PBH 520 | Program Planning, Implementation & Evaluation | 3 | | Electives | 6 |
| PBH 651 | Clerkship- Applied Practice Experience (joint with DMM) | 0 | | | |
| PBH 609 | GIS Mapping | 3 | | | |
| | Electives | 9 | | | |

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 free 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, 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 | 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 |
| | | | | Free 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 | | Free 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

| <u>Year 1</u> | | | <u>Year 4</u> | | |
|---------------|----------------------------------|-----|---------------|---|---|
| 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 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 | | | |
| | <u>Year 2</u> | | | <u>Year 5</u> | |
| 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 |
| | <u>Year 3</u> | | ATP 662 | Practicum in Athletic Training IV | 3 |
| PHYS 111 | Physics I | 4 | ATP 692 | Research/Collaborative Project II | 1 |
| 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 XXX | Exercise Physiology | 3 | | | |
| EXSC XXX | Kinesiology | 3 | | | |
| HSCI 330 | Med Term & Documentation | 3 | | | |
| PSYC 322 | Research Methods | 3 | | | |
| | Free 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: 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.

Years 1 & 2: 61-62 credits

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|--|-----|-------------------------------|-----------------------------------|---|
| 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 | HSCI 3XX | Health Sciences Elective | 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 |
| CHEM 104 | Chemistry II/Lab (optional; or elective) | 3-4 | | | |
| PSYC 101 | Introduction to Psychology | 3 | *Science prerequisites | | |

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

Years 3 & 4: Upper Division Sequence

Select two concentrations from the options below (refer to Medical Imaging & Radiation Sciences section for upper-division curriculum information)

Nuclear Medicine
Magnetic Resonance Imaging

Radiography
General Sonography

Cardiac Sonography
Vascular 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>

Students can also choose to earn a BS degree within the HSCI 2+2 Pre-Medical Laboratory Sciences & Biotechnology degree program, instead of following the accelerated BS/MS program (refer to curriculum below).

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

Undergraduate Coursework Years 1 & 2, 60-62 credits

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|-----------------------------|-----|----------------|---|-----|
| FYS 100 | Pathways Seminar | 1 | WRIT 2XX | Multimedia Communication | 3 |
| 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 or PHYC 111 (for Biotech & Med Lab Sciences) | 3-4 |
| BIOL 104 | *Biology II/Lab | 4 | CHEM 201 | *Organic Chemistry I | 4 |
| CHEM 103 | *Chemistry I/Lab | 4 | | | |
| CHEM 104 | *Chemistry II/Lab | 4 | | | |

*Science prerequisites

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 arts 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.

Foundation Courses for Nursing (Prerequisite Curriculum): 60-62 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 above) | 3 | HSCI 311 | Introduction to the Nursing Profession | 2 |
| CHEM 103 | Chemistry I/Lab | 4 | GDIV or ADIV 2XX | Select 1 | 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 | HSCI 3xx | Free Elective | 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

You will have the opportunity to take courses with other pre-medical, health sciences and future pharmacy students, and experience undergraduate and leadership experiences.

No undergraduate degree is awarded in this pathway. Students interested in earning their BS degree enter the HSCI 3+4 Pre-Pharmacy pathway (refer to curriculum below).

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 BS Pre-Pharmacy program are guaranteed an interview for the competitive professional pharmacy program at Jefferson College of Pharmacy.

Two-Year Track: Foundation and Prerequisite Coursework

| <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 | Elective | *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 |
| | | | ELEC | Free 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

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 the highly competitive 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 interview consideration includes the following: minimum cumulative and science GPA of 3.25; certification as EMT or CNA; 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 (Writing Intensive) | 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 | SCI Elec | BIOL 207 Genetics Lecture /Lab (recom) | 4 |
| BIOL 104 | Biology II Lecture/Lab | 4 | Elective | CHEM 201 Organic Chemistry I (recom) | 4 |
| WRIT 201 | Multimedia Communication | 3 | Elective | Free 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 Elective | 3 |
| ADIV 2XX | American Diversity | 3 | PSYC 2XX | Psychology Elective | 3 |
| ETHC 2XX | Ethics | 3 | HSCI 330 | Medical Terminology | 3 |
| PSYC 201 | Abnormal Psychology | 3 | Elective | consider 4-course minor | 15 |
| HSCI 3XX | Health Sciences Elective | 3 | | | |
| HSCI 3XX | Health Sciences Elective | 3 | | | |
| BIOL 201 | Anatomy & Physiology I Lecture/Lab | 4 | | | |
| BIOL 202 | Anatomy & Physiology II Lecture/Lab | 4 | | | |

Health Sciences & Medical Laboratory Sciences & Biotechnology

Accelerated Bachelor of Science (BS) Health Sciences & Master's in Medical Laboratory Sciences (MS)

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/bs-ms-programs/accelerated-health-sciences-bs-medical-lab-sciences-biotechnology.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, less time than would be required to complete both degrees separately. Students begin their pre-professional education in the Health Sciences where they complete college studies, health sciences, and prerequisite coursework with other pre-medical and health students on Jefferson's East Falls Campus. Students who maintain progression criteria are guaranteed to matriculate into the professional program, 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.

Our three distinct graduate programs prepare laboratory professionals for careers in the fields of biotechnology, cytotechnology and cell sciences, or medical laboratory sciences. Throughout your chosen program, you will experience cutting-edge training with nationally recognized faculty.

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

- Biotechnology
- Cytotechnology and Cell Sciences
- Medical Laboratory Sciences

Accelerated Dual Degree BS/MS (Foundation and Prerequisite Coursework toward B.S.)

Curriculum: 5 years, Minimum 120 cr BS degree; MS degree

Students choose from among three specialty areas during the professional phase of the program; each has a different range of courses and credits. Year 4 courses [39-40 credits] are allocated to the undergraduate BS degree. Year 5 courses (30-37 credits) comprise the MS degree.) Refer to Medical Laboratory Sciences and Biotechnology programs for information on each program.

Undergraduate Foundation Coursework (Years 1-3)

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

*Science elective (choose 1): BIOL 207/L; BIOL 256/L; BIOL 309; BIOL 321; or PHYC 111 [for Biotech and Med Lab Science concentrations]

| | |
|---|--|
| Health Sciences & Nutrition | |
| Accelerated Bachelor of Science (BS) Health Science & Master of Science (MS) Nutrition and Dietetic Practice | |
| Program Director (Undergrad) 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 | 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 | | Free Electives | 9 |
| HSCI 100 | Intro Health Professions | 1 | | Free Elective (if credits needed) | 0-3 |
| PSYC 101 | Introduction to Psych. | 3 | | | |
| | Free 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 MS Program)</u> | | | | | |

Nutrition Graduate Curriculum

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

Health Sciences & Occupational Therapy

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

| | |
|---------|---|
| Contact | Admissions Office |
| Campus | East Falls/Center City |
| Website | https://www.jefferson.edu/university/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/bs-otd-programs-east-falls/curriculum.html |

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 | 3 | 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 |
| PHYS 111 | Physics I Mechanics & Thermodynamics | 3 | HSCI 3XX | Health Sci Designated Elective | 3 |
| MATH 102 OR 110 | Pre-calculus/Intro to Calculus/Calculus I | 3-4 | HSCI 3XX | Health Sci Designated Elective | 3 |
| AMST 114 | Topics in Am Studies | 3 | HSCI/BIOL | Writing Intensive Designated Elective | 3-4 |
| GDIV 2XX | Global Diversity | 3 | <u>Science Courses</u> | | |
| GCIT 2XX | Global Citizenship | 3 | BIOL 201/L | Anatomy and Physiology I/Lab | 4 |
| ETHC 2XX | Ethical Reflection | 3 | BIOL 202/L | Anatomy and Physiology II/Lab | 4 |
| ADIV 2XX | American Diversity | 3 | Health Sciences Designated Electives | | |
| ISEM 3XX | Integrative Seminar | 3 | <u>Psychology Courses</u> | | |
| CGIS 300 | Contemp Global Issues | 3 | PSYC 101 | Introduction to Psychology | 3 |
| HALL 499 | Capstone Folio | 4 | 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 |

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)

Contact
Campus
Website

Admissions Office
East Falls
<https://www.jefferson.edu/university/health-professions/departments/physician-assistant-studies/degrees-programs/undergraduate/3-2-pathway.html>

Program Description, Learning Goals & Outcomes

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, certification as an EMT or CNA, and at least 200 documented direct patient contact hours will be invited for 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 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 ten 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 Seminar | 1 |
| BIOL 201 | Anatomy and Physiology I/L | 4 | PAST 561 | Physiology & Pathophysiology II | 1 |
| BIOL 202 | Anatomy and Physiology II/L | 4 | <u>Year 5 (Clinical Rotations: 5 weeks each)</u> | | |
| PSYC 213 | Developmental Psychology | 3 | | Internal Medicine | 6 |
| <u>Year 3</u> | | | | Primary Care I | 6 |
| CGIS 300 | Contemporary Global Issues | 3 | | Primary Care II | 6 |
| ISEM 3XX | Integrative Seminar | 3 | | Pediatrics | 6 |
| PHIL 499 | Philosophies of the Good Life | 3 | | Women's Health | 6 |
| HSCI 225 | Applied Statistics | 3 | | Emergency Medicine | 6 |
| HSCI 3XX | Health Sciences Elective | 3 | | Psychiatry/Mental Health | 6 |
| BIOL XXX | Biology Elective | 3 | | Surgery | 6 |
| HSCI 320 | Clinical Interactions | 3 | | Elective | 6 |
| HSCI 330 | Medical Terminology | 3 | | Medical Surgical Elective | 6 |
| BIOL 207 | Principles Genetics Lecture & Lab | 3 | PAST 772 | Master's Comprehensive Experience | 2 |
| | Free Electives | 6 | | | |

Medical Imaging and Radiation Sciences

Bachelor of Science (BS)

| | |
|-------------------------|---|
| Department Chair | Colleen Dempsey, EdD, RT (R)(ARRT) |
| Campus | Center City |
| Website | https://www.jefferson.edu/university/health-professions/departments/radiologic-sciences/degrees-programs/bs-programs/ |

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.

Two Year Program Concentrations:

Imaging Concentrations

Cardiac Sonography, Computed Tomography¹, General Sonography, 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 Management³ or Healthcare Information Systems³

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

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:

- Cardiac Sonography
- General Sonography
- Vascular Sonography
- Magnetic Resonance Imaging
- Medical Dosimetry
- Nuclear Medicine
- 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
- General Sonography
- 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)
- Nuclear Medicine
- Radiation Therapy
- Radiography

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: General Sonography

| <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 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: 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 | | | |
| RSM 433 | Procedures Simulation Lab I | 1 | | | |
| <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 | 2 | | | |
| RSM 434 | Procedures Simulation Lab II | 1 | | | |
| 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: Nuclear Medicine

| <u>Semester 1</u> | | | <u>Semester 3</u> | | |
|-------------------|--|---|-------------------|--------------------------------------|---|
| RSN 321 | Patient Care & Services Diagnostic Imaging | 2 | RSN 457 | Nuclear Medicine Procedures III | 2 |
| RSN 400 | Medical Nuclear Physics | 3 | RSN 458 | Nuclear Medicine Advanced Procedures | 2 |
| RSN 410 | Medical Radiobiology | 2 | RSN 472 | Clinical Nuclear Medicine III | 8 |
| RSN 430 | Nuclear Medicine Instrumentation | 3 | RSN 499 | Nuclear Medicine Review Seminar | 2 |
| RSN 455 | Nuclear Medicine Procedures I | 3 | | | |
| RSN 461 | Nuclear Medicine Lab I | 1 | | | |
| RSN 470 | Clinical Nuclear Medicine I | 6 | | | |
| <u>Semester 2</u> | | | | | |
| RSN 420 | Radiation Protection | 3 | | | |
| RSN 440 | Health Sciences Research | 1 | | | |
| RSN 451 | Imaging Informatics | 1 | | | |
| RSN 456 | Nuclear Medicine Procedures II | 3 | | | |
| RSN 460 | Radiochemistry & Radiopharmaceuticals | 3 | | | |
| RSN 462 | Nuclear Medicine Lab II | 1 | | | |
| RSN 471 | Clinical Nuclear Medicine II | 6 | | | |

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 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 | 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 | | | |

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/university/health-professions/departments/radiologic-sciences/degrees-programs/ms-programs/ms-radiologic-imaging-sciences.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
- PET/CT

Curriculum: 1 year, credits 30-50 based on 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 | | | |

PET/CT: 38 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 | RSPC 514 | CT Clinical III | 4 |
| RSCC 500 | CT Physics and Instrumentation | 3 | | | |
| RSPC 501 | Cross-Sectional Anatomy I | 2 | | | |
| RSCC 512 | CT Clinical I | 4 | | | |
| RSPC 516 | PET Principles | 1 | | | |
| RSPC 531 | CT Procedures I | 3 | | | |
| RSPC 533 | CT Procedures Sim Lab I | 1 | | | |
| <u>Semester 2</u> | | | | | |
| RS 691 | Capstone Project II | 1 | | | |
| RSPC 502 | Cross-Sectional Anatomy II | 2 | | | |
| RSPC 513 | CT Clinical II | 4 | | | |
| RSPC 515 | PET Procedures | 1 | | | |
| RSPC 532 | CT Procedures II | 3 | | | |
| RSPC 534 | CT Procedures Sim 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 | | | |

Medical Physics

Master of Science (MS)

| | |
|------------------|---|
| Program Director | Colleen Dempsey, EdD, R.T.(R)(ARRT) |
| Campus | Center City |
| Website | https://www.jefferson.edu/university/health-professions/departments/radiologic-sciences/degrees-programs/ms-programs/ms-medical-physics.html |

Program Description

The goal of this program, the only program in the Philadelphia region that offers training on the two largest suppliers of linear accelerators in the United States, is to create Qualified Medical Physicists, who can independently provide clinical professional services in one or more of the subfields of medical physics - therapeutic, diagnostic, nuclear, and medical health.

Curriculum: 2 years, 57 credits

| <u>Semester 1</u> | | | <u>Semester 4</u> | | |
|-------------------|------------------------------|---|-------------------|--|---|
| MEDP 600 | Radiation Physics | 3 | MEDP 603 | Medical Imaging Physics | 3 |
| MEDP 635 | Radiation Therapy Physics I | 3 | MEDP 612 | App Radiation Therapy Physics Lab I | 2 |
| MEDP 640 | Introduction to Radiobiology | 2 | MEDP 650 | Capstone I | 6 |
| MEDP 670 | Medical Physics Seminar I | 1 | MEDP 672 | Medical Physics Seminar III | 1 |
| | | | GC 660 | Statistical Methods for Data Analysis | 3 |
| <u>Semester 2</u> | | | <u>Semester 5</u> | | |
| RS 650 | Healthcare Law and Ethics | 3 | MEDP 613 | App Radiation Therapy Physics Lab II | 2 |
| MEDP 610 | Radiation Protection | 3 | MEDP 614 | Radiation Therapy Physics Clinical Practicum | 3 |
| MEDP 636 | Radiation Therapy Physics II | 3 | MEDP 645 | Diagnostic Imaging Physics | 3 |
| MEDP 671 | Med Physics Seminar II | 1 | MEDP 651 | Capstone II | 6 |
| | | | MEDP 673 | Medical Physics Seminar IV | 1 |
| <u>Semester 3</u> | | | | | |
| BIOL 201 | Anatomy and Physiology I | 3 | | | |
| BIOL 202 | Anatomy & Physiology Lab I | 1 | | | |
| BIOL 203 | Anatomy and Physiology II | 3 | | | |
| BIOL 204 | Anatomy & Physiology Lab II | 1 | | | |

Computed Tomography (CT)

Undergraduate Certificate

| | |
|------------------|---|
| Program Director | Colleen Dempsey, EdD, R.T. (R)(ARRT) |
| Campus | Center City |
| Website | https://www.jefferson.edu/university/health-professions/departments/radiologic-sciences/degrees-programs/certificates/ct-certificate.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 |

Undergraduate Certificate

| | |
|-------------------------|---|
| Program Director | Colleen Dempsey, EdD, R.T. (R)(ARRT) |
| Campus | Center City |
| Website | https://www.jefferson.edu/university/health-professions/departments/radiologic-sciences/degrees-programs/certificates/pet-ct-certificate.html |

Program Description

Our PET/CT Certificate Program is the first formal PET/CT curriculum in the nation. This Program is for certified nuclear medicine technologists.

Curriculum: 16 credits

| <u>Curriculum</u> | | |
|-------------------|------------------------------|---|
| 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 451 | PET Principles | 1 |
| RSPC 402 | Cross-Sectional Anatomy II | 1 |
| RSPC 413 | PET/CT Clinical II | 1 |
| RSPC 415 | PET Procedures | 1 |
| RSCC 432 | CT Procedures II | 3 |
| RSPC 414 | PET/CT Clinical III | 1 |

| | |
|---------------------------------|---|
| Biotechnology | |
| Bachelor of Science (BS) | |
| Program Director | Scott Gygax, PhD |
| Campus | Center City |
| Website | 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 300 | 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 | Introduction to 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 | Introduction to 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 | Introduction to Bioinformatics | 2 | | | |
| BT 410 | Molecular Diagnostic Techniques | 4 | | | |
| BT 411 | Protein Purification & Characterization | 3 | | | |

Biotechnology

Master of Science (MS)

Program Director Scott Gygax, 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: MS, 1 year option without 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 | Introduction to Bioinformatics | 2 | | | |
| BT 610 | Molecular Diagnostic Techniques | 4 | | | |
| BT 611 | Protein Purification and Characterization | 3 | | | |

Curriculum: MS, 1 year option with 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 | Introduction to Bioinformatics | 2 | | | |
| BT 610 | Molecular Diagnostic Techniques | 4 | | | |
| BT 611 | Protein Purification and Characterization | 3 | | | |

Curriculum: MS, 2 year option

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

Curriculum: BS/ MS, 2-year option

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 M.S. Two year option (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 | Introduction to 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: Advanced M.S. Two year option (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 | Introduction to 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 M.S. 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 | Introduction to 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 | Introduction to 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 | Tatiana Zorina, MD, PhD, 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 year option

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 |
| LS 426 | Flow Cytometry I | 2 | CT 416 | Comprehensive Examination | 0 |
| CT 315 | Cytopathology II | 4 | CT 325 | Cellular, Molecular, and Immuno Diagnostics | 3 |
| CT 317 | Cytopathology III | 3 | LS 430 | Laboratory Standards & Practice | 3 |
| | | | | Program Approved Elective | 2 |

Curriculum: BS, 1 year option

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 | | | |
| <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 | | | |
| LS 426 | Flow Cytometry I | 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 | Tatiana Zprina, MD, PhD, 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: MS, 2-year option

| <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 | LS 610 | Regulatory & Fiscal Issues in Lab Management | 3 |
| CT 515 | Cytopathology II | 4 | CT 814 | Practicum III | 3 |
| CT 517 | Cytopathology III | 4 | CT 815 | Practicum IV | 3 |
| LS 510 | Introduction to Molecular Diagnostics | 2 | CT 816 | Comprehensive Exam | 0 |
| LS 626 | Flow Cytometry I | 2 | LS 805 or LS 805 | Contemporary Topics Research or Experimental Research II | 1 |

Curriculum: MS, 1-year option

| <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 812 | Practicum I | 3 |
| LS 511 | Functional Histology | 2.5 | CT 813 | Practicum II | 3 |
| CT 501 | Principles of Cell Analysis | 2 | CT 814 | Practicum III | 3 |
| CT 511 | Cytopathology I | 5 | CT 815 | Practicum IV | 3 |
| CT 512 | Cytopathology I Laboratory | 3 | CT 816 | Comprehensive Examination | 0 |
| LS 531 | Immunology | 3 | LS 803 | Contemporary Topics Research | 2 |
| <u>Year 1 Spring</u> | | | | | |
| LS 510 | Intro to Molecular Diagnostics | 2 | | | |
| CT 510 | Cytological & Surgical Pathology Techniques | 2 | | | |
| LS 626 | Flow Cytometry I | 2 | | | |
| CT 515 | Cytopathology II | 4 | | | |
| CT 517 | Cytopathology III | 4 | | | |
| CT 525 | Cellular, Molecular and Immuno Diagnostics | 3 | | | |
| LS 613 | Pathology | 2 | | | |

Curriculum: Advanced M.S. Two-year option (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 | | | *** 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. | | |
| ** Or substitute LS 644 Lab Education, Administration and Instruction, or LS 498 Special Topics in Lab Science | | | | | |

Curriculum: Advanced MS, 1 year

| <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 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 Experimental Research II (requires special approval) | 2 1 |
| LS 814 | Practicum III | 3 |
| LS 815 or LS 644† or LS 698 | Practicum IV Laboratory Education and Instruction Special Topics in the Laboratory Sciences | 3 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 | Tatiana Zorina, MD, PhD, 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: BS /MS

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 |
| LS 426 | Flow Cytometry I | 2 | CT 814 | Cytotechnology Practicum III | 3 |
| LS 427 | Flow Cytometry II or Program Approved Elective | 2 | CT 815 | Cytotechnology Practicum IV | 3 |
| CT 315 | Cytopathology II | 4 | CT 816 | Comprehensive Examination | 0 |
| CT 317 | Cytopathology III | 3 | CT 525 | Cellular, Molecular, and Immuno Diagnostics | 3 |

Medical Laboratory Sciences

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 Sciences 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 year option

| <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 413 | Pathology | 2 |
| LS 426 | Flow Cytometry I | 2 | LS 427 | Flow Cytometry II | 2 |
| MLS 313 | Clinical Microbiology II | 2 | LS 430 | Laboratory Standards and Practices | 3 |
| MLS 324 | Clinical Chemistry II | 2 | LS 440 | Current Research in the Biosciences | 2 |
| MLS 343 | Clinical Hematology II | 3 | MLS 375 | Medical Laboratory Sciences Seminar | 2 |
| MLS 352 | Immunohematology | 3 | MLS 416 | Comprehensive Examination | 0 |
| MLS 376 | Urinalysis and Body Fluids | 3 | MLS 442 | Medical Lab Sciences Practicum III | 3 |
| | | | MLS 454 | Medical Lab Sciences Practicum IV | 3 |

Curriculum: BS, 1 year option

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 413 | Pathology | 2 | | | |
| LS 426 | Flow Cytometry I | 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: MS, 2-year option

| <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> | | |
| LS 626 | Flow Cytometry I | 2 | LS 510 | Intro to Molecular Diagnostics | 2 |
| MLS 513 | Clinical Microbiology II | 3.5 | LS 610 | Regulatory and Fiscal Issues in Laboratory Management | 3 |
| MLS 524 | Clinical Chemistry II | 3 | LS 613 | Pathology | 2 |
| MLS 543 | Clinical Hematology II | 3 | LS 803 or LS 805** | Contemporary Topics Research Experimental Research II (approval) | 2 1 |
| MLS 552 | Immunochemistry | 3 | MLS 575 | Medical Laboratory Sciences Seminar | 2 |
| MLS 576 | Urinalysis and Body Fluids | 3 | MLS 814 | Medical Lab Sciences Practicum III | 3 |
| | | | MLS 815 | Medical Lab Sciences Practicum IV | 3 |
| | | | MLS 816 | Comprehensive Examination | 0 |

Curriculum: MS, 1 year option

| <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 | | | |
| LS 613 | Pathology | 2 | | | |
| LS 626 | Flow Cytometry I | 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: BS/MS, 2 year option

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 426 | Flow Cytometry I | 2 | LS 613 | Pathology | 2 |
| 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 | Immunochemistry | 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: Advanced MS, 1 year

| <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 | 2 |
| LS 805** | Experimental Research II (requires special approval) | 1 |
| LS 814 | Practicum III | 3 |
| LS 815 or | Practicum IV | 3 |
| LS 644† or | Laboratory Education and Instruction | 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: Advanced MS, 2 year, 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, 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 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 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: 27 credits

| <u>Curriculum</u> | | |
|-------------------|--|---|
| LS 501 | Molecular Biology | 3 |
| LS 523 | Clinical Chemistry I | 3 |
| MT 531 | Immunology | 3 |
| LS 613 | Pathology | 2 |
| LS 626 | Flow Cytometry I | 2 |
| 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 |

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: 25 credits

| <u>Curriculum</u> | | |
|-------------------|---|---|
| LS 501 | Molecular Biology | 3 |
| LS 531 | Immunology | 3 |
| MLS 541 | Clinical Hematology I | 3 |
| LS 613 | Pathology | 2 |
| MLS 576 | Urinalysis and Body Fluids | 3 |
| LS 626 | Flow Cytometry I | 2 |
| 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 |

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: 28 credits

| <u>Curriculum</u> | | |
|-------------------|---|-----|
| LS 501 | Molecular Biology | 3 |
| MLS 512 | Clinical Microbiology I | 3.5 |
| LS 531 | Immunology | 3 |
| LS 613 | Pathology | 2 |
| LS 626 | Flow Cytometry I | 2 |
| 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 |

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: 24 credits

| <u>Curriculum</u> | | |
|-------------------|---|---|
| LS 501 | Molecular Biology | 3 |
| LS 531 | Immunology | 3 |
| MLS 541 | Clinical Hematology I | 3 |
| LS 613 | Pathology | 2 |
| LS 510 | Introduction to Molecular Diagnostics | 2 |
| MLS 552 | Immunohematology | 3 |
| LS 626 | Flow Cytometry I | 2 |
| LS 610 | Regulatory and Fiscal Issues in Laboratory Management | 3 |
| MLS 812 | Medical Laboratory Sciences Practicum I (Clinical Hematology) | 3 |

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

| <u>Curriculum</u> | | |
|-------------------|---|---|
| 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 |

| | |
|-------------------------------|---|
| 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)

| | | | | | |
|-------------------|--|-----|-------------------|--|-----|
| <u>Semester 1</u> | | | <u>Semester 4</u> | | |
| 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 Care | 3 |
| <u>Semester 2</u> | | | MIDW 640 | Preparation for Full Scope Midwifery Practice | 1 |
| MIDW 645 | Reproductive and Sexual Healthcare | 4 | <u>Semester 5</u> | | |
| MIDW 638 | Advanced Pharmacology I | 2.5 | MIDW 633 | Clinical III: Full Scope Midwifery Care I | 4 |
| MIDW 731 | Evidence-Based Care: Evaluating Research | 3 | MIDW 619 | Advanced Perinatal Pathophysiology | 4 |
| <u>Semester 3</u> | | | <u>Semester 6</u> | | |
| MIDW 613 | Embryology and Genetics | 1 | Elective | | |
| MIDW 641 | Preparation for Office Based Practice | 1 | MIDW 634 | Clinical IV: 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 Setting 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 |

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 course work, 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

| | | | | | |
|----------|---|-----|----------|---|---------------|
| | Fall | | | | Spring |
| MIDW 501 | Orientation Residency | 0.5 | MIDW 812 | Professional Communication | 3 |
| MIDW 800 | Current Issues Midwifery & Women's Health | 2 | MIDW 822 | AIM Operation Workshop | 3 |
| MIDW 810 | Epidemiology for Midwifery & Women's Health | 3 | | | |
| | Spring | | | Summer | |
| MIDW 811 | Leadership in Midwifery | 2 | MIDW 815 | Grant Writing | 3 |
| MIDW 712 | Intro to Health Policy | 3 | | | |
| | Summer | | | Fall | |
| MIDW 813 | Midwifery Case Studies | 2 | MIDW 823 | AIM: Implementation Workshop | 3 |
| MIDW 807 | Data Driven Midwifery | 1.5 | | | |
| | Fall | | | Spring | |
| MIDW 805 | Organizational Change | 3 | MIDW 824 | AIM: Analysis Workshop | 3 |
| MIDW 821 | AIM: Project Design and Methods | 2 | | Summer | |
| | | | MIDW 825 | AIM Dissemination Workshop Midwifery Thinks! Symposium | 1 |

Midwifery

Post-Graduate 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: 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 III: 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 IV: 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 | Katie Fosselius, MS, RDN, LDN |
| Campus | Center City |
| Website | www.jefferson.edu/MSRDN |

Program Description

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 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 22 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

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|---|-----|---------------|--|-----|
| RDN 571 | Medical Nutrition Therapy I | 3 | RDN 661 | Management in Nutrition | 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 722 | SEL - Public Nutrition Experience | 1 |
| RDN 535 | Food Science & Safety | 3 | RDN 761 | SEL - Nutrition Management Experience | 1.5 |
| RDN 537 | Culinary Nutrition, Functional Foods, & Diet Planning | 3 | RDN 772 | SEL - Clinical Experience 1 | 3 |
| RDN 614 | Nutrition Counseling | 3 | RDN 692 | Capstone Course | 1 |
| RDN 671 | Medical Nutrition Therapy 2 | 3 | RDN 665 | Sustainable Nutrition Practice | 1 |
| RDN 612 | Nutrition Communication, Education, & Leadership | 3 | SCJU 634 | Social Justice Seminar: Analysis and Advocacy | 1 |
| SCJU 632 | Social Justice Seminar: Interprofessional Perspectives | 0.5 | RDN 762 | SEL - Food Service and Culinary Experience | 1 |
| RDN 712 | SEL - Nutrition Communication, Education, & Leadership Experience | 1 | RED 773 | SEL - Clinical Experience 2 | 3 |
| RDN 622 | Global and Public Health Nutrition | 3 | RED 782 | SEL - Individualized Professional Experience | 1.5 |
| RDN 681 | Nutrition Research | 3 | RDN 765 | Sustainable Nutrition Experience | 0.5 |
| SCJU 631 | Social Justice Seminar: Food, Weight, and Health | 1 | | | |
| RDN 675L | Nutrition Support | 0.5 | | | |
| RDN 714 | SEL - Nutrition Counseling Experience | 1.5 | | | |
| RDN 771 | SEL - Introduction to Nutrition Therapy Experience | 1 | | | |

Physician Assistant Studies

Master of Science (MS)

Program Director Michele Q. Zawora, MD
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 | 2.5 | PAST 630 | Behavioral Medicine Clinical* | 5 |
| PAST 530 | Clinical Medicine I | 3.5 | PAST 640 | Surgery Clinical* | 5 |
| PAST 540 | Clinical Skills I | 1 | PAST 650 | Primary Care Clinical* | 5 |
| PAST 550 | Pharmacology & Clinical Therapeutics I | 2.5 | PAST 681 | Healthcare II | 1 |
| PAST 560 | Physiology & Pathophysiology I | 2 | 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 | | PAST 691 | Graduate Project II | 0.5 |
| PAST 533 | Clinical Medicine II | 3 | 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 | 1.5 | | | |
| PAST 552 | Pharmacology & Clin Therapeutics III | 1.5 | | | |
| PAST 562 | Physiology & Pathophysiology III | 1.5 | | | |
| PAST 590 | Special Topics in Medicine | 5 | | | |

*Sequencing of clinical rotations depends on specific student schedules

Physician Assistant Studies

Master of Science (MS)

Program Director Jesse Coale, DMin, PA-C, DFAAPA
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/New Jersey 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 Clinical Year</u> | |
|------------|---|-----|-----------------------------|--------------------------|
| PASF 507GR | Advanced Human Anatomy A | 2 | Clinical Rotation 2 | 6 |
| | <u>Year 1 Fall</u> | | Clinical Rotation 3 | 6 |
| PASF 507GR | Advanced Human Anatomy B | 3 | Clinical Rotation 4 | 6 |
| PASF 513GR | Medical Physiology and Pathophysiology | 3 | Clinical Rotation 5 | 6 |
| PASF 511GR | Applied Behavioral Sciences | 3 | Clinical Rotation 6 | 6 |
| PASF 517GR | Medical History and Physical Diagnosis | 5 | Clinical Rotation 7 | 6 |
| PASF 10GR | Medical and Professional Ethics | 2 | Clinical Rotation 8 | 6 |
| PASF 518GR | Evidence Based Medicine | 2 | Medical/Surgical Selective | 6 |
| PASF 521GR | Medical Genetics, Immunology and Microbiology | 2 | Elective | 6 |
| | <u>Year 1 Spring</u> | | PAS 772 | Master's Comp Experience |
| PAS 605 | Clinical Correlations of Public Health | 1 | | 2 |
| PAS 611 | Clinical Medicine | 8 | | |
| PAS 612 | Clinical Reasoning | 2.5 | | |
| PAS 613 | Pharmacology & Pharmacotherapeutics | 4 | | |
| PAS 614 | Emergency Medicine | 3 | | |
| PAS 615 | Diagnostic Medicine | 2 | | |
| | <u>YEAR 1 Summer</u> | | | |
| PAS 621 | Clinical Disciplines Overview (Surgery, Pediatrics, Women's Health) | 6 | | |
| PAS 622 | Pharmacotherapeutics Seminar | 1 | | |
| PAS 623 | Advanced Diagnostic Seminar | 1 | | |
| PAS 561 | Physiology & Pathophysiology II | 1 | | |
| PAS 603 | Advanced Physical Assessment | 0.5 | | |

Clinical Rotations (5 weeks each)

Internal Medicine
Primary Care I
Primary Care II
Pediatrics
Women's Health

Emergency Medicine
Psychiatry/Mental Health
Surgery
Elective
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, Connected Care & Telehealth, 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.

| | |
|---------------------------------------|---|
| <h1>Cardiovascular Perfusion</h1> | |
| 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: MS, 2-year

| <u>Year 1 Fall</u> | | | <u>Year 2 Fall</u> | | |
|----------------------|---------------------------------------|----|----------------------|--------------------------------------|----|
| 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 | | | |
| <u>Year 1 Spring</u> | | | <u>Year 2 Spring</u> | | |
| PER 600 | Perfusion Technology II | 4 | PER 694 | Clinical Application in Perfusion V | 12 |
| PR 522 | General Pharmacology | 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 | | | |
| <u>Year 1 Summer</u> | | | | | |
| PER 640 | Applications of ECMO & VAD | 1 | | | |
| PER 692 | Clinical Application in Perfusion III | 12 | | | |

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 M.S. 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 M.S. 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: MS, 2 years

| <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 M.S. Degree encompasses 3 stackable graduate certificates in the following areas:

- Mind-Body Medicine
- Integrative Nutrition
- Integrative Health Education

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: MS, 30 credits

| Mind-Body Certificate | | | Integrative Health Education 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 Health Education for Wellness and Clinical Conditions | 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 | IHMC 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 M.S. 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: MS, 33 credits

| Cannabis Medicine Certificate | | | Cannabis Business Certificate | | |
|-------------------------------|---|---|-------------------------------|--|---|
| CMD 503 | Pathology Potentially Responsive to Cannabis | 3 | CBU 501 | Emerging Issues in the Cannabis Industry | 3 |
| CMD 504 | Conventional & Cannabinoid Therapy of Disease | 3 | CBU 506 | Essentials of Cannabis Financial and Operations Analysis | 3 |
| CMD 505 | Health Implications of Medicinal Cannabis | 3 | IMBA 604 | Business Model Innovation | 3 |
| Cannabis Science Certificate | | | Additional Required Courses | | |
| CSC 511 | Botany and Chemistry of Cannabis | 3 | CRC 600 | Applied Research Design & Methods | 3 |
| CSS 512 | Forensic Analysis of Cannabis and Cannabis-Derived Products | 3 | CRC 610 | Cannabis Capstone Project | 3 |
| CSC 513 | Cannabinoid Pharmacology | 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 | | | | | | | | | |
| Curriculum | <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">CBU 501</td> <td style="width: 65%;">Emerging Issues in the Cannabis Industry</td> <td style="width: 20%; text-align: right;">3</td> </tr> <tr> <td>CBU 506</td> <td>Essentials of Cannabis Financial and Operations</td> <td style="text-align: right;">3</td> </tr> <tr> <td>IMBA 604</td> <td>Analysis Business Model Innovation</td> <td style="text-align: right;">3</td> </tr> </table> | 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 |
| 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 | | | | | | | | |
| Learning Outcomes | <ul style="list-style-type: none"> 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. | | | | | | | | | |

| 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. | | | | | | | | | |
| Curriculum | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 20px;">CMD 503</td> <td>Pathology Potentially Responsive to Cannabis</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="padding-left: 20px;">CMD 504</td> <td>Conventional & Cannabinoid Therapy of Disease</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="padding-left: 20px;">CMD 505</td> <td>Health Implications of Medicinal Cannabis</td> <td style="text-align: right;">3</td> </tr> </table> | CMD 503 | Pathology Potentially Responsive to Cannabis | 3 | CMD 504 | Conventional & Cannabinoid Therapy of Disease | 3 | CMD 505 | Health Implications of Medicinal Cannabis | 3 |
| CMD 503 | Pathology Potentially Responsive to Cannabis | 3 | | | | | | | | |
| CMD 504 | Conventional & Cannabinoid Therapy of Disease | 3 | | | | | | | | |
| CMD 505 | Health Implications of Medicinal Cannabis | 3 | | | | | | | | |
| Learning Outcomes | <ul style="list-style-type: none"> • 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. | | | | | | | | | |

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. | | |
| Curriculum | CSC 511 | Botany and Chemistry | 3 |
| | CSC 512 | Forensic Analysis of Cannabis and Cannabis-Derived Products | 3 |
| | CSC 513 | Cannabinoid Pharmacology | 3 |
| Learning Outcomes | <ul style="list-style-type: none">• 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. | | |

Connected Care: Telehealth & Digital Health Innovation

Graduate Certificate

| | | | |
|----------------------------|--|--|---|
| Program Director | Shruti Chandra, MD, MEHP | | |
| Campus | Online | | |
| Website | https://www.Jefferson.edu/ConnectedCareCertificate | | |
| Program Description | This certificate delves into emerging developments in areas of both telehealth and connect care and digital health to provide students the knowledge of different healthcare data streams and arming them with best practices in technology adoption for business implementation. | | |
| Curriculum | DIGH 500 | Telehealth and Connected Care: An Advanced Course | 3 |
| | DIGH 501 | Introduction to Clinical Data | 3 |
| | DIGH 502 | Business and Legal Tools for Digital Health Entrepreneurship | 3 |
| Learning Outcomes | <ul style="list-style-type: none"> • Gain a practical skill set to practice telehealth, implement and support telehealth programs. • Understand the different aspects of business model creation to solve healthcare problems in telehealth and digital health within and outside their own institutions. • Understand and apply various data science tools and health data streams. • Identify the legal, ethical, and regulatory consideration for telehealth and other forms of digital health. | | |

| Integrative Health Education | | | |
|--------------------------------------|---|---|---|
| Advanced Practice Certificate | | | |
| Program Director | Mary Gozza-Cohen, PhD | | |
| Campus | Online | | |
| Website | https://www.Jefferson.edu/IntegrativeHealthEducation | | |
| Program Description | <p>The Advanced Practice Certificate in Integrative Health Education 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.</p> | | |
| Curriculum | IHE 600 | Foundations in Integrative Health Education | 3 |
| | IHE 610 | Integrative Health Education for Wellness and Clinical Conditions | 3 |
| | IHE 620 | Integrative Health Education Practicum | 3 |
| Learning Outcomes | <ul style="list-style-type: none"> • 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. | | |

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. | | |
| Curriculum | IN 500 | Foundations in Integrative Nutrition | 3 |
| | IN 510 | Functional Genomics, Proteomics, and Metabolomics | 3 |
| | IN 520 | Advanced Concepts in Integrative Nutrition | 3 |
| Learning Outcomes | <ul style="list-style-type: none">• 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. | | |

Mind-Body Medicine

Advanced Practice Certificate

| | | | |
|----------------------------|---|--|---|
| Program Director | Mary Gozza-Cohen, PhD | | |
| Campus | Online with 1-2 days on campus | | |
| 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. | | |
| Curriculum | 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 |
| Learning Outcomes | <ul style="list-style-type: none">• 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 | | |

Telehealth Facilitator

Undergraduate Certificate

Program Director
Campus
Website

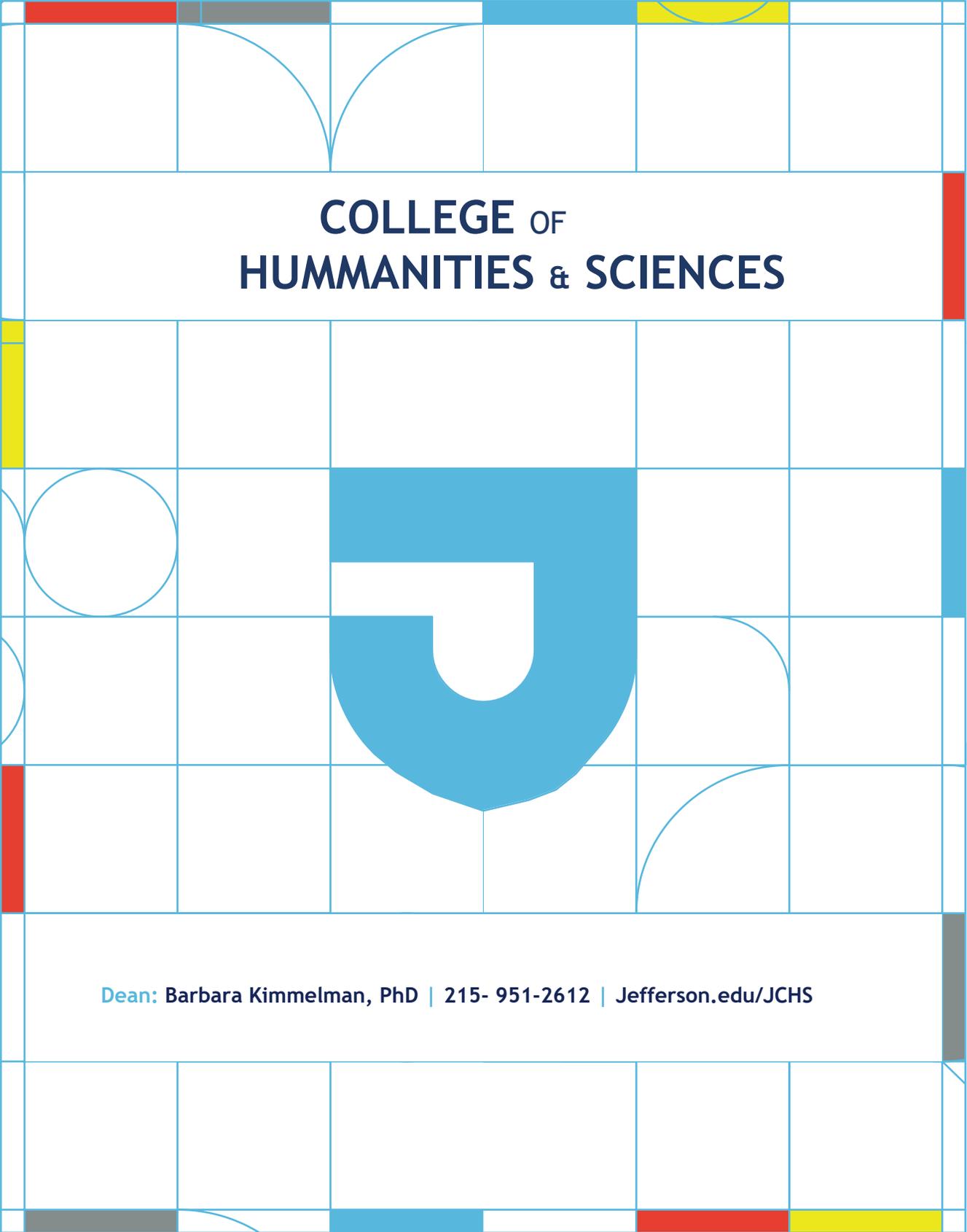
Shruti Chandra, MD, MEHP
Online
<https://www.jefferson.edu/Telehealth>

Program Description

The goal of the program is to prepare graduates for a role in Telehealth facilitation and coordination as part of the inter-professional healthcare team by providing both Telehealth content expertise and Telehealth facilitation competencies. Students will develop the skills to successfully facilitate, evaluate, and advocate for Telehealth in their departments and organizations.

Learning Outcomes

- Describe Telehealth and its corresponding technologies.
- Discuss the applications, benefits and challenges of Telehealth delivery.
- Examine the telehealth facilitator role within a telehealth team.
- Explain the general set-up and physical exam strategies during Telehealth encounters.
- Use a plan to solve common technical difficulties encountered during a simulated encounter.
- Analyze the ethical, legal, and regulatory considerations of Telehealth.



**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 is organized around a value proposition that defines our goals for each student:

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 a learning portfolio process (the Hallmarks portfolio). 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 portfolio is the digital space where students collect and post evidence of their progress towards fulfilling the 8 Hallmarks outcomes. This learning portfolio 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. | |
|------------------|---|--|--|

| | | | |
|------------|--------------------------|-------------------------------------|-------------------------------------|
| 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 portfolios, 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 |
|---|--|--|--|
| First Year Seminar FYS 100 Pathways Seminar: Preparing for Academic and Professional Success (1 credit) | Writing Seminar II: Multimedia Communication WRIT 201/202: Writing Seminar II (Prereq: WRIT 101/101G) Global Diversity GDIV 200 Global Cultures of Modernity 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 (Prereq: AMST 114, WRIT 101/101G) 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 | Contemporary Global Issues CGIS 300 Contemporary Global Issues (Prereq: WRIT 201/202, GDIV 2xx or GCIT 2xx) Integrative Seminars ISEM 301 Animals and Society ISEM 302 Telling Stories, Selling Stories ISEM 304 Cultures of Health and Illness ISEM 305 Healthcare Economics and Policy ISEM 313 Conspiracy Theories ISEM 340 Sustainability and Development in the Non-Western World ISEM 360 Human Behavior and the Physical Environment ISEM 378/DECM 300 Ethnographic Research Methods (Prereq: WRIT 201/202, GDIV 2xx or GCIT 2xx) | Philosophies of the Good Life PHIL 499 Philosophies of the Good Life (Prereq: CGIS 300, ISEM 3xx, ETHC 2xx, ADIV 2xx, GCIT 2xx, MATH 1xx, Scientific Understanding) |
| Writing Seminar I: Written Communication WRIT 101/101G Writing Seminar I | Ethics 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 (Prereq: AMST 114, WRIT 101/101G) | | |
| | American Diversity 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 (Prereq: AMST 114, WRIT 101/101G) | | |
| Topics in American Studies | Global Citizenship GCIT 200 War and Political Violence GCIT 210 Human Rights | | |

| | | |
|---|---|--|
| 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 100/1 Finite Math MATH 102 Pre-Calculus MATH 103 Introduction to Calculus 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 | 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 |
| | | | | Free 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 | | Free 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 free elective.

Communication

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 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 | | Free Elective | 3 |
| COM 204 | Social Media Strategies | 3 | | | |
| | Free 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 | | Free 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 | | Free Elective | 3 |
| | Science or Statistics or Mathematics | 3-4 | | | |
| | Free 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 |
| | Free Elective | 3 | | Free 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 |
| | Free 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 | | Free Electives | 9 |
| LAW 201 | Constit Law/Supreme Court | 3 | | | |
| LAW 313 | Conspiracies Theories | 3 | | | |
| | Designated Electives | 9 | | | |
| | Free 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

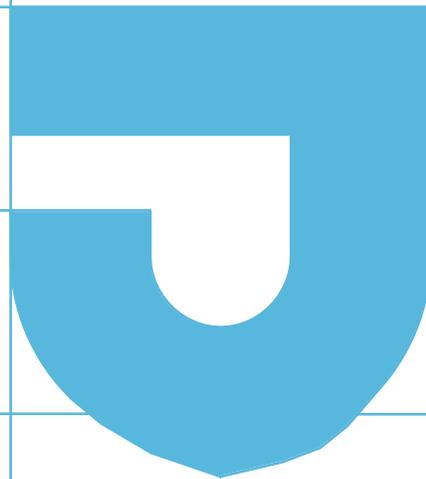
- Analyze and apply the scientific process to psychology
- Locate, retrieve, critically evaluate and communicate scientific data and knowledge
- Communicate effectively and professionally
- Express expertise in specific content areas of psychology
- Display knowledge of the ethical standards, personal 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 Free Elective | 3-4 | PSYC XXX | Psyc Electives (Designated) | 9 |
| PSYC 101 | Introduction to Psychology | 3 | | Minor Course | 3-4 |
| PSYC 103 | Physiological Psychology | 3 | | Free Electives | 3 |
| PSYC 213 | Developmental Psychology | 3 | | | |
| | Science Elective(Designated) | 3-4 | | | |
| | Free 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 | Psyc Electives (Designated) | 6 | | Free Electives | 6 |
| | Minor Course | 3-4 | | | |
| | Free Electives | 6 | | | |

| <u>Psychology Distribution Electives (select two courses from each area)</u> | | | | | |
|--|-------------------------|---|---|--|---|
| <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) |
|---------------------|-----------------|

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 | | Electives | 9-10 |
| MATH 213 | Calculus III | 4 | | Free 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
- 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 | | Free 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 | | Free Electives | 9-12 |
| BIOL 105 | Medicinal Plants | 3 | | | |
| BIOL 207 | Principles of Genetics/Lab | 4 | | | |
| | Free Elective | 3-4 | | | |

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 | | Free 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 | | | |
| | Free 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

| | | | | | | |
|------------|----------------------------|---|--|---------------|-----------------------------|------|
| | Year 1 | | | Year 3 | | |
| 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 | | | Free Electives | 6-8 |
| | Year 2 | | | | Year 4 | |
| 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 | | | Free Electives | 9-12 |
| MATH 112 | Calculus II | 4 | | | | |
| BIOL 201/L | Anatomy & Physiology I/Lab | 4 | | | | |
| BIOL 202/L | Anatomy & Physiology I/Lab | 4 | | | | |
| | Year 2 Summer | | | | | |
| 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, Learning Goals & Outcomes

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 (FT/PT), 40 credits

| <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)

| | |
|-------------------------|---|
| Program Director | Gerald Grunwald, PhD |
| Campus | Center City |
| Website | 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 year (FT/PT), 40 credits

| <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: MS Program, 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 | | Free 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, Learning Goals & Outcomes

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) | |

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

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, Learning Goals & Outcomes

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.

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 Mgmt: Increasing R&D Productivity | 2 |
| GC 660 | Statistical Methods for Data Analysis | 3 | GC 617 | Mgmt 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, Learning Goals & Outcomes

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

| <u>Core Courses</u> | | | <u>Human Investigation Track</u> | | |
|---------------------|---|-------|----------------------------------|--|-----|
| 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, Learning Goals & Outcomes

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.

- 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 year, 180 credits

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|--|----|--|--|---|
| 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 | | 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 |
| | Elective | | BI 920 | Research | |
| BI 531 | Research Rotation 3 | 3 | BI 930 | Research | |
| NS 740 | Applied Statistics | 2 | | Elective | |
| BI 730 | Seminar in Biochemistry & Molecular Pharmacology | 1 | | | |
| BI 735 | Journal Club | 1 | 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 | | |
| BI 920 | Research | | | | |
| BI 930 | Research | | | | |

Cell Biology & Regenerative Medicine

Doctor of Philosophy (PhD)

| | |
|--------------------------|---|
| Program Directors | Nancy Philip, PhD Makarand Risbud, PhD |
| Campus | Center City |
| Website | https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/cell-biology.html |

Program Description, Learning Goals & Outcomes

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 | | | | |
| | 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 | | | |
| | Elective | | | | |

Genetics, Genomics & Cancer Biology

Doctor of Philosophy (PhD)

| | |
|----------------------|---|
| Chair Cancer Biology | Lucia Languino, PhD |
| Campus | Center City |
| Website | https://www.jefferson.edu/university/life-sciences/degrees-programs/phd-programs/genetics.html |

Program Description, Learning Goals & Outcomes

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

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, Learning Goals & Outcomes

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, Learning Goals & Outcomes

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

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|--|----|---------------|--|---|
| 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, Learning Goals & Outcomes

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.

- Provides high-level, scholarly, scientific training
- 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

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 | | 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 | |
| | 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, Learning Goals & Outcomes

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.

- 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 |
| | Free 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, Learning Goals & Outcomes

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. 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, Learning Goals & Outcomes

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.

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, Learning Goals & Outcomes

The curriculum for the Graduate Certificate in Infectious Disease Control is built from core courses and expertise in microbiology and immunology.

- 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

| <u>Core Curriculum</u> | | |
|------------------------|--|---|
| 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 |
| | Free 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, Learning Goals & Outcomes

The Graduate Certificate in Patient-Centered Research 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.

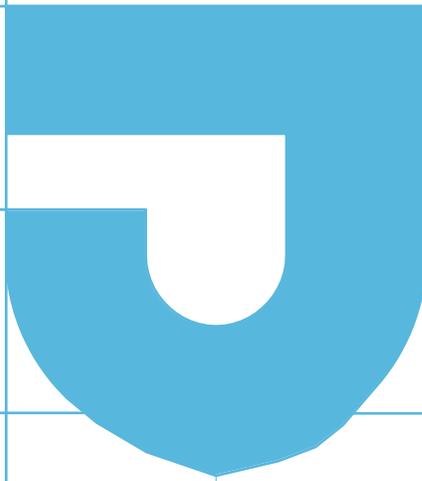
Educate and train the next generation of health service researchers in the principles and methods of:

- 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 | | 1 |
| | Free 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 To educate physicians who will serve, lead and discover.

Values Put the patient first; Foster respect and humility; Insist on integrity and personal responsibility; Develop a passion for learning, collaborative practice and continuous reflection

Medical Departments of SKMC

| | | |
|----------------------------------|--------------------------------------|--|
| Anesthesiology | Molecular Physiology & Biophysics | Pediatrics |
| Biochemistry & Molecular Biology | Neurological Surgery | Pharmacology & Experimental Therapeutics |
| Cancer Biology | Neurology | Psychology & Human Behavior |
| Dermatology & Cutaneous Biology | Neuroscience | Radiation Oncology |
| Emergency Medicine | Obstetrics & Gynecology | Radiology |
| Family & Community Medicine | Oral & Maxillofacial Surgery | Rehabilitation Medicine |
| Medical Oncology | Orthopedic Surgery | Surgery |
| Medicine | Otolaryngology / Head & Neck Surgery | Urology |
| Microbiology & Immunology | Pathology, Anatomy & Cell Biology | |

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 | This Program invites Princeton University students pursuing non-traditional pre-med majors or concentrations 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. Learn more about the ways that we are creating leaders in the medical field.

Foundations of Medicine

The basic science and clinical skills that are the bedrock of medical education are found in our 21-month long course, Foundations of Medicine.

Clinical Experience

Students do not have to wait to interact with the community they will serve. Learn more about the early clinical experience will shape our students.

<https://www.jefferson.edu/academics/colleges-schools-institutes/skmc/undergraduate-medical-education/curriculum/phase-1.html>

Humanities Selective

This interdisciplinary course offers a multitude of different opportunities for every learner.

Scholarly Inquiry

The greatest doctors have always been seekers. Learn more how we foster that desire to learn in our innovative Scholarly Inquiry course.

<https://www.jefferson.edu/academics/colleges-schools-institutes/skmc/undergraduate-medical-education/curriculum/phase-1.html>

Phase I

Students focus on the foundations of medicine through eight organ system blocks that interweave fundamental and clinical sciences.

- Introduction to the Study of Medicine
- Host Defense/Blood
- Cardiovascular/Pulmonary
- Renal/Liver/Gastrointestinal
- Urology/Endocrine/Reproductive
- Musculoskeletal/ Integumentary
- Neuroscience/ Psychiatry
- Complex Cases

Phase II

Students begin their clinical rotations, shifting the balance of learning toward clinical skills and application of knowledge. Students also continue to learn more advanced basic science as it relates to patient care during this phase. The order of rotations differs from student to student.

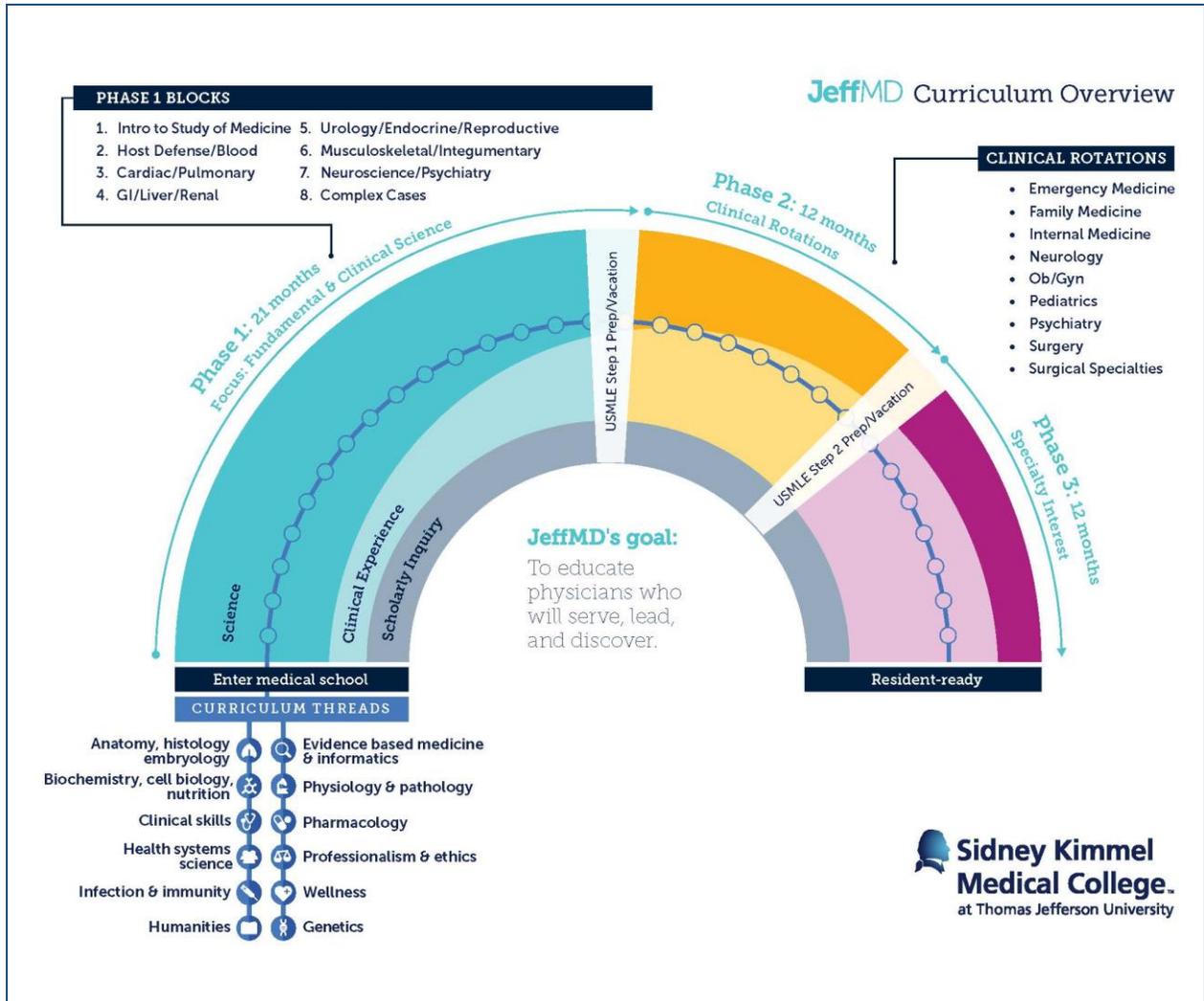
- Internal Medicine & Neurology
- Surgery, Surgical Subspecialty & Emergency Medicine
- Family Medicine & Psychiatry
- Obstetrics/Gynecology & Pediatrics

Phase III

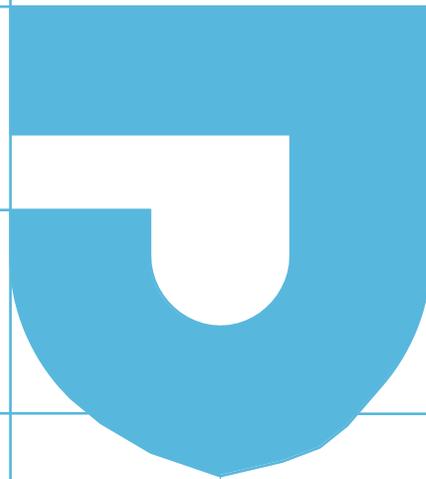
Phase 3 of the curriculum is 12 weeks longer than the fourth year of a traditional curriculum, which allows students more time to prepare their residency applications and to take electives appropriate to their specialty interest. (Phase 1 is correspondingly 12 weeks shorter than years 1-2 in a traditional curriculum).

- Inpatient Medicine Sub-Internship
- Outpatient Experience
- Critical Care
- Advanced Basic Science
- Gateway to Internship
- Electives

JeffMD Curriculum Diagram



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 |
| Graduate | |
| Nursing Specialties: <ul style="list-style-type: none">• Adult Gerontology- Acute Care NP• Adult Gerontology -Primary Care NP• Community Systems Administration• Family/Individual Across Lifespan NP• Neonatal NP• Informatics• Pediatric Primary Care NP• Women's Health Gender-Related NP | MSN (Nurse Practitioner & post BSN-DNP) |
| Nursing | DNP (Post-BS Entry & Post-MS Entry) |
| Nurse Anesthesia | DNP |
| Certificate | |
| Academic Nursing | Post-Graduate Certificate |
| Advanced Headache Diagnosis & Management | Post-Graduate Certificate |
| Nurse Practitioner (All NP Pathways) | 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: 55 credits, 2 years

Bachelor of Science in Nursing (BSN) full-time, two year, traditional pathway, requires (55) approved prerequisite college credits

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|-------------------|---|-----|-------------------|---|----|
| <u>Semester 1</u> | | | <u>Semester 4</u> | | |
| 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 |
| NU343 | Pathophysiology | 3 | NU 498 | Promoting Health and Quality of Life Along the Care Continuum | 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: 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: Nursing BSN Full-time, FACT-2 pathway

Requires 60 approved prerequisite credits

| <u>Year 1</u> | | | <u>Year 2</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 | 10 |
| NU 343 | Pathophysiology | 3 | NU 497 | Transitions to Professional Practice & NCLEX-RN Prep | 3 |
| NU 495 | Health Promotion Applications Across the Lifespan III: Childbearing & Childrearing Families | 9.5 | NU 605 | Role of the Advanced Practice Nurse | 3 |
| 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 | 215-895-5918 |
| Campus | Center City |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/bachelor-science-nursing.html |

Curriculum: MSN, Core Curriculum, 18 credits

| | | | | | |
|--------|---|---|--------|---|---|
| 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, Adult- Gerontology, Acute Care Nurse Practitioner

| | | | | | |
|--------|--|---|--------|--|---|
| NU 560 | Advanced Pharmacotherapeutics | 3 | NU 632 | Diagnostic Reasoning & Clinical Decision Making for Acute Care II | 3 |
| NU 570 | Pathophysiology | 3 | NU 633 | Diagnostic Reasoning & Clinical Decision Making for Acute Care III | 3 |
| NU 631 | Diagnostic Reasoning & Clinical Decision Making for Acute Care 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 I Financial Mgt. for Nurses | 3 |
| NU 682 | Community Systems Administration II | 3 | | Free Elective | 3 |
| NU 690 | Nursing/Healthcare Informatics: Project Mgmt. | 3 | | Free 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 | 3 | NU 674 | Mgt. of Common Health Problems in Primary Care | 3 |
| NU 630 | Diagnostic Reason & Clinical Making for Advanced Practice Nurse II | 3 | NU 676 | Management of Adult & Older Adult in Ambulatory Care | 3 |

Curriculum: MSN, Family Individual Across Lifespan Nurse Practitioner

| | | | | | |
|--------|---|---|--------|---|---|
| NU 560 | Advanced Pharmacotherapeutics | 3 | NU 674 | Mgt. Common Health Problems in Primary Care | 3 |
| NU 570 | Pathophysiology of Human Disease | | NU 675 | Management of Women and Children in Ambulatory Care | 3 |
| NU 673 | Comprehensive Assessment Clinical Decision Making | 3 | NU 676 | Chronic Illness & Health Problems of Adult & Older Adult in Ambulatory Care | 3 |

Curriculum: MSN, Pediatric Primary Care Nurse Practitioner

| | | | | | |
|--------|---|---|--------|--|---|
| NU 560 | Advanced Pharmacotherapeutics | 3 | NU 641 | Diagnostic Reasoning & Clinical Decision Making for Pediatric Advanced Practice Nurse II | 3 |
| NU 570 | Pathophysiology of Human Disease | | NU 642 | Diagnostic Reasoning & Clinical Decision Making for Pediatric Advanced Practice Nurse III* | 3 |
| NU 640 | Diagnostic Reasoning & Clinical Decision Making for Pediatric Advanced Practice Nurse I | 3 | NU 673 | Comprehensive Assessment in Clinical Decision Making | 3 |

Curriculum: MSN, Women's Health-Gender Related Nurse Practitioner

| | | | | | |
|--------|--|---|--------|--|---|
| NU 560 | Advanced Pharmacotherapeutics | 3 | NU 591 | Diagnostic Reasoning & Clinical Decision Making for Women's Healthcare Advanced Practice Nurse II | 3 |
| NU 570 | Pathophysiology of Human Disease | 3 | NU 592 | Diagnostic Reasoning & Clinical Decision Making For Women's HealthCare Advanced Practice Nurse III | 3 |
| NU 590 | Diagnostic Reasoning & Clinical Decision Making for Women's Healthcare Advanced Practice Nurse I | 3 | NU 673 | Comprehensive Assessment Clinical Decision Making | 3 |

Curriculum: MSN, Neonatal Nurse Practitioner

| | | | | | |
|--------|---|---|--------|--|---|
| NU 570 | Pathophysiology Human Disease | 3 | NU 664 | Diagnostic reasoning & 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 & Clinical Decision Making Neonatal Nurse Practitioner I | 3 | NU 667 | Advanced Pharmacotherapeutics Neonatal Nurse Practitioner | 3 |

Curriculum: MSN, Informatics

| | | | | | |
|--------|--|---|--------|--|---|
| NU 689 | Healthcare Informatics: Ethics, Issues & Trends | 3 | NU 694 | Nursing Informatics Seminar & Practicum II | 3 |
| NU 690 | Nursing/Healthcare Informatics: Project Management | 3 | | Elective | 3 |
| NU 693 | Nursing Informatics Seminar & Practicum I | 3 | | Elective | 3 |

Nursing

Doctoral Programs (DNP)

Office of Admissions 215-895-5918
 Campus Center City
 Website <https://www.jefferson.edu/academics/colleges-schools-institutes/nursing/degrees-programs/bachelor-Center for Forensic Science Research & Educatio-nursing.html>

Curriculum: 69 credits

Post-Baccalaureate Entry*

| | | | | | |
|--------|--------------------------|---|--------|---|---|
| NU 560 | Advanced Pharmacology | 3 | NU 702 | Practice Inquiry: Design, Methods & Analysis | 3 |
| NU 570 | Pathophysiology | 3 | NU 703 | Organizational Change | 3 |
| NU 602 | Health Policy | 3 | NU 704 | Methods for Evidence Based Practice | 3 |
| NU 603 | Research for the APN | 3 | NU 705 | Advance Topics in Informatics | 3 |
| NU 605 | Role of the APN | 3 | NU 706 | Healthcare Quality & Patient Safety | 3 |
| NU 625 | Epidemiology | 3 | NU 707 | Leadership & Inter-professional Collaboration | 3 |
| NU 651 | Clinical I | 3 | NU 708 | Clinical Prevention/Population Health | 3 |
| NU 652 | Clinical II | 3 | NU 709 | Health & Social Policy | 3 |
| NU 653 | Clinical III | 3 | NU 710 | Practicum I | 3 |
| NU 672 | Informatics | 3 | NU 711 | Practicum II | 3 |
| NU 673 | Physical Assessment | 3 | NU 712 | Practicum III | 3 |
| NU 701 | Scientific Underpinnings | 3 | | | |

*Refer to JCN Student Handbook & Course Catalog 2021-2022 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: DNP, Post-Master's Entry*, 2 years

- DNP Core Curriculum, 27 credits

| <u>Year 1</u> | | | <u>Year 2</u> | | |
|---------------|--|---|---------------|---|---|
| NJ 701 | Scientific Underpinning for Nursing Practice | 3 | NU 706 | Healthcare Quality & Patient Safety | 3 |
| NU 702 | Practice Inquiry: Designs, Methods & Analyses | 3 | NU 707 | Leadership & Interprofessional Collaboration | 3 |
| NU 703 | Theoretical Foundations Organizational Change Healthcare Systems | 3 | NU 708 | Clinical Prevention/Pop Health Improving the Nation's Health | 3 |
| NJ 704 | Philosophy, Foundations & Methods for Evidence Based Practice | 3 | NU 709 | Current issues Health & 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 |

- Part-time and full-time plans of study are available.

Curriculum: DNP, Anesthesia Program, 3 years

| <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 709 | Current Issues in Health and Social Policy: Planning, Participating, and Policymaking | 3 |
| NU 724 | Chemistry & Physics Related to Anesthesia | 2 | NU 710 | Practicum I | 3 |
| NU 625 | Epidemiology for the Health Professions | 3 | NU 756 | Clinical Practice VI | 3 |
| NU 706 | Healthcare Quality & Patient Safety | 3 | NU 705 | Advanced Topics in Health Informatics | 3 |
| NU 673 | Comprehensive Assessment Clinical Decision-Making | 3 | NU 711 | Practicum II | 3 |
| NU 570 | Pathophysiology of Human Disease | 3 | NU 757 | Clinical Practice VII | 3 |
| NU 748 | Basic Principles Anesthesia | 3 | NU 712 | Practicum III | 3 |
| NU 700 | Pharmacokinetics & Dynamics of Anesthesia Agents | 3 | | | |
| NU 750 | Orientation to Clinical Practice | NC | | | |
| 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 | | | |
| | <u>Year 2</u> | | | | |
| NU 768 | Advance Principles Anesthesia II | 3 | | | |
| NU 752 | Clinical Practice II | 3 | | | |
| NU 702 | Practice Inquiry: Design, Method, & Analyses | 3 | | | |
| NU 605 | Role of Advanced Practice Nurse | 3 | | | |
| NU 753 | Clinical Practice III | 3 | | | |
| NU 703 | Theoretical Foundation Organizational Change in Healthcare Systems | 3 | | | |
| NU 704 | Philosophy, Foundations, and Methods for Evidenced-Based Practice | 3 | | | |
| NU 754 | Clinical Practice IV | 3 | | | |
| NU 701 | Scientific Underpinning for Nurse Practice | 3 | | | |
| NU 708 | Clinical Prevention & Pop Health Improving Nation's Health | 3 | | | |

Post-Graduate Certificate Programs

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: Nurse Practitioners, 18 credits

| | | | | | |
|--------|--|---|--------|-------------------------------|---|
| NU 560 | Advanced Pharmacotherapeutics | 3 | NU 6xx | Specialty Clinical Course I | 3 |
| NU 570 | Pathophysiology of Human 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 Certificate Program in Academic Nursing provides access to an unrivaled graduate education specialty concentration designed to foster competency development in the academic nursing role. As graduates of the program, expert nurse clinicians and researchers will be prepared to lead students to think boldly, cultivate nursing education-practice partnerships, and engage in scholarly work to impact teaching and learning in nursing education.

This program offers flexibility to students by offering three online courses (9 graduate credits) geared towards professional development in the areas of teaching strategies, curriculum design and evaluation methods. Two preceptor-facilitated experiential learning components are incorporated into the curriculum required for certificate completion. Course design affords students opportunities to collaborate with expert academicians as they explore the role of the faculty member in relation to service, teaching, and scholarship expectations.

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

Develop new expertise in Headache Medicine utilizing a unique inter-professional collaboration supporting new avenues of learning and expertise for nurses and other health professionals.

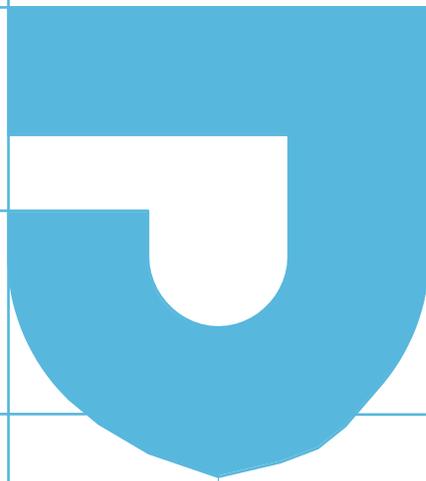
Learning Goals/Outcomes

- 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 & Emerging Treatment & Procedural Skills for Headache Disorders | 4 |
| NU 687 | Headache Course III: Psychological Factors and Business Management | 2 |
| | <u>On-site Intensive Weekends</u> | |
| | Winter & Spring | |

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 |
|----------------------------|----------------------|

Accelerated/Dual Degree

| | |
|--------------------------------------|------------|
| Pharm.D Pharmacy & MPH Public Health | PharmD/MPH |
|--------------------------------------|------------|

| | |
|-------------------------------------|--|
| <h1>Pharmacy</h1> | |
| Doctor of Pharmacy (PharmD) | |
| Campus Accreditation Website | Center City Accreditation Council for Pharmacy Education https://www.jefferson.edu/university/pharmacy/doctor-of-pharmacy.html |

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 Elective(s) | 2 2-3 |
| PHRM 525 | Immunology | 3 | | | |
| PHRM 559 | Introduction to Pharmacy Practice Lab I | 1 | | | |
| <u>Spring</u> | | | <u>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 XXX | Introduction to Pharmacy Practice Lab II | 1 | PHRM 610 | Pharmacy Law | 1 |
| PHRM 584 | Student Pharmacist Enrichment I | .25 | PHRM 586 | Student Pharmacist Enrichment III Elective(s) | .25 2-3 |
| <u>Year 2 Fall</u> | | | <u>Year 4 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 Advanced Pharmacy Practice Experience Elective | 6 |
| 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 | .25 |
| PHRM 549 | Pharmacology I | 3 | | | |
| | Spring | | | | |
| 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 | .25 | | | |
| | Elective(s) | 2-3 | | | |

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 pharmacoeconomic principles.
- Design and optimize strategies to improve health outcomes associated with medication use.

Curriculum: MS Population Health Pharmacy, 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 and Advocacy | 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

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: Thesis Track, 2 years, 34 credits

| <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 | 2 |
| PSCI 705 | Biological Pharmaceutical Sciences | 3 | PSCI 701 | Pharmaceutical Sciences Seminar | 1 |
| PSCI 702 | Research Ethics | 1 | | Elective | 2 |
| PSCI 799 | Pharmaceutical Sciences Research | 3 | | Elective | 2 |
| PSCI 706 | Special Techniques in Pharmaceutical Sciences | 2 | PSCI 799 | Pharmaceutical Sciences Research | 2 |
| <u>Summer</u> | | | | | |
| PSCI 799 | Pharmaceutical Sciences Research | 1 | | | |

Curriculum: Non-Thesis Track, 2 years, 34 credits

| <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 | | 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 | 2 |
| PSCI 705 | Biological Pharmaceutical Sciences | 3 | PSCI 701 | Pharmaceutical Sciences Seminar | 1 |
| PSCI 702 | Research Foundation and Ethics | 1 | | Elective | 2 |
| PSCI 798 | Pharmaceutical Sciences Practicum | 3 | | Elective | 2 |
| PSCI 706 | Special Techniques in Pharmaceutical Sciences | 2 | PSCI 798 | Pharmaceutical Sciences Practicum | 2 |
| PSCI 798 | Pharmaceutical Sciences Practicum | 1 | | | |

| | |
|---|---|
| <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: Graduate Certificate Population Health Pharmacy, 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 |

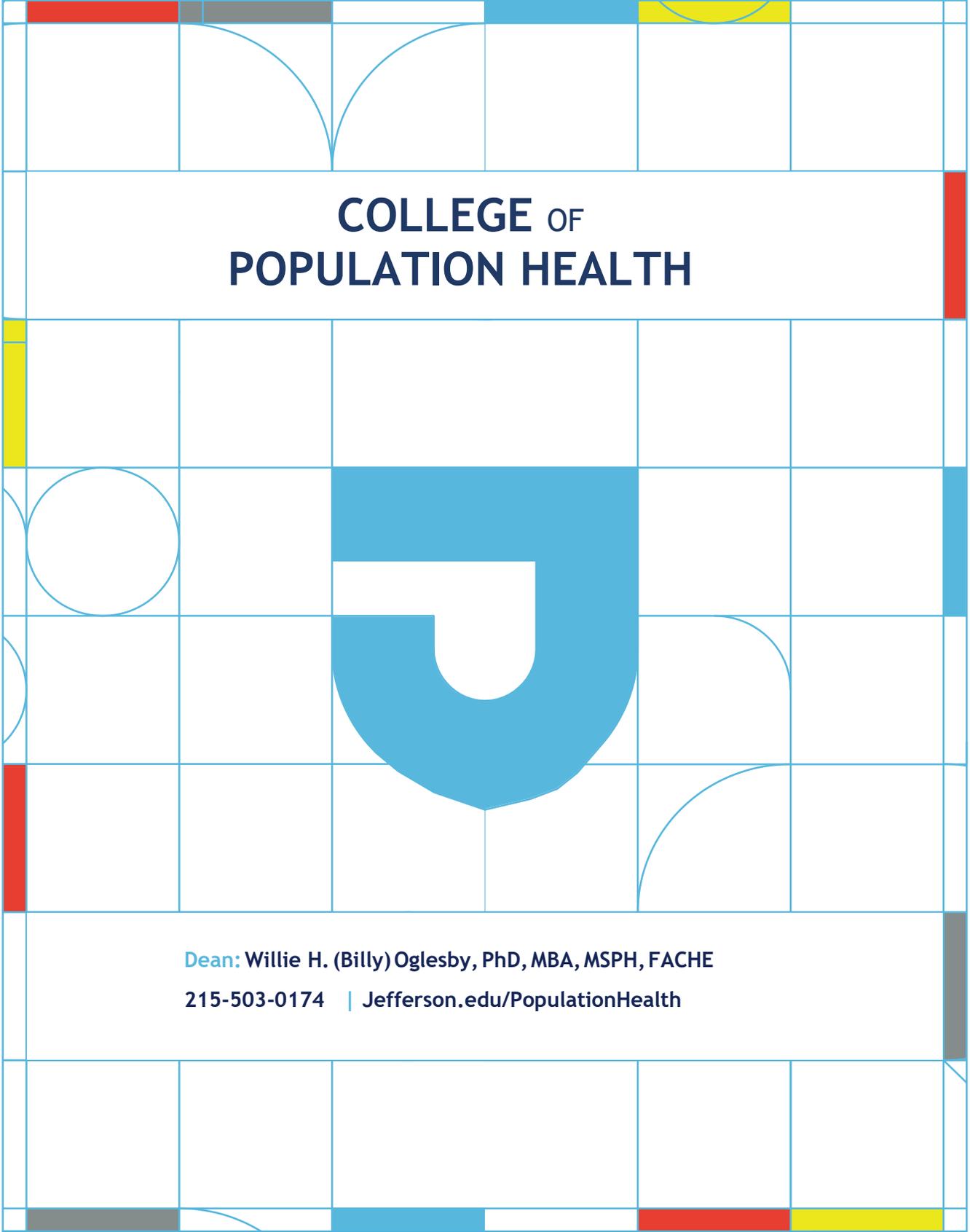
| | |
|---|---|
| <h2>Doctor of Pharmacy & Public Health</h2> | |
| Dual PharmD/MPH | |
| Program Director | Elena Umland, PharmD and Rosemary (Rosie) Frasso, PhD, MSc, CPH |
| Campus | Center City |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/public-health/Pathways/dual-degrees/PharmDMPH.html |

Program Description

The PharmD/MPH recognizes the growing synergy between pharmacy services and public health 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 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 36 credits (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.



**COLLEGE OF
POPULATION HEALTH**

Dean: Willie H. (Billy) Oglesby, PhD, MBA, MSPH, FACHE
215-503-0174 | Jefferson.edu/PopulationHealth

About Us

Established in 2008, a leading academic health center founded in Philadelphia, PA in 1824 as Jefferson Medical College (now the Sidney Kimmel Medical College). We are dedicated to exploring the policies and forces that define the health and well-being of populations. Our mission is to prepare leaders with global vision to examine the social determinants of health and to evaluate, develop and implement health policies and systems that will improve the health of populations and thereby enhance the quality of life.

We do this by providing exemplary graduate academic programming in population health, public health, health policy, healthcare quality and safety, and health outcomes research. Our educational offerings are enhanced by research, publications, continuing education, and professional development offerings in these areas.

Population health seeks to create conditions that promote health, prevent adverse events, and improve outcomes.¹ Population health builds on public health foundations by:

- Connecting prevention, wellness and behavioral health sciences with health care delivery, quality and safety, disease prevention/management and economic issues of value and risk - all in the service of a specific population, be it a city, provider's practice, employee group, hospital's primary service area or age group
- Identifying socio-economic and cultural factors that determine the health of populations and developing policies that address the impact of these determinants
- Applying epidemiology and biostatistics in new ways to model disease states, map their incidence and predict their impact
- Using data analysis to design social and community interventions and new models of health care delivery that stress care coordination and ease of accessibility

Population health in the broadest sense addresses the large-scale social, economic, and environmental issues that impact health outcomes of groups of people. Population health can also be defined more narrowly as specific interventions to address the health needs of attributed and discretely defined subpopulations. This latter definition is generally referred to as population health management, as the populations are usually under the care of a health system or provider or have an identifiable disease state.¹ When applied to health care delivery, population health differs from conventional health care by emphasizing value rather than volume of services rendered.

Six Domains of Curriculum Framework:

Knowledge -Based Domains

| | |
|---|--|
| Health Systems | Addressing the structure, stakeholders and processes of local, state and national health systems |
| Legal, Regiatory & Administative | Incorporating local, state and federal laws, agency and regulatory body regulations, and ethical standards |
| Social/Behavioral/ Environmental | Addressing the factors outside of medical care that influence health outcomes |

Skills-Based Domains

| | |
|---------------------------|--|
| Analytics | Incorporating epidemiological and outcomes research, sources of data and statistical analyses |
| Process and Design | Addressing the underlying skills necessary to complete many of the topics seen in the other domains, including the skills required to plan, build and maintain an organization or intervention |
| Interpersonal | Incorporating skills and techniques for greater communication and collaboration between various parties* |

*Harris D, Puskarz K, & Golab C. Population Health: curriculum framework for an emerging discipline. Population Health Management, 2016,19(1), 39-45. doi:10.1089/pop.2015.0129.

Center for Population Health

Through the Center for Population Health Innovation, the College of Population Health offers diverse opportunities for professionals to enhance and update their awareness of the issues and challenges inherent in today's evolving health care environment

- Jefferson College of Population Health Forum
- Hearst Health Prize
- Population Health Academy Series
- Population Health Colloquium
- Grandon Society
- Population Health Leadership Series & Poptalk Webinars
- 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

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 Science | Hybrid | DHSc |
| Public Health | Online | 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 | On Campus | 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 |
| | Online | Advanced Practice Certificate |

Dual Degrees

| | | |
|--|--------------------------|-------------------|
| Bridge Program | On campus | MPH |
| Disaster Medicine & Management & Public Health | Center City & East Falls | MS/MPH |
| *Center City- on campus | | |
| *East Falls- on campus or online | | |
| Medicine (SKMC) & Public Health (MPH) | On Campus | MD/MPH (See SKMC) |
| Advanced Standing | On Campus | MPH |
| 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 |
| Physician Assistant (PA) & Public Health (MPH) | On Campus | PA/MPH |

| | |
|---|---|
| <h1>Applied Health Economics & Outcomes Research</h1> | |
| 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 Master's 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: Graduate Certificate, 1 year

| | | |
|---------|--|---|
| 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: Master of Science, 2 years

Industry Track

| | | |
|---|---|---|
| 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

| | | |
|---|---|---|
| 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: Graduate Certificate, 1 year

| | | |
|--------------------|--|---|
| 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: Master of Science, 2 years

Management Track

| | | |
|---|--|---|
| 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 in HDS or AHE | 3 |
| HDS 652 | Strategic Capstone Portfolio & Presentation | 3 |

Research Track

| 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 in HDS or AHE | 3 |
| HDS 651 | Capstone Research Project | 3 |

Both tracks culminate in a Capstone Project, which incorporates knowledge and skills gained through the Masters 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)

| | |
|----------------|---|
| Contact | Billy Oglesby, PhD, MBA, MSPH, FACHE |
| Campus | Online |
| Website | 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.

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: Graduate Certificate 1 year

| | | |
|---------|--|---|
| 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: Graduate Degree, 2 years

U.S Health Policy Track

| | | |
|---|---|---|
| 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 | Practice-Based Health Statistics | 3 |
| HPL 650 | Capstone Seminar and Project | 3 |
| | Elective | 3 |

Global Health Policy Track

| | | |
|---|--|---|
| 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 | Practice-Based Health Statistics | 3 |
| HPL 650 | Capstone Seminar & Project | 3 |
| | Global Health Elective | 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/degreess-programs/degreess-graduate-certificates/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.

Domestic 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: Graduate Certificate, 1 year

| | | |
|---------|--|---|
| 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 |
| | Elective | 3 |

Curriculum: Graduate Degree, 2 years

| | | |
|---|---|---|
| Graduate Certificate courses plus: | | |
| OPX 520 | Change Management | 3 |
| HPL 520 | Practice-Based Health 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 Seminar and Project** | 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: Advanced Practice Certificates

Healthcare Quality & Safety

| | | |
|---------|---|---|
| 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

| | | |
|---------|--|---|
| 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

| | | |
|---------|---|---|
| HPL 500 | U.S. Healthcare Organization & Delivery | 3 |
| HQS 500 | Introduction to Healthcare Quality & Safety | 3 |
| | Elective | 3 |

Health Systems Science Education

| | | |
|---------|---|---|
| HQS 500 | Introduction to Healthcare Quality & Safety | 3 |
| HQS 517 | Teaching Health Systems Science | 3 |
| | 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: Graduate Certificate, 1 year

| | | |
|---------|---|---|
| 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: Graduate Degree, 2 years

| | | |
|---|-------------------------------------|---|
| Graduate Certificate courses plus: | | |
| HQS 512 | Business Case for Quality | 3 |
| HPL 520 | Practice-Based Health Statistics | 3 |
| OPX 535 | Strategic Execution | 3 |
| OPX 531 | Evaluating Healthcare Organizations | 3 |
| | Elective | 3 |
| OPX 650 | Capstone Seminar and Project | 3 |

Curriculum: Advanced Practice Certificate 1 year

Operational Excellence

| | | |
|---------|---|---|
| HQS 500 | Introduction to Healthcare Quality & Safety | 3 |
| OPX 520 | Change Management | 3 |
| OPX 532 | Project Management Essentials | 3 |

Operational Excellence Education

| | | |
|---------|-------------------------------------|---|
| OPX 531 | Evaluating Healthcare Organizations | 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 | Hybrid: Center City & 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 Masters Program education. The Capstone should advance knowledge which can be applied to the student's discipline and/or organization.

Curriculum: Graduate Certificates, 1 year

Population Health Science

| | | |
|---------|--------------------------------------|---|
| 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

| | | |
|---------|--|---|
| 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

| | | |
|---------|--------------------------------------|---|
| 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: Master of Science, 2 years

Population Health Science

| | | |
|---------|---|---|
| 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 & Advocacy | 3 |
| OPX 520 | Change Management | 3 |
| | Elective | 3 |
| POP 650 | Capstone Seminar & Project | 3 |

Population Health Management

| | | |
|---------|--|---|
| 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 | 3 |
| POP 650 | Capstone Seminar & Project | 3 |

Population for Employers

| | | |
|---------|--|---|
| 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 | 3 |
| POP 650 | Capstone Seminar & Project | 3 |

Curriculum: Advanced Practice Certificates

Population Health

| | | |
|---------|---|---|
| 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

| | | |
|---------|-----------------------------------|---|
| 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: Core Courses All Concentrations, 27 credits

| | | |
|-----------------------|--|---|
| 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 | Fundamentals of Health Statistics | 3 |
| PBH 505 | Fundamentals of Statistics for Research | |
| 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 | Capstone-Integrative Learning Experience (C-ILE) | 3 |
| 611/612 or 613/614 | | |

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 |
|-----------------|----|

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 |
| | Free Electives (two) | 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 |
| | Electives (four) | 12 |

Public Health Bridge Programs

The Bridge program is open to a select group of undergraduate students from our partner institutions. Students in this program take up to four MPH courses while still enrolled as an undergraduate. The courses apply to both their undergraduate degree and the MPH.

Curriculum:

Students on this pathway complete 45 credits of MPH coursework.

| | |
|---|--|
| <h1>Population Health Science</h1> | |
| Doctor of Philosophy (PhD) | |
| Interim Assistant Program Director | Margaret Kornuszko-Story, PhD, MHA, FACHE |
| Campus | Hybrid: Center City/Online |
| Website | 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 | Online |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/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 in 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.

Program Specializations

- Health Policy
- Healthcare Quality & Safety (HQS)
- Operational Excellence
- Population Health Management

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 1 Spring</u> | | | <u>Year 3 Spring</u> | |
| DHS 751 | Spring Residency | 1 | DHS 801 | Dissertation II | 3 |
| HPL 550 | Comparative Health Systems | 3 | | | |
| DHS 701 | Experimental Research Methods | 3 | | | |
| | <u>Year 1 Summer</u> | | | <u>Year 3 Summer</u> | |
| DHS 702 | Population Health Management Strategies | 3 | DHS 755 | Summer Residency | 1 |
| DHS 703 | Systematic Reviews & Analysis | 3 | DHS 802 | Dissertation III | 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: #C85130;">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.

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 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.

Curriculum:

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 | Fundamentals of Epidemiology | 3 |
| PBH 606 | Advanced Epidemiology | |
| 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 | Capstone-Integrative Learning Experience (C-ILE) | 3 |
| PBH 614 | | |
| | Electives (four) | 12 |

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

Social Work / Public Health

Master of Social Services (MSS) & Master of Public Health (MPH)

| | |
|-------------------|---|
| Program Directors | Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH |
| Campus | Center City |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/public-health/Pathways/dual-degrees/MSSMPH.html |

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.

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 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.

Curriculum:

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.

Pharmaceutical Science / Public Health

Doctor of Pharmacy (PharmD) & Master of Public Health (MPH)

| | |
|-------------------|---|
| Program Directors | Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH |
| Campus | Center City |
| Website | 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 services 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 work closely with faculty to design and complete an independent research project on a topic of their choice.

Law/ Public Health

Juris Doctor (JD) & Master of Public Health (MPH)

| | |
|-------------------|---|
| Program Directors | Public Health- Rosemary (Rosie) Frasso, PhD, MSc, CPH |
| Campus | Widener University & Center City |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/degrees-programs/degrees-graduate-certificates/public-health/Pathways/dual-degrees/JDMPH.html |

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.

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.

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 |

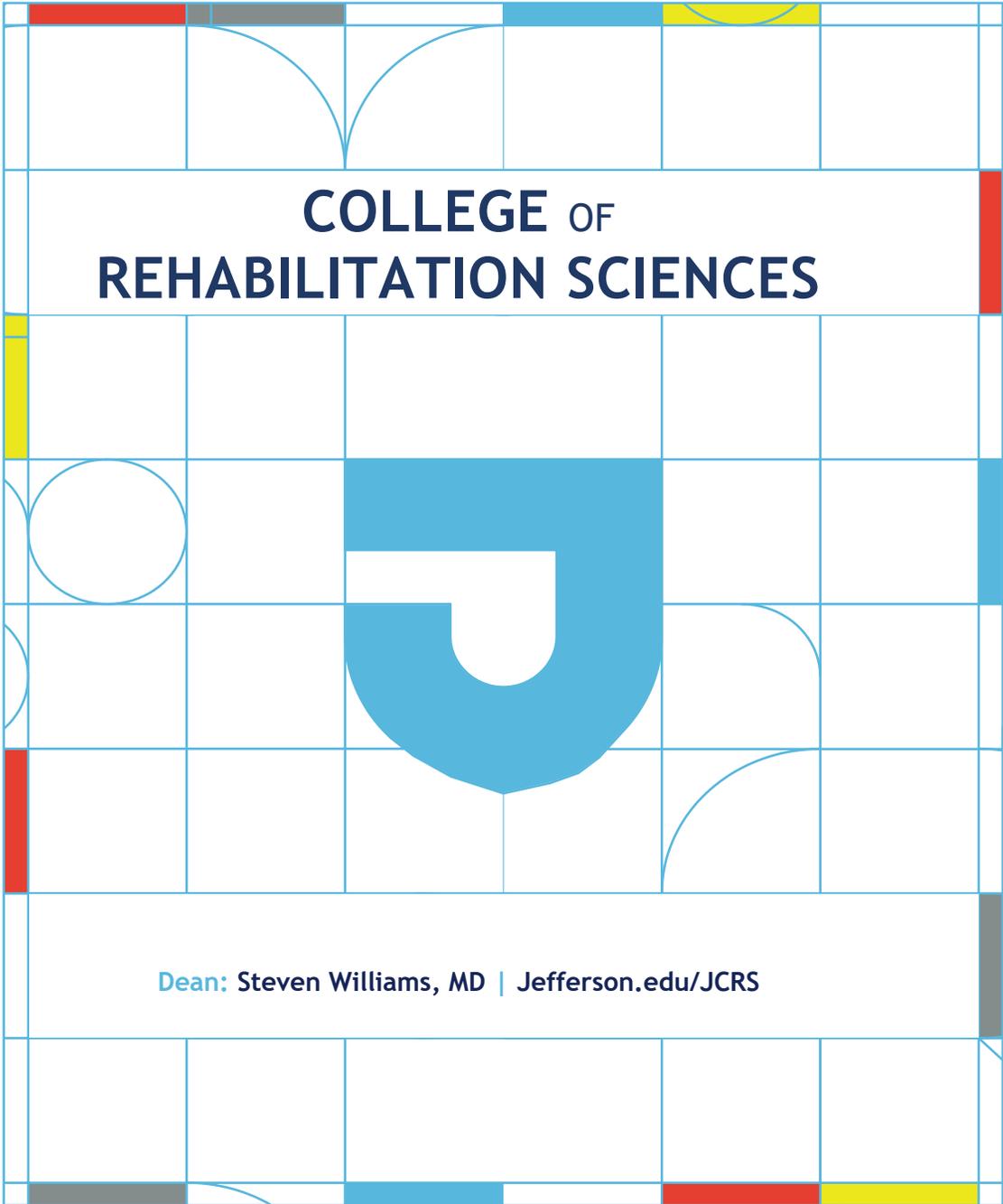
Program Description

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 | 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 | Clinical Care & Public Health | 3 |
| PBH 651 | Clerkship-Applied Practice Experience | 0 |
| | Elective (three) | 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, Speech and 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 was and the Department of 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

Departments & Divisions

- Athletic Training
- Autism Center for Excellence
- Center for Hand & Upper Limb Rehabilitation
- Center for Outcomes & Measurement
- Exercise Science
- Occupational Therapy
- Physical Therapy
- Using Design in Healthcare Delivery
- Speech Language Pathology

Residency

The Mission of the Jefferson College of Rehabilitation Sciences Clinical and Education Training programs is to develop practitioners of choice who are rehabilitation specialists to meet the needs of society. These programs will develop expert clinicians with advanced clinical skills in critical and innovative thinking as well as patient-centered, evidence-based, and autonomous practice. Graduates will exemplify professionalism, compassion, accountability, altruism, integrity, ethical conduct, and social responsibility and will contribute to the profession and to health care through their leadership, clinical excellence, teaching, consultative activities, and pursuit of scholarship and lifelong learning.

Pillars for the Programs

Advanced Clinical Competence, Education, Practice Management, Professionalism, Scholarship.

The Jefferson College of Rehabilitation post-professional clinical and education training programs are designed to develop and advance the skills, knowledge and behaviors of rehabilitation clinicians in specialized areas of practice. We currently offer the following programs

- Neurologic Physical Therapy Residency
- Orthopedic Physical Therapy Residency

Residency Programs

Thomas Jefferson University & Magee Rehabilitation Hospital Neurologic Residency

A post-professional clinical and didactic education program that is designed to advance the participant's preparation to become a practitioner of choice in the field of neurologic physical therapy. The program combines opportunities for ongoing clinical mentoring with a scientific basis for advanced practice. At the end of the experience, the resident will be academically and clinically prepared to pass the American Board of Physical Therapy Specialist (ABPTS) Neurologic Clinical Specialist Examination, and to become a leader in the world of neurologic physical therapy.

Jefferson-Strive Physical Therapy Orthopedic Residency

A post-professional clinical and didactic education program, designed to advance a physical therapist's preparation as a practitioner of choice in the field of orthopedic physical therapy. The program combines opportunities for ongoing clinical mentoring with a scientific basis for advanced practice. At the end of the experience, the resident will be academically and clinically prepared to pass the American Board of Physical Therapy Specialist (ABPTS) Orthopedic Clinical Specialist Examination.

Accreditation

| | |
|--|---|
| Accreditation Council for Occupational Therapy Education (ACOTE) Occupational Therapy (MSOT); Occupational Therapy Doctorate (OTD) | 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/ |

Graduates are eligible to take the qualifying examinations of the state and/or national licensing or registry bodies and to become members of the appropriate professional organizations.

Academic Programs

Undergraduate

| | |
|------------------|----|
| Exercise Science | BS |
|------------------|----|

Graduate

| | |
|--|--------|
| Athletic Training | MSAT |
| Occupational Therapy- Center City | MSOT |
| Occupational Therapy- East Falls | MSOT |
| Occupational Therapy-Center City | OTD |
| Post Professional Occupational Therapy | 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 |
| Neuroscience: Advanced Concepts for Evidence Based Practice | Advanced Practice Certificate |
| Teaching in the Digital Age | Advanced Practice Certificate |
| Using Design in Healthcare Delivery | 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/MS |
| Psychology & Occupational Therapy | BS/MSOT & BS/OTD |

Exercise Science

Bachelor of Science (BS)

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|---|--|
| Chair Contact Campus Website | Stephen Thomas, PhD, ATC 215-951-2657 East Falls 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. 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.

- Develop and implement behavioral and 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.
- 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

| | | | | | |
|-------------------------|--|-----|-----------|--|---|
| | <u>Year 1 Fall</u> | | | <u>Year 3 Fall</u> | |
| FYS 100 | Pathways Seminar | 1 | EXSC XXX | Exercise Physiology | 3 |
| AMST 114 | Topics in American Studies | 3 | BIO 201 | Anatomy & Physiology I Lecture | 3 |
| CHEM 103 | Chemistry I Lecture | 3 | BIO 201 L | Anatomy & Physiology I Lab | 1 |
| CHEM 103L | Chemistry II Lab | 1 | CGIS 300 | Contemporary Global Issues | 3 |
| MATH 102 or MATH 110 | Quant. Reasoning: Pre-calc or higher | 3-4 | EXSC XXX | Health Behavior Theory & Practice | 3 |
| PSYC 101 | Introduction to Psychology | 3 | EXSC XXX | Nutrition (for fitness) | 3 |
| BIO 103 | Biology Lecture | 3 | EXSC XXX | Safety, First Aid & Injury Prevention | 3 |
| BIO 103L | Biology I Lab | 1 | | | |
| | <u>Year 1 Spring</u> | | | <u>Year 3 Spring</u> | |
| EXSC 110 | Intro to Exercise Science | 1 | BIO 202 | Anatomy & Physiology II Lecture | 3 |
| WRIT 101 | Written Communication | 3 | BIO 202 L | Anatomy & Physiology II Lab | 1 |
| PSYCH 213 | Developmental Psychology | 3 | EXSC XXX | Internship | 3 |
| WRIT 202 | Multimedia Communication | 3 | | Concentration coursework | 3 |
| CHEM 104 | Chemistry II Lecture | 3 | | Integrative Seminar | 3 |
| CHEM 104L | Chemistry II Lab | 1 | PHIL 499 | Philosophies of Good Life | 4 |
| BIO 104 | Biology II Lecture | 3 | | | |
| BIO 104L | Biology II Lab | 1 | | | |
| | Concentration coursework | 3 | | | |
| | <u>Year 2 Fall</u> | | | <u>Year 4 Fall</u> | |
| | Concentration coursework | 3 | EXSC 301 | Biomechanics | 3 |
| GDIV 2XX | Global Diversity (Incl world languages) | 3 | EXSC XXX | Entrepreneurship & Leadership | 3 |
| PHYS 111 | Physics I Lecture | 3 | EXSC XXX | Elective | 3 |
| PHYS 111L | Physics I Lab | 1 | EXSC XXX | Exercise Prescription | 3 |
| STAT 220 or SAT 301 | Statistics for the Behavioral Sciences or Biostatistics | 3 | EXSC XXX | Fitness Assessment | 3 |
| WRIT 201 | Multimedia Communication | 3 | | | |
| | <u>Year 2 Spring</u> | | | <u>Year 4 Spring</u> | |
| | Concentration coursework | | EXSC XXX | Exercise for Special Populations | 3 |
| GCIT 2XX | Global Citizenship (Incl world languages) | 3 | EXSC XXX | Elective | 3 |
| ETHIC 2XX | Ethics | 3 | EXSC XXX | Elective | 3 |
| EXSC XXX | American Diversity | 3 | EXSC XXX | Internship | 6 |
| PHYS 112 | Physics II Lecture | 3 | | | |
| PHYS 112L | Physics II Lab | 1 | | | |
| EXSC XXX | 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.

MSOT-Center City Curriculum: 82 credits

| <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.

MSOT-East Falls Curriculum: 72 credits

| <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 | 5 | OCC 778 | Level II Fieldwork A | 5 |
| OCC 779 | Level II Fieldwork B | 5 | OCC 779 | Level II Fieldwork B | 5 |

Occupational Therapy

Doctor of Occupational Therapy-Center City (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.

OTD- Center City Curriculum: 115 credits

| <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 | 6 |
| OT 700 | Developing Your OTD Practice Toolkit | 1 | | Elective or Independent Study | 3 |
| <u>Year 1 Spring</u> | | | <u>Year 2 Spring</u> | | |
| OT 322 | Found of Occupation- Practice II | 2 | OT 480 | Fieldwork Level II A (January through March) | 6 |
| OT 357 | Evaluation Process | 4 | OT 482 | Fieldwork Level II B (April through June) | 6 |
| OT 577 | Historical Perspectives on Theory-Based Practice | 3 | OT704A | Evidence-Based Practice I (online January-March) | 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</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 |
| OT 308 | Neuroscience Foundations of Occupational Therapy | 4 | OT 707 | The Doctoral Capstone: Preparing for the Capstone Experience and Project | 2 |
| <u>Year 1 Summer</u> | | | <u>Year 3 Fall</u> | | |
| OT 341 | Occupational Analysis & Evaluation - Fieldwork Level I | 2 | OT 720 | Doctoral Capstone Seminar A | 12 |
| OT 467 | Health Services Administration | 2 | <u>Year 3 Spring</u> | | |
| OT 603 | Research Mentorship and Methods | 4 | OT 721 | Doctoral Capstone Seminar B | 12 |
| OT 702 | OTD Leadership: National and Global Perspectives | 1 | | | |

Occupational Therapy

Post-Professional Occupational Therapy Doctorate (PP-OTD)

| | |
|------------------|---|
| Dept. Chair | Catherine Verrier Piersol, PhD, OTR/L, FAOTA |
| Program Director | Susan Troth-Cohen, 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.

PP-OTD Curriculum:

| <u>Students entering without Masters' Degree (13 credits)</u> | | | |
|---|--|--------------------------------|---|
| OT 603 | Research Methods & Mentorship | All semesters except Summer II | 4 |
| OT 680 | Leading Edge Occupational Therapy Practice | Fall & Spring | 3 |
| OT 681 | Advanced Occupational Therapy Practicum | All semesters except Summer II | 6 |

| <u>All Students (33 credits)</u> | | | |
|----------------------------------|---|---------------|---|
| 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 797 | Seminar in clinical Research | All | 3 |

Clinical Fellowship & Capstone courses, 6-9 credits

| | | | |
|--|----------------------|---------------|-----|
| OT 800 | Clinical Fellowship* | All semesters | 3-6 |
| OT 801 | Capstone Project | All semesters | 3 |
| Students with less than three years of experience in occupational therapy take six fellowship credit; Students with more than three take three years | | | |

Physical Therapy

Doctoral Degree (DPT)

| | |
|----------------------|---|
| Program Chair | Jane Fedorczyk, PT, PhD, CHT |
| Contact | 215-503-8026 |
| 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 (online) | 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 Experience 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 Experience 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 Experience III | 8 |

Speech-Language Pathology

Master of Science (MS-SLP)

| | |
|-------------------------|---|
| Department Chair | Patricia A. Remshifski PhD, CCC-SLP |
| Contact | 215-955-8473 |
| 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: 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 (through Summer 1 and Summer 2) | 2 | | | |
| <u>Summer 1</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 | | | |

Accelerated & Dual Degree Programs

Occupational Therapy

Bachelor of Science (BS) & Master of Science (MSOT)- Center City (BS/MSOT-CC)

| | |
|------------------|---|
| Department Chair | Catherine Verrier Pierrsol, 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 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

East Falls Curriculum: Graduate 72 credits

| | | | | | |
|----------------------|--------------------------------------|---|----------------------|---|---|
| <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 2 Spring</u> | | |
| <u>Year 1 Spring</u> | | | OCC 751 | Professional Issues and Trends | 3 |
| OCC 616 | Assistive Technology Design | 2 | OCC 755 | Level I Fieldwork C | 1 |
| OCC 623 | Applied Neuroanatomy | 4 | OCC 757 | Innovative Practice in OT | 3 |
| OCC 628 | Intro to Evaluation | 1 | OCC 759 | Children & Youth B | 3 |
| OCC 635 | Clinical Skills B | 1 | OCC 767 | Critical Inquiry I | 2 |
| OCC 645 | Clinical Skills C | 1 | <u>Year 2 Summer</u> | | |
| OCC 741 | Interpersonal Relationships & Groups | 3 | OCC 764 | Specialty Practice: Upper Extremity Rehab | 2 |
| <u>Year 1 Summer</u> | | | OCC 769 | Critical Inquiry II | 1 |
| OCC 626 | Evidence-Based Practice | 3 | OCC 784 | Mastery | 1 |
| OCC 735 | Level I Fieldwork A | 1 | <u>Year 2.5</u> | | |
| OCC 746 | Psychosocial Interventions | 4 | OCC 778 | Level II Fieldwork (Summer or Fall) | 5 |
| OCC 766 | Older Adults: Enabling Participation | 2 | OCC 779 | Level II Fieldwork (Fall or Spring) | 5 |

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 |

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 II Lab | 1 | EXSC XXX | American Diversity | 3 |
| MATH 102 or MATH 110 | Quant. Reason: Pre-calc or higher | 3-4 | PHYS 112 | Physics II | 3 |
| PSYC 101 | Introduction to Psychology | 3 | PHYS 112L | Physics II Lab | 1 |
| BIO 103 | Biology I | 3 | EXSC 210 | Develop Inter-professional Team | 1 |
| BIO 103L | Biology I Lab | 1 | | | |
| | <u>Year 1 Spring</u> | | | <u>Year 3 Fall</u> | |
| EXSC 110 | Intro to Exercise Science | 1 | EXSC XXX | Exercise Physiology | 3 |
| WRIT 101 | Written Communication | 3 | BIO 201 | Anatomy & Physiology I | 3 |
| PSYCH 213 | Developmental Psychology | 3 | BIO 201 L | Anatomy & Physiology I Lab | 1 |
| WRIT 202 | Multimedia Communication | 3 | CGIS 300 | Contemporary Global Issues | 3 |
| CHEM 104 | Chemistry II | 3 | EXSC XXX | Health Behavior Theory & Practice | 3 |
| CHEM 104L | Chemistry II Lab | 1 | EXSC XXX | Nutrition (for fitness) | 3 |
| BIO 104 | Biology II | 3 | EXSC XXX | Safety, First Aid & Injury Prevention | 3 |
| BIO 104L | Biology II Lab | 1 | | | |
| | Concentration coursework | 3 | | <u>Year 3 Spring</u> | |
| | <u>Year 2 Fall</u> | | BIO 202 | Anatomy & Physiology II | 3 |
| | Concentration coursework | 3 | BIO 202 L | Anatomy & Physiology II Lab | 1 |
| GDIV 2XX | Global Diversity (Incl world lang) | 3 | EXSC XXX | Internship | 3 |
| PHYS 111 | Physics I Lecture | 3 | | Concentration coursework | 3 |
| PHYS 111L | Physics I Lab | 1 | | Integrative Seminar | 3 |
| STAT 220 or SAT 301 | Statistics for the Behavioral Sciences or Biostatistics | 3 | | | |
| WRIT 201 | Multimedia Communication | 3 | PHIL 499 | Philosophies of Good Life | 4 |

Curriculum: Years 4-6 (Professional Phase)

| | | | | | |
|--|---|---|---|---|---|
| <u>Year 4 Pre-Fall</u> | | | <u>Year 5 Summer 1 or 2 (6 wks May-June OR Jun-Aug)</u> | | |
| PT 503 | Human Anatomy | 3 | ATP 660 | Specialty Practicum Athletic Training | 2 |
| PT 504 | Human Anatomy Laboratory | 3 | <u>Year 5 Summer (12 wks: May-Aug)</u> | | |
| PT 527 | Critical Inquiry I | 3 | ATP 691 | Research/Collaborative Project | 1 |
| PT 534 | PT Issues: Intro Profession | 1 | <u>Year 6 Fall 1 (8 wks Aug-Oct)</u> | | |
| PT 536 | PT Issues: Language of Practice | 1 | <u>Year 6 Fall 2 (8 wks Oct-Dec)</u> | | |
| <u>Year 4 Fall</u> | | | <u>Year 6 Spring 1 (8 wks Jan-Mar)</u> | | |
| PT 506 | Biomechanics and Kinesiology | 4 | ATP 661 | Practicum Athletic Training III | 3 |
| PT 516 | Neuroscience | 3 | <u>Year 6 Spring 2 (8 wks Mar-May)</u> | | |
| PT 533 | Intro Physical Therapy Examination | 5 | ATP 665 | Prevention, Evaluation & Treatment Athletic Injuries II (Lower Extremity) | 4 |
| PT 538 | PT Practice Issues: Psychosocial Aspects of PT & PTs as Teachers and Learners | 2 | ATP 675 | Strength and Conditioning | 3 |
| PT 539 | PT Practice Issues: Clinical Decision Making | 1 | ATP 685 | Organization and Admin in Athletic Training | 2 |
| PT 545 | Integrated Clinical Experience (ICE) I | 1 | ATP 690 | General Medical Condition & Pharmacology Athletic Training | 3 |
| <u>Year 4 Spring</u> | | | <u>Year 6 Spring 1 (8 wks Jan-Mar)</u> | | |
| PT 513 | Pathophysiology I | 3 | ATP 662 | Practicum Athletic Training IV | 3 |
| PT 518 | Physical Therapy Practice and the Movement System | 2 | <u>Year 6 Spring 2 (8 wks Mar-May)</u> | | |
| PT 546 | Integrated Clinical Experience (ICE) II | 1 | ATP 670 | Prevention, Evaluation and Treatment of Athletic Injuries III (Spine and advanced techniques) | 4 |
| PT 553 | Biophysical Agents | 3 | ATP 695 | Psychological Aspects of Injury and Rehabilitation | 3 |
| PT 556 | Therapeutic Interventions | 3 | ATP 696 | Special Topics Athletic Training | 2 |
| PT 624 | Critical Inquiry II | 2 | ATP 692 | Research/Collaborative Project II | 1 |
| <u>Year 5 Fall 1 (8 wks 8 Aug-Oct)</u> | | | | | |
| ATP 600 | Emergency Care | 4 | | | |
| ATP 602 | Scientific Inquiry and Writing | 1 | | | |
| ATP 605 | Fund of Athletic Training | 4 | | | |
| ATP 610 | Basics of Rehabilitation | 3 | | | |
| AT[615 | Functional Human Anatomy | 3 | | | |
| <u>Year 5 Fall 2 (8 wks Oct-Dec)</u> | | | | | |
| ATP 620 | Practicum in Athletic Training | 3 | | | |
| <u>Year 5 Spring 1 (8 wks Jan-March)</u> | | | | | |
| ATP 625 | Prevention, Evaluation & Treat of Athl Injuries I (Upper Extremity) | 4 | | | |
| ATP 630 | Therapeutic Modalities | | | | |
| ATP 635 | Human Physiology | 3 | | | |
| ATP 645 | Motor Control & Human Movement | 3 | | | |
| <u>Year 5 Spring 2 (8 wks March-May)</u> | | | | | |
| ATP 640 | Practicum in Athletic Training II | 3 | | | |

Exercise Science / Doctor of Occupational Therapy

Bachelor of Science/Doctor of Occupational Therapy (BS/OTD)

| | |
|---------|--|
| 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, Learning Goals & Outcomes

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 Bachelors 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 | | 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 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 | 3 |
| PSYC 101 | Introduction to Psychology | 3 | PHYS 112L | Physics II Lab | 1 |
| BIO 103 | Biology I | 3 | EXSC XXX | Develop Inter-professional Team | 1 |
| BIO 103L | Biology I Lab | 1 | | | |
| <u>Year 1 Spring</u> | | | <u>Year 3 Fall</u> | | |
| EXSC 110 | Intro to Exercise Science | 1 | EXSC XXX | Exercise Physiology | 3 |
| WRIT 101 | Written Communication | 3 | BIO 201 | Anatomy & Physiology I | 3 |
| PSYCH 213 | Developmental Psychology | 3 | BIO 201 L | Anatomy & Physiology I Lab | 1 |
| WRIT 202 | Multimedia Communication | 3 | CGIS 300 | Contemporary Global Issues | 3 |
| CHEM 104 | Chemistry II | 3 | EXSC XXX | Health Behavior Theory & Practice | 3 |
| CHEM 104L | Chemistry II Lab | 1 | EXSC XXX | Nutrition (for fitness) | 3 |
| BIO 104 | Biology II | 3 | EXSC XXX | Safety, First Aid & Injury Prevention | 3 |
| BIO 104L | Biology II Lab | 1 | | | |
| | Concentration coursework | 3 | <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 Lecture | 3 | EXSC XXX | Internship | 3 |
| PHYS 111L | Physics I Lab | 1 | | Concentration coursework | 3 |
| STAT 220 or SAT 301 | Statistics for the Behavioral Sciences or Biostatistics | 3 | | Integrative Seminar | 3 |
| WRIT 201 | Multimedia Communication | 3 | PHIL 499 | Philosophies of Good Life | 4 |

OTD Curriculum: Years 4-6

Program Director: Tina DeAngelis, EdD, OTR/L

Site Coordinator: E. Adel Herge, OTD, OTR/L, FAOTA

| | | | | | |
|----------------------|--|---|----------------------|---|--------|
| <u>Year 4 Fall</u> | | | <u>Year 5 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 5 Spring</u> | | |
| <u>Year 4 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 5 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 6 Fall</u> | | |
| <u>Year 4 Summer</u> | | | OT 720 | Doctoral Capstone Seminar A | 12 |
| OT 341 | Occupational Analysis & Evaluation - Fieldwork Level I | 2 | <u>Year 6 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 Contact Campus Website | Stephen Thomas, PhD, ATC 215-951-2657 East Falls 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, Learning Goals & Outcomes

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 Bachelors 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 |
| WRIT 101 | Written Communication | 3 | GCIT 2XX | Global Citizenship | 3 |
| AMST 114 | Topics in American Studies | 3 | ETHIC 2XX | Ethics | 3 |
| CHEM 103 | Chemistry I | 3 | ADIV 2XX | American Diversity | 3 |
| CHEM 103L | Chemistry I Lab | 1 | PHYS 112 | Physics II | 3 |
| MATH 102 or MATH 110 | Quantitative Reasoning: Pre-calculus or higher | 3 | PHYS 112L | Physics II Lab | 1 |
| PSHCH 101 | Intro to Psychology | 3 | ES XXX | Developing Interprofessional Team | 1 |
| <u>Year 1 Spring</u> | | | <u>Year 3 Fall</u> | | |
| ES 110 | Intro to Exercise Science | 3 | ES XXX | Exercise Physiology | 3 |
| WRIT 201 | Multimedia Communication | 3 | BIO 201 | Anatomy & Physiology I | 3 |
| PSYH 213 | Developmental Psychology | 3 | BIOL 201L | Anatomy & Physiology I Lab | 1 |
| CHEM 104 | Chemistry II | 3 | CGIS 300 | Contemporary Global Issues | 3 |
| CHEM 105 | Chemistry II Lab | 1 | ES 3XX | Nutrition (for fitness) | 3 |
| BIO 103 | Biology I | 3 | ES 3XX | Safety, First Aid & Injury Prevention | 3 |
| BIOL 103L | Biology I Lab | 1 | <u>Year 3 Spring</u> | | |
| | Concentration Coursework | 3 | BIO 202 | Anatomy & Physiology II | 3 |
| | Concentration Coursework | 3 | BIO 202L | Anatomy & Physiology II Lab | 1 |
| GDIV 2XX | Global Diversity | 3 | ES 3XX | Internship | 3 |
| PHYS 111 | Physics I | 3 | | Concentration Coursework | 3 |
| PHYS 111L | Physics I Lab | 1 | ISEM 3XX | Integrative Seminar | 3 |
| STAT 220 or STAT 301 | Statistics for the Behavioral Sciences or Biostatistics | 3 | PHIL 499 | Philosophies of the Good Life | 4 |
| BIO 104 | Biology II | 3 | | | |
| BIO 104L | Biology II Lab | 1 | | | |

DPT Curriculum: Years 4-6

Program Chair: Jane Fedorczyk, PT, PhD, CHT

| | | | | | |
|-------------------------|---|---|------------------------|--|---|
| <u>Year 4 Pre-Fall</u> | | | <u>Year 5 Fall</u> | | |
| PT 503 | Human Anatomy | 3 | PT 608 | Musculoskeletal Physical Therapy II | 4 |
| PT 504 | Human Anatomy Lab | 3 | PT 612 | Cardiovascular and Pulmonary PT II | 3 |
| PT 527 | Critical Inquiry I | 3 | PT 621 | Neuromuscular Physical Therapy I | 5 |
| PT 534 | PT Issues: Intro to the Profession | 1 | PT 628 | Capstone Project Physical Therapy I | 1 |
| PT 536 | PT Issues: The Language of Practice | 1 | PT 645 | Integrated Clinical Experience (ICE) III (1/2 class) | 2 |
| <u>Year 4 Fall</u> | | | PT 670 | Prosthetics and Orthotic Intervention | 3 |
| PT 506 | Biomechanics and Kinesiology | 4 | PT 680 | Introduction to Clinical Education | 1 |
| PT 516 | Neuroscience | 3 | <u>Year 5 Spring A</u> | | |
| PT 533 | Introduction to Physical Therapy Examination | 5 | PT 682 | Clinical Experience I | 4 |
| PT 538 | PT Practice Issues: Psychosocial Aspects of PT & PTs as Teachers and Learners | 2 | <u>Year 5 Spring B</u> | | |
| PT 539 | PT Practice Issues: Clinical Decision Making | 1 | PT 609 | Musculoskeletal III | 4 |
| PT 545 | Integrated Clinical Experience (ICE) I | 1 | PT 622 | Neuromuscular II | 3 |
| <u>Year 4 Spring</u> | | | PT 710 | Capstone in PT II | 1 |
| PT 513 | Pathophysiology I | 3 | <u>Year 6 Pre-Fall</u> | | |
| PT 518 | Physical Therapy Practice and the Movement System | 2 | PT 781 | Clinical Experience II | 6 |
| PT 546 | Integrated Clinical Experience (ICE) II | 1 | <u>Year 6 Fall</u> | | |
| PT 553 | Biophysical Agents | 3 | PT 632 | Healthcare Delivery Sys | 3 |
| PT 556 | Therapeutic Interventions | 3 | PT 764 | Pediatric Physical Therapy Practice | 3 |
| PT 624 | Critical Inquiry II | 2 | PT 700 | Differential Diagnosis | 2 |
| <u>Year 5 Pre- Fall</u> | | | PT 705 | Comprehensive Case Analysis I | 2 |
| PT 514 | Pathophysiology II | 2 | PT 711 | Capstone in PT III | 1 |
| PT 607 | Musculoskeletal Physical Therapy I | 4 | PT 736 | Business and Leadership in Physical Therapy Practice | 3 |
| PT 611 | Cardiovascular and Pulmonary PT I | 2 | PT 774 | Geriatric PT Practice | 2 |
| PT 613 | Pharmacology | 2 | <u>Year 6 Spring</u> | | |
| PT 661 | PT for the Integumentary System | 3 | PT 707 | Comprehensive Case Analysis II | 1 |
| | | | PT 782 | Clinical Experience III | 8 |

| | |
|--------------------------------------|---|
| <h1>Coaching In Context</h1> | |
| Advanced Practice Certificate | |
| Contact Campus Website | Mary Jane “MJ” Mulcahey, PhD Online https://www.jefferson.edu/university/rehabilitation-sciences/departments/outcomes-measurement/education/health-coaching-in-context.html |

Program Description, Learning Goals & Outcomes

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: 12-16 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, Learning Goals & Outcomes

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: 12-16 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 | Jane Fedorczyk, PT, PhD, CHT |
| Campus | Center City |
| Website | https://www.jefferson.edu/university/rehabilitation-sciences/departments/hand-upper-limb-rehabilitation.html |

Program Description, Learning Goals & Outcomes

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: 11 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 |

Neuroscience: Advanced Concepts for Evidence Based Practice

Graduate 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/neuroscience.html |

Program Description, Learning Goals & Outcomes

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: 12-16 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 | Susan Toth-Cohen, PhD, OTR/L |
| Campus | Online |
| Website | https://www.jefferson.edu/university/rehabilitation-sciences/departments/occupational-therapy/degrees-programs/advanced-practice-certificates/teaching.html |

Program Description, Learning Goals & Outcomes

As the need for occupational therapists increases, so does the demand for qualified OT educators to prepare the future workforce.

- Fundamental knowledge and skills to teach OT curricula in schools and other applied settings
- Courses are designed to interface with our OTD program and may be used for graduate credit toward a Doctorate degree

Curriculum: 12-16 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 |

Using Design In Healthcare Delivery

Advanced Practice Certificate

| | |
|------------------|---|
| Program Director | Mikael Avery, MArch, MS, OTR/L |
| Campus | Online |
| Website | https://www.jefferson.edu/university/rehabilitation-sciences/departments/design-in-healthcare-delivery.html |

Program Description, Learning Goals & Outcomes

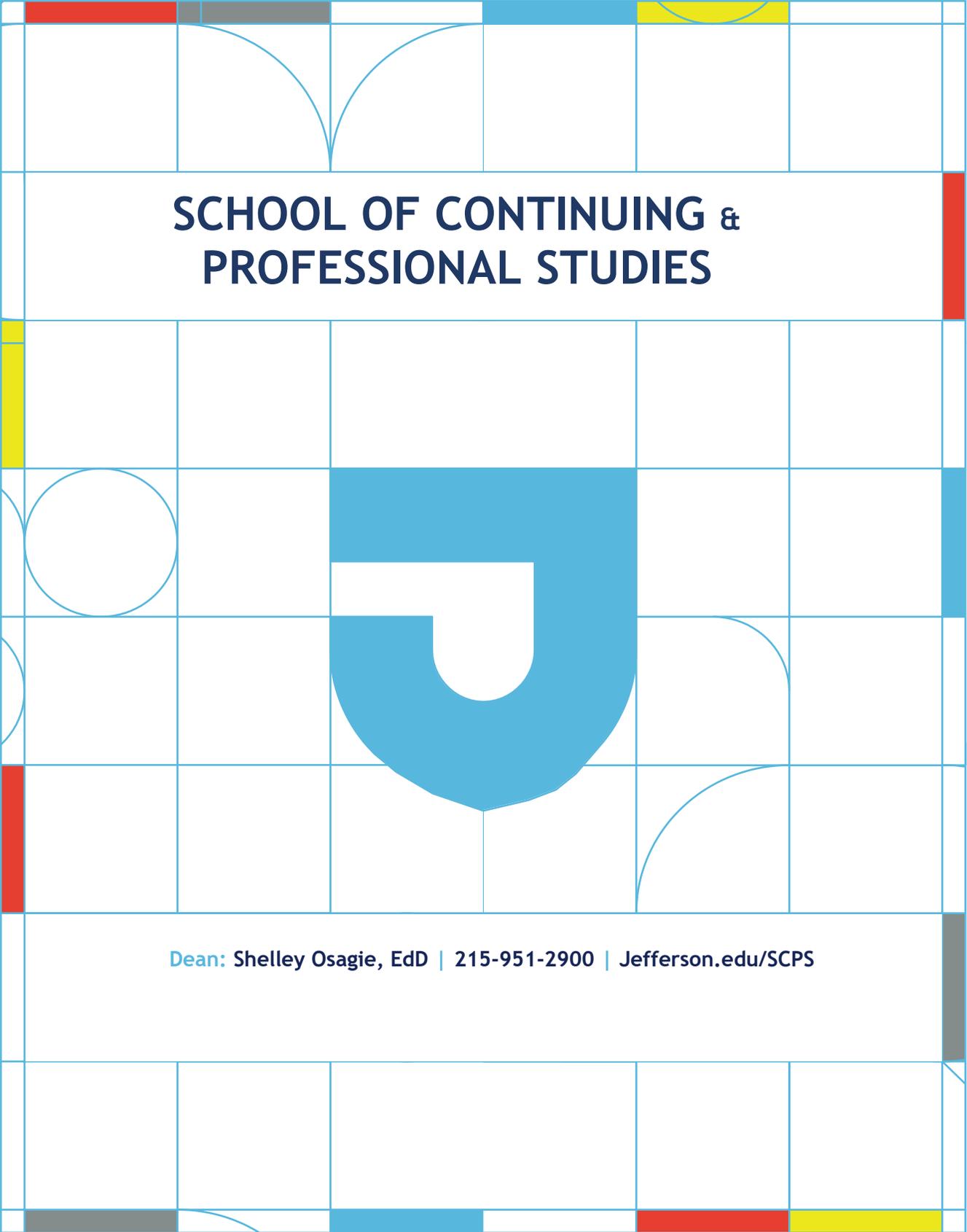
The Advanced Practice Certificate in Using Design in Healthcare Delivery was created to provide practicing occupational therapy practitioners and other healthcare professionals with specific knowledge in design principles and a distinct skill-set in design approaches and methods that will enhance their practice and expand inter-professional collaborative opportunities.

- Learn to apply design principles and strategies to enhance client intervention planning, implementation, and outcomes
- Role of health professionals within a design team
- Integration of design approaches and methods into healthcare practice
- Iterative nature of the design process, in which research, prototyping, testing, and redesign are interconnected
- Expand tool kit to include the application of design concepts and specific design strategies within their practice

Credits may be applied to Post-Professional OTD program offered at Thomas Jefferson University. Students may transfer credits from the certificate program to degree programs at other universities

Curriculum: 12-16 months, 12 credits

| <u>Core Curriculum</u> | | |
|------------------------|---|---|
| JCRS 740 | Design Approaches in Healthcare | 3 |
| JCRS 741 | New Methods for Assistive Technology Creation | 3 |
| JCRS 742 | Scaling Up and Finding a Market | 3 |
| JCRS 743 | Quality Improvement through Design | 3 |



**SCHOOL OF CONTINUING &
PROFESSIONAL STUDIES**

Dean: Shelley Osagie, EdD | 215-951-2900 | Jefferson.edu/SCPS

About Us

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 convenient locations, accelerated courses, flexible class times (evening, afternoon, and Saturday), online and hybrid course options, individualized advising, earning a degree or certificate is accessible and possible and attainable.

Locations

- Jefferson Bucks County 4800 E. Street Road, Trevoese, PA
- 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. |
| Individual Course(s) | 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 |
| Occupational Therapy | AS |

Bachelor's Degree Programs

| | |
|---------------------------------|----|
| Accounting | BS |
| Behavioral & Health Services | BS |
| Building & Construction Studies | 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 |

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 320 or CLCX 320 | Creativity in the Digital Age | 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 |

Undergraduate Certificate Programs

| Healthcare Information Systems Undergraduate Certificate | | | |
|---|---|--|---|
| Contact | SCPS@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 21.0-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 | CMST 212 | Database Management | 3 |
| | HCA 300 | Health Services Delivery and Organization | 3 |
| | HMIS 310 | Management Information Systems in Healthcare | 3 |
| | HMIS 311 | Informatics Resources & Technology for Health Services | 3 |
| | HMIS 401 | Network Management | 3 |
| | HMIS 402 | Systems Design | 3 |
| | HMIS 420 | Informatics Analysis and Utilization in HSOs | 3 |

Medical Coding & Data Quality Undergraduate Certificate

| | | | |
|----------------------------|--|--|---|
| Contact | SCPS@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 | <p>The 34.0-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.</p> | | |
| Curriculum | HSC 120 | Medical Terminology | 3 |
| | HSC 200 | Structure and Function of the Human Body | 3 |
| | HSC 201 | Human Disease and Treatment | 3 |
| | HSM 303 | Healthcare Law | 3 |
| | CODP 100 | Intro Health Information & Data Quality | 3 |
| | CODP 202 | ICD-10-CM | 3 |
| | CODP 203 | CPT Coding Concepts | 3 |
| | CODP 204 | Application of CPT Coding | 3 |
| | CODP 205 | ICD-10 PCS | 3 |
| | CODP 206 | ICD-10 Principles/Applications | 3 |
| | CODP 207 | Reimbursement Methodology | 3 |
| | CODP 210 | Coding PPE | 3 |

Medical Practice Management Undergraduate Certificate

| | | | |
|----------------------------|--|--|---|
| Contact | SCPS@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 | <p>The 36.0-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.</p> | | |
| Curriculum | ACCT 101 | Financial Accounting | 3 |
| | ACCT 102 | Managerial Accounting | 3 |
| | CMST 201 | Technology Apps for Healthcare | 3 |
| | ENGL 101 | Composition I | 3 |
| | ENGL 103 | Business and Technical Writing | 3 |
| | HCA 300 | Health Services Delivery and Organization | 3 |
| | HCA 302 | Healthcare Classification Systems | 3 |
| | HCA 303 | Business & Healthcare Law | 3 |
| | HCA 410 | Medical Practice Management | 3 |
| | HSC 120 | Medical Terminology | 3 |
| | MGMT 101 | Principles of Management and Organizational Behavior | 3 |
| | MGMT 102 | Human Resources Management | 3 |

Associate's Degree Programs

| Health & Human Services (AS) | |
|------------------------------|--|
| Contact | SCPS@Jefferson.edu |
| Campus Website | Restricted Enrollment: District 1199C Training & Upgrading Fund 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 (AS)

| | |
|----------------------------|---|
| Contact | SCPS@Jefferson.edu |
| Campus | Restricted Enrollment: Einstein |
| Website | https://www.jefferson.edu/university/continuing-professional-studies |
| Program Description | <p>This 63-credit program builds on transferable credits earned through successful completion of specified Albert Einstein Medical Center School of Radiologic Technology coursework.</p> <ul style="list-style-type: none"> • 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 HUMN 310 | Art in Context Or Globalization & World Politics | 3 |
| IT 201 | Learning and Technology | 3 |

Occupational Therapy (AS)

| | |
|----------------------------|---|
| Contact | SCPS@Jefferson.edu |
| Campus | Bucks County |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/associates-occupational-therapy.html |
| Program Description | <p>The A.S. 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:</p> <ul style="list-style-type: none"> ▪ 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 |

Bachelor's Degree Programs

*Students must earn a minimum of 120 credits to earn a bachelor's degree at Jefferson. Students must complete a minimum of 33 credits at Jefferson.

| Accounting (BS) | |
|----------------------------|---|
| Contact | SCPS@Jefferson.edu |
| Campus | Online |
| Website | https://online.jefferson.edu/online-degrees/bs-accounting/ |
| Program Description | The BS in Accounting features a curriculum focused on core accounting fundamentals as well as recent tax law changes and government regulations. The program will help graduates qualify to take the CPA exam. Whether you choose to be a part of the workforce or to continue with graduate study, the online BS in Accounting will help you achieve your goals. |

Curriculum: 120 credits

| <u>SCPS General Education Requirements</u> | | | <u>Creativity & Leadership Core</u> | | |
|--|---------------------------------------|---|---|---|----|
| WRIT 101 | Written Communication Elective | 3 | CLCX 310 | Creativity Foundations and Applications | 3 |
| | Written Communication Elective | 3 | CLCX 320 | Creativity in the Digital Age | 3 |
| STAX 211 | Finding & Evaluating Statistical Data | 3 | CLCX 330 | Project Management | 3 |
| | Science Elective | 3 | CLCX 340 | Leading Diverse Organizations | 3 |
| COMX 220 | Speaking to Lead in Digital Age | 3 | CLCX 350 | Creative Leadership | 3 |
| PHLX 222 | Applied Professional Ethics | 3 | <u>Major Requirements</u> | | |
| | Social Science Elective | 3 | ACCX 203 | Intermediate Accounting I | 3 |
| | <u>Foundation Requirements</u> | | ACCX 204 | Intermediate Accounting II | 3 |
| CCSX 101 | Learning Across the Lifespan | 3 | ACCX 303 | Accounting Theory & Practice | 3 |
| ACCX 111 | Financial Accounting | 3 | ACCX 309 | Federal Taxes I | 3 |
| ACCX 112 | Managerial Accounting | 3 | ACCX 316 | Cost Accounting I | 3 |
| BLWX 211 | Business Law | 3 | ACCX 409 | Auditing | 3 |
| ECNX 231 | Economic Decision Making | 3 | ACCX 412 | Advanced Accounting | 3 |
| FINX 323 | Financial Decision Making | 3 | ACCX 498 | Accounting Capstone | 3 |
| | | | | Free Electives | 42 |

Behavioral & Health Services (BS)

Contact SCPS@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

| <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 320/ CLCX 320 | Creativity in Digital Age | 3 |
| STAT 211/ STAX 211 | Finding & 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 | Major Requirements | | |
| PSYC 100/ PSYX 100 | Introduction to Psychology/ Fundamentals of Psychology | 3 | PSYC 251/ PSYX 251 | Abnormal Psychology | 3 |
| | <u>Foundation Requirements</u> | | PSYC 253/ PSYX 253 | Developmental Psychology | 3 |
| CCSE 101/ CSSX 101 | Learning Across the Lifespan | 3 | PSYC 254/ PSYX 254 | Psychology of Addiction | 3 |
| | | | PSYC 256/ PSYX 256 | Psychology of Trauma | 3 |
| | | | PSYC 262/ PSYX 262 | Counseling Psychology | 3 |
| | | | PSYC 263/ PSYX 263 | Interpersonal Relations & Small Group Dynamics | 3 |
| | | | BHS 351/ BHSX 351 | Behavioral Health Policies & Services | 3 |
| | | | BHS 353/ BHSX 353 | Human Services Administration | 3 |
| | | | BHS 361/ BHSX 361 | Applications of Behavioral Health Research | 3 |
| | | | BHS 498/ BHSX 498 | Behavioral & Health Services Capstone | 3 |
| | | | | Free Electives | 51 |

Building & Construction Studies (BS)

| | |
|----------------------------|---|
| Contact | SCPS@Jefferson.edu |
| Campus | East Falls |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/accelerated-bachelors-degree-completion/list-of-majors/building-and-construction.html |
| Program Description | The B.S. in Building and Construction Studies is designed for individuals who want to increase their employment opportunities and move into administrative and project management positions. You will benefit from coursework that combines building materials and methods, construction estimating and scheduling, construction contracts and drawings, and business and leadership practices. Graduates will be able to perform technical, operational and project management functions in small to large enterprises, as employees or entrepreneurs. Graduates also are prepared to further their education, such as in Jefferson's M.S. in Sustainable Design or M.S. in Construction Management. |

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 | CLC 320 | Creativity in the Digital Age | 3 |
| | Math elective | 3 | CLC 330 | Project Management | 3 |
| | Science elective | 3 | CLC 340 | Leading Diverse Organizations | 3 |
| COMM 220 | Speaking to Lead in the Digital Age | 3 | CLC 350 | Creative Leadership | 3 |
| PHIL 222 | Applied Professional Ethics | 3 | | <u>Major Requirements</u> | |
| | Social Science Elective | 3 | ARCH 204 | Great Buildings: Structure, Style & Context | 3 |
| | | | ARST 221 | Contemporary Preservation & Adaptive Reuse | 3 |
| | | | CMGT 104 | Intro to Estimating & Scheduling | 3 |
| CCSE 101 | Learning Across the Lifespan | 3 | CMGT 208 | Materials & Methods of Construction | 3 |
| FIN 201 | Accounting & Finance for Nonfinancial Leaders | 3 | CMGT 220 | Intro to Construction Drawings | 3 |
| | | | CMGT 302 | Construction Contract Administration | 3 |
| | | | CMGT 404 | ST: Project Management in Construction | 3 |
| | | | CMGT 498 | Building & Construction Studies Capstone | 3 |
| | | | | Free Electives | 54 |

Business Management (BS)

Contact SCPS@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/business-management.html>
<https://online.jefferson.edu/online-degrees/bs-business-management/>

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 320/ CLCX 320 | Creativity in Digital Age | 3 |
| STAT 211/ STAX 211 | Finding & 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 | | | |
| | 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 | | Free Electives | 48 |
| MKTG 212/ MKTX 212 | Principles of Marketing | 3 | | | |

Health Sciences (BS)

| | |
|----------------------------|---|
| Contact | SCPS@Jefferson.edu |
| Campus | Center City & East Falls |
| 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

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|---|-------------------------------------|---|--|--|----|
| <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 | CLC 320 | Creativity in the Digital Age | 3 |
| STAT 211 | Finding & Evaluating Stat Data | 3 | CLC 330 | Project Management | 3 |
| BIOL 121/122 | General Biology I/Lab | 4 | CLC 340 | Leading Diverse Organizations | 3 |
| COMM 220 | Speaking to Lead in the Digital Age | 3 | CLC 350 | Creative Leadership | 3 |
| PHIL 222 | Applied Professional Ethics | 3 | | | |
| | Social Science Elective | 3 | | | |
| | | | | <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 | Hlthcare Quality Improvement | 3 |
| CHEM 110/111 | Chemistry I/Lab | 4 | HSC 498 | Health Sciences Capstone | 3 |
| HSC 110 | Intro to Health Professions | 3 | | Free Electives | 37 |
| HSC 120 | Medical Terminology | 3 | | | |

Health Services Management (BS)

| | |
|----------------------------|--|
| Contact | SCPS@Jefferson.edu |
| Campus | Center City, 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 320/ CLCX 320 | Creativity in the Digital Age | 3 |
| STAT 211/ STAX 211 | Finding and Evaluating Statistical Data | 3 | CLC 330/ CLCX 330 | Project Management | 3 |
| | Science Elective | 3 | | | |
| COMM 220/ COMX 220 | Speaking to Lead in the Digital Age | 3 | CLC 340/ CLCX 340 | Leading Diverse Organizations | 3 |
| PHIL 222/ PHLX 222 | Applied Professional Ethics | 3 | CLC 350/ CLCX 350 | Creative Leadership | 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 |
| | | | | Free Electives | 51 |

Health Studies (BS)

Contact SCPS@Jefferson.edu
Campus Center City, 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 B.S. 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 free electives to personal goals.

| <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 320/ CLCX 320 | Creativity in Digital Age | 3 |
| | Math Elective | 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 | | | |
| | Social Science Elective | 3 | | | |
| | | | | <u>Health Studies Electives</u> | 30 |
| | | | | Choose electives from biological sciences, physical sciences, social sciences, or health professions | |
| | | | | <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 |
| | | | | Free Electives | 30 |

Human Resource Management (BS)

| | |
|----------------------------|---|
| Contact | SCPS@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 | <p>The BS in Human Resource Management will enable you to become a knowledgeable human resources 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.</p> |

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 320/ CLCX 320 | Creativity in Digital Age | 3 |
| | Math Elective | 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 | | <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 |
| | | | | Free Electives | 51 |

Information Technology (BS)

| | |
|----------------------------|---|
| Contact | SCPS@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>Creativity & Leadership Core</u> | | |
| | Written Communication Elective | 3 | CLC 310/ CLCX 310 | Creativity Foundations and Applications | 3 |
| | Written Communication Elective | 3 | CLC 320/ CLCX 320 | Creativity in the Digital Age | 3 |
| | Science Elective | 3 | CLC 330/ CLCX 330 | Project Management | 3 |
| | Math Elective | 3 | CLC 340/ CLCX 340 | Leading Diverse Organizations | 3 |
| COMM 220/ COMX 220 | Speaking to Lead Digital Age | 3 | CLC 350/ CLCX 350 | Creative Leadership | 3 |
| PHIL 222/ PHLX 222 | Applied Professional Ethics | 3 | | | |
| | Social Science Elective | 3 | | | |
| <u>Foundation Requirements</u> | | | <u>Major Requirements</u> | | |
| CSSE 101/ CSSX 101 | Learning Across the Lifespan | 3 | IT 211/ ITX 211 | Intro to Information Systems | 3 |
| FIN 201/ FINX 201 | Accounting & Finance for Nonfinancial Leaders | 3 | IT 221/ ITX 221 | Hardware and Operating Systems | 3 |
| | | | IT 241/ ITX 241 | Software Development | 3 |
| | | | IT 320/ ITX 320 | Database Management | 3 |
| | | | IT 321/ ITX 321 | Systems Analysis and Design | 3 |
| | | | IT 322/ ITX 322 | Network Management | 3 |
| | | | IT 323/ ITX 323 | Cloud Management | 3 |
| | | | IT 324/ ITX 324 | Cybersecurity Management | 3 |
| | | | IT 325/ ITX 325 | IT Process and Service Management | 3 |
| | | | IT 498/ ITX 498 | Information Technology Capstone | 3 |
| | | | | Free Electives | 48 |

Organizational Leadership (BS)

| | |
|----------------------------|---|
| Contact | SCPS@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 320/ CLCX 320 | Creativity in the Digital Age | 3 |
| | Math Elective | 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 | | | |
| | 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 |
| | | | | Free Electives | 60 |

Organizational Leadership (MS)

| | |
|----------------------------|---|
| Contact | SCPS@Jefferson.edu |
| Campus | Online |
| Website | https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/ms-organizational-leadership.html |
| Program Description | <p>The MS in Organizational Leadership (MSOL) will focus on the human processes side of leadership education. As the demand for leaders who are prepared to handle volatility, uncertainty, complexity, and ambiguity (VUCA) increases, the MSOL program will meet those needs by providing education that embraces the VUCA environment by teaching necessary skills to meet complexity head on.</p> <ul style="list-style-type: none"> • A dynamic academic community will be cultivated in this online program, with one residency per year, bringing organizational leaders together to brainstorm and create a learning community that will give back to their employer and city communities through vision, understanding, creativity, and adaptability/agility. • The program supports experiential and learner-centered teaching provided to each student in the form of independent and group projects, self-assessment, and reflective, purposeful and participatory learning. Learners will be able to customize their curriculum by choosing a concentration and adding another concentration, if they choose. <p>Concentrations:</p> <ol style="list-style-type: none"> 1. Organizational Leadership 2. Healthcare Leadership 3. Project Management 4. Human Capital 5. Data Science |

Curriculum: 36 credits

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| <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 | Organiz Performance Metrics | 3 | | | |

Strategic Leadership (MS)

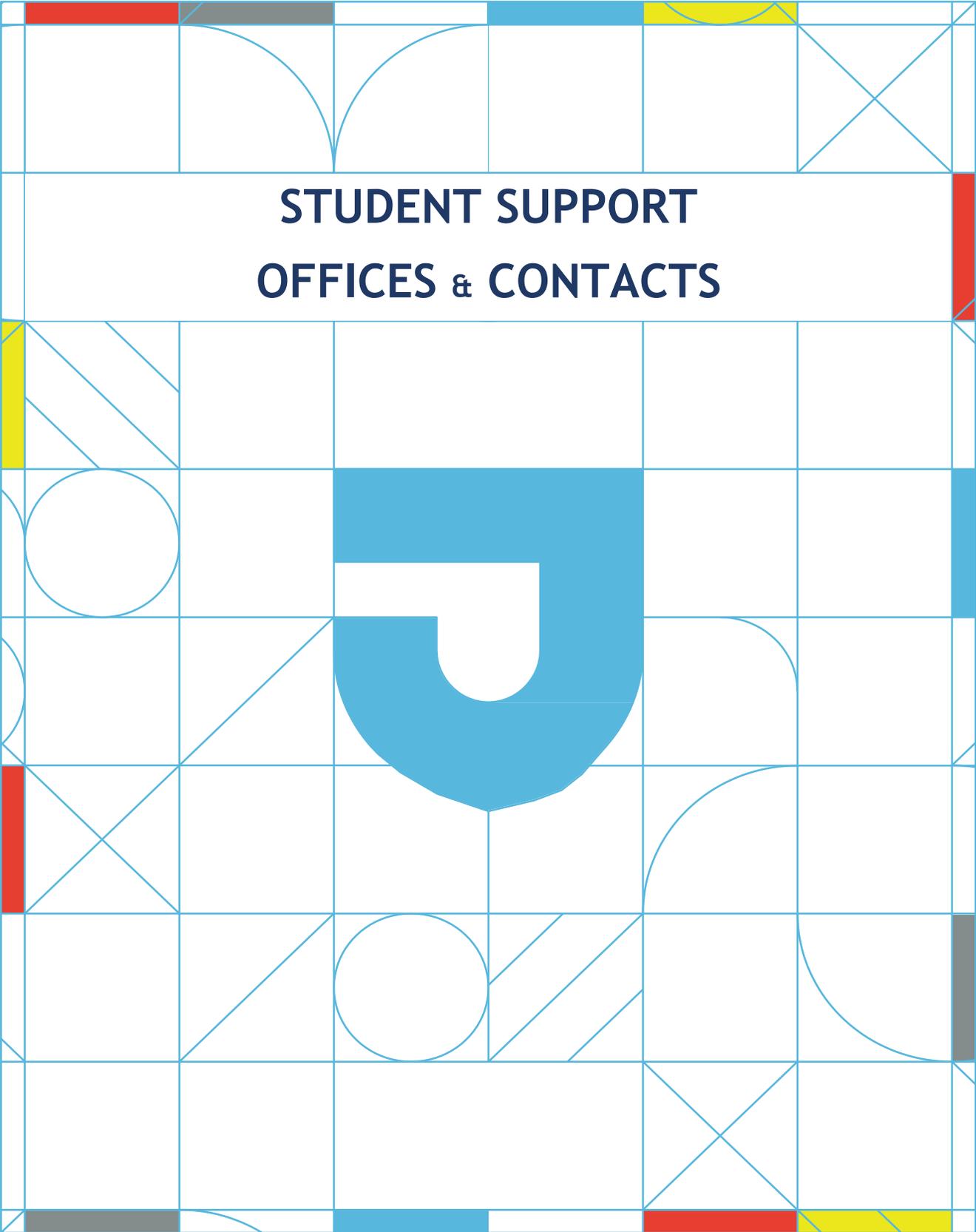
Contact SCPS@Jefferson.edu
Campus East Falls
Website <https://www.jefferson.edu/academics/colleges-schools-institutes/continuing-professional-studies/degree-options/doctor-of-management-strategic-leadership.html>

Program Description Designed by doctoral students, faculty, corporate, government, and not-for-profit stakeholders, this distinctive systems/complexity-based Doctor of Management (D.Mgt.) 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 D.Mgt. 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.

*The curriculum listed below will no longer be offered as of Fall 2021. A reimagination of this program is currently underway with new curriculum to be published in July 2022.

Curriculum: 45 credits

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| Conceptual Requirements | | | Conceptual Electives (Select 3) | | 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 | |
| Project-Based Requirements | | | Project-Based Elect (Select 2) | | 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 | |
| | | | Dissertation | | |
| | | | 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.

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| 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 |

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| <p>Athletics</p> | <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> |
| <p>Career Services</p> | <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> |
| <p>Clubs & Organizations</p> | <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> |
| <p>Community & Civic Engagement</p> | <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> |
| <p>Commuter Services</p> | <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> |

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| | | 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 selection 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 2021</p> <p>East Falls 215-951- 2660 White Corners, First Floor</p> |

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| | | 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> |

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| | | <p>East Falls 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>Center City 215-955-4760 Scott Memorial Library, Suite 643 https://www.jefferson.edu/university/provost.html</p> <p>East Falls 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>Center City 215-503-8734 Curtis Building, Suite 115 https://www.jefferson.edu/university/academic-affairs/tju/academic-services/registrar.html</p> <p>East Falls 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>Center City 215-955-8913 or 811 Orlowitz Residence, Suite 103 https://www.jefferson.edu/university/housing.html</p> <p>East Falls 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>Center City 215- 955-8888 Edison Bldg, Suite 1630 https://www.jefferson.edu/university/security.html</p> <p>East Falls 215-951-2999 Ravenhill, next to Partridge Hall https://www.eastfalls.jefferson.edu/security/</p> |

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| 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 2021</p> <p>East Falls 215-951-2708 Archer Hall, First Floor Website being revised summer 2021</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_affairs/contact.html</p> |

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| | | <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_calendingaring/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> |

