Drexel University
Catalog 2008/2009

Undergraduate Catalog

Graduate Catalog

Archived Catalogs

Welcome!
This online catalog contains the curricula, programs, and policies for the colleges and schools that make up Drexel University. Our goal is to make it easier for Drexel University students to find the information they need quickly regarding their chosen academic path. Prospective students are invited to browse the catalog to help make important enrollment decisions. I hope you will enjoy perusing the broad range of course offerings at Drexel and use this resource to "shop" for courses that both contribute to your chosen major and also to your experiencing areas that are new or intriguing.

Sincerely,
Mark L. Greenberg
Provost

Disclaimer
Since University curricula, programs, and policies cannot be static in a changing environment, the information in this catalog is subject to change by the University at any time. Accordingly, neither this catalog nor any parts of it may be relied upon as a contract. The University may reproduce or modify this catalog, or parts of it, for distribution in other formats (for example, in other formats for computer access, or in college, school, or academic department publications). As a result, students, applicants, and other users of this catalog should consult with appropriate University Offices to verify the current text or status of policies, programs, descriptions of curricula, or other information in this catalog.

Occasionally, course description links in this catalog will take users to the top of a list of related courses, rather than to the specified course. This occurs when that particular course description is in the process of being updated for the following term.

Drexel University
Catalog 2008/2009

About the 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.

Today, nearly 12,500 undergraduate and over 6,000 graduate students attend Drexel's nine colleges and four schools:

- The College of Arts and Sciences, which grants bachelor's, master's, and Ph.D. degrees
- The Bennett S. LeBow College of Business, which grants bachelor's, master's, and Ph.D. degrees
- The College of Engineering, which grants bachelor's, master's, and Ph.D. degrees
- The College of Information Science and Technology, which grants bachelor's, master's, and Ph.D. degrees
- The Antoinette Westphal College of Media Arts and Design, which grants bachelor's and master's degrees
- The Goodwin College of Professional Studies, which grants interdisciplinary bachelor's degrees, provides academic and professional support for all part-time undergraduate students, and offers continuing professional education courses
- The School of Biomedical Engineering, Science, and Health Systems, which grants bachelor's, master's, and Ph.D. degrees
- The School of Education, which grants bachelor's, master's, and Ph.D. degrees, and recommends issuance of Pennsylvania instructional and teaching certificates
- The College of Nursing and Health Professions, which grants bachelor's, master's, and Ph.D. degrees
- The Drexel University College of Medicine, which grants M.D., master's and Ph.D. degrees
- The School of Public Health, which grants master's and Ph.D. degrees
- The Pennoni Honors College, which enriches the University experience for students from all majors with demonstrated academic achievement and broad intellectual interests
- The Earle Mack School of Law, which prepares students for the practice of law by offering a J.D. degree.

One of the first schools in the nation to adopt mandatory co-operative education programs, Drexel now administers one of the largest, with more than 4,800 students taking part in co-op/internships on an annual basis. Agreements with 1,500 business, industrial, governmental, and other institutions located in 27 states

and 11 foreign countries enable Drexel students to acquire practical experience related to college studies through periods of paid internships.

Located on 49 acres in Philadelphia's University City neighborhood, just minutes from Center City, Drexel is ideally situated for its valuable co-operative relationships with business and industry. The 45-building campus, which includes seven residence halls housing more than 2,500 students, is a vibrant mix of neoclassical architecture, such as the grand Main Building at 32nd and Chestnut Streets, and innovative classrooms and laboratories, such as those found in the Leonard Pearlstein Business Learning Center, completed in 2002. The University's educational programs are enhanced by the industrial, commercial, professional, and cultural activities of the nation's fifth-largest metropolitan area.

A unique academic niche is filled by the Drexel University College of Medicine, the nation's largest private medical school, which combines more than a century of excellence in medical education with Drexel's technological focus. Drexel also includes an outstanding college for nursing and the health professions and one of only two public health schools in Pennsylvania.

Drexel University is privately controlled, nonsectarian, and coeducational.

Accreditation

Drexel University
Drexel's educational program is accredited by MSCHE (Middle States Association of Colleges and Secondary Schools).

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 B.S. in Dramatic Writing, are accredited by NASAD(National Association of Schools of Arts and Design).

The B.S. in Interior Design is accredited by the 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
Engineering curricula are accredited by ABET (Accreditation Board for Engineering and Technology.

The Computer Science B.S. degree program is accredited by the Computing Accreditation Commission (CAC) of ABET(Accreditation Board of Engineering and Technology.

The College of Arts and Sciences
The Chemistry B.S. is certified by the American Chemical Society
The Clinical Psychology Ph.D. program is accredited by the American Psychological Association.

The English Language Center is accredited by CEA (Commission on English Language Program Accreditation).

The Nutrition and Foods B.S. is accredited by ADA (American Dietetic Association, Commission on Accreditation of Dietetic Education).

The College of Nursing and Health Professions
Nursing programs are accredited by NLNAC (National League for Nursing Accreditation Commission), CCNE (Commission on Collegiate Nursing Education), and the PA State Board of Nursing.

The Couple and Family Therapy M.S. and Ph.D. degrees are accredited by COAMFTE (Commission on Accreditation of Marriage and Family Therapy Education).

The Creative Arts in Therapy M.A. degrees in Dance/Movement Therapy, Music Therapy, and Art Therapy are accredited by ADTA (American Dance Therapy Association), AMTA (American Music Therapy Association), and AATA (American Art Therapy Association), respectively.

The Nurse Anesthesia program is accredited by the the Council on Accreditation of Nurse Anesthesia Educational Programs.

Rehabilitation and Physical Therapy programs are 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 Information Science and Technology
The Information Systems B.S. is accredited by the Computing Accreditation Commission (CAC) of ABET (Accreditation Board for Engineering and Technology). 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 M.S. degree is accredited by ALA (American Library Association).

The Drexel University College of Medicine
The M.D. degree is accredited by LCME (Liaison Committee on Medical Education).

The M.S. 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 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 Earle Mack School of Law
The Drexel University Earle Mack School of Law has been provisionally accredited by the Council of the Section of Legal Education and Admissions to the Bar of the American Bar Association, 321 North Clark Street, Chicago, IL 60610.

Students at a provisionally accredited law school and individuals who graduate while the school is provisionally approved are entitled to the same recognition given to students and graduates of fully approved law schools. Graduates of Drexel's law

school will be eligible to sit for the bar exam in any jurisdiction.

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.

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.

And in 2002 the University launched DrexelOne Mobile, a Web portal that allows students to retrieve personalized information via any Web-enabled handheld device.

Our students are able to access the Internet and Drexel's comprehensive system of information networks from anywhere on campus using a laptop computer in a fully wireless environment. Drexel students are the first in the U.S. to enjoy the best of both worlds—a campus network ranked by *Yahoo! Internet Life* magazine's "most wired" survey as number one in Philadelphia and number six nationwide, and an all-wireless environment where it's easy to access the network at anytime and from anyplace on campus.

Drexel Co-op
One of the nation's most established and successful experiential programs, Drexel Co-op: The Ultimate Internship® provides students with a unique combination of academic and professional problem-solving skills.

Quality Faculty
Dedicated to teaching and learning, Drexel faculty have reached the highest level of recognition for their research and scholarship.

About Philadelphia
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.

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.

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The Steinbright Career Development Center (SCDC)

Drexel Co-op
Cooperative education at Drexel enables full-time undergraduate students to alternate periods of classroom theory with professional experience prior to graduation. Participation in cooperative education is available in all academic programs and over 92% of the undergraduates participate in the program.

General Information
One of the major reasons undergraduate students choose Drexel is the opportunity to gain six to 18 months of career-related work experience integrated with their coursework. Cooperative education helps students explore and confirm their career choices.

Co-op assists students in several areas of career development, including self-assessment, career exploration, and career experiences leading to full-time employment. Students develop confidence, professionalism, and a sense of purpose.

All co-op students are assigned a co-op coordinator to assist with their co-op experience and job search. Freshmen and entering transfer students attend the mandatory co-op pre-registration sessions as well as the Co-op 101 course. This orientation is designed to assist students personally and professionally and to introduce them to career management. The orientation includes résumé writing, interview techniques, and an overview of how co-op works at Drexel. The goal of the Co-op 101 course is to prepare students for their cooperative education experiences and to develop lifelong career planning/job search skills and techniques.

Successful completion of the cooperative education experience is a graduation requirement for many of Drexel's undergraduate degree programs.

Students participate in the co-op interviewing process according to a designated co-op experience cycle (normally fall/winter or spring/summer). The fall/winter five-year co-op students begin searching for positions during the spring term of their freshman year. Students in a five year co-op program with a fall/winter co-op cycle may need to be available during the summer of the freshman year to continue searching for a co-op position. Available openings are advertised in SCDC.online, Drexel's web-based co-op and career servicing search tool. Throughout the job search process, students receive guidance from a co-op coordinator.

Coordinators work closely with employers, assisting them in determining their co-op needs and developing opportunities for co-op students, and they act as University contacts for co-op students. Upon completing a co-op experience and returning to classes, students meet with their co-op coordinators to discuss the work experience, submit the Employment Summary and Planner (ES & P), and determine a strategy for future experiences.

The SCDC will make every effort to find sufficient numbers of co-op employment positions for students, but the University cannot make any guarantee of a co-op assignment. The co-op process is competitive, and academic performance, skills, motivation, maturity, attitude, and potential will determine whether a student is offered an assignment. If a student experiences difficulty in securing a co-op position, the SCDC will assist the student in a continuing job search. Failure to obtain a co-op assignment does not entitle any student to a change of academic status, co-op cycle, refund, or adjustment of tuition and fee charges.

Schedule Options

Co-Op Schedule

■On-campus study

●Co-op/internship experience

❍Vacation

Four-year Non-co-op Program

	Fall	**Winter**	**Spring**	**Summer**
Freshman year	■	■	■	❍
Sophomore year	■	■	■	❍
Junior year	■	■	■	❍
Senior year	■	■	■	

Four-year Program with co-op: fall/winter cycle*

	Fall	**Winter**	**Spring**	**Summer**
Freshman year	■	■	■	❍
Sophomore year	■	■	■	■
Junior year	●	●	■	■
Senior year	■	■	■	

Five-year Program with co-op: fall/winter cycle*

	Fall	**Winter**	**Spring**	**Summer**
Freshman year	■	■	■	❍
Sophomore year	●	●	■	■
Pre-junior year	●	●	■	■
Junior year	●	●	■	■
Senior year	■	■	■	

*Most students are randomly assigned to either the fall/winter (shown above) or spring/summer (not shown) co-op cycle.

Graduation Requirements

To graduate, students must complete the total number of Drexel Co-op Units (DCUs) required for the program or major in which they are enrolled. The number of DCUs in the various programs ranges from 32 to 96. Sixteen DCUs are awarded for successful completion of each term of co-op. In addition, students are urged to meet with their coordinators at the end of each co-op experience.

Graduation Requirements

College	Co-op terms	DCUs
Arts and Sciences		
Five-year program	6	96
Four-year program	2	32

Business			
	Five-year program	6	96
	Four-year program	2	32
Engineering			
	Five-year program	6	96
	Four-year program	2	32
Goodwin College of Professional Studies			
	Four-year program	2	32
	Five-year program	6	96
Information Science and Technology			
	Five-year program	6	96
	Four-year program	2	32
Media Arts and Design			
	Four-year program	2	32
Nursing			
	Five-year program	6	96
	Four-year program	2	32

Student Transfer Policy

Students must agree to complete the minimum co-op education requirements of the major to which they are transferring. Before the initial co-op experience, transfer students must successfully complete the mandatory co-op orientation program including Co-op 101 taught by the Steinbright Career Development Center (SCDC) and at least two college terms in the new co-op major. This policy ensures that students understand and receive the full services of the SCDC before beginning a co-op experience. For the typical transfer student entering Drexel after completing two years at another institution, the following requirements apply:

Requirements for Transfers

College		Co-op terms	DCUs
Arts and Sciences			
	Five-year program	4	64
	Four-year program	2	32
Business			
	Five-year program	4	64
	Four-year program	2	32
Engineering			
	Five-year program	4	64
	Four-year program	2	34
Goodwin College of Professional Studies			
	Four-year program	2	34
Information Science and Technology			
	Five-year program	4	68
	Four-year program	2	34
Media Arts and Design			
	Five-year program	4	68
	Four-year program	2	34

Regardless of the number of credits they transfer to Drexel, transfer students in engineering must complete a minimum of two terms of co-op experience to graduate. This is a

requirement of the Accreditation Board for Engineering and Technology for those four-year colleges that present co-operative programs in engineering. A non–co-operative engineering degree can be awarded, with the approval of the Dean of Engineering and the Vice President of Enrollment Management, to those transfer students who cannot complete the minimum experience requirement.

International Students
In most cases, international students will be required to obtain work authorization to start a co-op position. Generally, with the appropriate work visas, international students are eligible for co-op positions.

Responsibilities of the Student
Students are responsible for knowing the regulations that apply to them as co-op students. These regulations are documented by a signed Student Co-op Agreement completed before each student's co-op period. Co-op experience is considered to be in the nature of laboratory work, and students are expected to take advantage of every possible opportunity to observe different aspects of the workplace and to gain experience.

Even though students work full-time while employed, they are officially registered with the Office of Academic Records and Operations and maintain their connections with the University, with all the privileges and responsibilities of students. They are required, however, to adjust themselves completely to the daily routine of the organizations where they are employed and to observe all their rules and regulations. University holidays, for example, are not necessarily holidays for students during their work experience. Students are requested to use their designated drexel.edu e-mail accounts to receive all university communications.

Salaries paid to co-op students are considered taxable income and should be reported as such.

Drexel co-op students are subject to the same principles of personal conduct whether they are on the Drexel campus or working many miles away. Drexel students are expected at all times to maintain behavioral standards that reflect favorably on themselves and on the University.

Cooperative Education Policies
Co-op positions are not guaranteed by the SCDC. Students are responsible for conducting an independent job search in conjunction with the job search available via Drexel's SCDC Online to optimize obtaining co-op employment.

All co-op experiences must be related to the student's major and pre-approved by the student's co-op coordinator.

Students are required to attend all interviews that have been granted by employers. Students may not miss classes or examinations for co-op interviews.

Students who participate in the ranking/optimal pairing process, must rank only those positions they would be willing to accept. Once paired, students must honor those commitments.

The SCDC communicates frequently with students via both US Mail and e-mail. Students must keep their mailing address up to date in DrexelOne and consistently check their Drexel e-mail at all times, even when on co-op. E-mail is a valid mode of official communication with students at Drexel. Students who choose to have their e-mail forwarded do so at their own risk; the University is not responsible for e-mail forwarded to any address other than the student's Drexel address. Failure to receive or read in a timely manner official University communications sent to a student's Drexel e-mail or postal address does not absolve them from acknowledging and complying with the content of the communication.

Co-op Cycles
A co-op cycle, once assigned, will not change for the student's entire academic career at the

University. Freshmen, during a specific time-frame, may be allowed to apply to swap their cycles. Cycle swaps are not permitted past the deadline.

Students must successfully complete the total number of Drexel Co-op Units (DCUs) designated for the program/major selected by the student. The total required DCUs may be reduced for some transfer students and/or students in combined-degree programs. The review of successful completion of co-op experiences and clearance for graduation are conducted by the academic department.

Co-op Eligibility
Students must maintain full-time status for the 2 terms immediately preceding co-op (5COP fall/winter freshmen are the exception) in order to be eligible for co-op participation and registration. Students who are not registered full-time the 2 terms immediately preceding co-op will not be eligible for co-op that academic year. Students will attend class during those scheduled co-op terms. More than one instance of ineligibility due to insufficient enrollment will result in permanent disqualification from the co-op program.

Co-op 101 is a 10-week, noncredit, pass/fail course that meets once a week. It is designed to help students with all aspects of career planning and the co-op job search. Passing the class is required for any student in a co-op program prior to beginning their first co-op experience.

Students who fail Co-op 101 once will need to retake the class the next available term that the course is offered prior to participating in their first co-op.

If a student fails Co-op 101 twice, he or she may be ineligible to participate in co-op at all, which could affect financial aid and billing. In addition, failing Co-op 101 twice may delay or prevent graduation.

Before and after each scheduled co-op experience, students must meet with their co-op coordinator to obtain authorization for their next job search. First time Co-op students must attend a group pre-registration meeting before their job search can begin; students returning from co-op must schedule an individual appointment with their Co-op Coordinator to review the results of their Employment Summary & Planner (ES&P). Students completing a final co-op should schedule a meeting to review their completed ES&P.

Students who receive a registration hold from any University office due to outstanding obligations to the University are not entitled to use Drexel.SCDConline services until the hold is resolved with the issuing office.

All paperwork associated with an independently-obtained co-op experience must be submitted to the student's coordinator and approved prior to beginning co-op employment.

International students must meet with International Students and Scholars Services (ISSS), 210 Creese Student Center, after obtaining a co-op position, but prior to beginning work in order to obtain work authorization. Students who work without prior work authorization from the ISSS will be considered out-of-status by U.S. federal regulation and are subject to consequences up to and including deportation. Questions about student status and responsibilities should be directed to: International Students and Scholars Services, 210 Creese Student Center.

Co-op Cycle Adjustments
The SCDC will register all students for the prescribed number of co-op terms, as required by the student's academic major, program, and concentration. However, some adjustments may be undertaken by the SCDS under certain circumstances, such as documented need for medical leave, documentation of deployment for active military service, and combined degree programs.

Departmental waivers will be granted for the following academic-progress reasons only: incomplete clinical rotations (Nursing), incomplete seminar work (Anthropology). Departmental waivers will not be accepted before the midterm of the term prior to the

scheduled co-op and not after the end of the first week of the co-op term.

Co-op Probation
While on co-op students continue to be under the jurisdiction of the University. Any breach of conduct committed by a student on co-op that would be cause for disciplinary action were the student on campus shall also be cause for disciplinary action while the student is on co-op. While working at a participating co-op employer's worksite, students are required to adhere to the employer's policies and procedures in addition to the University's policies and procedures. If students encounter difficulties with their employer or the University while participating in the co-op program, they are to contact their coordinator immediately.

Students who refuse to honor a co-op pairing, are dismissed from a co-op job, engage in inappropriate behavior anytime during the co-op process, violate employer/University policy or resign from a co-op position may be placed on co-op probation.

Co-op failures will result in a failed work term(s). The SCDC reserves the right to remove students from co-op programs. Students with more than one failure may not be eligible for further co-op participation. Students with failures may be given the option to change to an NCOP concentration.

Dropped for Poor Scholarship
The University Registrar informs the SCDC of those students who have been dropped from the University by the colleges due to poor scholarship. Students who are dismissed from the University due to poor scholarship during co-op terms will not receive credit for co-op. Instead, the co-op course will be removed from the student's academic record. Employers of co-op students who have been dropped for poor scholarship will be notified of the University's action against the student and all co-op agreements will be considered terminated.

Career Assessment and Counseling
The SCDC's services include individual career counseling; testing to help students choose a long-range career goal consistent with their abilities, interests, and personality traits; and information about appropriate career search techniques. All services are free of charge to active students.

Career Services
Career Services offers assistance to baccalaureate and advanced-degree candidates and to alumni in securing employment consistent with personal career goals and objectives. Services include:

- Individual career counseling, including testing to help students choose a long-range career goal consistent with their abilities, interests, and personality traits, and information about appropriate career search techniques.
- Group programs covering such topics as résumé writing, interview preparation, and job search strategies.
- A career resources collection and devoted SCDC Library Assistant at Drexel's Hagerty Library.
- The On-Campus Interview Program, which arranges on-campus interviews with employers from business and industry; education; and local, state, and federal government services.
- Two of the largest career fairs in the Delaware Valley—one in October, and one in April—for all students and alumni.
- The Employer-Directed Résumé Search.