

*About the University*

# COURSE CATALOG

2014-2015



[catalog.drexel.edu](http://catalog.drexel.edu)

# About Drexel University

## Mission Statement

To serve our students and society through comprehensive integrated academic offerings enhanced by technology, co-operative education, and clinical practice in an urban setting, with global outreach embracing research, scholarly activities, and community initiatives.

## Yesterday, Today, and Tomorrow

In 1891, near the end of a long and prosperous life, Philadelphia financier and philanthropist Anthony J. Drexel founded the Drexel Institute of Art, Science and Industry. As society's need for technically proficient leaders grew, so did Mr. Drexel's institution, first becoming the Drexel Institute of Technology in 1936, and then Drexel University in 1970. Drexel University is privately controlled, nonsectarian, and coeducational.

Today, nearly 16,000 undergraduate and over 9,000 graduate students attend Drexel's nine colleges and five schools:

- College of Arts and Sciences (<http://drexel.edu/coas>), which grants bachelor's, master's, and PhD degrees
- LeBow College of Business (<http://www.lebow.drexel.edu>), which grants bachelor's, master's, and PhD degrees
- College of Computing & Informatics (<http://www.cci.drexel.edu>), which grants bachelor's, master's, and PhD degrees
- College of Engineering (<http://www.drexel.edu/coe>), which grants bachelor's, master's, and PhD degrees
- Pennoni Honors College (<http://drexel.edu/catalog/school/pennoni.htm>), which enriches the University experience for students from all majors with demonstrated academic achievement and broad intellectual interests
- Westphal College of Media Arts and Design (<http://www.drexel.edu/academics/comad>), which grants bachelor's and master's degrees
- Drexel College of Medicine (<http://www.drexel.edu/med>), which grants MD, master's and PhD degrees
- College of Medicine: School of Biomedical Science and Professional Studies, which grants master's and PhD degrees
- College of Nursing and Health Professions (<http://www.drexel.edu/cnhp>), which grants bachelor's, master's, and PhD degrees
- Goodwin College (<http://drexel.edu/catalog/UG/goodwin>), which grants interdisciplinary bachelor's and master's degrees, provides academic and professional support for all part-time undergraduate students, and offers continuing professional education courses
- School of Biomedical Engineering, Science, and Health Systems (<http://www.biomed.drexel.edu>), which grants bachelor's, master's, and PhD degrees
- School of Education, which grants bachelor's, master's, EdD and PhD degrees, and recommends issuance of Pennsylvania instructional and teaching certificates
- Close School of Entrepreneurship, providing curriculum and activities for students to learn and practice innovative behavior in alignment with all other colleges and schools at Drexel
- Center for Hospitality and Sport Management, which grants bachelor's and master's degrees

- School of Public Health (<http://www.publichealth.drexel.edu>), which grants master's and doctorate degrees
- Thomas R. Kline School of Law (<http://www.drexel.edu/law>), which prepares students for the practice of law by offering a JD degree

## Drexel Co-op

Drexel University has been a pioneer in cooperative education since 1919—operating one of the largest cooperative education programs in the nation. Undergraduates alternate on-campus study with full-time employment in fields related to their academic interests. More than 1,300 employer organizations in business, government, health care and education participate at locations in 30 states and 24 countries. The Steinbright Career Development Center (SCDC) is one of the most highly ranked co-op and career service organizations at any university in the country and works to ensure that students and alumni get the most from their experiential and career placement activities.

## Technology

Technology is integrated into every aspect of the Drexel educational experience, marking the university as a leader in educational innovation.

Drexel made history in 1983 when it became the first university to mandate that all students must have personal access to a microcomputer. This tradition of leadership in integrating state-of-the-art technologies into a Drexel education continued when Drexel, in early 1998, inaugurated the first totally wireless library in the nation. In 2000, Drexel again made history by becoming the nation's first major university to offer completely wireless Internet access across the entire campus.

A pioneer in online learning, Drexel offers distance education programs leading to certificates and degrees in areas including engineering management, business administration, information systems and library and information science. Drexel University Online has over 7,500 unique students from all 50 states and more than 20 countries pursuing one of more than 130 graduate and undergraduate degree and certificate programs. Over all, there are more than 13,000 Drexel University students taking at least one course online.

Drexel is widely recognized for excellence in technology-based, experiential learning and is ranked among the best national doctoral universities by *U.S. News & World Report* in its "America's Best Colleges 2013." Drexel ranked third in the *US News* 2013 poll of America's "Up-and-Coming Schools."

## Location

Drexel's 74-acre University City Main Campus is located in the vibrant University City district of Philadelphia, Pennsylvania. Drexel makes full use of its metropolitan setting by integrating Philadelphia and its resources into the classroom, co-op/internship experience, and student life, making it a model for other urban universities. The main campus is a 10-minute walk from Center City, the core of Philadelphia's commercial and business district.

Drexel teaches at six additional locations: the Center City Hahnemann Campus for the College of Nursing and Health Professions and the School of Public Health; the Queen Lane Medical Campus in East Falls for the College of Medicine; the Drexel at Delaware County Community College campus in Media, Pennsylvania; the Drexel at Burlington County College campus in Mount Laurel, New Jersey; the Drexel at Montgomery County Community College campus in Blue Bell, Pennsylvania; and the Sacramento, California, Center for Graduate Studies.

## Programs

### Civic Engagement

Civic engagement, participation in the public life of the community, is important to the Drexel University's strategic plan. Civic engagement can take many forms, from volunteerism doing community service, to electoral participation and advocacy.

Drexel University offers a Certificate in Civic Engagement, designed for those whose commitment to civic engagement extends beyond the civic-engagement requirement of University 101, enables students of all majors to attach a recognized body of civic engagement work to their transcript. The program will also provide students with an intellectual core and an element of critical thinking for future civic engagement activities. The program is administered by the Lindy Center for Civic Engagement (<http://www.drexel.edu/lindycenter>).

### Honors Program

The Pennoni College offers a number of academic options for its students. These opportunities are designed to be intensive, and are taught by faculty members who understand and accommodate Honors students' abilities and aspirations.

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These options include:

- **Honors Colloquia:** These interdisciplinary courses introduce students to topics not typically covered elsewhere. These courses are small, discussion-based, seminar style classes. Past Honors Colloquia topics include: The Hidden God in Cinema; Theory of Special Relativity; The Graphic Novel; Torture and Terrorism, and many others.
- **Honors-Section Courses:** These courses fulfill traditional major requirements but offer Honors credit. While the subject remains the same, the classes are taught to smaller groups, consisting entirely of Honors students, and on an advanced level that encourages discussion and practical application. Honors-section courses include, among other subjects, physics, English, business, general psychology, chemistry, and biology.
- **Honors Options:** With permission from their instructors and approval from the Honors Program, Honors students may elect to enhance non-honors courses to yield honors credit. The student and faculty member conducting may agree on the specific terms before the course begins and jointly submit a proposal to the Honors Program.
- **Independent Study:** Honors students frequently come across topics in their general coursework that they would like to investigate in greater detail. To accommodate this, the Honors College encourages students to study and research a topic of their choosing with guidance from a faculty member.

### The Great Works Symposium

The Great Works Symposium (<http://www.drexel.edu/greatworks>) is a series of team-taught, interdisciplinary courses, each one focused upon a great human achievement or important global problem. Each course typically has at least three instructors, representing three different academic disciplines, and typically there is a series of about ten guest lecturers, recognized experts on the topic, also representing a wide variety of disciplines and points of view. Each course is broader in its

content than what could be covered by any one academic discipline or any single textbook, but each has a concrete center of focus. Each topic is broad and important enough that it is relevant to the education of any student.

### ROTC

The Army Reserve Officers' Training Corps (<http://www.armyrotc.com/edu/drexel>), established at Drexel in 1918, is an integral part of the University. Army ROTC courses are open to all students, and enrollment alone does not carry a military obligation. Students selected for the advanced course (normally pre-junior, junior, and senior years) will complete their academic and military studies concurrently, and upon graduation will be commissioned as lieutenants in the United States Army, Army Reserve, or Army National Guard. Participation in the advanced course may qualify participants to receive financial aid through a series of scholarships and co-operative education programs. For further information, contact the Professor of Military Science, Drexel University, The Armory, 33rd and Market Streets, Philadelphia, PA 19104.

Drexel students are eligible to participate in the Naval Reserve Officers' Training Corps (<http://www.vpul.upenn.edu/nrotc>) (NROTC) through a cross-enrollment agreement with the University of Pennsylvania. All naval science courses are held on Penn's campus. The NROTC program enables a college student to earn a commission in the Navy or the Marine Corps while concurrently satisfying requirements for his or her baccalaureate degree. Scholarship and nonscholarship programs are available.

Drexel students are eligible to participate in the Air Force Reserve Officers' Training Corps (<http://www.sju.edu/afrotc>) (AFROTC) through a cross-enrollment agreement with St. Joseph's University. All aerospace studies courses will be held on the St. Joseph's campus. The AFROTC program enables a college student to earn a commission as an Air Force officer while concurrently satisfying requirements for his or her baccalaureate degree.

### Study Abroad

Drexel University's Study Abroad (<http://drexel.edu/catalog/school/special/study-abroad.htm>) programs are open to students in all disciplines who meet the qualifications of each individual program. Please see the study abroad website (<http://www.drexel.edu/studyabroad>) for eligibility requirements of each individual program and for the most up to date program offerings.

### Certification of Proficiency in a Foreign Language

The University awards an advanced-level Certification of Proficiency in a foreign language in recognition of exceptional ability in oral and written communication in that language. Certification is listed on the official college transcript.

Examinations leading to proficiency certification include listening comprehension, reading comprehension, and written analysis, and the ETS Achievement Test, which is also the qualifying examination for proficiency testing. Certification also requires successful completion of an extensive oral interview, with at least a "2" rating on the FSI/ACTFL rating scale. Certification indicates proven ability to function effectively in professional and social situations in a country in which the target language is spoken.

## Affirmative Action and Equal Opportunity

### University Policy: Affirmative Action and Equal Opportunity

It is the policy of the University to provide a working and learning environment in which employees and students are able to realize their

full potential as productive members of the University community. To this end, the University affirms its commitment to equal opportunity and nondiscrimination in employment and education for all qualified individuals regardless of race, religion, color, national origin, sex, age, sexual orientation, disability or applicable veteran status or any other characteristic protected by applicable federal or state law. Further, the University is committed to taking affirmative action to increase opportunities at all levels of employment and to increase opportunities for participation in programs and activities by all faculty, staff, and students.

Affirmative Action is directed toward racial and ethnic minorities, women, persons with disabilities, and Vietnam-era veterans. All member of the University community -- faculty, staff, and students -- are expected to cooperate fully in meeting these goals.

It is the policy of the University that no qualified individual with a disability shall, on the basis of the disability, be excluded from participation in University programs and activities. Disability is defined as any physical or mental impairment that substantially limits one or more major life activities; or having a record of such impairment; or being regarded as having such impairment. A qualified individual with a disability means an individual as defined above, who is capable of performing the essential functions of a particular job or of participating in a particular course of study, with or without reasonable accommodations for his/her disability. Reasonable accommodations are determined on a case-by-case basis.

# Accreditation

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Drexel University's educational programs are accredited by MSCHE (Middle States Commission on Higher Education).

## The Antoinette Westphal College of Media Arts and Design

- Architecture is one of the few part-time evening programs accredited by NAAB (National Architectural Accrediting Board).
- Design curricula are accredited by NASAD (National Association of Schools of Arts and Design).
- Media arts curricula, with the exception of the BS in Dramatic Writing, are accredited by NASAD (National Association of Schools of Arts and Design).
- The BS in Interior Design is accredited by CIDA (Council for Interior Design Accreditation).

## The Bennett S. LeBow College of Business

- The Bennett S. LeBow College of Business is accredited by AACSB (Association to Advance Collegiate Schools of Business).

## The College of Engineering

- The undergraduate programs for Architectural Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, Materials Science and Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.
- The Construction Management program is accredited by ACCE (American Council for Construction Education).
- The undergraduate Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

## The College of Arts and Sciences

- The Chemistry BS is certified by ACA (American Chemical Society).
- The Clinical Psychology PhD program is accredited by APA (American Psychological Association).
- The English Language Center is accredited by CEA (Commission on English Language Program Accreditation).

## The College of Nursing and Health Professions

- Nursing programs are accredited by the CCNE (Commission on Collegiate Nursing Education), and the PA State Board of Nursing.
- The Couple and Family Therapy MFT degree and Post-Master's Certificates are accredited by COAMFTE (Commission on Accreditation of Marriage and Family Therapy Education).
- The Creative Arts in Therapy MA degrees in Dance/Movement Therapy, Music Therapy, and Art Therapy are approved by the ADTA (American Dance Therapy Association), the AMTA (American Music Therapy Association), and the AATA (American Art Therapy Association), respectively.
- The Didactic Program in Nutrition is accredited by ADA (American Dietetic Association).
- The Health Services Administration program is certified by AUPHA (Association of University Programs in Health Administration).
- The Nurse Anesthesia program is accredited by COA (Council on Accreditation of Nurse Anesthesia Educational Programs).

- The Nutrition and Foods BS is accredited by ADA (American Dietetic Association, Commission on Accreditation of Dietetic Education).
- The Professional Physical Therapy (DPT) program is accredited by CAPTE (Commission on Accreditation in Physical Therapy Education).
- The Physician Assistant program is accredited by ARC-PA (Accreditation Review Commission on Education for the Physician Assistant).
- The Radiologic Technology program is accredited by JRCERT (Joint Review Committee on Education in Radiologic Technology).

## The College of Computing & Informatics

- The Computer Science BS and BA programs are accredited by the Computing Accreditation Commission (CAC) of ABET .
- The Information Systems BS is accredited by the Computing Accreditation Commission (CAC) of ABET . The College of Information Science and Technology was in the first group of schools to have their information systems programs be accredited by ABET.
- The Library and Information Science MS degree is accredited by ALA (American Library Association).

## The Drexel University College of Medicine

- The MD degree is accredited by LCME (Liaison Committee on Medical Education).
- The MS degree in Pathologists' Assistant program is accredited by NAACLS (National Accrediting Agency for Clinical Laboratory Sciences).

## The School of Public Health

- The School of Public Health is accredited by CEPH (Council on Education for Public Health).

## The School of Biomedical Engineering, Science and Health Systems

- The undergraduate biomedical engineering curriculum is accredited by the Engineering Accreditation Commission of ABET.

## The School of Education

- Teacher education programs leading to Pennsylvania State Teacher Certification for various K-12 specialties as well as Instructional Technology Specialist, School Principal, and School Superintendent certification programs are approved by the Pennsylvania Department of Education. Other state-approved programs include K-12 Library Science certification in collaboration with the College of Information Science and Technology and K-12 English as a Second Language Program Specialist in collaboration with the English Language Center.

## The Thomas R. Kline School of Law

- The Thomas R. Kline School of Law is accredited by ABA (American Bar Association).

Any student or prospective student may request a copy of the documents describing the institution's accreditation. This information is available in the Provost's Office and in the Financial Aid Office, both located in the Main Building.

# Tuition & Fees

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## Undergraduate

- Full-Time Undergraduate Programs (<http://www.drexel.edu/undergrad/financing/break-down>)
- Adult Education (<http://www.drexel.edu/em/goodwin/financialaid>)  
(Part-time, Saturday Scholars, and non-enrolling students)
- Drexel at Burlington County College (<http://www.drexel.edu/bcc/admissions/financing/tuition>)
- Drexel at Delaware County Community College  
(<http://www.drexel.edu/dccc/financing/cost>)
- Drexel at Montgomery County Community College  
(<http://www.drexel.edu/mccc/financing/cost>)
- Drexel University Online ([http://www.drexel.com/tuition/tuition\\_rates.aspx](http://www.drexel.com/tuition/tuition_rates.aspx))

## Graduate

Graduate Program Tuition, Fees and Expenses (<http://www.drexel.edu/grad/financing/tuition>) (Including College of Medicine)  
School of Law Tuition, Fees, and Expenses