

# Drexel University

## Catalog 2008/2009

### Table of Contents

#### The College of Arts and Sciences Graduate Programs

About the College of Arts and Sciences .....	2
--	---

#### Biological Sciences

M.S. in Biological Sciences .....	4
Ph.D. in Biological Sciences .....	6

#### Chemistry

About the Programs.....	7
M.S. in Chemistry.....	9
Ph.D. in Chemistry .....	11

#### Communication

M.S. in Communication.....	12
----------------------------	----

#### Environmental Policy

M.S. in Environmental Policy .....	17
------------------------------------	----

#### Environmental Science

About the Programs.....	20
M.S. in Environmental Science.....	23
Ph.D. in Environmental Science/Policy .....	25

#### Human Nutrition

About the Programs.....	26
M.S. in Human Nutrition.....	28
M.S. in Human Nutrition (Didactic Program in Dietetics Track).....	30
Ph.D. in Biological Sciences (Human Nutrition Research Area) .....	31

#### Mathematics

About the Programs.....	32
M.S. in Mathematics.....	34
Ph.D. in Mathematics.....	35

#### Physics

M.S. in Physics .....	38
Ph.D. in Physics .....	39

#### Psychology

M.S. in Psychology .....	40
Ph.D. in Clinical Psychology.....	43
Ph.D. in Psychology: Applied Cognitive and Brain Science.....	45
J.D./Doctoral Program in Law-Psychology .....	48

#### Publication Management

M.S. in Publication Management.....	52
-------------------------------------	----

#### Science, Technology and Society

M.S. in Science, Technology and Society .....	56
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# Drexel University

## Catalog 2008/2009

### **The College of Arts and Sciences**

#### **Mission Statement**

By pursuing excellence in research and scholarship, we educate our students to become ethical professionals and citizens with knowledge of and appreciation for the fundamental interactions among the humanities and the sciences in a fast-changing, challenging, and diverse world.

#### **About the College of Arts and Sciences**

The College of Arts and Sciences was established on July 1, 1990, with the merger of the College of Sciences and the College of Humanities and Social Sciences. The educational objectives of the college encompass a wide range of goals: to provide general educational courses for the University's undergraduates; to provide disciplinary study in the arts and sciences for our Bachelor of Science and Bachelor of Arts majors; to offer Master of Science and Doctoral programs in selected areas of faculty and research strength; to promote research, scholarships, and creative activities which expand disciplinary boundaries and to enhance faculty expertise and the quality of the university's instruction; and to improve the quality of life for the University's community through co-curricular programming in the arts and sciences.

Each undergraduate major offered by the College of Arts and Sciences combines disciplinary study with broad and useful preparation for a variety of careers as well as for further study in graduate or professional school. Each combines arts and sciences coursework with an emphasis on new and emerging technologies related to their respective fields.

All undergraduate majors in the college offer co-operative education program options, with special opportunities relating academic study to work experience, or internships.

The college is open to transfer students, but (for undergraduate students) transfer after the seventh term is not recommended. Applicants from another Drexel college may be admitted in any term of the academic year if they meet program requirements. Students should consult the Assistant Deans of the College of Arts and Sciences for further information. The College's dedicated staff of professional advisors work to enhance a student's educational journey through a comprehensive academic advising program.

For additional information, visit the The College of Arts and Sciences web site.

# Drexel University

## Catalog 2008/2009

### **The English Language Center**

As part of the College of Arts and Sciences, Drexel's English Language Center offers an intensive English program throughout the year. Besides classes in academic skills such as essay writing and oral presentations, the center offers courses in business English, English for academic purposes, computer skills in English, TOEFL preparation, and other subjects. Many graduate students begin their studies at Drexel in the English Language Center, particularly if they do not meet minimum TOEFL requirements (see the Special Language Enhancement Program, described below).

Interested applicants may call the English Language Center at 215-895-2022; fax: 215-895-6775; e-mail: [elc@drexel.edu](mailto:elc@drexel.edu).

### **The Special Language Enhancement Program**

Students who have good academic qualifications but whose TOEFL scores are below the minimum required by their department may be accepted to Drexel through the Special Language Enhancement Program (SLEP). SLEP students will be provided a program that includes English language study, Drexel courses, and academic advising.

# Drexel University

## Catalog 2008/2009

### Master of Science Program in Biological Sciences

#### Requirements

Forty-five credits are required for the M.S. in Biological Sciences. Soon after matriculation the student completes a plan of study with the advisor, outlining his or her specific program. Both thesis and non-thesis options are available. Conducting formal research necessary for the thesis is dependent upon the student finding a faculty member whom will serve as their Faculty Advisor and supervise a mutually agreed upon research project.

Students wishing to pursue Ph.D. candidacy are encouraged to elect the M.S. with thesis. After all other requirements are completed, the research M.S. student defends the thesis at a final oral examination. The nonthesis student takes a comprehensive examination.

The M.S. candidate may simultaneously obtain secondary education certification by including specified required courses. The minimum number of credits for this M.S. degree is 48.

Requirements for the M.S. Curriculum with Thesis		45.0 Credits
BIO 500	Biochemistry	3.0
BIO 532	Advanced Cell Biology	3.0
BIO 540	Readings in Molecular and Cellular Biology	3.0
BIO 635	Advanced Genetics & Molecular Biology	3.0
BIO 679	Issues in Scientific Research	3.0
BIO 997	Research in Bioscience	9.0
ENVS 506	Biostatistics	3.0
NFS 601	Research Methods	3.0
	Bioscience (BIO) or Environmental Science (ENVS) electives	15.0

Requirements for the Non-thesis M.S. Curriculum		45.0 Credits
BIO 500	Biochemistry	3.0
BIO 532	Advanced Cell Biology	3.0
BIO 635	Advanced Genetics & Molecular Biology	3.0
BIO 679	Issues in Scientific Research	3.0
ENVS 506	Biostatistics	3.0
	Bioscience (BIO) or Environmental Science (ENVS) electives*	30.0

\*Non-thesis students may elect to take up to 4 credits of BIO 997 **Research in Bioscience**.

#### Bioscience electives include:

BIO 530	Microbial Genetics	5.0
BIO 566	Endocrinology	4.0

BIO 610	<b>Biochemistry of Metabolism</b>	3.0
BIO 615	<b>Proteins</b>	3.0
BIO 620	<b>Biomembranes</b>	3.0
BIO 625	<b>Nucleic Acids</b>	3.0
BIO 631	<b>Bioinformatics I</b>	3.0
BIO 644	<b>Human Genetics</b>	3.0
BIO 646	<b>Stem Cell Research</b>	3.0
BIO 649	<b>Recombinant DNA Laboratory</b>	5.0
BIO 650	<b>Virology</b>	3.0
BIO 663	<b>Molecular Mechanics of Neurodegeneration</b>	3.0
BIO 670	<b>Medical Microbiology</b>	3.0
BIO 675	<b>Advanced Immunology</b>	3.0
BIO 680	<b>Special Topics: Parasitology</b>	3.0
BIO 680	<b>Special Topics: Biology of Neuron Function</b>	3.0

# Drexel University

## Catalog 2008/2009

### **Doctoral Program in Biological Sciences**

The Doctor of Philosophy in Biological Sciences is conferred in recognition of breadth of scholarship and scientific attainment plus demonstrated ability to complete original research. A minimum of 90 credits is required beyond the bachelor's degree. In addition to a qualifying examination, the Ph.D. student must pass a candidacy examination and an oral defense of his or her dissertation, which demonstrates the capacity to perform independent research. Both examinations are administered by the student's examining committee.

Contact the Department of Biology at (215) 895-2624 for more information.

# Drexel University

## Catalog 2008/2009

### Chemistry

#### General Information

The Chemistry Department offers graduate programs in analytical chemistry, inorganic chemistry, organic chemistry, physical chemistry, and polymer chemistry. The department also encourages interdisciplinary activities. Faculty members are active participants in the environmental engineering and science and biomedical science and engineering programs; others work with physicists and biologists in areas such as atmospheric science, biochemistry, and biophysical chemistry.

The chemistry faculty wants graduate students to understand the purpose of, and need for, fundamental research while working on problems of practical interest and application to the challenges facing mankind in the modern world. Areas of research include the use of digital electronic methods to analyze trace constituents of air and water, a study of the molecules of living systems, the effects of toxic chemicals and carcinogens, synthesis and characterization of compounds of medicinal and industrial interest, methods for studying macromolecules, and characterization of transient species using lasers.

The Chemistry Department strives to maintain a community of research scholars (faculty, postdoctoral fellows, and graduate and undergraduate students) that is large enough to provide a variety of experiences within chemistry, yet small enough to give each student individual attention. Both full- and part-time study are available.

# Drexel University

## Catalog 2008/2009

### **Chemistry**

#### **Requirements for Admission**

For admission to graduate study, the department requires a B.S. in chemistry or the equivalent. This requirement applies to full-time and part-time students working toward either the M.S. or the Ph.D. degree. All entering M.S. and Ph.D. students are required to take a series of two-hour exam in analytical, inorganic, organic, and physical chemistry to help assess their preparation for graduate work in chemistry. The scores obtained on these exams are used as a basis for course selection.

#### **Financial Assistance**

Graduate students at Drexel can obtain two main types of financial support: teaching assistantships and research assistantships. Teaching assistantships are available on a competitive basis to incoming students and are normally renewable for several years. All those requesting financial assistance must submit GRE scores.



# Drexel University

## Catalog 2008/2009

### Master of Science Program in Chemistry

#### General Requirements

The M.S. degree is awarded after satisfactory completion of a minimum of 45 credit hours in chemistry and related fields, at least 30 credits of which must be taken at Drexel. Both thesis and nonthesis options are available.

#### Course Requirements

The course requirements for both thesis and nonthesis options are one complete sequence in the major area of interest; one of the sequence courses from each of analytical, organic, polymer, and inorganic chemistry; and two courses in physical chemistry. The remaining credits may be chosen from graduate courses within the department or from other departments offering courses related to the student's major areas.

Major sequence (choose one of the following):		9.0 Credits
CHEM 521	Inorganic Chemistry I	3.0
CHEM 522	Inorganic Chemistry II	3.0
CHEM 523	Inorganic Chemistry III	3.0
or		
CHEM 530	Analytical Chemistry I	3.0
CHEM 531	Analytical Chemistry II	3.0
CHEM 755	Mass Spectrometry	3.0
or		
CHEM 541	Organic Chemistry I	3.0
CHEM 542	Organic Chemistry II	3.0
CHEM 543	Organic Chemistry III	3.0
or		
CHEM 557	Physical Chemistry I	3.0
CHEM 558	Physical Chemistry II	3.0
CHEM 555	Quantum Chemistry I	3.0
or		
CHEM 561	Polymer Chemistry I	3.0
CHEM 562	Polymer Chemistry II	3.0
CHEM 563	Polymer Chemistry III	3.0
Additional sequence courses*		15.0
Electives		21.0

\*One of which must be chosen from the following: CHEM 555 (Quantum Chemistry I) or CHEM 557 (Physical Chemistry I).

#### Thesis Option

Up to 9 credits of coursework may be replaced by either CHEM 997 or by sections of CHEM 680 involving laboratory research. No later than the spring term of the first

year of coursework, a student should choose a research advisor with whom to work in carrying out an original investigation in chemistry. The results will be written up in thesis form and submitted to an M.S. thesis committee consisting of the research advisor and two other departmental faculty appointed by the advisor. The acceptance by this committee of the M.S. thesis completes the thesis option requirements for the M.S. degree. Students in the M.S. program receiving financial aid from the department must elect the thesis option if they do not pursue the Ph.D. program at Drexel.

# Drexel University

## Catalog 2008/2009

### Doctoral Program in Chemistry

The Ph.D. degree is awarded in any of five main areas of chemistry: analytical, inorganic, organic, physical, or polymer chemistry. The degree recipient must demonstrate scholastic breadth in chemistry and contribute significantly to scientific advancement in a chosen major area. Requirements of the program include coursework, candidacy examinations, a chemical information retrieval or technical writing course, and successful completion of a publishable Ph.D. thesis.

#### Course Requirements

Ninety credits of graduate-level work must be completed for the Ph.D. degree. The Chemistry Department requires 30 credits of coursework in chemistry (outlined in the [Course Requirements](#) section of the M.S. program). The balance can be made up of advanced special topics courses and research credits.

#### Candidacy Requirements

To become a candidate for the Ph.D. in chemistry at Drexel, a student must pass a prescribed set of cumulative examinations and must present and successfully defend a research proposal in an area not directly related to his or her Ph.D. thesis research.

#### Cumulative Examinations

Written examinations designed to test a student's background in his or her major area are given monthly during the academic year and occasionally during the summer at the discretion of the faculty. Students should begin taking these examinations after having completed three courses in the major area (usually the main sequence courses). Full-time students normally begin taking these examinations in the fall term of their second year.

#### Research Proposal

The research proposal is an attempt to confront the student early on with the problem of defining and evaluating a worthwhile research program. The subject of the proposal is distinct from that of the thesis research. The examination at which the research proposal is defended is held no later than 90 days after the notification of a student's completion of the cumulative examination requirement. A written proposal is submitted to the committee no later than two weeks before the examination. A passing grade on this examination admits the student to Ph.D. candidacy.

#### Thesis

A Ph.D. thesis — the heart of the Ph.D. degree — must be written, accepted by the research supervisor, presented to a Ph.D. Thesis Examining Committee, and defended orally to the satisfaction of the Examining Committee. It is the responsibility of the student, not the research supervisor, to submit an acceptable thesis.

### **Master of Science in Communication**

#### **General Information**

Drexel's Master of Science in Communication prepares students for careers in a wide range of professional activities. The program specializes in three areas: technical communication, science communication, and public communication. Technical communication is for those seeking employment as technical writers, computer documentation specialists, and training specialists. Science communication has much to offer those who aspire to medical, science, and pharmaceutical writing. A concentration in public communication leads to careers in journalism and public relations. In addition, the program provides a strong foundation in theoretical approaches to communication. This theoretical basis is designed to ensure that, as the field changes, students will continue to have an intellectual framework for evaluating and implementing new technology and changing media.

Students can attend full time or part time, they can begin the program in any academic quarter, and they can complete all coursework in the evening. The program emphasizes flexibility, encouraging each student, in consultation with a faculty advisor, to fashion a particular course of study.

The program accommodates students from widely varying educational backgrounds: Many have backgrounds in science and mathematics; an equal number come from humanities-related areas. Some students pursue their degrees while already at work at demanding jobs in technical or scientific fields; others are new to the field. For students without previous work experience, the program requires a paid internship).

For more information, visit the College's Department of Culture and Communication home page.

# Drexel University

## Catalog 2008/2009

### **Master of Science in Communication**

#### **Requirements for Admission**

Applicants must meet the general requirements for admission to graduate studies. Applicants with a GPA below 3.0 must provide scores from the Graduate Record Examination. Prospective students must also submit with their applications a 1,500-word statement explaining why they want to enter the program. The program's screening committee carefully reads the essays to evaluate each applicant's writing skills and sense of purpose.

The program accommodates students from both science and humanities backgrounds. Some students pursue their degrees while already working in technical or scientific fields; others are new to the field. For students without appropriate prior work experience, the program features a paid 6-month internship.

# Drexel University

## Catalog 2008/2009

### Master of Science Program in Communication

#### General Requirements

The M.S. degree requires 45 credits of coursework, a professional portfolio of three to five items developed by the student, and six months of paid internship for those who lack significant experience in communication related fields.

As a final graduation requirement, each student must submit a professional exit portfolio. Based on coursework and professional assignments, the portfolio undergoes a rigorous process of review by faculty members and by a professional outside the university.

#### Curriculum

Students may use electives to increase communication skills, to broaden theoretical backgrounds, or to develop areas of specialization. Any appropriate graduate course offered in the University can serve as an elective if the student has sufficient background to take the course. In addition, the program offers its own elective courses including special topics (COM 690). Qualified students may also pursue independent study for elective credit in special cases.

Core Courses		Credits
COM 500	Persuasive Writing and Reading in Communication	3.0
COM 610	Theories of Communication and Persuasion	3.0

#### Concentrations

##### Technical Communication

COM 510	Technical Writing	3.0
COM 570	Technical and Science Editing	3.0
COM 620	Message Design and Evaluation	3.0
COM 630	Developing Software Documentation	3.0
COM 875	Ethics in Technical and Science Communication	3.0
	Electives	24.0

##### Science Communication

COM 520	Science Writing	3.0
COM 570	Technical and Science Editing	3.0
COM 620	Message Design and Evaluation	3.0
COM 670	Medical Writing	3.0
COM 875	Ethics in Technical and Science Communication	3.0
	Electives	24.0

##### Public Communication

COM 635	Writing for the World Wide Web	3.0
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COM 650	<b>Telecommunications Policy</b>	3.0
COM 660	<b>Investigative Journalism</b>	3.0
COM 680	<b>Public Relations Strategies</b>	3.0
COM 880	<b>Seminar: Ethics for Public Communication</b>	3.0
	<b>Electives</b>	24.0

# Drexel University

## Catalog 2008/2009

### **Internship**

Students who need professional experience consult with their advisors and the program director to develop a suitable internship. Normally, this placement begins after the student has completed at least half the required coursework. Students who already have the equivalent of six months of professional experience or who gain the equivalent by working part time during their course of study can request exemption from this requirement.

For more information contact:  
215-895-2455  
ccdept@drexel.edu



# Drexel University

## Catalog 2008/2009

### **Master of Science in Environmental Policy**

The graduate program in Environmental Policy prepares students for careers as policy analysts who have a strong commitment to environmental values, are scientifically and methodologically competent, and can work effectively in the democracy policy process with the various groups and institutions engaged in environmental issues.

To meet these requirements, students must complete a range of coursework designed to teach:

- knowledge of how policies are developed and implemented
- scientific and engineering basis of effective environmental policies
- an understanding of who the key players are in environmental politics, and how to work with them to accomplish environmental improvements.

For more information about this program, visit the M.S. in Environmental Policy web page.

# Drexel University

## Catalog 2008/2009

### **Master of Science in Environmental Policy**

#### **Requirements for Admission**

In addition to the general entrance requirements for all applicants, entrance to the M.S. Program in Environmental Policy requires a Bachelor's degree in Environmental Science, or in the natural, physical, or social sciences, or related engineering disciplines, along with additional course work as specified in the table below. Students entering from other programs at Drexel University or other institutions may be required to complete additional course work to meet the course prerequisites for the required courses.

For more details on the prerequisites and requirements for admission, visit the visit the M.S. in Environmental Policy web page.

# Drexel University

## Catalog 2008/2009

### Master of Science in Environmental Policy (M.S.E.P.)

#### Curriculum

<b>Core Courses</b>		<b>9.0 Credits</b>
ENVS 501	<b>Chemistry of the Environment</b>	3.0
ENVS 506	<b>Biostatistics</b>	3.0
ENVS 511	<b>Evolutionary Ecology</b>	3.0
or		
ENVS 521	<b>Environmental Health</b>	3.0
<b>Required Specialization Courses in Environmental Policy</b>		<b>27.0 Credits</b>
ENVP 522	<b>Environmental Law</b>	3.0
ENVP 523	<b>Environmental Regulations</b>	3.0
ENVP 650	<b>Resource and Environmental Economics</b>	3.0
ENVP 720	<b>Environmental Cost Benefit Analysis and Valuation</b>	3.0
ENVP 760	<b>Social Change &amp; Environmental Movements</b>	3.0
ENVP 771	<b>Theory and Practice of Environmental Policy Analysis</b>	3.0
ENVP 772	<b>Methods of Environmental Policy Analysis</b>	3.0
ENVP 773	<b>Practicum in Environmental Policy Analysis</b>	3.0
ENVP 774	<b>Economic Analysis of Environmental Policy</b>	3.0
<b>Recommended Electives</b>		<b>9.0 Credits</b>
ENVP 570	<b>International Environmental Policy</b>	3.0
ENVP 880	<b>Environment and Society</b>	3.0
ENVP 865	<b>Special Topics in Environmental Policy</b>	3.0

#### Plan of Study

Within the first quarter of study, a student must meet with an assigned advisor and work out a plan of study. An example plan of study form can be viewed on the Master of Science in Environmental Policy web page.

# Drexel University

## Catalog 2008/2009

### **Graduate Study in Environmental Science**

#### **General Information**

Environmental science is a multidisciplinary field in which we try to understand environmental problems and find solutions to them. This field requires understanding of a number of disciplines, including biology, chemistry, hydrology and climatology.

The environmental science program was created to focus on the need for scientists to aid in the development of local, national, and international environmental policy.

M.S. areas of concentration include: ecology, environmental assessment, environmental biotechnology, environmental risk management, paleoecology-geology, and toxicology and industrial hygiene. A student may alternatively craft a specialized plan of study outside of these strength areas under the guidance of an academic advisor.

The master's degree may be completed with either a thesis or non-thesis option. Those choosing to prepare a thesis must complete 45 credits (including 6 - 9 credits awarded for the thesis). Students choosing the non-thesis option must complete coursework totaling 48 credits. Most courses carry three credits.

Susan Cole is the Graduate Coordinator for Environmental Science. Susan Cole can be reached by telephone at 215-895-2905 or e-mail at [coless@drexel.edu](mailto:coless@drexel.edu). Her office is located in Room 109 of Disque Hall.

# Drexel University

## Catalog 2008/2009

### **Environmental Science**

#### **Requirements for Admission**

In addition to the general entrance requirements for all applicants, entrance to the M.S. Program in Environmental Science requires a Bachelor of Science degree in science, mathematics, or engineering. Minimally, students must have completed a year of calculus, general biology, general chemistry, physics, and, preferably, a semester of organic chemistry.

#### **Ph.D. Program**

Applicants to the doctoral program are judged on the basis of academic excellence and the alignment of their research interests with those of the faculty in the department. Prospective Ph.D. students are welcome to contact the program to discuss their research interests.

# Drexel University

## Catalog 2008/2009

### **Part-time Study**

The M.S. degree may be completed on a part-time basis. Most courses are scheduled in the late afternoon and evening, usually on a rotating basis from year to year. Part-time students should plan to take courses in the appropriate sequence to comply with the necessary prerequisites. Scheduling of course is dependent on student demand and faculty resources; however, most prescribed courses are offered at least once every other year (schedules are published each term). Required courses should be take at the first opportunity.

# Drexel University

## Catalog 2008/2009

### Master of Science in Environmental Science (M.S.E.S)

#### Curriculum

The M.S.E.S. degree requires three core courses that form the basis for further specialization. Students choose to complete the remainder of the program with an area of specialization and/or elective course options. Areas of specialization allow students to gain more depth in a particular area of interest. If student interest is not specifically addressed in any one area of specialization, elective courses may be used to build up an individualized plan of study. The program requires a total of 48 credits for non-thesis students and 45 credits for thesis students.

<b>Core Courses</b>		<b>9.0 Credits</b>
ENVS 501	<b>Chemistry of the Environment</b>	3.0
ENVS 506	<b>Biostatistics</b>	3.0
ENVS 511	<b>Evolutionary Ecology</b>	3.0

#### Areas of Specialization and Electives

Students may choose an area of specialization from below or design a unique plan of study combining one or more areas of interest. Students interested in applying their background in environmental science to environmental regulation or economics may also take electives in Environmental Policy

#### Ecology

##### *Recommended Specialization Courses*

ENVS 538	<b>Biodiversity and Conservation</b>	3.0
ENVS 583	<b>Ecology of the NJ Pine Barrens</b>	5.0
ENVS 614	<b>Advanced Community Ecology</b>	3.0
ENVS 613	<b>Advanced Population Ecology</b>	3.0
ENVS 630	<b>Aquatic Ecology</b>	3.0
ENVS 642	<b>Biophysical Ecology</b>	3.0
ENVS 690	<b>Marine Ecology</b>	3.0
ENVS 710	<b>Physiological Ecology</b>	3.0
ENVS 712	<b>Biophysical Ecology</b>	3.0
ENVS 722	<b>Tropical Ecology</b>	3.0
ENVS 865	<b>Special Topics: Molecular Ecology</b>	3.0
ENVS 865	<b>Special Topics: Animal Behavior</b>	5.0

#### Environmental Assessment

##### *Recommended Specialization Courses*

ENVS 516	<b>Sanitary Microbiology</b>	3.0
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ENVS 521	<b>Environmental Health</b>	3.0
ENVS 538	<b>Biodiversity and Conservation</b>	3.0
ENVS 608	<b>Fate of Pollutants in Air &amp; Water</b>	3.0
ENVS 624	<b>Microbial Ecology</b>	3.0
ENVS 630	<b>Aquatic Ecology</b>	3.0
ENVS 711	<b>Aquatic Toxicology</b>	3.0
ENVS 726	<b>Environmental Assessment</b>	3.0
ENVE 727	<b>Risk Assessment</b>	3.0

### **Environmental Biotechnology**

#### ***Recommended Specialization Courses***

BIO 500	<b>Biochemistry</b>	3.0
BIO 501	<b>Biochemistry Laboratory I</b>	2.0
BIO 530	<b>Microbial Genetics</b>	5.0
BIO 610	<b>Biochemistry of Metabolism</b>	3.0
ENVS 516	<b>Sanitary Microbiology</b>	3.0
ENVS 608	<b>Fate of Pollutants in Air and Water</b>	3.0
ENVS 624	<b>Microbial Ecology</b>	3.0
ENVS 726	<b>Environmental Assessment</b>	3.0
ENVS 757	<b>Bioremediation</b>	3.0

### **Environmental Risk Management**

#### ***Recommended Specialization Courses***

ENVP 522	<b>Environmental Law</b>	3.0
ENVP 523	<b>Environmental Regulations</b>	3.0
ENVS 608	<b>Fate of Pollutants in Air and Water</b>	3.0
ENVS 621	<b>Epidemiology</b>	3.0
ENVS 636	<b>Principles of Toxicology I</b>	3.0
COM 610	<b>Theories of Communication &amp; Persuasion</b>	3.0
ENVE 727	<b>Risk Assessment</b>	3.0
EGMT 531	<b>Economics for Engineering Management</b>	3.0

### **Paleoecology-Geology**

#### ***Recommended Specialization Courses***

ENVS 520	<b>Field Methods in Paleoecology</b>	3.0
ENVS 865	<b>Special Topics: Sedimentary Environments</b>	3.0
ENVS 575	<b>Invertebrate Paleontology</b>	4.0
ENVS 577	<b>Vertebrate Paleontology</b>	3.0
ENVS 865	<b>Special Topics: Paleobotany</b>	3.0

### **Certificate Program (offered online)**

The Certificate in Toxicology and Industrial Hygiene may be built into the M.S. program in Environmental Science.

ENVS 531	<b>Industrial Hygiene I</b>	3.0
ENVS 532	<b>Industrial Hygiene II</b>	3.0
ENVS 636	<b>Principles of Toxicology I</b>	3.0
ENVS 637	<b>Principles of Toxicology II</b>	3.0



# Drexel University

## Catalog 2008/2009

### **Ph.D. Program**

A Ph.D. can be pursued in the fields of Environmental Science (including Environmental Policy) and Environmental Engineering in specialties consistent with interests of the Environmental Science affiliated faculty.

To be awarded the Ph.D., students must complete a major research project publishable in a peer-reviewed journal. The degree requires a total of 90 credits; credits earned toward a master's degree may apply toward the 90. There is no prescribed coursework -- students must take courses needed to complete their research under guidance of an academic advisor. Students must successfully pass the qualifying examination, the candidacy examination, and a Ph.D. dissertation and oral defense.

# Drexel University

## Catalog 2008/2009

### Graduate Program in Human Nutrition

#### Undergraduate Prerequisites

The program's approach to graduate study in Human Nutrition is quantitative; therefore, applicants should have demonstrated competency in the coursework or its equivalent listed below.

Applying to the M.S. in Human Nutrition with Didactic Program in Dietetics (DPD) program requires special planning. Students are admitted during the Fall and Winter quarters only, however, all students must enroll in the prerequisite courses offered online at Drexel in the summer prior to their start term. For students starting in the winter quarter, the program will require at least 2-1/2 years to complete. The first consideration before submitting an application is whether all prerequisites have been met. Students are encouraged to apply as early as possible so that transcripts can be reviewed and prerequisites determined.

#### Prerequisites

- 1 year English composition and/or literature
- 1 semester general biology with lab to include cells and genetics
- 1 - 2 semesters general chemistry with lab
- 1 semester organic chemistry with lab
- 1 semester biochemistry with lab
- 1 semester human physiology with lab or 2 semesters anatomy & physiology with lab
- 1 semester basic food preparation (DPD track only)
- 1 semester quantity foods (DPD track only)
- 1 semester general psychology
- 1 semester statistic
- 1 semester nutrition

Prerequisite courses required through Drexel:

NFS 111 Introduction to Dietetics (1.0) (DPD track only)

NFS 220 Normal & Lifespan Nutrition (4.0)

#### Doctoral Program Admission Requirements

Human Nutrition is a part of the Department of Biology, and the Doctor of Philosophy requirements are those of the department. The Ph.D. degree requires a minimum of 90 credits beyond the bachelor's degree. Depending on the applicant's background, a qualifying examination may be required. Candidates must demonstrate appropriate scientific scholarship and the ability to conduct independent research representing a significant contribution to their chosen field. Ph.D. students must pass a candidacy examination and an oral defense of their dissertations. Applicants interested in the Ph.D. program should contact potential major professors for an appointment to discuss research interests.

# Drexel University

## Catalog 2008/2009

### **Graduate Program in Human Nutrition**

#### **Financial Assistance**

A limited number of teaching assistantships are available for students in the Bioscience Ph.D. program; contact the department head for more information. A limited number of research assistantships are available to Human Nutrition M.S. students (depending on funded research of individual faculty); contact faculty members for more information. Assistantships normally provide for waiver of tuition and a modest stipend. The University Financial Aid Office can provide information about the availability of work-study funds and higher education assistance loans.

# Drexel University

## Catalog 2008/2009

### Master of Science in Human Nutrition

45.0 Credits

#### General Information

The human nutrition major is concerned with nutrition science, the application of the principles of biochemistry, physiology, and biology to human nutritional needs in health and disease. Current research includes neuro-physiological determinants of food reward in obesity and eating disorders, physiological determinants of food intake memory, novel weight loss treatments, interactions of socioeconomic and food safety factors on food choice, cultural effects on food preference and choice, and nutraceutical effects on immunity. Graduate study in Human Nutrition is offered on a full-time and part-time basis.

#### Curriculum

Students are required to complete 21 credits of CORE courses and then select 24 credits of electives chosen from courses currently offered in Biology, Nutrition, Food Science, Environmental Science or Public Health after consulting with their advisor. Those students choosing the thesis option substitute 6 credits of research for two elective courses. Those students choosing the non-thesis option are required to pass a comprehensive exam before being granted their M.S.

Required courses		21.0 Credits
BIO 610	Biochemistry of Metabolism	3.0
BIO 641	Data Analysis in the Biosciences	3.0
NFS 530	Macronutrient Metabolism	3.0
NFS 531	Micronutrient Metabolism	3.0
NFS 601	Research Methods in Human Nutrition	3.0
NFS 629	Readings in Nutritional Science	3.0
BIO 679	Issues in Scientific Research	3.0

Nutrition Science Electives (Students select 3 of the following)		9.0 Credits
NFS 525	Nutritional Assessment	3.0
NFS 545	Nutrition in Critical Care	3.0
NFS 630	Nutrition Counseling	3.0
NFS 634	Women's Issues in Nutrition	3.0
NFS 640	Nutrition of the Schoolchild	3.0
NFS 641	Nutrition in Later Maturity	3.0
NFS 690	Community Nutrition	3.0
NFS 696	Methods of Teaching Dietetics	3.0
NFS 732	Weight Management and Eating Disorders	3.0

Electives	15.0 Credits
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In consultation with their graduate advisory committee or graduate advisor, students select electives from departmental or related course offerings. Some examples include the following:

BIO 670	<b>Medical Microbiology</b>	3.0
BIO 680	<b>Immunology</b>	3.0
BMES 604	<b>Pharmacology</b>	3.0
FDSC 560	<b>Advanced Food Chemistry</b>	3.0
ENVS 621	<b>Epidemiology</b>	3.0
ENVS 636	<b>Principles of Toxicology I</b>	3.0

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**Thesis Option**

Students selecting the thesis option may include up to 6 credits of NFS 997 Research in Nutrition and Food Sciences among their **electives**.

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**Non-thesis Option**

Students selecting the non-thesis option are required to pass a written comprehensive examination. Students electing the non-thesis option may include up to 3 credits of NFS 997 Research in Nutritional and Food Sciences among their **electives**.

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# Drexel University

## Catalog 2008/2009

### Master of Science in Human Nutrition Didactic Program in Dietetics (DPD) Track

45.0 Credits

The Didactic Program in Dietetics (DPD) provides the coursework that is required to become a Registered Dietitian. Students who want to become a Registered Dietitian must successfully complete coursework approved by the Commission on Accreditation for Dietetics Education of the American Dietetics Association (ADA). Drexel University is one of the first universities in the country to offer the DPD program on the graduate level.

The M.S. in Human Nutrition with the DPD option is a full- or part-time program with courses offered in the evening. The program is 45 credits with a written comprehensive exam and may be completed in 2 years with full-time study.

After completing the M.S. in Human Nutrition, students participating in this program will also receive a Verification Statement which shows successful completion of the DPD.

<b>Core courses</b>		<b>21.0 Credits</b>
BIO 610	<b>Biochemistry of Metabolism</b>	3.0
BIO 641	<b>Data Analysis in the Biosciences</b>	3.0
NFS 525	<b>Nutritional Assessment</b>	3.0
NFS 530	<b>Macronutrient Metabolism</b>	3.0
NFS 531	<b>Micronutrient Metabolism</b>	3.0
NFS 601	<b>Research Methods in Human Nutrition</b>	3.0
NFS 629	<b>Readings in Nutritional Science</b>	3.0

<b>Didactic Program in Dietetics (DPD) Requirements</b>		<b>24.0 Credits</b>
FDSC 506	<b>Food Composition and Behavior</b>	3.0
NFS 543	<b>Medical Nutrition Therapy I</b>	3.0
NFS 544	<b>Medical Nutrition Therapy II</b>	3.0
NFS 545	<b>Nutrition in Critical Care</b>	3.0
NFS 546	<b>World Nutrition</b>	3.0
NFS 630	<b>Nutritional Counseling</b>	3.0
NFS 680	<b>Foodservice Systems Management</b>	3.0
NFS 690	<b>Community Nutrition</b>	3.0

# Drexel University

## Catalog 2008/2009

### **Ph.D. in Biological Sciences**

**Research area: Human Nutrition**

#### **Doctoral Program**

It is possible for student with an interest in Human Nutrition to complete a Ph.D. in Biological Sciences while working in a laboratory of one of the Human Nutrition faculty. Since Human Nutrition is a part of the Department of Biology, the Doctor of Philosophy requirements are those of the department.

The Ph.D. degree requires a minimum of 90 credits beyond the bachelor's degree. Depending on the applicant's background, a qualifying examination may be required. Candidates must demonstrate appropriate scientific scholarship and the ability to conduct independent research representing a significant contribution to their chosen field. Ph.D. students must pass a candidacy examination and an oral defense of their dissertations. Applicants interested in the Ph.D. program should contact potential major professors for an appointment to discuss research interests.

# Drexel University

## Catalog 2008/2009

### **Mathematics**

The Department of Mathematics is a broadly based academic unit offering instructional programs and carrying on research activities in mathematics. Doctor of Philosophy and Master of Science degrees are offered.

Areas of research specialty among the faculty include applied mathematics, biomathematics, discrete mathematics, optics, analysis, number theory, numerical analysis, probability and statistics, matrix and operator theory, fluid mechanics, and partial differential equations.



# Drexel University

## Catalog 2008/2009

### **Mathematics**

#### **Requirements for Admission**

Applicants should hold a B.S. degree in mathematics or some related technical area, and meet the University's graduate admission standards. Students requesting financial aid are required to take the Graduate Record Examination (GRE). If the applicant satisfies all the standard admission requirements and has at least a 3.2 GPA, these requirements may be waived with the approval of the department. Because many of the core courses are two- or three-term sequences beginning in the fall, new students typically are admitted to the programs only in the fall term.

# Drexel University

## Catalog 2008/2009

### Master of Science Program in Mathematics

#### General Requirements

- Students must complete a minimum of 45 graduate credits for the M.S. degree. Of these, at least 15 courses, the following five are required:

#### Required courses

MATH 504	<b>Linear Algebra and Analysis</b>	3.0
MATH 505	<b>Principles of Analysis I</b>	3.0
MATH 506	<b>Principles of Analysis II</b>	3.0
MATH 533	<b>Abstract Algebra I</b>	3.0
MATH 630	<b>Complex Variables I</b>	3.0

- The remaining 10 courses may be any graduate mathematics courses. In some cases, course substitutions may be made with courses from other departments. Elective courses taken outside the department must receive prior departmental approval in order to be counted toward the degree.
- There are no thesis, language, or special examination requirements for the master's degree.
- Students seeking a dual M.S. must satisfy core requirements for both degree programs.
- Students should note that some departmental courses, such as Advanced Engineering Mathematics, are foundation courses and do not contribute to the departmental requirements for the degree. They do count toward the University requirements for a degree.

For additional information, contact the Department of Mathematics' Graduate Program.

### **Doctoral Program in Mathematics**

The Ph.D. degree in mathematics is awarded in any of the department's main areas of mathematics research. The degree recipient must demonstrate scholastic breadth as well as making a contribution to scientific advancement in their chosen field.

Requirements of the program include course requirements, qualifying and candidacy examinations, completion of a research proposal, and successful completion of a publishable Ph.D. thesis.

At least 90 credits of graduate-level work must be completed for the Ph.D. degree. This total includes coursework required for the Master of Science Program in Mathematics. The balance is made up of more advanced special topics courses and research credits.

Further details about the doctoral program are available on the Department of Mathematics' Graduate Programs web page.

# Drexel University

## Catalog 2008/2009

### Physics

#### General Information

The Department of Physics offers opportunities for students to study with leading researchers in astrophysics, biophysics, nonlinear dynamics, particle physics, and solid state physics, as well as to participate in international collaborations. Coursework for the M.S. and Ph.D. degrees includes advanced training in core areas of physics and in the topics of current research. Ph.D. students begin research early in the program, commencing thesis work in their second year of study.

To learn more about the graduate program in Physics visit  
<http://www.physics.drexel.edu/>.

# Drexel University

## Catalog 2008/2009

### **Physics**

#### **Admission Requirements**

For admission to the graduate programs, a bachelor's degree in an approved program is required with a minimum undergraduate GPA of 3.0/4.0 specified. The GRE general and physics subject tests are required for financial aid. Students from non-English speaking countries are required to demonstrate proficiency in English via the TOEFL exam. Minimum acceptable score for admission is 550, (80 IBT, 213 CBT) but opportunities for financial aid are greater for TOEFL scores near or above 600 (100 IBT, 250 CBT). Teaching assistants educated in non-English speaking countries must complete a special English program. See Drexel's Admissions site for more information.

# Drexel University

## Catalog 2008/2009

### **Master of Science Program in Physics**

#### **General Requirements**

Students who wish to complete only the master's degree are welcomed, and will find that the learning environment will allow them to broaden their professional understanding by exploring current topics and trends of physics in an interdisciplinary setting.

The requirement for the master's degree in physics is 45 graduate credits, with at least 30 credits taken in Mathematical Physics (PHYS 501 and PHYS 502), Dynamics I (PHYS 506), Electromagnetic Theory (PHYS 511 and PHYS 512), Quantum Mechanics (PHYS 516, PHYS 517, and PHYS 518), and Statistical Mechanics (PHYS 521 and PHYS 522). There are no thesis, language, or special examination requirements for the master's degree.

# Drexel University

## Catalog 2008/2009

### **Doctoral Program in Physics**

The Doctor of Philosophy degree is conferred in recognition of breadth of scholarship and scientific attainment, plus demonstrated ability to investigate scientific problems independently and efficiently. Doctoral students are required to take a minimum of 45 credits.

Ph.D. candidates must pass a candidacy examination, written and oral; satisfy a one-year residence requirement; and perform original research, write a satisfactory thesis describing that research, and defend this thesis in an oral examination. The usual schedule for physics graduate students consists of two years of course work, qualifying exams, research training and dissertation research. It is required by the university that a graduate student complete the Ph.D. degree within seven years after enrollment. The program expects that most students can complete the Ph.D. in five years of coursework and research work beyond the master's requirement of 45 credits.

An outline of the course curriculum is available in the Department's Graduate Program Handbook.

# Drexel University

## Catalog 2008/2009

### **M.S. in Psychology**

#### **General Information**

The M.S. degree in Psychology is a full-time program aimed at providing a post baccalaureate course of study to students interested in advanced education in scientific psychology in order to further their educational or career goals.

#### **Career Opportunities**

Opportunities include further graduate level training leading to a Ph.D., research careers, or other educational and administrative opportunities.



# Drexel University

## Catalog 2008/2009

### **M.S. in Psychology**

#### **Requirements for Admission**

Applicants must meet the general University requirements for admission, including a minimum 3.0 GPA (on a 4.0 scale) for the last two years of undergraduate study. Applicants to the graduate program in psychology are also required to submit scores from the Graduate Record Examination (GRE) general tests. Only applications for full-time status are considered.

Various factors are considered in choosing students. These include background in psychology, undergraduate (and, if applicable, graduate) GPA, GRE scores, and letters of recommendation. The preferred GRE scores are a minimum of 500 on both the verbal and quantitative portions; the average combined score of admitted students is approximately 1,200.

# Drexel University

## Catalog 2008/2009

### Master of Science in Psychology

#### Degree Requirements

The general requirements for earning the M.S. degree in psychology are as follows:

- Completion of all required coursework with a minimum grade point average of 3.0, with no grade lower than a B in any required (non-elective) course and no more than two course grades of C or lower.
- Successful completion of a minimum of 45.0 course credits.
- Successful completion of required research laboratory hours.
- Completion of an empirical thesis.
- Research laboratory: 8 hours/week for two years; 6 credits of independent study will pertain to the student's laboratory research.

For more information on specific requirements, consult the Master of Science in Psychology Program Handbook available from the Department of Psychology web site.

#### Required courses

PSY 510	Research Methods I	3.0
PSY 511	Research Methods II	3.0
PSY 512	Cognitive Psychology	3.0
PSY 530	Principles of Neuroscience	3.0
PSY 610	Data Analysis in Psychology	3.0
PSY 624	Behavior Analysis	3.0
PSY 690	MS Research I	3.0
PSY 691	MS Research II	3.0
PSY 692	MS Research III	3.0

Many additional electives are available to enhance individual plans of study.

# Drexel University

## Catalog 2008/2009

### **Ph.D. in Psychology: Clinical Psychology**

Drexel University offers the doctorate program with a specialization in Clinical Psychology with the primary goal of training clinical psychologists in the scientist-practitioner model. This model places equal emphasis on clinical research and the application of scientific principles. Students receive an appropriate, broad education in preparation for entry-level practice in professional psychology. This education includes training in intervention and assessment, as well as an introduction to the science and practice of clinical psychology. The program is accredited by the American Psychological Association.

For additional information about the Ph.D. in Clinical Psychology, review the Department of Psychology's Ph.D. Handbook.

# Drexel University

## Catalog 2008/2009

### **Ph.D. in Psychology: Clinical Psychology**

#### **Requirements for Admission**

Newly admitted students begin the program in September. All application materials must be received by the previous December 1 so that admission decisions can be made and offers extended by April 1. Only applications for full-time status are considered. Applicants to the graduate program in psychology are also required to submit scores from the Graduate Record Examination (GRE) general tests.

Admission is competitive and is limited to 10-12 students per year. There are normally 50 or so full-time students enrolled, representing various ethnic and cultural groups.

Various factors are considered in choosing students. These include background in psychology, research experience, potential for good performance as a psychologist in clinical and research work, undergraduate (and, if applicable, graduate) GPA and strength of program, GRE scores, letters of recommendation and excellent fit with the department's mission and with one or more specific research groups within the department. The preferred undergraduate GPA is 3.5 and the preferred GRE total score is approximately 1,300.

For more details, please visit the [Graduate Admissions Application Checklist](#).

# Drexel University

## Catalog 2008/2009

### Ph.D. in Psychology: Applied Cognitive and Brain Science

#### Requirements for Admission

Drexel University is seeking applicants with a strong academic record, as evidenced by their GRE scores (a quantitative plus verbal sum of 1250 or greater is desirable), strength of undergraduate institution and GPA (3.5 or greater is preferred). In addition, applicants should have outstanding letters of recommendation (from doctoral-level academic, research-oriented psychologists, if possible), high-quality research experience, and include a statement of purpose that convinces Drexel that a potential student is an excellent "match" for one or more of our research groups.

The deadline for completed applications is **December 1st**. Students should submit all required materials before the deadline.

Required materials checklist:

- Online application
- Transcripts – Official transcripts must be sent directly to Drexel from all the colleges/universities attended. Transcripts must be submitted in a sealed envelope with the college/university seal over the flap.
- GRE – Official copies of GRE scores must be sent to Drexel (test code 2194); Psychology subject test recommended
- Faculty Preference Ranking Form – This form is submitted through a secure web-based application. Please click on Faculty Preference Ranking Form to complete the form online
- Three letters of recommendation – Applicants download the Letter of Recommendation Form, complete Section I, and pass on to their evaluators. Evaluators should complete Section II and attach a letter of recommendation (printed on official letterhead). Both documents must be returned to you in a sealed envelope with the evaluator's signature across the seal.
- 1,500-word **personal statement** that discusses (and integrates) the applicant's research experiences and interests, and how these fit into the Drexel program and into a specific faculty's (or research group's) work in particular.
- Curriculum vitae/résumé
- Interview (if selected)
- [International applicants only] TOEFL – Official copies of TOEFL scores must be sent to Drexel (test code 2194)

*Please mail transcripts, letters of recommendation (with required form), personal statement, and curriculum vitae (résumé) to the address listed below:*

Drexel University  
Graduate Admissions  
Main Building  
3141 Chestnut Street  
Philadelphia, PA 19104

# Drexel University

## Catalog 2008/2009

### Doctoral Program in Psychology: Applied Cognitive and Brain Science (ACBS)

#### Curriculum

The Ph.D. program curriculum requires student to earn a minimum of 90 credits. Students completing the concentration in Applied Cognitive and Brain Science take all or most of their core courses within the first two years. The third and fourth years, following the receipt of the master's degree, successful passing of the qualifying examinations, and advancement to doctoral candidacy, will be spent in enrichment or specialization courses negotiated with their research supervisor and in research activities.

The following section outlines the courses required for graduation for entering Bachelor's-level students.

#### Requirements

##### First Year

<i>Fall</i>		<b>Credits</b>
PSY 530	<b>Principles of Neuroscience</b>	3.0
PSY 610	<b>Data Analysis in Psychology</b>	3.0
PSY 560	<b>Teaching in Psychology</b>	1.0

##### *Winter*

PSY 617	<b>Empirical Foundations of Unconscious Processes</b>	3.0
<b>or</b>		
PSY 865	<b>Special Topics in Psychology: EEG</b>	
PSY 710	<b>Data Analysis II: Multivariate Methods</b>	3.0
PSY 712	<b>History and Systems of Psychology</b>	3.0

##### *Spring*

PSY 510	<b>Research Methods in Psychology</b>	3.0
PSY 517	<b>Social Psychology</b>	3.0
<b>or</b>		
PSY 518	<b>Social Cognition in Clinical Psychology</b>	
PSY 711	<b>Data Analysis III: Advanced Topics</b>	3.0

##### Second Year

##### *Fall*

PSY 512	<b>Cognitive Psychology</b>	3.0
PSY 516	<b>Developmental Psychology</b>	3.0
<b>or</b>		
PSY 812	<b>Cognitive Neuroscience</b>	
	<b>Advanced elective</b>	3.0

##### *Winter*

PSY 511	<b>Research Methods in Psychology I</b>	3.0
PSY 898	<b>Master's Thesis in Psychology</b>	3.0
	<b>Advanced elective</b>	3.0

**Spring**

PSY 614	<b>Problem-Solving and Creativity</b>	3.0
or		
PSY 630	<b>Psychopharmacology</b>	
PSY 898	<b>Master's Thesis in Psychology</b>	3.0
	<b>Advanced elective</b>	3.0

**Sample Advanced Electives\***

PSY 516	<b>Developmental Psychology</b>	3.0
PSY 517	<b>Social Psychology</b>	3.0
PSY 518	<b>Social Cognition in Clinical Psychology</b>	3.0
PSY 562	<b>Consciousness</b>	3.0
PSY 612	<b>Psychology of Human-Computer Interaction</b>	3.0
PSY 614	<b>Problem-Solving and Creativity</b>	3.0
PSY 616	<b>Motivation and Emotion</b>	3.0
PSY 617	<b>Empirical Foundations of Unconscious Processes</b>	3.0
PSY 621	<b>Theories of Personality</b>	3.0
PSY 630	<b>Psychopharmacology</b>	3.0
PSY 632	<b>Sensory and Motor Systems</b>	3.0
PSY 648	<b>Forensic Psychology/Forensic Assessment I</b>	3.0
PSY 649	<b>Forensic Assessment II</b>	3.0
PSY 720	<b>Health Psychology</b>	3.0
PSY 730	<b>Criminal Law and Psychology</b>	3.0
PSY 732	<b>Law and Mental Health</b>	3.0
PSY 746	<b>Neuropsychological Evaluation: Children and Adolescents</b>	3.0
PSY 812	<b>Cognitive Neuroscience</b>	3.0
PSY 840	<b>Models of Memory</b>	3.0
PSY 865	<b>Special Topics in Psychology: Technologies in Psychology</b>	3.0
PSY 865	<b>Special Topics in Psychology: Autistic Spectrum Disorders</b>	3.0
PSY 865	<b>Special Topics in Psychology: EEG</b>	

For more information on the Ph.D. program requirements, consult the Ph.D. Program Handbook available from the Department of Psychology's web site.

# Drexel University

## Catalog 2008/2009

### Joint J.D./Ph.D. Law-Psychology Program

The Earle Mack School of Law and the Department of Psychology in the College of Arts and Sciences have established a joint and integrated J.D./Ph.D. Program in Law and Psychology. The program melds two already ongoing successful endeavors, the JD degree in the school of law and the Ph.D. in clinical psychology in the department of psychology.

Students in the program complete the 130 credits required for graduation from the law school and the 91 credits required to complete the doctorate. The program allows those students who wish to pursue professional degrees in both law and psychology a more efficient plan of study. The program is designed to be completed in seven (7) years, including required psychology practica, a year's internship in an American Psychological Association accredited predoctoral mental health/forensic setting, a masters thesis, a doctoral dissertation, 20 hours per week of cooperative training and 50 hours of pro bono service in law.

Visit the Department of Psychology web site for more information. Students who are accepted into the J.D./Ph.D. program will receive full tuition remission for all coursework, plus a guaranteed annual stipend that is currently at least \$9,000 per year for all six years they are at the university prior to completing the clinical internship.

#### Curriculum

Law and psychology are related in many significant ways, yet few people are trained and skilled to strengthen this relationship. Many institutions permit students to pursue both degrees in an informal, uncoordinated manner. By contrast, Drexel University offers a carefully developed, integrated, conceptually unified program so that they acquire a mature understanding of the interaction between the two disciplines.

At the conclusion of the program, students are eligible for admission to the bar and, after completing the postdoctoral requirement for supervised experience in a given state, licensure as a psychologist.

The curriculum consists of five elements:

- Core programs in law and psychology
- Interdisciplinary courses such as Introduction to Law and Psychology, Social Science Applications to Law, Law and Mental Health, Research in Law and Psychology, and Forensic Assessment
- Legal clinics and psychology practica and internships that combine knowledge from both fields in a practical setting
- Electives in both fields, such as Health Law, Medical Malpractice, Privacy, Behavior Therapy, and Clinical Decision Making
- The option for employment one summer in a legal setting, such as a public-interest law firm, governmental agency, or private law firm.

**Course**

**Credits**

**First Year**



***Fall Term***

LAW 511	Introduction to Law and Legal Methods	2.0
LAW 601	Legal Methods I: Research and Writing	3.0
LAW 604	Torts I	3.0
LAW 608	Civil Procedure I	4.0
PSY 721	Principles of Psychotherapy	3.0

***Winter Term***

LAW 605	Torts II	4.0
LAW 609	Civil Procedure II	3.0
LAW 610	Property I	4.0
LAW 616	Introduction to Interviewing, Negotiations, and Counseling	2.0
PSY 520	Psychopathology	3.0

***Spring Term***

LAW 602	Legal Methods II: Introduction to Persuasion	2.0
LAW 611	Property II	3.0
LAW 612	Criminal Law	5.0
PSY 510	Research Methods in Psychology I	3.0

**Second Year**

***Fall Term***

LAW 606	Contracts I	4.0
PSY 514	Learning Foundations of Behavioral Assessment	3.0
PSY 530	Principles of Neuroscience	3.0
PSY 610	Data Analysis in Psychology	3.0
PSY 865	Psychopathy	3.0

***Winter Term***

LAW 607	Contracts II	3.0
PSY 522	Intellectual Assessment	3.0
PSY 620	Personality Assessment	3.0
PSY 710	Multivariate Methods in Psychology	3.0
PSY 722	Psychotherapy Theories	3.0

***Spring Term***

LAW 614	Constitutional Law I	5.0
PSY 515	Behavioral Assessment II	3.0
PSY 550	Multicultural Perspectives	3.0
PSY 711	Data Analysis III: Advanced Topics	3.0

**Third Year**

***Fall Term***

LAW 625	Criminal Procedure: Investigations	4.0
LAW 630	Evidence	5.0
PSY 512	Cognitive Psychology	3.0
PSY 732	Law and Mental Health	3.0

***Winter Term***

LAW 617	Constitutional Law II	4.0
PSY 712	History and Systems of Psychology	3.0

	<b>Advanced Problems in Mental Health Law (proposed)</b>	3.0
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*Spring Term*

LAW 670	<b>Family Law</b>	4.0
PSY 517	<b>Social Cognition in Clinical Psychology</b>	3.0
PSY 540	<b>Principles of Neuropsychology</b>	3.0
PSY 648	<b>Forensic Psychology/Forensic Assessment I</b>	3.0

**Fourth Year**

*Fall Term*

LAW 622	<b>Professional Responsibility</b>	3.0
LAW 700	<b>Health Law I: Regulating Quality and Autonomy</b>	4.0
PSY 524	<b>Professional Issues and Ethics</b>	3.0
PSY 649	<b>Forensic Assessment II</b>	3.0
	<b>Social Science Applications to Law (proposed)</b>	3.0

*Winter Term*

LAW 680	<b>Education Law</b>	3.0
LAW 701	<b>Health Law II: Regulating Cost and Access</b>	4.0
PSY 865	<b>Psychopathy</b>	3.0
PSY 898	<b>Thesis in Psychology</b>	3.0

*Spring Term*

LAW 702	<b>Health Care Finance</b>	3.0
LAW 902	<b>Conflict in the Doctor/Patient Relationship</b>	2.0
PSY 897	<b>Practicum Seminar</b>	3.0
PSY 899	<b>Practicum Fieldwork</b>	1.0

**Fifth Year**

*Fall Term*

LAW 620	<b>Lawyering Practice Seminar</b>	2.0
LAW 621	<b>Co-Op</b>	7.0
PSY 542	<b>Neuropsychological Assessment</b>	3.0

*Winter Term*

LAW 620	<b>Lawyering Practice Seminar</b>	2.0
LAW 621	<b>Co-Op</b>	7.0
LAW 645	<b>Employment Discrimination</b>	4.0
PSY 865	<b>Special Topics in Psychology: Psychopathy</b>	3.0

*Spring Term*

LAW 806	<b>Independent Study</b>	3.0
PSY 897	<b>Practicum Seminar</b>	3.0
PSY 899	<b>Practicum Fieldwork</b>	1.0

**Sixth Year**

*Fall Term*

LAW 703	<b>Bioethics</b>	3.0
LAW	<b>Forensic Neuropsychological Assessment</b>	3.0

*Winter Term*

LAW 801	<b>Advanced Legal Research</b>	2.0
LAW 618	<b>First Amendment</b>	4.0

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PSY 826	<b>Social Problem-solving and Psychopathology</b>	3.0
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*Spring Term*

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LAW 807	<b>Appellate Advocacy</b>	3.0
LAW 901	<b>Seminar: Regulating Medical Errors</b>	2.0
PSY 630	<b>Psychopharmacology</b>	3.0
PSY 820	<b>Cognitive-Behavior Therapy</b>	3.0

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**J.D. Awarded**

**Seventh Year**

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PSY 998	<b>Ph.D. Dissertation Psychology</b>	4.0
PSY 999	<b>Full Year APA-accredited psychology internship</b>	4.0

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# Drexel University

## Catalog 2008/2009

### **Master of Science in Publication Management**

Students enter the Publication Management program from diverse undergraduate backgrounds, including liberal arts, business administration, journalism, communications, technical writing, and information studies. The program builds on the individual's undergraduate content base by providing knowledge about the key elements of the publishing process needed by a publishing executive. The program also serves the needs of individuals already employed in the printing or publishing industry who are seeking to update or broaden their knowledge.

Students completing the program may find career opportunities in the management of traditional publishing companies as well as in corporate communication areas of a broad range of business and education. Entrepreneurial opportunities provide another area of career development.

All courses in the program are offered in the evening on a part-time or full-time basis. The curriculum comprises courses in technical and science writing and editing, product acquisition, design, production, and printing technology offered through the College of Arts and Sciences and business management and marketing courses offered through the LeBow College of Business.

# Drexel University

## Catalog 2008/2009

### **Master of Science in Publication Management**

#### **Requirements for Admission**

After admissibility to Drexel graduate studies has been determined, applicants are selected on the basis of college transcripts, a written statement of professional goals and objectives, references, and a personal interview with the graduate advisor.

#### **Financial Assistance**

Graduate assistantships are available to selected students. Assistantships provide professional experience, tuition waiver, and stipend. Contact the University Financial Aid Office for information regarding work-study arrangements and student loans.

# Drexel University

## Catalog 2008/2009

### Master of Science Program in Publication Management

45.0 credits

#### General Requirements

Graduation from the program requires the successful completion of all program pre- and co-requisites and 45 credits of graduate coursework.

#### Curriculum

Required courses		30.0 Credits
COM 510	Technical Writing	3.0
COM 570	Technical and Science Editing	3.0
PMGT 630	Publishing Environment	3.0
PMGT 631	Page Design and Production	3.0
PMGT 635	Periodicals Publishing	3.0
PMGT 730	Book Publishing	3.0
PMGT 745	Electronic Publishing	3.0
PMGT 735	Publication Budgeting and Estimating	3.0
PMGT 740	Publications Marketing	3.0
PMGT 800	Independent Study	3.0
or		
PMGT 801	Independent Project	3.0

Elective courses		15.0 Credits
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Students select five additional courses for 15 elective credits.

One course (3 credits) must be a COM elective.

Electives may include, but are not limited to the following:

COM 500	Persuasive Writing and Reading in Communication	3.0
COM 520	Science Writing	3.0
COM 530	Technical and Science Photography	3.0
COM 540	Technical and Science Graphics	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 620	Message Design and Evaluation	3.0
COM 630	Developing Software Documentation	3.0
COM 640	Desktop Publishing	3.0
COM 645	Strategy and Design for Multimedia	3.0
COM 650	Telecommunications Policy	3.0
COM 655	Telecommunication Policy in the Information Age	3.0
COM 660	Investigative Journalism	3.0
COM 665	Journalists, Courts and the Law	3.0

COM 670	<b>Medical Writing</b>	3.0
COM 675	<b>Grant Writing: Arts/Humanities</b>	3.0
COM 680	<b>Public Relations Strategies</b>	3.0
COM 690	<b>Special Topics in Communication</b>	3.0
COM 865	<b>Interconnections: Science and Technology, Literature and the Arts</b>	3.0
COM 875	<b>Ethics for Technical and Scientific Communication</b>	3.0
COM 880	<b>Ethics for Public Communication</b>	3.0
ORGB 625	<b>Leadership and Professional Development</b>	3.0
MKTG 601	<b>Marketing Strategy and Planning</b>	3.0
MKTG 630	<b>Global Marketing</b>	3.0

# Drexel University

## Catalog 2008/2009

### **Master of Science in Science, Technology, and Society**

#### **General Information**

The increasingly complex nature of modern life has steadily eroded the distinctions traditionally made between social and technical issues. Leaders among scientists, engineers, policy-makers, managers, investors, and educators must base their decisions on a diverse array of data, new tools for gathering and evaluating this data, integrated systems of information, and interdisciplinary approaches to problem-solving. In an era of expanding global investment and complex regulation, opportunities will accrue to those who can identify potential problems early and formulate multifaceted, long-term, and viable solutions.

The graduate program in Science, Technology, and Society (STS) targets this new leadership cadre. STS at Drexel integrates the study of history, science and technology, public policy, and contemporary social and political issues. It combines core courses in the history of science and technology with classes that focus on gender and race, democratic institutions, ethics, and future challenges to industry and government. The program also provides a unique international orientation, which recognizes the crucial context of globalization in the advancement of science and technology and the broad implications of scientific research and innovation in the politics and history of the modern world.

Prospective students for the M.S. in STS see this educational opportunity as an essential factor in their skill enhancement and career advancement. They are recent college graduates in the social sciences, humanities, natural sciences, and engineering; middle and high school teachers; and professionals in businesses, city and state government offices, and area hospitals. Students can attend full time or part time and complete all coursework in the evening.

For additional information, visit the Masters Program in Science, Technology, and Society web page.



# Drexel University

## Catalog 2008/2009

### **Master of Science in Science, Technology, and Society**

#### **Admissions Requirements**

Applicants to the program must meet the general requirements for admission to graduate studies at Drexel. Applicants whose undergraduate grade point average is below 3.0 must provide GRE scores.

Prospective students must also submit a 500-word essay explaining why they want to enter the program. These statements are read carefully by the faculty screening committee to evaluate each applicant's sense of purpose. Entering students typically begin during the fall quarter.

# Drexel University

## Catalog 2008/2009

### Master of Science in Science, Technology, and Society

#### Curriculum

The M.S. degree in STS requires 45 credits of coursework. At least 36 credits must be in the Department of History & Politics. Required courses total 27 credits (including a 3-credit research seminar, a 3-credit practicum, and 6 credits of research and writing for the thesis, which may be tied to the practicum). Remaining credits are chosen from a list of electives.

<b>Basic requirements</b>		<b>15.0 Credits</b>
HIST 501	<b>Introduction to Science, Technology, and Society</b>	3.0
HIST 585	<b>Technology in Historical Perspective</b>	3.0
HIST 586	<b>Gender and Technology</b>	3.0
<b>or</b>		
PSCI 573	<b>Gender, Race, and Science</b>	3.0
PSCI 555	<b>International Political Economy</b>	3.0
<b>One of the following courses:</b>		
PSCI 571	<b>Science and Technology Public Policy</b>	3.0
PSCI 557	<b>Globalization and Transition</b>	3.0
PSCI 541	<b>Technology in Developing Countries</b>	3.0
PSCI 570	<b>International Environmental Policy</b>	3.0
<b>Advanced requirements</b>		<b>12.0 Credits</b>
HIST 696	<b>Seminar in Science, Technology, and Society</b>	3.0
<b>or</b>		
PSCI 696	<b>Seminar in Science, Technology, and Society</b>	3.0
HIST 697	<b>Practicum: Science and Technology in Action</b>	3.0
HIST 698	<b>M.S. Thesis</b>	6.0
<b>or</b>		
PSCI 698	<b>M.S. Thesis</b>	6.0
<b>Suggested Electives (select at least three of the following)</b>		<b>9.0 Credits</b>
HIST 541	<b>Technology in Developing Countries</b>	3.0
HIST 555	<b>International Political Economy and Technology</b>	3.0
HIST 557	<b>Globalization and Transition</b>	3.0
HIST 583	<b>History of Medicine and Disease</b>	3.0
HIST 586	<b>Gender and Technology</b>	3.0
HIST 590	<b>Themes in the History of Science</b>	3.0
HIST 591	<b>Themes in the History of Technology</b>	3.0
PSCI 541	<b>Technology in Developing Nations</b>	3.0
PSCI 555	<b>International Political Economy</b>	3.0
PSCI 557	<b>Globalization and Transition</b>	3.0
PSCI 570	<b>International Environmental Policy</b>	3.0
PSCI 573	<b>Gender, Race, and Science</b>	3.0
PSCI 574	<b>Alternative Policy Perspectives</b>	3.0
PSCI 575	<b>Appropriate Technology and Development</b>	3.0

COM 650	<b>Telecommunications Policy</b>	3.0
COM 690	<b>Grant Writing</b>	3.0
MGMT 602	<b>Management and Technology</b>	3.0
PSY 612	<b>Human-Computer Interaction</b>	3.0

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**Remaining electives** **9.0**  
**Credits**

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Any remaining electives may be taken in the Department of History & Politics or other departments and colleges in the university, chosen in consultation with the STS faculty.

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