



DREXEL UNIVERSITY
College of
Arts and Sciences

CATALOG

2020-2021

UNDERGRADUATE



catalog.drexel.edu

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The College of Arts and Sciences

About the College

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, social sciences, and the sciences in a fast-changing, challenging, and diverse world.

About the College of Arts and Sciences

Drexel University's College of Arts and Sciences (<http://www.drexel.edu/coas/>) (CoAS) stands unafraid in the face of change. We recognize that our ever-evolving, fast-paced culture requires a new approach to education, one that understands the world is malleable and can be molded by minds inspired to lead society's evolution.

But innovation requires more than an ambitious personality. It requires versatility—we must not only be experts in our field, but also agile enough to engage in the cross-disciplinary work needed to address modern problems resourcefully. That's why our faculty challenge students to see past their own perspectives and establish a deeper understanding of humanity's needs. It's why our co-op program inserts students within a professional culture, introducing them to the expectations of the job while offering hands-on practical application of coursework. And it's why, starting as early as freshman year, students team with faculty members as peers, conducting research that affects the world now.

Here at CoAS, we are committed to implementing in-the-moment change, not for personal glory, but because it's what the world needs.

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- **NEW:** Global Studies (BA) / Communication (MS)
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Special Programs

Pre-professional Programs

Students wishing to prepare for admission to professional schools of medicine, veterinary medicine, dentistry, or public health may obtain pre-professional counseling and application assistance at the Steinbright Career Development Center. (<https://drexel.edu/scdc/>) For health profession application assistance, students may call 215.895.2437. For law school admission assistance, students may call 215.895.1632.

Accelerated Programs

The College of Arts and Sciences offers several accelerated degree programs that enable academically qualified students to earn both a bachelor's and an advanced degree concurrently, graduating sooner than they would in traditional programs. Depending on the academic program,

eligible students can be admitted to an accelerated degree program in one of two ways: as an incoming freshman or after completing a minimum of 90.0 credits but no more than 120.0 credits. Note: In addition to the options listed below, students can apply to combine degree programs into an accelerated BS/MS program. Talk to your academic advisor to learn more.

More details about Accelerated Programs can be found on the Undergraduate Admissions (<http://drexel.edu/coas/admissions/overview/>) website.

BA/BS+MD Early Assurance Program

Drexel offers a BA/BS+MD program, a 4 + 4 combined program that allows outstanding high school students to gain acceptance into their undergraduate program and provisional early acceptance into medical school.

The program is open only to the following majors:

- Biological Sciences (p. 8)
- Chemistry (BA only) (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/undergraduate/collegeofartsandsciences/chemistry/>)
- Biomedical Engineering (<http://catalog.drexel.edu/undergraduate/schoolofbioengineeringandhealthsystems/biomedicalengineering/>) (four year program only)

Students in this program cannot double major. However, students are encouraged to minor in one or more areas. In addition, students are not eligible to participate in combined Bachelors/Masters programs.

Admission Requirement

For consideration to the BA/BS+MD Early Assurance Program, applicants must:

- Submit the Common Application or the Coalition Application and all required documents prior to November 1
- Be a U.S. citizen or permanent resident applying for first-year admission
- Be on track to graduate from an American high school
- Have a minimum 3.5 GPA on a 4.0 weighted scale (subject to change)
- Have a combined SAT score of at least 1420 on the SAT (for Evidence-based Reading and Writing and Math sections) or a minimum ACT composite score of 31; submission of an SAT Subject Test is strongly recommended, preferably in the sciences, but all Subject Tests will be reviewed.
- Be on track to graduate, having satisfactorily completed four years of laboratory science with one year each of biology, chemistry, and physics

As a point of reference, first-year students admitted to the BA/BS+MD program had an average GPA of 4.42 and an average combined SAT (Evidence-based Reading and Writing and Math) of 1542 or ACT 35 composite.

A select number of students will be invited to attend an interview with the medical school admissions committee at the Drexel University College of Medicine.

Undergraduate Program Requirements

Upon acceptance into the BA/BS +MD Program, students will be provided with a contract of requirements for the completion of the undergraduate portion of the program. The current general requirements of the program are:

- Maintain minimum cumulative GPA of 3.6 in all coursework and a minimum GPA of 3.6 in BCPM classes (all biological sciences, chemistry, physics, and math), without repeating a course and with no grade less than a C. The GPA requirements must be met by the end of their third undergraduate year and at the end of their fourth year
- Complete a minimum of 100 hours of service that is documented and approved by the advisor.
- Complete a spring/summer six-month co-op in research, clinical, or health informatics, health law, or bioengineering. A co-op of 20 or 40 hours a week is possible.
- Complete 12.0 quarters of study, including fall, winter, and spring quarter of their 4th year as a matriculated Drexel student. In order to maintain their full-time status, BA/BS+MD program students must be registered for at least 14.0 credits per quarter for the 12.0 quarters of Drexel University undergraduate studies.
- BSMD programs follow a full 4 year co-op plan with the following schedule of classes and co-op terms. Students must follow this layout of full-time terms in class and co-op. (see below).

First Year				
Fall Courses	Credits Winter Courses	Credits Spring Courses	Credits Summer Vacation Term	Credits
	0	0	0	0
Second Year				
Fall Courses	Credits Winter Courses	Credits Spring Courses	Credits Summer Courses	Credits
	0	0	0	0
Third Year				
Fall Courses	Credits Winter Courses	Credits Spring COOP EXPERIENCE	Credits Summer COOP EXPERIENCE	Credits
	0	0	0	0
Fourth Year				
Fall Courses	Credits Winter Courses	Credits Spring Courses	Credits Summer Undergrad Degree Completed	Credits
	0	0	0	0
Total Credits				0

- The MCAT is required prior to matriculation into the College of Medicine. Students must receive a minimum MCAT score of 511, including:
 - 128 or better in chemical and physical foundations of biological systems
 - 127 or better in critical analysis and reasoning skills
 - 128 or better in biological and biochemical foundations of living systems
 - 128 or better in psychological, social, and biological foundations of behavior
- Alternatively, students can receive a minimum total score of 513 with no subsection less than 127.
- The College of Medicine reserves the right to revise the above requirements. As noted above, acceptance into the College of Medicine is provisional.

DragonsTeach

DragonsTeach is a collaboration between the College of Engineering, the College of Arts and Sciences, and the School of Education designed to allow students in science, technology, engineering, and math (STEM) degree programs to explore a career in education. Through a unique combination of skills development and classroom experiences, DragonsTeach students can earn a minor in STEM Education and eligibility for teaching credentials while completing their major degree program and co-ops. Learn more on the DragonsTeach website (<http://drexel.edu/dragonsteach/>).

Eligible Majors:

- BS in Biological Sciences (p. 8)
- BS or BA in Chemistry (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/undergraduate/collegeofartsandsciences/chemistry/>)
- BS in Environmental Science (p. 63)
- BS or BA in Mathematics (p. 92)
- BS in Physics (p. 108)

Secondary and Elementary Teacher Certification

The School of Education offers innovative curricula that combines academic majors with appropriate coursework to satisfy state requirements for certification in elementary education. Students interested in the teacher education programs should contact the School of Education (<http://drexel.edu/soe/>).

The Drexel Writing Center

The Drexel Writing Center (DWC) is dedicated to helping students, faculty, and staff, at all levels of experience and across all disciplines, in their development as writers.

- The DWC works with writers at all stages in the writing process, from brainstorming ideas to polishing final drafts.
- The DWC focus is on individual, one-on-one sessions that feature a conversational, collaborative relationship between the reader and the writer they work with.
- Interaction with the DWC will help writers develop not just writing but critical thinking and reading skills.
- While DWC readers do not perform copy-editing services, they will help students learn strategies for proofreading and editing their documents.

The DWC is located at 100-103 Korman Center and can be reached at 215.895.6633. Further information can be found at the Drexel Writing Center (<https://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) website.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

English Language Center

As part of the College of Arts and Sciences, Drexel's English Language Center (<http://www.drexel.edu/elc/>) offers an accredited intensive English program throughout the year. In addition to classes in academic skills such as essay writing and oral presentations, the Center offers the Language of STEM (Science, Technology, Engineering, and Math), Language of Media and Design, Global Business English program (GLOBE), English for academic purposes, TOEFL and IELTS preparation, ESL Teaching enhancement programs, and other subjects.

Through the International Gateway program, the English Language Center offers academic language preparation for students who have an admissible high school academic background but need further English language proficiency. This pathway program combines academic English language courses, credit courses taught by CoAS faculty, and acculturation activities. Students admitted into the University Preparation program (UPREP) begin their studies at Drexel in the English Language Center in a short, pre-term program designed to prepare international students for the academic work and culture of the American university.

Accepted undergraduate students have access to free language tutoring and other academic skills workshops throughout the academic year.

For more information, see the ELC website or contact the Center at:

English Language Center
229 N. 33rd Street
Philadelphia, PA 19104

Phone: 215-895-2022
Fax: 215-895-6775
E-mail: elc@drexel.edu

The Drexel Co-op

No summers of coffee runs or mindless filing here! Drexel students embark on six-month periods of full-time employment in practical, discipline-specific positions consistent with their interests and abilities. Depending on their chosen program, students have the opportunity to participate in up to three different co-op positions—that's 18 months of real work experience—during their time at Drexel, allowing them to explore their career options, strengthen their resumes, and build a professional network in the process. While co-op opportunities can be both paid and unpaid, students who participate in the co-op program typically receive higher starting salaries post-graduation than graduates of other schools.

The number of co-op experiences required for graduation is determined by the student's chosen course of study. The following options exist for most majors:

- **Three Co-op Option** (Five Years)
- **One Co-op Option** (Four Years)
- **No Co-op Option** (Four Years) *Though this program is available, we strongly encourage students to take advantage of the co-op program, a key benefit of a Drexel education.*

Learn more on the Steinbright Career Development Center (<http://drexel.edu/scdc/>) website.

Global Opportunities

Global Opportunities Abound

Philadelphia may be the heart of Drexel's campus, but the world is our muse. There are numerous opportunities for Drexel Dragons to go abroad.

Study Abroad

Study abroad allows students a unique academic experience to learn about subjects from an international perspective, often with local students and professors. From Costa Rica to Barcelona, Milan to Turkey, and Brazil to Israel, our students have studied all over the world.

Research Abroad

Research extends far beyond the walls of any laboratory. Our students have studied sea turtles in Costa Rica, infectious diseases in Uganda, and data from the Double Chooz experiment in France. Many of our faculty members are also involved in international research collaborations and our students have the opportunity to make an impact alongside them.

Co-Op Abroad

Co-op abroad provides students with a unique professional perspective and exposure to an international work environment. Our students have worked at Coca Cola in India, the UN Development Programme in Africa, the Italian Parliament in Rome, and the Heraklion Community Mental Health Center in Greece—just to name a few.

An international co-op gives students a distinct advantage in the global economy, making them more attractive to prospective employers. Candidates with international experience also have the ability to earn higher starting salaries upon graduation.

Visit the Steinbright Career Development Center (<http://drexel.edu/scdc/>) website to learn more.

Travel Courses

The College of Arts and Sciences' travel-integrated courses allow students to travel domestically or internationally for one or two weeks at the end of a course to extend their studies beyond the classroom. Recent classes have traveled to France to learn about WWI and Brazil to study commodities exchange. Talk to your academic advisor to learn more.

Alternative Spring Break

The Alternative Spring Break (ASB) program places teams of Drexel students in communities to engage in community service and experiential learning during spring break. Students may choose to work domestically

or internationally in activities that benefit the environment, the community, and those in need.

Community-Based Learning

In the College of Arts and Sciences' unique Community-Based-Learning (CBL) courses, students don't just study the issues affecting the world, they study alongside the people affected, from prison inmates to hospice patients. CBL courses are offered in three formats:

- Side by side
- Community hybrid
- Service learning

Side-by-side courses create a co-learning environment in which Drexel students and the community members take classes together.

Community hybrid courses are composed entirely of Drexel students and time is split between the classroom and the community.

Service-learning courses require service in the community in addition to students' credit hours in the classroom.

For a current list of available courses, visit the Lindy Center for Civic Engagement (<http://drexel.edu/lindycenter/>).

Biological Sciences

Major: Biological Sciences

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 184.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 26.0101

Standard Occupational Classification (SOC) code: 19-1029

About the Program

The biological sciences major resides in the Department of Biology (<http://drexel.edu/coas/academics/departments-centers/biology/>). Students earn a bachelor's degree in the biological sciences and are prepared for technical careers in research or commercial laboratories, or for professional schools or graduate study.

The biological sciences encompass many areas of study. Biologists study the structure and functions of living organisms from the individual cell to the full organism, and collectively to the community level. Discoveries in the biological sciences influence many aspects of our daily lives and have become the foundation of many new developments in biotechnology and medicine. In the past two decades, advances in molecular biology, cell biology and genetics have been rapid, opening many new, exciting career opportunities in biotechnology, genetic engineering and the development of new diagnostics and therapeutics. Biologists can pursue a variety of options including careers in medicine, dentistry, veterinary medicine or other health-related areas; in research or commercial laboratories at pharmaceutical companies, medical research laboratories, biotechnology companies or in government agencies; and in teaching. In fact, more than 100 different occupations have been listed for biologists. Graduates in the biological sciences are in demand and enjoy a high placement rate with competitive salaries.

The curricular choices are designed to provide a sound basis for careers in the private sector, government and research laboratories, and for

advanced study in graduate and professional programs in medicine, other health related areas, or in teaching.

The course requirements identifies required support courses in chemistry, physics, mathematics, humanities, and social sciences. With proper selection of electives, students can meet teacher certification requirements or complete a minor in another field. Students are encouraged to consult frequently with their academic advisor for curriculum planning.

In addition to the core requirements, students select one of five concentrations in a field of interest:

- Cell/Molecular Biology/Genetics/Biochemistry
- Organismal Biology/Physiology
- Ecology/Evolution/Genomics
- Pathobiology
- General Biology

Program Options

Co-op employment is an option for biological science students. The major offers three distinct plans:

Five-year option with co-op experience

This option allows for the greatest amount of employment experience, with three distinct six-month periods of employment included with studies. After the start of the sophomore year, students study or work through all terms, including summer.

Four-year option with co-op experience

The degree includes just one six-month period of employment. After the start of sophomore year, students study or work through all terms, including summer.

Four-year option without co-op experience

The degree can be completed in four years without co-op/internship employment. Students are not required to pursue studies during any of the summer terms.

Degree Requirements

The Biological Sciences curriculum is designed to provide students with both depth and flexibility within the field of biology. In addition to the core requirements, students select one of five concentrations in a field of interest.

- Cell/Molecular Biology/Genetics/Biochemistry
- Organismal Biology/Physiology
- Ecology/Evolution/Genomics
- Pathobiology
- General Biology

Concentration requirements and elective options are outlined below. Within each concentration, students are able to further specialize in a focus area by selecting electives in their area of interest.

Requirements		
Humanities and Social Sciences		
CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COM 310 [WI] or COM 320	Technical Communication Science Writing	3.0
COOP 101	Career Management and Professional Development	1.0

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 251	Ethics	3.0
or PHIL 321	Biomedical Ethics	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Humanities and Social Science Electives		9.0
Science, Technology, Health and Human Affairs Elective		3.0
Mathematics and Statistics		
Select one of the following sequences:		12.0
Intro to Analysis		
MATH 101	Introduction to Analysis I	
& MATH 102	and Introduction to Analysis II	
& MATH 239	and Mathematics for the Life Sciences	
Calculus		
MATH 121	Calculus I	
& MATH 122	and Calculus II	
& MATH 123	and Calculus III	
MATH 410	Scientific Data Analysis I	3.0
MATH 411	Scientific Data Analysis II	3.0
Physical Sciences		
BIO 311	Biochemistry	3.0-4.0
or CHEM 243	Organic Chemistry III	
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103	General Chemistry III	5.0
CHEM 241	Organic Chemistry I	4.0
CHEM 242	Organic Chemistry II	4.0
PHYS 152	Introductory Physics I	4.0
PHYS 153	Introductory Physics II	4.0
PHYS 154	Introductory Physics III	4.0
Core Biology Courses		
BIO 131	Cells and Biomolecules	4.0
BIO 134	Cells and Biomolecules Lab	1.0-2.0
or BIO 142	SEA-PHAGES I	
BIO 132	Genetics and Evolution	4.0
BIO 135	Genetics and Evolution Lab	1.0-2.0
or BIO 143	SEA-PHAGES II	
BIO 133	Physiology and Ecology	4.0
BIO 136	Anatomy and Ecology Lab	1.0-2.0
or BIO 144	SEA-PHAGES III	
BIO 207	Applications in Biology I	1.0
BIO 208	Applications in Biology II	1.0
BIO 209	Cell, Molecular & Developmental Biology I	4.0
BIO 211	Cell, Molecular & Developmental Biology II	4.0
BIO 219 [WI]	Techniques in Molecular Biology	3.0
BIO 224	Form, Function & Evolution of Vertebrates	4.0
BIO 225	Vertebrate Biology and Evolution Laboratory	2.0
BIO 471	Seminar in Biological Sciences	2.0
BIO 472	Seminar in Biological Sciences	2.0
BIO 473 [WI]	Seminar in Biological Sciences	2.0
ENVS 212	Evolution	4.0
Concentration Courses		28.0-30.0
Free electives		24.0
Total Credits		184.0-190.0

Concentrations

Students select one of five concentration and fulfill the requirements, as outlined below.

1. The Cell/Molecular/Genetics/Biochemistry (CMGB) Concentration

This concentration provides exposure to several vital disciplines within Biology, and will prepare students for a diversity of careers in research, medicine, and industry. Students interested in tailoring their studies more specifically may follow the suggested "focus areas" when selecting their two CMGB Concentration electives.

Cell/Molecular/Genetics/Biochemistry (CMGB) Concentration Requirements

BIO 244	Genetics I	3.0
or BIO 444	Human Genetics	
BIO 314	Pharmacology	3.0
or BIO 404	Structure and Function of Biomolecules	
or BIO 416	Biochemistry of Major Diseases	
BIO 318	Biology of Cancer	3.0
or BIO 430	Cell Biology of Disease	
BIO 410	Advanced Molecular Biology	3.0
Cell/Molecular/Genetics/Biochemistry (CMGB) Concentration Electives (See Lists Below)		
Two Cell/Molecular/Genetics/Biochemistry (CMGB) Electives (see list below)		6.0
Organismal/Physiology Elective (see list below)		3.0
Ecology/Evolution/Genomics Elective (see list below)		3.0
Concentration Laboratory Courses		
Two Laboratory Electives (see list below)		4.0
Total Credits		28.0

* Students interested in pursuing a focus area in Neurobiology, Pharmaceuticals, Cell Biology, Biochemistry, Molecular Biology or Genetics should contact the academic advisor in the Biology Department for specific focus recommendations.

Cell/Molecular/Genetics/Biochemistry (CMGB) Electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 414	Behavioral Genetics	3.0
BIO 415	Proteins	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 447	Advanced Genetics and Molecular Biology	3.0
BIO 451	Genetic Reg Development	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0
BIO 465	Neurobiology of Disease	3.0
ENVS 326	Molecular Ecology	3.0
Organismal/Physiology Electives		
BIO 201	Human Physiology I	4.0
BIO 221	Microbiology	3.0

BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 323	Parasitology	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 426	Immunology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
ENVS 254	Invertebrate Morphology and Physiology	3.0
ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0
Ecology/Evolution/Genomics Electives		
BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 470	Advanced Topics in Evolution	3.0
Laboratory Electives		
BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 394	Entomology Laboratory	2.0

2. The Organismal Biology/Physiology Concentration

This concentration combines courses in organismal biology and physiology with an opportunity to focus on human physiology. The concentration is designed to appeal to students interested in health and

medicine, but also accommodates students seeking a wider breadth of knowledge in organismal diversity. Students can focus their electives in human physiology or can choose courses that study non-human organisms.

Organismal Biology/Physiology Concentration Requirements

BIO 201	Human Physiology I	4.0
or ENVS 254	Invertebrate Morphology and Physiology	
BIO 203	Human Physiology II	4.0
or BIO 256	Vertebrate Morphology and Physiology	
BIO 373	Developmental Biology	3.0
Select one of the following:		
BIO 412	Biology of Aging	3.0
or BIO 284	Biology of Stress	
or BIO 466	Endocrinology	
or BIO 468	Pathophysiology	

Organismal Biology/Physiology Concentration Electives (See List Below)

Cell/Molecular/Genetics/Biochemistry (CMGB) Elective	3.0
Two Organismal/Physiology Electives	6.0
Ecology/Evolution/Genomics Elective	3.0

Concentration Laboratory Courses

Two Laboratory Electives	4.0
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Total Credits **30.0**

* Students interesting in pursuing a focus area in Human Physiology or Organismal Biology should contact the academic advisor in the Biology Department for specific focus recommendations.

*Cell/Molecular/Genetics/Biochemistry (CMGB) electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 410	Advanced Molecular Biology	3.0
BIO 414	Behavioral Genetics	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0
ENVS 326	Molecular Ecology	3.0

**Organismal/Physiology electives

BIO 201	Human Physiology I	4.0
BIO 203	Human Physiology II	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 264	Ethnobotany	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 320	Microbial Pathogenesis	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0

BIO 372	Histology	4.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 426	Immunology	3.0
BIO 435	Immunobiology of Disease	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
BIO 466	Endocrinology	4.0
BIO 468	Pathophysiology	4.0
ENVS 254	Invertebrate Morphology and Physiology	3.0
ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0

*** Ecology/Evolution/Genomics electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

+Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 434 [WI]	Advanced Cell Biology Laboratory	2.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 394	Entomology Laboratory	2.0

3. The Ecology/Evolution/Genomics Concentration

This concentration focuses on ecological and evolutionary aspects of biology for biology majors who also have specific interests in ecology, evolution or genomics. This concentration is designed to maintain a breadth of knowledge in biology, but also allows students to tailor their course work more specifically to reflect their specific area of interest.

Ecology/Evolution/Genomics Concentration requirements

ENVS 326	Molecular Ecology	3.0
BIO 228	Evolutionary Biology & Human Health	3.0
or BIO 331	Bioinformatics I	
BIO 436	Population Genetics	3.0-4.0
or ENVS 230	General Ecology	
Select one of the following:		3.0-5.0
BIO 221	Microbiology	
BIO 256	Vertebrate Morphology and Physiology	
BIO 323	Parasitology	
BIO 413	Genomics	
BIO 420	Virology	
ENVS 254	Invertebrate Morphology and Physiology	
ENVS 360	Evolutionary Developmental Biology	
ENVS 382	Field Botany of the New Jersey Pine Barrens	
ENVS 391	Freshwater and Marine Algae	
ENVS 392	Ichthyology and Herpetology	
ENVS 393	Entomology	
ENVS 438	Biodiversity	
Ecology/Evolution/Genomics concentration electives		
Select one Cell/Molecular/Genetics/Biochemistry (CMGB) elective (see list below)		3.0
Select one Organismal/Physiology elective (see list below)		3.0
Select two Ecology/Evolution/Genomics electives (see list below)		6.0
Concentration Laboratory Courses		
Select two Laboratory electives (see list below)		4.0
Total Credits		28.0-31.0

* Students interested in pursuing a focus area in Ecology, Evolutionary Biology or Genomics should contact the academic advisor in the Biology Department for specific focus recommendations.

Cell/Molecular/Genetics/Biochemistry (CMGB) electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 410	Advanced Molecular Biology	3.0
BIO 414	Behavioral Genetics	3.0
BIO 415	Proteins	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 453	Protein Dysfunction in Disease	3.0

BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0

Organismal/Physiology electives

BIO 201	Human Physiology I	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 264	Ethnobotany	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 426	Immunology	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
ENVS 254	Invertebrate Morphology and Physiology	3.0
ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0

Ecology/Evolution/Genomics electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 332	Bioinformatics II	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
ENVS 315	Plant Animal Interactions	3.0
ENVS 322	Tropical Ecology	3.0
ENVS 328	Conservation Biology	3.0
ENVS 330	Aquatic Ecology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 336	Terrestrial Ecology	5.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 390	Marine Ecology	3.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 410	Physiological Ecology	3.0
ENVS 412	Biophysical Ecology	3.0
ENVS 413	Advanced Population Ecology	3.0
ENVS 414	Advanced Community Ecology	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0

BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research (by permission of the department)	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 327	Molecular Ecology Laboratory	2.0
ENVS 336	Terrestrial Ecology	5.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 394	Entomology Laboratory	2.0

4. The Pathobiology Concentration

The Pathobiology concentration focuses on pathogenesis, and provides a unique option for students that differs from the more traditional disciplines in cell/molecular/genetics/biochemistry. This concentration is designed to appeal to students with an interest in pursuing careers in areas of public and allied health.

BIO 221	Microbiology	3.0
BIO 320	Microbial Pathogenesis	3.0
BIO 323	Parasitology	3.0
or BIO 420	Virology	
or BIO 435	Immunobiology of Disease	
BIO 426	Immunology	3.0
Select one Cell/Molecular/Genetics/Biochemistry (CMGB) elective (see list below)		3.0
Select two Organismal/Physiology electives (see list below)		6.0
Select one Evolutionary Bio/Ecology elective (see list below)		3.0
Concentration Laboratory Courses		
Two Laboratory electives (see list below)		4.0
Total Credits		28.0

Cell/Molecular/Genetics/Biochemistry (CMGB) electives:

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 410	Advanced Molecular Biology	3.0
BIO 414	Behavioral Genetics	3.0
BIO 415	Proteins	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0

BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0
ENVS 326	Molecular Ecology	3.0

Organismal/Physiology electives

BIO 201	Human Physiology I	4.0
BIO 203	Human Physiology II	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 435	Immunobiology of Disease	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
BIO 466	Endocrinology	4.0
BIO 468	Pathophysiology	4.0
ENVS 254	Invertebrate Morphology and Physiology	3.0

Ecology/Evolution/Genomics electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0

BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research (by permission of the department)	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0

5. The General Biology Concentration

This concentration will allow maximum flexibility for students who want to develop their own unique plan of study. The concentration is designed for students who may not have one specific area of interest, but who are looking to be well-rounded in the biological sciences. Students pursuing careers in education, where a wider breadth of knowledge in biology is desirable, may choose to select this concentration.

General Biology Concentration Electives	24.0
2 or 3 Cell/Molecular/Genetics/Biochemistry (CMGB) electives (see list below)	
2 or 3 Organismal/Physiology electives (see list below)	
2 or 3 Ecology/Evolution/Genomics electives (see list below)	
Concentration Laboratory Courses	
Two Laboratory electives (see list below)	4.0
Total Credits	28.0

Cell/Molecular/Genetics/Biochemistry (CMGB) electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 331	Bioinformatics I	3.0
BIO 332	Bioinformatics II	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 413	Genomics	3.0
BIO 415	Proteins	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 447	Advanced Genetics and Molecular Biology	3.0
BIO 451	Genetic Reg Development	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 465	Neurobiology of Disease	3.0
ENVS 326	Molecular Ecology	3.0

Organismal/Physiology electives

BIO 201	Human Physiology I	4.0
BIO 203	Human Physiology II	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 264	Ethnobotany	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 320	Microbial Pathogenesis	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0

BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 426	Immunology	3.0
BIO 435	Immunobiology of Disease	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
BIO 466	Endocrinology	4.0
BIO 468	Pathophysiology	4.0
ENVS 254	Invertebrate Morphology and Physiology	3.0
ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0

Ecology/Evolution/Genomics electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 332	Bioinformatics II	3.0
BIO 413	Genomics	3.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
ENVS 315	Plant Animal Interactions	3.0
ENVS 322	Tropical Ecology	3.0
ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 330	Aquatic Ecology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 336	Terrestrial Ecology	5.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 390	Marine Ecology	3.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 410	Physiological Ecology	3.0
ENVS 412	Biophysical Ecology	3.0
ENVS 413	Advanced Population Ecology	3.0
ENVS 414	Advanced Community Ecology	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0

BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research (by permission of the department)	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 327	Molecular Ecology Laboratory	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 394	Entomology Laboratory	2.0

Note about laboratory credits: ENVS 336, ENVS 382 and ENVS 388 have both a lecture and laboratory component.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plans of Study

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 BIO 132	4.0 BIO 133	4.0 VACATION	
BIO 134 or 142	1.0-2.0 BIO 135 or 143	1.0-2.0 BIO 136 or 144	1.0-2.0	
CHEM 101	3.5 CHEM 102	4.5 CHEM 103	5.0	
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0	
MATH 121 or 101	4.0 ENGL 102 or 112	3.0 MATH 239 or 123	4.0	
UNIV S101	1.0 MATH 122 or 102	4.0		
	16.5-17.5	17.5-18.5	17-18	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 207	1.0 BIO 208	1.0 BIO 224	4.0 VACATION	
BIO 209	4.0 BIO 211	4.0 BIO 225	2.0	
BIO 219	3.0 CHEM 242	4.0 BIO 311 or CHEM 243	3.0-4.0	
CHEM 241	4.0 PHYS 153	4.0 PHIL 251	3.0	
PHYS 152	4.0 UNIV S201	1.0 PHYS 154	4.0	

	Biology Laboratory Requirement course*	2.0		
	16	16	16-17	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENVS 212	4.0 COM 310	3.0 COM 230	3.0 VACATION	
MATH 410	3.0 MATH 411	3.0 BIO/ENVS elective	3.0	
BIO/ENVS Elective	3.0 BIO/ENVS elective	3.0 Biology Laboratory Requirement course*	2.0	
Humanities/Social Science Elective	3.0 Humanities/Social Science elective	3.0 Humanities/Social Science elective	3.0	
Science, Technology, Health & Human Affairs elective	3.0	Free elective	3.0	
	16	12	14	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
BIO 471	2.0 BIO 472	2.0 BIO 473	2.0
BIO/ENVS electives	6.0 BIO/ENVS elective	6.0 BIO/ENVS elective	3.0
Free electives	7.0 Free electives	6.0 Free electives	9.0
	15	14	14

Total Credits 184-188

* See degree requirements (p. 8).

4 year, 1 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 BIO 132	4.0 BIO 133	4.0 VACATION	
BIO 134 or 142	1.0-2.0 BIO 135 or 143	1.0-2.0 BIO 136 or 144	1.0-2.0	
CHEM 101	3.5 CHEM 102	4.5 CHEM 103	5.0	
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101*	1.0	
MATH 121 or 101	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV S101	1.0 MATH 122 or 102	4.0 MATH 239 or 123	4.0	
	16.5-17.5	17.5-18.5	18-19	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 207	1.0 BIO 208	1.0 BIO 311 or CHEM 243	3.0-4.0 BIO 224	4.0
BIO 209	4.0 BIO 211	4.0 ENVS 212	4.0 BIO 225	2.0
BIO 219	3.0 CHEM 242	4.0 PHIL 251	3.0 BIO/ENVS elective	3.0
CHEM 241	4.0 PHYS 153	4.0 PHYS 154	4.0 Humanities/Social Science elective	3.0

PHYS 152	4.0 UNIV S201	1.0	Science, Technology, Health & Human affairs elective	3.0
	16	16	14-15	15

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	COM 230	3.0 COM 310	3.0
		MATH 410	3.0 MATH 411	3.0
		BIO/ENVS elective	3.0 Biology Laboratory Requirement course**	2.0
		Free electives	6.0 BIO/ENVS elective	3.0
			Free elective	3.0
	0	0	15	14

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
BIO 471	2.0 BIO 472	2.0 BIO 473	2.0
BIO/ENVS electives	6.0 BIO/ENVS electives	6.0 BIO/ENVS elective	3.0
Free electives	6.0 Humanities/Social Science elective	3.0 Humanities/Social Science elective	3.0
	Free elective	3.0 Free electives	6.0
	14	14	14

Total Credits 184-188

* Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major. COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** See degree requirements (p. 8).

5 year, 3 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 BIO 132	4.0 BIO 133	4.0 VACATION	
BIO 134 or 142	1.0-2.0 BIO 135 or 143	1.0-2.0 BIO 136 or 144	1.0-2.0	
CHEM 101	3.5 CHEM 102	4.5 CHEM 103	5.0	
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101*	1.0	
MATH 121 or 101	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV S101	1.0 MATH 122 or 102	4.0 MATH 239 or 123	4.0	
	16.5-17.5	17.5-18.5	18-19	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	BIO 207	1.0 BIO 208	1.0
		BIO 209	4.0 BIO 211	4.0

	BIO 219	3.0	CHEM 242	4.0
	CHEM 241	4.0	PHYS 153	4.0
	PHYS 152	4.0	UNIV S201	1.0
			Biology Laboratory requirement course**	2.0
	0	0	16	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	BIO 311 or CHEM 243	3.0-4.0 BIO 224	4.0
		ENVS 212	4.0 BIO 225	2.0
		PHIL 251	3.0 BIO/ENVS elective	3.0
		PHYS 154	4.0 Humanities/Social Science elective	3.0
			Science, Technology, Health & Human Affairs elective	3.0
	0	0	14-15	15

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	COM 230	3.0 COM 310	3.0
		MATH 410	3.0 MATH 411	3.0
		BIO/ENVS elective	3.0 BIO/ENVS elective	3.0
		Free electives	6.0 Free elective	3.0
			Biology Laboratory Requirement course**	2.0
	0	0	15	14

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
BIO 471	2.0 BIO 472	2.0 BIO 473	2.0
BIO/ENVS electives	6.0 BIO/ENVS electives	6.0 BIO/ENVS elective	3.0
Free electives	6.0 Humanities/Social Science elective	3.0 Humanities/Social Science elective	3.0
	Free elective	3.0 Free electives	6.0
	14	14	14

Total Credits 184-188

* Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** See degree requirements (p. 8).

Co-op/Career Opportunities

Opportunities

Students earn a bachelor's degree in the biological sciences and are prepared for technical careers in research or commercial laboratories or for professional schools.

Graduates typically work for pharmaceutical companies, university and medical research laboratories, biotechnology companies, or in government laboratories. Many graduates also choose to pursue an advanced degree in the medical, dental and veterinary disciplines; or Masters or PhD degrees in Biology-related fields and Public Health.

Co-op Opportunities

Past co-op employers of biosciences majors have included:

- GlaxoSmithKline
- Fox Chase Cancer Center
- Children's Hospital of Philadelphia
- Johnson and Johnson
- Merck
- Wistar Institute
- Moss Rehab
- ViroPharma, Inc.
- Janssen Biotech
- Integral Molecular

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) page for more detailed information on co-op and post-graduate opportunities.

Dual/Accelerated Degree

Combined Bachelors/Masters Degree

Qualified students can take graduate courses in their junior and senior years for graduate credit. They can also complete a combined Biological Sciences BS/Biological Sciences MS (p. 125) degree in five years. Further questions about the BS /MS degree program should be directed to the departmental graduate advisor:

Kate Pelusi
Graduate Program Manager
Department of Biology
215.895.6374
kp475@drexel.edu

Facilities

The Department of Biology resides in the Papadakis Integrated Sciences Building (PISB). This state of the art facility has well-equipped teaching laboratories with networked computers and advanced digital image analysis capability. Both teaching and research laboratories contain a range of modern equipment including basic and cutting-edge light microscopes, confocal microscopy facilities, a Cell Imaging Center, basic and analytical ultracentrifuges, spectrophotometers, scintillation and luminescence counters, densitometers and cell culture facilities.

Visit the Research in Biology (<http://www.drexel.edu/coas/academics/departments-centers/biology/research/>) web page for more information.

Biological Sciences Faculty

Shivanthi Anandan, PhD (*University of California, Los Angeles*) *Vice Provost for Undergraduate Education*. Associate Professor. Microbial genetics, in particular the analysis of light-regulated signal transduction pathways and the regulation of gene expression in photosynthesizing organisms.

John R. Bethea, PhD (*University of Alabama at Birmingham*). Professor. Neuroscience and immunology.

Valerie Bracchi-Ricard, PhD (*University Joseph Fourier, Grenoble, France*). Research Assistant Professor. Role of TNF and TNF receptors in neuroinflammation and remyelination following spinal cord injury.

Laura Duwel, PhD (*University of Cincinnati*) *Assistant Department Head, Department of Biology*. Teaching Professor. Immunology and microbiology.

Felice Elefant, PhD (*Temple University*) *Director of the Biology Graduate Program*. Professor. Understanding the roles of two classes of chromatin regulatory proteins termed histone acetyltransferases (HATs) and histone de-methylases.

Denise Garcia, PhD (*UCLA*). Associate Professor. Neuroscience, the role of astrocytes in the central nervous system.

Tali Gidalevitz, PhD (*University of Chicago*). Associate Professor. Genetic and molecular pathways regulating protein folding homeostasis, and their role in protein conformation diseases, aging, and development.

Mary Katherine Gonder, PhD (*The City University of New York*) *Department Head, Director, Bioko Biodiversity Protection Program Co-Founder, Central African Biodiversity Alliance*. Professor. Deciphering spatial patterns of biodiversity across the Gulf of Guinea and Congo Basin region; Conservation measures to mitigate the effects of habitat loss and climate change in western equatorial Africa.

Meshagae Hunte-Brown, PhD (*Drexel University*). Teaching Professor. Stable isotopes in aquatic food webs, ecosystem ecology, STEM education.

Kari Lenhart, PhD (*Princeton University*). Assistant Professor. Coordination of stem cell behavior and regulation of stem cell cytokinesis in the young and aged niche.

Robert Loudon, PhD (*Thomas Jefferson University*). Associate Teaching Professor. Rho GTPases, regulation of actin cytoskeleton, Regulation of G protein-coupled receptors by receptor kinases and arrestins.

Michael O'Connor, MD, PhD (*MD, Johns Hopkins University; PhD, Colorado State*). Professor. Biophysical and physiological ecology, thermoregulation of vertebrates, ecological modeling.

Sean O'Donnell, PhD (*University of Wisconsin-Madison*). Professor. Climate ecology, focusing on geographic variation and species differences in thermal physiology; Behavior and ecology of army ant/bird interactions; Neurobiology, focusing on brain plasticity and brain evolution in social insects.

Ryan Petrie, PhD (*McGill University*). Assistant Professor. Mechanisms of cell movement through three-dimensional extracellular matrix.

Jerome Ricard, PhD (*University Joseph Fourier, Grenoble, France*). Research Assistant Professor. Inflammation and cell death after spinal cord injury. Regulation of cell death by Eph receptors.

Jacob Russell, PhD (*University of Arizona*). Professor. Microbiomes and metagenomics; ecology and evolution of symbiosis.

Nianli Sang, MB, PhD (*M.B., Fudan University Shanghai Medical College; Ph.D., Thomas Jefferson University*) *Co-Director of the Cell Imaging Center*. Associate Professor. Molecular and cellular biology of cancer; posttranslational modification, folding and quality control of proteins and their implication in cell physiology and human diseases.

Aleister Saunders, PhD (*University of North Carolina, Chapel Hill*) *Executive Vice Provost for Research, Director of the RNAi Resource Center*. Professor. Identification and characterization of genes and proteins involved in Alzheimer's disease.

Kevin P.W. Smith, PhD (*Drexel University*). Associate Teaching Professor. Linking behavioral ecology and organismal diversity, neonate behavior in herpetological models, STEM education.

Elias T. Spiliotis, PhD (*The Johns Hopkins University*) *Co-Director of the Cell Imaging Center*. Associate Professor. Cell polarity and cell division: regulation of cytoskeleton-dependent motility.

Jennifer Stanford, PhD (*Harvard University*). Associate Professor. Evaluating and improving approaches to teach STEM content in higher education environments to promote student learning, engagement in STEM courses, and STEM student retention.

Monica M. Togna, PhD (*New Jersey Institute of Technology*). Assistant Teaching Professor. Examination of the structure and function of living organisms from the cellular to the organismal level in order to better understand common physiological processes.

Emeritus Faculty

Joseph Bentz, PhD (*State University of New York [SUNY] at Buffalo*). Professor Emeritus. Biophysics, biochemistry and biopharmaceutics, focused on the molecular basis of biological membrane transport and fusion.

Cecilie Goodrich, PhD (*Harvard University*). Professor Emeritus. Neuroscience and systems physiology, postnatal maturation of physiology and behavior in relation to brain immunocytochemistry.

Donna Murasko, PhD (*Penn State Hershey Medical Center*) *Dean Emeritus*. Professor. The effects of aging on the adaptive immune response to influenza virus and retrovirus latency and reactivation.

Chemistry

Major: Chemistry

Degree Awarded: Bachelor of Arts (BA) or Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: BA -183.0; BS - 189.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 40.0501

Standard Occupational Classification (SOC) code: 19-2031

About the Program

Drexel's Department of Chemistry offers both a BA and a BS degree in Chemistry. The BA is offered as a four-year, one co-op program for those interested in following their undergraduate education in chemistry with professional school such as law or medicine. The BS degree, offered in three formats (a five-year, three co-op; four-year, one co-op; and a four-year, no co-op), is certified by the American Chemical Society. The BS degree also can be completed with a Biochemistry concentration. In addition, a minor in Chemistry is available for students in other majors who desire a strong physical science background.

Each student plans a course of study and selects electives in consultation with an advisor in the Department of Chemistry (<http://www.drexel.edu/coas/academics/departments-centers/chemistry/>). Students who show initiative and laboratory ability are encouraged to participate in undergraduate research by selecting a research problem in collaboration with one of the departmental faculty members. Students in the BS program are required to participate in undergraduate research through the senior research courses.

Most graduate courses in chemistry are open to qualified seniors. Prerequisites and descriptions of available graduate courses appear in the graduate catalog.

Additional Information

For more information about the major in Chemistry, contact:

Daniel King, PhD
Undergraduate Affairs Committee Chair
Department of Chemistry
Drexel University
dk68@drexel.edu

Degree Requirements (BA)

General Education Requirements *

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Humanities and Arts electives		6.0
International Studies electives		6.0
Social and Behavioral Studies electives		6.0
Studies in Diversity electives		6.0
Language Requirements courses		8.0-12.0
CHEM 121	Majors Chemistry I	5.0
CHEM 122	Majors Chemistry II	5.0
CHEM 123	Majors Chemistry III	5.5
CHEM 230	Quantitative Analysis	4.0
CHEM 231 [WI]	Quantitative Analysis Laboratory	2.0
CHEM 246	Organic Chemistry for Majors I	6.5
CHEM 248	Organic Chemistry for Majors II	6.5
CHEM 249	Organic Chemistry for Majors III	7.0
CHEM 253	Thermodynamics and Kinetics	4.0
CHEM 270	Software Skills for Chemists	3.0

CHEM 357 [WI]	Physical Chemistry Laboratory I	2.5
CHEM 367	Chemical Information Retrieval	3.0
CHEM 421	Inorganic Chemistry I	3.0
Chemistry Electives		
Select two Chemistry Electives **		6.0
Biology Requirements		
BIO 131	Cells and Biomolecules	5.0
& BIO 134	and Cells and Biomolecules Lab	
BIO 132	Genetics and Evolution	5.0
& BIO 135	and Genetics and Evolution Lab	
BIO 133	Physiology and Ecology	5.0
& BIO 136	and Anatomy and Ecology Lab	
Mathematics Requirements		
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
Physics Requirements		
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Free Electives		
Free electives ***		32.0-36.0
Total Credits		183.0-191.0

* Categories of Electives:

- *Humanities and Arts Electives*
Designated courses in art, art history, communication studies, foreign languages (300-level or above), history, literature, music, philosophy, religion, and theatre arts.
- *International Electives*
Designated courses in anthropology, art history, history, literature, music, politics and sociology. Courses with an international focus may be used to fulfill requirements in other categories as well.
- *Social and Behavioral Studies Electives*
Designated courses in anthropology, criminal justice, economics, international relations, history, politics, psychology and sociology.
- *Studies in Diversity Electives*
Africana studies, women's studies or designated cross-listed courses in anthropology, art, art history, history, literature, music, philosophy, politics and sociology.
- *Language Requirement*
Students may satisfy the language course requirements in two ways: (1) complete at least 8.0 credits of a foreign language at Drexel and, at minimum, must complete the 103 level of the target language (or beyond if they place higher); or (2) take 12.0 credits of a computer language over two terms.

** Courses with CHEM prefix, although ENVS chemistry courses can also fulfill this requirement (with Department approval).

*** The total number of free elective credits depends on the number of credits required to fulfill the language requirement.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of

writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study (BA)

4 year, 1 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131 & BIO 134	5.0 BIO 132 & BIO 135	5.0 CHEM 123	5.5 VACATION	
CHEM 121	5.0 CHEM 122	5.0 BIO 133 & BIO 136	5.0	
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0	
MATH 121	4.0 ENGL 102 or 112	3.0 MATH 123	4.0	
UNIV S101	1.0 MATH 122	4.0		
	18	18	17.5	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 230 & CHEM 231	6.0 CHEM 248	6.5 CHEM 249	7.0 PHYS 201	4.0
CHEM 246	6.5 COOP 101*	1.0 PHYS 102	4.0 International Studies elective	3.0
Free elective	3.0 MATH 200	4.0 Humanities electives	6.0 Free electives	6.0
	PHYS 101	4.0		
	15.5	15.5	17	13

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 253	4.0 CHEM 270	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 367	3.0 CHEM 357	2.5		
CHEM 421	3.0 Language elective	4.0		
UNIV S201	1.0 Diversity Studies elective	3.0		
Language elective	4.0 Social and Behavioral Studies elective	3.0		
	15	15.5	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
Chemistry elective	3.0 Chemistry elective	3.0 Free electives	12.0
Social and Behavioral Studies elective	3.0 International Studies	3.0	
Diversity Studies elective	3.0 Free electives	6.0	

Free elective	5.0		
	14	12	12

Total Credits 183

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Degree Requirements (BS)

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101 or ENGL 111	Composition and Rhetoric I: Inquiry and Exploratory Research English Composition I	3.0
ENGL 102 or ENGL 112	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing English Composition II	3.0
ENGL 103 or ENGL 113	Composition and Rhetoric III: Themes and Genres English Composition III	3.0
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Technical electives**		6.0
Liberal Studies electives**		6.0

Chemistry Requirements

CHEM 121	Majors Chemistry I	5.0
CHEM 122	Majors Chemistry II	5.0
CHEM 123	Majors Chemistry III	5.5
CHEM 230	Quantitative Analysis	4.0
CHEM 231 [WI]	Quantitative Analysis Laboratory	2.0
CHEM 246	Organic Chemistry for Majors I	6.5
CHEM 248	Organic Chemistry for Majors II	6.5
CHEM 249	Organic Chemistry for Majors III	7.0
CHEM 253	Thermodynamics and Kinetics	4.0
CHEM 270	Software Skills for Chemists	3.0
CHEM 346	Qualitative Organic Chemistry	5.5
CHEM 355	Physical Chemistry IV	3.0
CHEM 357 [WI]	Physical Chemistry Laboratory I	2.5
CHEM 358	Physical Chemistry Laboratory II	2.5
CHEM 359	Atomic and Molecular Spectroscopy	3.0
CHEM 367	Chemical Information Retrieval	3.0
CHEM 420	Molecular Symmetry and Group Theory Applied Chemistry	3.0
CHEM 421	Inorganic Chemistry I	3.0
CHEM 422	Inorganic Chemistry II	3.0
CHEM 425	Inorganic Chemistry Laboratory	4.0
CHEM 430	Analytical Chemistry I	3.0
CHEM 431 [WI]	Analytical Chemistry II	4.0
CHEM 493	Senior Research Project	9.0

Biology Requirements

BIO 131	Cells and Biomolecules	4.0
BIO 134	Cells and Biomolecules Lab	1.0
BIO 214	Principles of Cell Biology	4.0

Biochemistry Requirements***

BIO 311 or BIO 404 or CHEM 371	Biochemistry Structure and Function of Biomolecules Chemistry of Biomolecules	3.0-4.0
BIO 306	Biochemistry Laboratory	2.0

Computer/Mathematics Requirements

MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0

MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0
or MATH 210	Differential Equations	
Physics Requirements		
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Free Electives		21.0
Total Credits		189.0-190.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

** Technical electives are defined as 200+ level courses from Science, Mathematics, Business, Engineering or Information Studies. Liberal studies electives are defined as courses (at any level) from all other areas.

*** The American Chemical Society requires ACS-certified students to take a specified number of biochemistry courses. To fulfill this requirement in the BS curriculum, students should take a combination of one lecture and one lab course from the choice of: BIO 311, BIO 306, BIO 404, or CHEM 371 to fulfill the biochemistry requirement. Students may also choose to take the two lecture courses (BIO 311, BIO 404, or CHEM 371) rather than a lecture/laboratory combination.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plans of Study (BS)

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CHEM 122	5.0 CHEM 123	5.5 VACATION	
BIO 134	1.0 CIVC 101	1.0 ENGL 103 or 113	3.0	
CHEM 121	5.0 ENGL 102 or 112	3.0 MATH 123	4.0	
ENGL 101 or 111	3.0 MATH 122	4.0 PHYS 102	4.0	
MATH 121	4.0 PHYS 101	4.0		

UNIV S101	1.0			
	18	17	16.5	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 230 & CHEM 231	6.0 CHEM 248	6.5 BIO 214	4.0 VACATION	
CHEM 246	6.5 MATH 200	4.0 CHEM 249	7.0	
PHYS 201	4.0 Free elective	3.0 MATH 210 or 201	4.0	
	Technical Elective*	3.0 Free elective	3.0	
	16.5	16.5	18	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 253	4.0 CHEM 270	3.0 Liberal Studies elective	3.0 VACATION	
CHEM 367	3.0 CHEM 357	2.5 Technical elective*	3.0	
CHEM 421	3.0 CHEM 420	3.0 Free electives	9.0	
CHEM 430	3.0 CHEM 431	4.0		
UNIV S201	1.0			
	14	12.5	15	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
CHEM 346	5.5 BIO 306	2.0 CHEM 358	2.5
CHEM 355	3.0 CHEM 359	3.0 CHEM 422	3.0
CHEM 493	3.0 CHEM 493	3.0 CHEM 425	4.0
BIO 311 or 404**	4.0 Liberal Studies elective	3.0 CHEM 493	3.0
	Free elective	4.0 Free elective	3.0
	15.5	15	15.5

Total Credits 190

* Technical electives are defined as 200+ level courses from Science, Mathematics, Business, Engineering or Information Studies. Liberal studies electives are defined as courses (at any level) from all other areas.

** The American Chemical Society requires ACS-certified students to take a specified number of biochemistry courses. To fulfill this requirement in the BS curriculum, students should take a combination of one lecture and one lab course from the choice of: BIO 311, BIO 306, BIO 404 or CHEM 371 to fulfill the biochemistry requirement. Students may also choose to take the two lecture courses (BIO 311, BIO 404, or CHEM 371) rather than a lecture/laboratory combination.

NOTE: Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CHEM 122	5.0 CHEM 123	5.5 VACATION	
BIO 134	1.0 CIVC 101	1.0 ENGL 103 or 113	3.0	
CHEM 121	5.0 ENGL 102 or 112	3.0 MATH 123	4.0	
ENGL 101 or 111	3.0 MATH 122	4.0 PHYS 102	4.0	
MATH 121	4.0 PHYS 101	4.0		

UNIV S101	1.0			
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	18	17	16.5	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 230 & CHEM 231	6.0 CHEM 248	6.5 BIO 214	4.0 Liberal Studies elective	3.0
CHEM 246	6.5 MATH 200	4.0 CHEM 249	7.0 Technical elective*	3.0
PHYS 201	4.0 Free elective	3.0 COOP 101**	1.0 Free electives	9.0
	Technical Elective*	3.0 MATH 210 or 201	4.0	
		Free elective	3.0	
<hr/>				
	16.5	16.5	19	15
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 253	4.0 CHEM 270	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 367	3.0 CHEM 357	2.5		
CHEM 421	3.0 CHEM 420	3.0		
CHEM 430	3.0 CHEM 431	4.0		
UNIV S201	1.0			
<hr/>				
	14	12.5	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
BIO 311 or 404***	4.0 BIO 306	2.0 CHEM 358	2.5	
CHEM 346	5.5 CHEM 359	3.0 CHEM 422	3.0	
CHEM 355	3.0 CHEM 493	3.0 CHEM 425	4.0	
CHEM 493	3.0 Liberal Studies elective	3.0 CHEM 493	3.0	
	Free elective	3.0 Free elective	3.0	
<hr/>				
	15.5	14	15.5	

Total Credits 190

- * Technical electives are defined as 200+ level courses from Science, Mathematics, Business, Engineering or Information Studies. Liberal studies electives are defined as courses (at any level) from all other areas.
- ** COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.
- *** The American Chemical Society requires ACS-certified students to take a specified number of biochemistry courses. To fulfill this requirement in the BS curriculum, students should take a combination of one lecture and one lab course from the choice of: BIO 311, BIO 306, BIO 404 or CHEM 371 to fulfill the biochemistry requirement. Students may also choose to take the two lecture courses (BIO 311, BIO 404, or CHEM 371) rather than a lecture/ laboratory combination.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CHEM 122	5.0 CHEM 123	5.5 VACATION	
BIO 134	1.0 CIVC 101	1.0 COOP 101*	1.0	
CHEM 121	5.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	

ENGL 101 or 111	3.0 MATH 122	4.0 MATH 123	4.0	
MATH 121	4.0 PHYS 101	4.0 PHYS 102	4.0	
UNIV S101	1.0			
<hr/>				
	18	17	17.5	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 230 & CHEM 231	6.0 CHEM 248	6.5 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 246	6.5 MATH 200	4.0		
PHYS 201	4.0 Free elective	3.0		
<hr/>				
	16.5	13.5	0	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 214	4.0 CHEM 270	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 249	7.0 CHEM 357	2.5		
CHEM 253	4.0 Technical elective**	3.0		
MATH 210 or 201	4.0 Liberal Studies Elective	3.0		
	Free elective	3.0		
<hr/>				
	19	14.5	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 355	3.0 CHEM 359	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 367	3.0 CHEM 420	3.0		
CHEM 421	3.0 CHEM 431	4.0		
CHEM 430	3.0 Technical elective**	3.0		
UNIV S201	1.0 Free elective	3.0		
<hr/>				
	13	16	0	0
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
BIO 311 or 404***	4.0 BIO 306	2.0 CHEM 422	3.0	
CHEM 346	5.5 CHEM 493	3.0 CHEM 425	4.0	
CHEM 358	2.5 Liberal Studies elective	3.0 CHEM 493	3.0	
CHEM 493	3.0 Free electives	6.0 Free electives	6.0	
<hr/>				
	15	14	16	

Total Credits 190

- * COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.
- ** Technical electives are defined as 200+ level courses from Science, Mathematics, Business, Engineering or Information Studies. Liberal studies electives are defined as courses (at any level) from all other areas.

*** *Biochemistry Requirement:* The American Chemical Society requires ACS-certified students to take a specified number of biochemistry courses. To fulfill this requirement in the BS curriculum, you should take a combination of one lecture and one lab course from the choice of: BIO 311, BIO 306, BIO 404 or CHEM 371 to fulfill the biochemistry requirement. Students may also choose to take the two lecture courses (BIO 404, BIO 311) or CHEM 371) rather than a lecture/laboratory combination.

Chemistry BS - Biochemistry Concentration Degree Requirements

General Education Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV S101	The Drexel Experience	1.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Technical electives*		6.0
Liberal Studies electives*		6.0

Chemistry Requirements

CHEM 121	Majors Chemistry I	5.0
CHEM 122	Majors Chemistry II	5.0
CHEM 123	Majors Chemistry III	5.5
CHEM 230	Quantitative Analysis	4.0
CHEM 231 [WI]	Quantitative Analysis Laboratory	2.0
CHEM 246	Organic Chemistry for Majors I	6.5
CHEM 248	Organic Chemistry for Majors II	6.5
CHEM 249	Organic Chemistry for Majors III	7.0
CHEM 253	Thermodynamics and Kinetics	4.0
CHEM 270	Software Skills for Chemists	3.0
CHEM 346	Qualitative Organic Chemistry	5.5
CHEM 357 [WI]	Physical Chemistry Laboratory I	2.5
CHEM 367	Chemical Information Retrieval	3.0
CHEM 420	Molecular Symmetry and Group Theory Applied Chemistry	3.0
CHEM 421	Inorganic Chemistry I	3.0
CHEM 422	Inorganic Chemistry II	3.0
CHEM 425	Inorganic Chemistry Laboratory	4.0
CHEM 430	Analytical Chemistry I	3.0
CHEM 431 [WI]	Analytical Chemistry II	4.0
CHEM 493	Senior Research Project	9.0

Biology Requirements

BIO 131	Cells and Biomolecules	4.0
BIO 134	Cells and Biomolecules Lab	1.0
BIO 214	Principles of Cell Biology	4.0

Biochemistry Requirements

CHEM 371	Chemistry of Biomolecules	3.0
BIO 311	Biochemistry	2.0
BIO 306	Biochemistry Laboratory	4.0
BIO 404	Structure and Function of Biomolecules	4.0

Computer/Mathematics Requirements

MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0

Physics Requirements

PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Free electives		
Free electives		21.0
Total Credits		188.5

* Technical electives are defined as 200+ level courses from Science, Mathematics, Business, Engineering or Information Science. Liberal studies electives are defined as courses (at any level) from all other areas.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Chemistry (BS) - Biochemistry Concentration Sample Plan of Study

4 year, no-cop

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131 & BIO 134	5.0 CHEM 122	5.0 CHEM 123	5.5 VACATION	
CHEM 121	5.0 CIVC 101	1.0 ENGL 103 or 113	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 MATH 123	4.0	
MATH 121	4.0 MATH 122	4.0 PHYS 102	4.0	
UNIV S101	1.0 PHYS 101	4.0		
	18	17	16.5	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 230 & CHEM 231	6.0 CHEM 248	6.5 BIO 214	4.0 VACATION	
CHEM 246	6.5 MATH 200	4.0 CHEM 249	7.0	
PHYS 201	4.0 Liberal Studies elective	3.0 MATH 201 or 210	4.0	
	Free elective*	4.0 Technical elective**	3.0	
	16.5	17.5	18	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 253	4.0 CHEM 270	3.0 BIO 311	4.0 VACATION	
CHEM 367	3.0 CHEM 357	2.5 CHEM 371	3.0	
CHEM 421	3.0 CHEM 420	3.0 Technical elective**	3.0	
CHEM 430	3.0 CHEM 431	4.0 Free electives	6.0	
UNIV S201	1.0			
	14	12.5	16	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
BIO 404	4.0 BIO 306	2.0 CHEM 422	3.0
CHEM 346	5.5 CHEM 493	3.0 CHEM 425	4.0
CHEM 493	3.0 Liberal Studies elective	3.0 CHEM 493	3.0
Free elective	3.0 Free electives	6.0 Free elective	3.0
	15.5	14	13

Total Credits 188.5

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

** Must be at a 200+ level. See Degree Requirements for more information on acceptable classes.

4 year, 1 co-op**First Year**

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131 & BIO 134	5.0 CHEM 122	5.0 CHEM 123	5.5 VACATION	
CHEM 121	5.0 CIVC 101	1.0 ENGL 103 or 113	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 MATH 123	4.0	
MATH 121	4.0 MATH 122	4.0 PHYS 102	4.0	
UNIV S101	1.0 PHYS 101	4.0		
	18	17	16.5	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 230 & CHEM 231	6.0 CHEM 248	6.5 BIO 214	4.0 Technical elective**	3.0
CHEM 246	6.5 MATH 200	4.0 CHEM 249	7.0 Liberal Studies elective	3.0
PHYS 201	4.0 Liberal Studies elective	3.0 COOP 101*	1.0 Free electives	9.0
	Free elective	3.0 MATH 201 or 210	4.0	
		Free elective	3.0	
	16.5	16.5	19	15

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 253	4.0 CHEM 270	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 421	3.0 CHEM 357	2.5		
CHEM 430	3.0 CHEM 420	3.0		
CHEM 367	3.0 CHEM 431	4.0		
UNIV S201	1.0			
	14	12.5	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
CHEM 346	5.5 CHEM 493	3.0 CHEM 371	3.0
CHEM 493	3.0 BIO 306	2.0 CHEM 422	3.0
BIO 311	4.0 Liberal Studies elective	3.0 CHEM 425	4.0
BIO 404	4.0 Technical elective**	3.0 CHEM 493	3.0
	Free elective	3.0	
	16.5	14	13

Total Credits 188.5

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101. Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

** Must be at a 200+ level. See Degree Requirements for more information on acceptable classes.

5 year, 3 co-op**First Year**

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131 & BIO 134	5.0 CHEM 122	5.0 CHEM 123	5.5 VACATION	
CHEM 121	5.0 CIVC 101	1.0 COOP 101*	1.0	
ENGL 101 or 111	3.0 ENGL 102 or 102	3.0 ENGL 103 or 113	3.0	
MATH 121	4.0 MATH 122	4.0 MATH 123	4.0	
UNIV S101	1.0 PHYS 101	4.0 PHYS 102	4.0	
	18	17	17.5	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 230 & CHEM 231	6.0 CHEM 248	6.5 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 246	6.5 MATH 200	4.0		
PHYS 201	4.0 Free elective	3.0		
	16.5	13.5	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 214	4.0 CHEM 270	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 249	7.0 CHEM 357	2.5		
CHEM 253	4.0 Technical elective**	3.0		
MATH 201 or 210	4.0 Free elective	3.0		
	Liberal Studies elective	3.0		
	19	14.5	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 367	3.0 CHEM 420	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CHEM 421	3.0 CHEM 431	4.0		
CHEM 430	3.0 Technical elective**	3.0		
BIO 311	4.0 Free elective	3.0		

UNIV S201	1.0			
	14	13	0	0
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
CHEM 346	5.5 CHEM 493	3.0 CHEM 371	3.0	
CHEM 493	3.0 BIO 306	2.0 CHEM 422	3.0	
BIO 404	4.0 Liberal Studies elective	3.0 CHEM 425	4.0	
Free elective	3.0 Free electives	6.0 CHEM 493	3.0	
		Free elective	3.0	
	15.5	14	16	

Total Credits 188.5

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

** Must be at a 200+ level. See Degree Requirements for more information on acceptable classes.

Accelerated Bachelor's/Master's Dual Degree

The bachelor's/master's (BS/MS) dual degree program is an accelerated program providing the academically qualified student with an opportunity to earn both a BS and an MS degree (two diplomas are awarded) in five years—the time normally required to finish the co-op option BS degree alone.

This is an academically demanding program, but there are several allowances built in to enable the program to be completed in the time allotted. For instance, only 180-181 rather than 190-195 undergraduate quarter credits are required. The co-op experience may be adjusted; the student may take two rather than three co-op cycles, enabling two additional quarters of on-campus study. If needed, the student may also take evening courses while on co-op.

Eligibility

Exceptional students with a cumulative grade point average of at least 3.0 and who are enrolled in the five-year co-op option program are eligible for the BS/MS program. Students formally apply to the program after they have completed 90.0 credits but before they have completed 120.0 credits. Students are strongly encouraged to begin planning for the program as early as their freshman year. Students who have more than 120.0 credits are not eligible.

Transfer students are eligible to join the BS/MS program, but they must be able to complete the program in the time it would take to complete the BS degree alone. International transfer students must be able to meet the required minimum TOEFL score for the department graduate program (currently 550) in order to be admitted to the BS/MS program.

Application Process

Interested applicants need to formally apply to the program. Applications are available in the Office of Graduate Admissions or in the College of Arts & Sciences advisor's office. Applications must be accompanied by a plan of study prepared in consultation with the undergraduate and

graduate advisor in the department and approved by both the department head and the dean. Entry into the program must be officially approved by both the department head and academic dean.

BS/MS Requirements

Students enrolled in the BS/MS dual degree program must complete 180-181 undergraduate quarter credits for the BS degree and at least 45.0 graduate quarter credits for the MS degree. All graduate departmental requirements must be satisfied in full, including producing a thesis, if the thesis-option master's program is elected. Master's thesis requirements may be completed in the summer term of the final year with prior approval of the department. Students in the BS/MS program must maintain a cumulative GPA of 3.0 in their undergraduate and graduate coursework to remain in the program. Further questions about the BS/MS degree program should be directed to the departmental graduate advisor.

Additional Information

For more information, contact:

Daniel King, PhD
Undergraduate Affairs Committee Chair
Department of Chemistry
Drexel University
dk68@drexel.edu

Co-op/Career Opportunities

Opportunities for Chemistry majors include working in research and development in corporate and government laboratories in the chemical, pharmaceutical, and agricultural (e.g., U.S. Department of Agriculture) sectors. There is a remarkably high concentration of chemical and pharmaceutical companies in the Philadelphia region. Other options include entering medical, dental, law, or other professional schools. The major in Chemistry is sufficiently flexible to allow students to prepare to teach at the secondary level. With proper selection of electives, students can meet teacher certification requirements.

Sample Co-op Opportunities

A five-year co-op degree is offered. When students complete their co-op jobs, they are asked to write an overview of their experiences. These brief quotes are taken from some recent student reports:

Assistant chemist, pharmaceuticals manufacturer: "My position involved the synthesis and characterization of target compounds in the endothelium project. Involved the development of synthetic roots to the prescribed target. This would include the investigation of reactions which were going to be used...the position was very independent...great working environment."

Co-op chemist, petroleum refiner: "Performed synthesis of ligands and metal complexes. Operated FT-IR spectrometer for sample analysis. Submitted samples for analysis by mass spectrometer and NMR...The position allowed me to develop the skills necessary for independent research in organic synthesis."

Assistant lab technician, pharmaceuticals manufacturer: "I was an assistant technician in a mass spectrometry lab...I was responsible for the development of SDS-gel electrophoresis techniques for gels and gel membranes...I developed the methods independently and my employer encouraged me to be an expert on the technique and explore any method I found that would benefit the lab."

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) page for more detailed information on co-op and post-graduate opportunities.

Facilities

There are nine undergraduate teaching laboratories in the department: three freshman Chemistry labs, three Organic Chemistry labs, a Physical Chemistry lab, an Analytical Instrumentation Laboratory, and a combined Analytical/Inorganic Chemistry lab.

Mass Spectrometry Laboratory

The department maintains a professionally staffed mass spectrometry facility available to all members of the university community. Currently available instrumentation consists of a Waters Autospec M high resolution magnetic-sector mass spectrometer, a Bruker Autoflex III MALDI Time-of-Flight Mass Spectrometer, a Thermo LTQ-FT Fourier Transform Mass Spectrometer, a Sciex API-3000 triple-quadrupole mass spectrometer, and a Varian Saturn 2000 Gas Chromatograph/Ion-trap mass spectrometer system.

Nuclear Magnetic Resonance Laboratory

The professionally staffed Chemistry department NMR facility is equipped with 300MHz and 500MHz Varian Unity INNOVA NMR systems; both instruments have multi-nuclear capability. The probe on the 500MHz instrument is a cryogenically cooled triple resonance model (1H {13C/15N}) suitable for protein analysis. A Varian X-band 12" EPR spectrometer is also available.

Analytical Instrumentation Laboratory

The open-access departmental Analytical Instrumentation Laboratory includes two Perkin-Elmer (PE) Spectrum One Fourier-transform infrared absorption spectrometers each with a universal diamond ATR accessory, a PE Lambda-35 UV/visible spectrometer, a PE Lambda-950 UV/visible/NIR spectrometer with a 60-mm-diameter diffuse reflectance integrating sphere, a PE model 343 polarimeter, a PE LS55B luminescence spectrometer, a PE Clarus 500 capillary-column GC with dual FID detectors, a Clarus 500 capillary-column GC/MS system (with electron impact capability), a PE Series 200 Quaternary HPLC development system with UV/visible photodiode array detector, a PE Series 200 binary HPLC system interfaced to a Sciex 2000 triple-quadrupole mass spectrometer, a PE Series 2000 binary Gel Permeation Chromatography system with refractive index detector, and a Varian AA240FS flame atomic absorption spectrometer equipped with a GTA 120 Graphite Furnace Accessory.

Organic Instrumentation Laboratory

The Organic Instrumentation Laboratory (co-located with the organic synthesis teaching laboratories in the Papdakis Integrated Sciences Building) is equipped with two Perkin-Elmer (PE) Spectrum Two Fourier-transform infrared absorption spectrometers each with a universal diamond ATR accessory, a PE Clarus 500 capillary-column GC with one FID and one TCD detector, and an Anasazi EFT-90 FT-NMR system.

Other Departmental Facilities

The department has a VEECO INNOVA N3 Multimode Scanning Probe Microscope and also maintains a computational chemistry laboratory equipped with nine Dell Optiplex 790 computers running Hyperchem v 8.0. Research laboratories for each of the department faculty members are located in Disque and Stratton Halls. Instrumentation available in the research laboratories is described on individual faculty web pages. Full-time professional support includes two electronic instrument specialists (for NMR and MS- Chemistry department), two electronics specialists

(College of Arts & Sciences Electronics Shop), and four machinists (Drexel University Machine Shop).

Chemistry Faculty

Reza Farasat, PhD (*University of Alabama*). Assistant Teaching Professor. Modification of polymers for diverse applications; utilizing Thermoanalysis techniques to study polymeric and non-polymeric materials; nanotechnology; applying Multi-detector Size Exclusion Chromatography for characterization of polymers; creating composites to improve materials' properties.

Fraser Fleming, PhD (*University of British Columbia (Canada)*). Professor. Nitriles, Isonitriles, Stereochemistry, Organometallics

Joe P. Foley, PhD (*University of Florida*) *Department Head*. Professor. Separation science, especially the fundamentals and biomedical/ pharmaceutical applications of the following voltage- or pressure-driven separation techniques: capillary electrophoresis (CE), electrokinetic chromatography, supercritical fluid chromatography, and high-performance and two-dimensional liquid chromatography (LC). Within these techniques, we explore novel separation modes (e.g., dual-opposite-injection CE and sequential elution LC), novel surfactant aggregate pseudophases, and chiral separations.

Lee Hoffman, PhD (*Flinders University, Adelaide, South Australia*). Assistant Teaching Professor. Interfacial studies on the self-assembly of natural organic materials, understanding the nature of each component, and development of a mechanism describing this process; Dendrimer/ metal nanocomposite design and synthesis hosting metal nanoparticles, utilizing the multivalent dendritic polymer architecture for further exploitation with other molecules such as antibodies and other targeting species.

Monica Ilies, PhD (*Polytechnic University of Bucharest*). Associate Teaching Professor. Bioorganic chemistry and chemical biology; bioinorganic chemistry and biochemistry.

Haifeng Frank Ji, PhD (*Chinese Academy of Sciences*). Professor. Micromechanical sensors for biological and environmental applications; Nanomechanical drug screening technology.

Daniel B. King, PhD (*University of Miami*). Associate Professor. Assessment of active learning methods and technology in chemistry courses; incorporation of environmental data into chemistry classroom modules; development of hands-on activities and laboratory experiments.

Jamie Ludwig, PhD (*UT Southwestern Medical Center*). Discovery and optimization of biocatalytic transformations for use inorganic synthesis.

Dionicio Martinez-Solario, PhD (*University of Alabama*). Assistant Professor. Total synthesis of complex biologically active natural products serving as inspirational platforms for the discovery and development of new reactions and synthetic methods.

Craig McClure, PhD (*University of Michigan*). Associate Teaching Professor. Promotion of quantitative literacy in introductory courses; development of guided inquiry activities for introductory chemistry; outreach programs in STEM fields.

Kevin G. Owens, PhD (*Indiana University*). Associate Professor. Mass spectrometry research, including the development of sample preparation techniques for quantitative analysis and mass spectrometric imaging using matrix-assisted laser desorption/ionization (MALDI) time-of-flight mass spectrometry (TOFMS) techniques for both biological and synthetic

polymer systems, the development of laser spectroscopic techniques for combustion analysis, and the development of correlation analysis and other chemometric techniques for automating the analysis of mass spectral information.

Susan A. Rutkowsky, PhD (*Drexel University*) Associate Department Head. Associate Teaching Professor. Development of labs and lecture demonstrations for general and organic chemistry courses; STEM outreach programs.

Jeremiah Scepaniak, PhD (*New Mexico State University*). Assistant Professor. Design transition metal-based contrast agents for MRI & synthesis of bimetallic complexes to activate small molecules.

Reinhard Schweitzer-Stenner, PhD (*Universität Bremen (Germany)*). Professor. Exploring conformational ensembles of unfolded or partially folded peptides and proteins; determining the parameters governing peptide self-aggregation; structure and function of heme proteins; investigating protein-membrane interactions; use of IR, VCD, Raman, NMR and absorption spectroscopy for structure analysis.

Karl Sohlberg, PhD (*University of Delaware*). Associate Professor. Computational and theoretical materials-related chemistry: (1) complex catalytic materials; (2) mechanical and electrical molecular devices.

Anthony Wambsgans, PhD (*Rice University*). Associate Teaching Professor.

Ezra Wood, PhD (*University of California-Berkeley*). Associate Professor. Radical chemistry and formation of secondary pollutants in urban and forest environments, impacts of biomass burning on air pollution and climate change, pollutant emissions, and design and deployment of novel instrumentation for field studies.

Jun Xi, PhD (*Cornell University*). Associate Teaching Professor. Biomacromolecular interactions both in solution and in confined environment; mechanisms of DNA replication and DNA repair; structure and function of molecular chaperones; drug target identification and new therapeutic development; single molecule enzymology; DNA directed organic synthesis.

Emeritus Faculty

Anthony W. Addison, PhD (*University of Kent at Canterbury, England*). Professor Emeritus. Design and synthesis of novel biomimetic and oligonuclear chelates of copper, nickel, iron, ruthenium and vanadium; their interpretation by magnetochemical, electrochemical and spectroscopic methods, including electron spin resonance; CD and ESR spectroscopy and kinetics for elucidation of molecular architecture of derivatives (including NO) of oxygen-binding and electron-transfer heme- and non-heme iron metalloproteins of vertebrate and invertebrate origins; energy-transfer by Ru, Ir and lanthanide-containing molecules and assemblies.

Amar Nath, PhD (*Moscow State University, Moscow USSR*). Professor Emeritus.

Peter A. Wade, PhD (*Purdue University*). Professor Emeritus. Exploration of a newly discovered [3,3]-sigmatropic rearrangement in which O-allyl nitronic esters are thermally converted to #,#-unsaturated nitro compounds; development and exploitation of a carbon-based hemiacetal mimic; and exploration of cycloaddition reactions involving nitroethylene derivatives and novel nitrile oxides.

Communication

Major: Communication

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 09.0401; 09.0900; 09.0908; 09.9999; 09.0199

Standard Occupational Classification (SOC) code: 11-2011; 11-2031; 27-3022; 27-3041; 27-3042; 27-3043

About the Program

The Department of Communication is committed to helping students become broadly educated and professionally competent communicators. Students are exposed to a variety of media and are guided in the development of their interpretive and expressive skills.

Students may complete the BA in Communication with a concentration in public relations or journalism. Those who want to keep their options open may concentrate in communication.

The Department also offers a Bachelor of Science (BS) in Communication (p. 35).

All communication majors take a common core of courses that emphasize communication theory and methods. Students in the BA program also study a modern language. Students in the public relations concentration take courses and pursue careers in public relations, event planning, media relations, social media, and corporate communication. Journalism students take courses and pursue careers as reporters, copywriters, editors, and media specialists. Students in the communication concentration have the flexibility of crafting their path through the major and thus have career possibilities in any of the areas listed here. Many communication graduates also go on to law school, business school, or graduate school.

Additional Information

If you would like to learn more about the Department of Communication, please visit the Department of Communication website (<http://drexel.edu/coas/academics/departments-centers/communication/>).

Degree Requirements: Communication Concentration (BA)

Students who select the communication concentration take courses in all of the existing concentrations, as well as other communication courses to prepare them for any communication-related career, or professional post-graduate options.

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSY 101	General Psychology I	3.0

UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0
Foreign language courses **		8.0-12.0
Humanities and fine arts		12.0
Social sciences		9.0
International studies		6.0
Studies in diversity		6.0
Communication Core Requirements		
Theory Sequence		
COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	
Methods Sequence		
COM 220	Qualitative Research Methods	3.0
COM 221	Quantitative Research Methods in Communication	3.0
Additional Core Requirements		
COM 222	Interpersonal Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0
Additional Breadth in COM		
COM 160	Introduction to Journalism	3.0
COM 181	Public Relations Principles and Theory	3.0
COM 261	Advanced Journalism	3.0
or COM 282	Public Relations Writing	
COM 310 [WI]	Technical Communication	3.0
Two additional COM classes at 300 level or higher		6.0
Additional Electives		
COM electives		24.0
Free electives		27.0
Total Credits		180.0-188.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

** Students must complete at least 8 credits of a foreign language at Drexel and, at minimum, must complete the 103 level of the target language (or beyond if they place higher).

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive->

courses/) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study: Communication Concentration (BA)

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PSY 101	3.0 Foreign Language Course	4.0 Humanities Elective	3.0	
UNIV H101	1.0 Math Course	3.0-4.0 Math Course	3.0-4.0	
Foreign Language Course*	4.0			
		17	14-15	15-16
				0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221	3.0 VACATION	
COM 222	3.0 COM 247	3.0 COM 261 or 282	3.0	
Humanities Elective	3.0 LING 101 or 102	3.0 COM 310	3.0	
Science Course	3.0-4.0 COM Elective	3.0 COM Elective	3.0	
Social Science Elective	3.0 Science Course	3.0-4.0 International or Diversity Elective	3.0	
		15-16	15-16	15
				0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 305	3.0 COM 240	3.0 COM Elective (above 300 level)	3.0 VACATION	
COM Electives	6.0 UNIV H201	1.0 Free Electives	6.0	
Free Elective	3.0 COM Electives	6.0 International or Diversity Elective	3.0	
International or Diversity Elective	3.0 Free Elective	3.0 Social Science Elective	3.0	
		Humanities Elective	3.0	
		15	16	15
				0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 400	3.0 COM 491	3.0 COM 492	3.0	
Communica Elective (above 300 level)	3.0 Communica Elective	3.0 COM Elective	3.0	

Free Electives**	7.0 Free Elective	3.0 Free Electives	6.0
International or Diversity Elective	3.0 Humanities Elective	3.0	
	Social Science Elective	3.0	
	16	15	12

Total Credits 180-184

* See degree requirements (p.).

** Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

4 year, one co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101**	1.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities Elective	3.0	
UNIV H101	1.0 Foreign Language Course	4.0 Math Course	3.0-4.0	
Foreign Language Course	4.0 Math Course	3.0-4.0		
	17	15-16	15-16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221	3.0 PHIL 305	3.0
COM 222	3.0 COM 247	3.0 COM 261 or 282	3.0 COM Electives	6.0
Humanities Elective	3.0 LING 101 or 102	3.0 COM 310	3.0 Free Elective	3.0
Science Course	3.0-4.0 COM Elective	3.0 COM Elective	3.0 International or Diversity Elective	3.0
Social Science Elective	3.0 Science Course	3.0-4.0 International or Diversity Elective	3.0	
	15-16	15-16	15	15

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM Elective (above 300 level)	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 Free Electives	6.0		
COM Electives	6.0 International or Diversity Elective	3.0		
Free Elective	3.0 Social Science Elective	3.0		
Humanities Elective	3.0			
	16	15	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
COM 400	3.0 COM 491	3.0 COM 492	3.0
Communication Elective (above 300 level)	3.0 Communication Elective	3.0 COM Elective	3.0
Free electives	6.0 Free Elective	3.0 Free Electives	6.0
International or Diversity Elective	3.0 Humanities Elective	3.0	
	Social Science Elective	3.0	
	15	15	12

Total Credits 180-184

* See degree requirements (p.).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

5 year, 3 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101**	1.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities Elective	3.0	
UNIV H101	1.0 Foreign Language Course	4.0 Math Course	3.0-4.0	
Foreign Language Course	4.0 Math Course	3.0-4.0		
	17	15-16	15-16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
Humanities Elective	3.0 LING 101 or 102	3.0		
Science Course	3.0-4.0 COM Elective	3.0		
Social Science Elective	3.0 Science Course	3.0-4.0		
	15-16	15-16	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221	3.0 PHIL 305	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 261 or 282	3.0 COM Electives	6.0		
COM 310	3.0 Free Elective	3.0		

COM Elective	3.0 International or Diversity Elective	3.0		
International or Diversity Elective	3.0			
	15	15	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM Elective (above 300 level)	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 Free Electives	6.0		
COM Electives	6.0 International or Diversity Elective	3.0		
Free Elective	3.0 Social Science Elective	3.0		
Humanities Elective	3.0			
	16	15	0	0

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 400	3.0 COM 491	3.0 COM 492	3.0	
Communication Elective (above 300 level)	3.0 Communication Elective	3.0 COM Elective	3.0	
Free Electives	6.0 Free Elective	3.0 Free Electives	6.0	
International or Diversity Elective	3.0 Humanities Elective	3.0		
	Social Science Elective	3.0		
	15	15	12	

Total Credits 180-184

* See degree requirements (p.).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Degree Requirements: Journalism Concentration (BA)

Journalism provides students with the skills and theoretical perspective they need to be a journalist in today's swiftly changing media environment. An extension of the program's core curriculum, the concentration hones the student's ability to write, edit, and produce audiovisual content while at the same time exposing the student to new and evolving aspects of the field.

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101 or ENGL 111	Composition and Rhetoric I: Inquiry and Exploratory Research or English Composition I	3.0

ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSY 101	General Psychology I	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0
Foreign language courses **		8.0
Humanities and fine arts		12.0
Social sciences		9.0
International studies		6.0
Studies in diversity		6.0

Communication Core Requirements

Theory Sequence

COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	

Methods Sequence

COM 220	Qualitative Research Methods	3.0
COM 221	Quantitative Research Methods in Communication	3.0

Additional Core Requirements

COM 222	Interpersonal Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0

Journalism Concentration Requirements

COM 160	Introduction to Journalism	3.0
COM 181	Public Relations Principles and Theory	3.0
COM 261	Advanced Journalism	3.0
COM 266	Copy Editing for the Media	3.0
COM 315	Investigative Journalism	3.0
COM 365	Journalists, the Courts, and the Law	3.0
TVPR 220	TV News Writing	3.0

Additional Electives

Communication electives	18.0
Free Electives	30.0

Total Credits 180.0-184.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

** Students must complete at least 8 credits of a foreign language at Drexel and, at minimum, must complete the 103 level of the target language (or beyond if they place higher).

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic

advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study: Journalism Concentration (BA)

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 181	3.0 VACATION	
COM 150	3.0 COM 160	3.0 COM 261	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PSY 101	3.0 Foreign Language Course	4.0 Humanities Elective	3.0	
UNIV H101	1.0 Math Course	3.0-4.0 Math Course	3.0-4.0	
Foreign Language Course*	4.0			
	17	14-15	15-16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221	3.0 VACATION	
COM 222	3.0 COM 247	3.0 TVPR 220	3.0	
COM 230	3.0 COM 365	3.0 Free Elective	3.0	
Humanities Elective	3.0 LING 101 or 102	3.0 International or Diversity Elective	3.0	
Science Course	3.0-4.0 Free Elective	3.0		
Social Science Elective	3.0 Science Course	3.0-4.0		
	18-19	18-19	12	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 266	3.0 COM 240	3.0 COM 315	3.0 VACATION	
PHIL 305	3.0 UNIV H201	1.0 COM Elective	3.0	
COM Elective	3.0 COM Elective	3.0 Free Electives	6.0	
Free Elective	3.0 Free Elective	3.0 Social Science Elective	3.0	
International or Diversity Elective	3.0 Humanities Elective	3.0		
	15	13	15	0

Fourth Year			
Fall	Credits Winter	Credits Spring	Credits
COM 400	3.0 COM 491	3.0 COM 492	3.0
COM Elective	3.0 COM Elective	3.0 COM Elective	3.0
Free Electives	6.0 Free Elective	3.0 Free Elective**	4.0
International or Diversity Elective	3.0 Humanities Elective	3.0 International or Diversity Elective	3.0
	Social Science Elective	3.0	
	15	15	13

Total Credits 180-184

* See degree requirements (p. 29).

** Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

4 year, one co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 181	3.0 VACATION	
COM 150	3.0 COOP 101**	1.0 COM 261	3.0	
ENGL 101 or 111	3.0 COM 160	3.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities Elective	3.0	
UNIV H101	1.0 Foreign Language Course	4.0 Math Course	3.0-4.0	
Foreign Language Course	4.0 Math Course	3.0-4.0		
	17	15-16	15-16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221	3.0 COM 266	3.0
COM 222	3.0 COM 247	3.0 TVPR 220	3.0 PHIL 305	3.0
COM 230	3.0 COM 365	3.0 Free Elective	3.0 COM Elective	3.0
Humanities Elective	3.0 LING 101 or 102	3.0 International or Diversity Elective	3.0 Free Elective	3.0
Science Course	3.0-4.0 Free Elective	3.0	International or Diversity Elective	3.0
Social Science Elective	3.0 Science Course	3.0-4.0		
	18-19	18-19	12	15
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 315	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 COM Elective	3.0		
COM Elective	3.0 Free Electives	6.0		
Free Elective	3.0 Social Science Elective	3.0		

Humanities Elective	3.0			
	13	15	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 400	3.0 COM 491	3.0 COM 492		3.0
COM Elective	3.0 COM Elective	3.0 COM Elective		3.0
Free Electives	6.0 Free Elective	3.0 Free Elective		3.0
International or Diversity Elective	3.0 Humanities Elective	3.0 International or Diversity Elective		3.0
	Social Science Elective	3.0		
	15	15	12	

Total Credits 180-184

* See degree requirements (p. 29).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 181	3.0 VACATION	
COM 150	3.0 COM 160	3.0 COM 261		3.0
ENGL 101 or 111	3.0 COOP 101**	1.0 ENGL 103 or 113		3.0
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities Elective		3.0
UNIV H101	1.0 Foreign Language Course	4.0 Math Course	3.0-4.0	
Foreign Language Course*	4.0 Math Course	3.0-4.0		
	17	15-16	15-16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
COM 230	3.0 COM 365	3.0		
Humanities Elective	3.0 LING 101 or 102	3.0		
Science Course	3.0-4.0 Free Elective	3.0		
Social Science Elective	3.0 Science Course	3.0-4.0		
	18-19	18-19	0	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221	3.0 COM 266	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
TVPR 220	3.0 PHIL 305	3.0		
Free Elective	3.0 COM Elective	3.0		

International or Diversity Elective	3.0 Free Elective	3.0		
	International or Diversity Elective	3.0		
	12	15	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 315	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 COM Elective	3.0		
COM Elective	3.0 Free Electives	6.0		
Free Elective	3.0 Social Science Elective	3.0		
Humanities Elective	3.0			
	13	15	0	0

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 400	3.0 COM 491	3.0 COM 492		3.0
COM Elective	3.0 COM Elective	3.0 COM Elective		3.0
Free Electives	6.0 Free Elective	3.0 Free Elective		3.0
International or Diversity Elective	3.0 Humanities Elective	3.0 International or Diversity Elective		3.0
	Social Science Elective	3.0		
	15	15	12	

Total Credits 180-184

* See degree requirements (p. 29).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Degree Requirements: Public Relations Concentration (BA)

The concentration in public relations covers a broad range of activities that help an organization and its public communicate with one another. The field includes public relations, media relations, event planning, publication design, employee and customer communication, social media, and government relations.

Skills in this field include written, oral, and visual communication. A public relations specialist might be called on to write articles for an in-house newsletter, to research and write an annual report to shareholders, to publicize a special event, to write a speech for an executive, to plan a press conference, to develop a media plan for an organization, or to script a video for an employee orientation session.

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0

or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSY 101	General Psychology I	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0
Foreign language courses **		8.0
Humanities and fine arts		12.0
Social sciences		9.0
International studies		6.0
Studies in diversity electives		6.0
Communication Core Requirements		
Theory Sequence		
COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	
Methods Sequence		
COM 220	Qualitative Research Methods	3.0
COM 284	Public Relations Research, Measurement and Evaluation	3.0
Additional Core Requirements		
COM 222	Interpersonal Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0
Public Relations Concentration Requirements		
COM 160	Introduction to Journalism	3.0
COM 181	Public Relations Principles and Theory	3.0
COM 282 [WI]	Public Relations Writing	3.0
COM 286	Public Relations Strategies and Tactics	3.0
COM 386	Public Relations Campaign Planning	3.0
MKTG 201	Introduction to Marketing Management	4.0
Select one of the following Visual Communication courses: ***		3.0
COM 335	Digital Publishing	
COM 340	Modern Desktop Publishing	
Additional Electives		
COM electives		9.0
Free electives		38.0
Total Credits		180.0-184.0

- * Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.
- ** Students must complete at least 8 credits of a foreign language at Drexel and, at minimum, must complete the 103 level of the target language (or beyond if they place higher).
- *** Or other courses as appropriate in COM or the College of Media Arts and Design.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must

be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study: Public Relations Concentration (BA)

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101*	1.0 COM 160	3.0 VACATION	
COM 150	3.0 COM 181	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 COM 282	3.0	
PSY 101	3.0 Foreign Language course	4.0 ENGL 103 or 113	3.0	
UNIV H101†	1.0 Math Course	3.0-4.0 Math Course	3.0-4.0	
Foreign Language Course	4.0			
	17	14-15	15-16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 284	3.0 VACATION	
COM 222	3.0 COM 247	3.0 International or Diversity Elective	3.0	
Science Elective	3.0-4.0 LING 101 or 102	3.0 Free electives	6.0	
Humanities Elective	3.0 Science Course	3.0-4.0 Social Science elective	3.0	
Social Science Elective	3.0 Humanities Elective	3.0		
	15-16	15-16	15	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MKTG 201	4.0 COM 240	3.0 COM 340 or 335*	3.0 VACATION	
PHIL 305	3.0 COM 286	3.0 COM Elective	3.0	
International or Diversity Elective	3.0 UNIV H201	1.0 International or Diversity Elective	3.0	
Free electives	6.0 Humanities Elective	3.0 Free Electives	6.0	

	Free Electives **	6.0		
	16	16	15	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 386	3.0 COM 491	3.0 COM 492	3.0	
COM 400	3.0 COM Elective	3.0 COM Elective	3.0	
International or Diversity Elective	3.0 Social Science Elective	3.0 Free electives	6.0	
Free Electives	6.0 Humanities Elective	3.0		
	Free Elective	3.0		
	15	15	12	
Total Credits 180-184				

* See degree requirements (p.).

** Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

4 year, one co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101*	1.0 COM 160	3.0 VACATION	
COM 150	3.0 COM 181	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101**	1.0 COM 282	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101*	1.0 Foreign Language Course	4.0 Math Course	3.0-4.0	
Foreign Language Course	4.0 Math Course	3.0-4.0		
	17	15-16	15-16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 284	3.0 MKTG 201	4.0
COM 222	3.0 COM 247	3.0 International or Diversity Elective	3.0 PHIL 305	3.0
Science Elective	3.0-4.0 LING 101 or 102	3.0 Free Electives	6.0 International or Diversity Elective	3.0
Humanities Elective	3.0 Science Course	3.0-4.0 Social Science Elective	3.0 Free Electives	6.0
Social Science Elective	3.0 Humanities Elective	3.0		
	15-16	15-16	15	16
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	COM 240	3.0 COM 340 or 335*	3.0
		COM 286	3.0 Free Electives	6.0
		UNIV H201	1.0 COM Elective	3.0
		Humanities Elective	3.0 International or Diversity Elective	3.0

	Free Electives	5.0		
	0	0	15	15
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 386	3.0 COM 491	3.0 COM 492	3.0	
COM 400	3.0 COM Elective	3.0 COM Elective	3.0	
International or Diversity Elective	3.0 Social Science Elective	3.0 Free Electives	6.0	
Free Electives	6.0 Humanities Elective	3.0		
	Free Elective	3.0		
	15	15	12	
Total Credits 180-184				

* See degree requirements (p.).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major. COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101*	1.0 COM 160	3.0 VACATION	
COM 150	3.0 COM 181	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101**	1.0 COM 282	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101*	1.0 Foreign Language Course	4.0 Math Course	3.0-4.0	
Foreign Language Course	4.0 Math Course	3.0-4.0		
	17	15-16	15-16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
Humanities Elective	3.0 LING 101 or 102	3.0		
Science Elective	3.0-4.0 Humanities Elective	3.0		
Social Science Elective	3.0 Science Course	3.0-4.0		
	15-16	15-16	0	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 284	3.0 MKTG 201	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Free Electives	6.0 PHIL 305	3.0		
International or Diversity Elective	3.0 Free Electives	5.0		

Social Science Elective	3.0 International or Diversity Elective	3.0		
	15	15	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 340 or 335*	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 286	3.0 COM Elective	3.0		
UNIV H201	1.0 Free Electives	6.0		
Free Electives	6.0 International or Diversity Elective	3.0		
Humanities Elective	3.0			
	16	15	0	0
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 386	3.0 COM 491	3.0 COM 492	3.0	
COM 400	3.0 COM elective	3.0 COM Elective	3.0	
Free Electives	6.0 Free Elective	3.0 Free Electives	6.0	
International or Diversity Elective	3.0 Humanities Elective	3.0		
	Social Science Elective	3.0		
	15	15	12	
Total Credits 180-184				

* See degree requirements (p.).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Co-op/Career Opportunities

Public Relations Concentration

Students with a concentration in public relations find employment in a wide variety of fields, including public relations, advertising, special events planning, writing and editing, and public information. In addition, the strong communication and management skills stressed by this concentration enable students to find positions in management, human resources, marketing, consulting, and publishing.

Although graduate study is not necessary for those who pursue careers in public relations, students have used the major as a basis for graduate work in a variety of areas, including communication, business, and law.

Co-op Experiences in Public Relations

Cooperative education opportunities are available with a variety of corporations and nonprofits in such positions as corporate communication specialist, public relations assistant, and newsletter writer. The following are samples of co-op experiences:

- *Advertising and Promotions Assistant*, CoreStates Bicycle Championships, Philadelphia.

- *Corporate Communications Co-op*, Philadelphia Electric Company, Philadelphia.
- *Advertising/ Promotions Co-op*, U.S. Marketing Division, Mobil Oil Corp., Fairfax, VA.
- *Assistant Coordinator*, Communications Bureau, United Way of Southeastern Pennsylvania, Philadelphia.

Journalism Concentration

Journalism students pursue careers in journalism, broadcast media, and news. Given the rapidly changing nature of these fields, graduates may also find work in new types of publishing platforms, such as social media or mobile, or involving audiovisual content creation. Journalism graduates may also choose to pursue graduate study, whether in journalism or another discipline.

Co-op Experiences in Journalism

Journalism students have held co-ops with a number of media, news, and information companies, including the following:

- *Production assistant*, WPVI-TV (Channel 6) Philadelphia
- *Staff writer*, Delaware County Daily Times
- *Promotions department*, WPLY-FM (Y-100)
- *Production assistant*, sports department, FOX-29 (WTFX-TV)

Technical and Science Communication Concentration

Students who study technical and science communication are prepared for a variety of career options. Many students become technical writers and editors who produce manuals and reports about high-technology products and services. Students may also go on to write specifications and in-house organs for business, industry, and government. Other students conduct and interpret surveys for business. In addition, this program is excellent preparation for graduate study in a number of fields, such as law and medicine.

Co-op Experiences in Technical and Science Communication

Communication students have worked for corporations and nonprofit organizations. The following are some samples of past co-op experiences:

- *Technical writer*, Unisys Corp. and Hewlett Packard
- *Web page writer*, Hospital of the University of Pennsylvania
- *Pharmaceutical writer*, GlaxoSmithKline
- *Medical writer*, Medcases Corp.

Communication Concentration

Students in the communication concentration develop a focus that fits their interests in the field of communication and will thus be ready for a variety of career options that require strong writing and research skills, as well as graduate or professional school.

Co-op Experiences in Communication

Students in this concentration can choose from the variety of co-op opportunities open to any student in communication.

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) page for more detailed information on co-op and post-graduate opportunities.

Communication Faculty

Ronald Bishop, III, PhD (*Temple University*). Professor. Investigative reporting, sports journalism, journalism history, journalism sourcing patterns, textual narrative and ideological analysis, cultural history of fame.

Karen Cristiano, MS (*Temple University*) *Assistant Department Head of Communication*. Teaching Professor. Journalism, medical writing, feature writing, copy editing, mass media and society.

Richard Forney Assistant Teaching Professor. Broadcast journalism technology and the effects of new technologies on personal and corporate communication skills.

Ernest A. Hakanen, PhD (*Temple University*) *Director, Graduate Programs in Communication, Culture & Media*. Professor. Telecommunications policy, adolescent media use, communication theory and history, global media, and semiotics.

Barbara Hoekje, PhD (*University of Pennsylvania*). Associate Professor. Sociolinguistic theory, discourse analysis, applied linguistics (language teaching, learning, and testing).

Alexander Jenkins, PhD (*Drexel University*). Assistant Teaching Professor. Digital games, video games, emotion, morality, online fan communities, emerging media, convergence.

Hyunmin Lee, PhD (*University of Missouri*) *Director, Undergraduate Programs in Communication*. Associate Professor. Social media strategies for relationship and reputation management in public relations; media messages of public health issues and its psychological and behavioral effects on the public.

Susan Magee, MFA *Director Online Teaching*. Instructor. Digital Publishing, Content creation, Blogging, Strategic Social Media, Public Relations, Business and Technical Communication

Julia May, PhD (*Drexel University*) *Director, Strategic and Digital Communication MS Program*. Associate Teaching Professor. Political communication; international politics and its news coverage; public opinion; transatlantic relations; war, torture and human rights; debate in the public sphere.

Alexander Nikolaev, PhD (*Florida State University*). Associate Professor. Public relations, political communication, organizational communication, mass communication, international communications and negotiations, communications theory.

Rakhmiel Peltz, PhD (*University of Pennsylvania*). Professor. Judaic studies, Yiddish culture and linguistics, ethnography of communication, immigrant cultural studies.

Douglas V. Porpora, PhD (*Temple University*). Professor. War, genocide, torture, and human rights; macro-moral reasoning in public sphere debate; contemporary social theory moral and political communication; religion.

Rachel R. Reynolds, PhD (*University of Illinois*). Associate Professor. Sociolinguistics, ethnography of communication and discourse analysis; violence against women in mass media; political economy of migration; semiotics including the textual, the visual and multimodal.

Rosemary Rys, MA (*Rowan University*). Assistant Teaching Professor. Public relations and marketing.

Wesley Shumar, PhD (*University of Pennsylvania*). Professor. Digital media and learning; culture of higher education; entrepreneurship education; craft culture; semiotic of consumer culture.

Allan Stegeman, MA (*University of Houston*). Teaching Professor. Communication, technology and mass media, video.

Scott Tattar, BA (*York College of Pennsylvania*) *Faculty Advisor, Drexel PRSSA, Communication Department Recruitment Liaison*. Instructor. Public relations

Hilde Van den Bulck, PhD (*Katholieke Universiteit Leuven*) *Department Head of Communication*. Professor. Political economy of media structures; media policies for digitized media ecologies; stakeholders and coalitions in media policies; digitization; convergence and legacy media; public (service) media; celebrity culture and industry; fandom and anti-fandom.

Asta Zelenkauskaite, PhD (*Indiana University*). Associate Professor. Social media; user-generated content; computer-mediated communication; interactivity; active audience analysis; mobile communication; gender and online identity; prosumer culture; internet of things; quantitative/qualitative research.

Emeritus Faculty

Alexander Friedlander, PhD (*Carnegie Mellon University*). Associate Professor. Rhetorical theory and practice, document design, writing and technology.

Lawrence Souder, PhD (*Temple University*) *Director, Drexel Edits*. Teaching Professor. Science and technical writing, communication ethics, nonprofit communication.

Communication

Major: Communication

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 09.0401; 09.0900; 09.0908; 09.9999; 09.0199

Standard Occupational Classification (SOC) code: 11-2011; 11-2031; 27-3022; 27-3041; 27-3042; 27-3043

About the Program

The Department of Communication is committed to helping students become broadly educated and professionally competent communicators. Students are exposed to a variety of media and are guided in the development of their interpretive and expressive skills.

Students may complete the BS in Communication with a concentration in public relations or technical and science communication. Those who want to keep their options open may concentrate in communication.

The Department also offers a Bachelor of Arts (BA) in Communication (p. 26).

All communication majors take a common core of courses that emphasize communication theory and methods. Students in the BS program take a lab science sequence and a math analysis sequence, which includes some calculus. Students in the public relations concentration take courses

and pursue careers in public relations, event planning, media relations, social media, and corporate communication. Those who choose the technical and science communication concentration go on to work in technical writing, science writing, publishing, and software and hardware documentation. Students in the communication concentration have the flexibility of crafting their path through the major and thus have career possibilities in any of the areas listed here. Many communication graduates also go on to law school, business school, or graduate school.

Additional Information

If you would like to learn more about the Department of Communication, please visit the Department of Communication website (<http://drexel.edu/coas/academics/departments-centers/communication/>).

Degree Requirements: Communication Concentration (BS)

Students who select the communication concentration take courses in all of the existing concentrations, as well as other communication courses to prepare them for any communication-related career, or professional post-graduate options.

General Requirements

CIVC 101	Introduction to Civic Engagement *	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSY 101	General Psychology I	3.0
UNIV H101	The Drexel Experience *	1.0
UNIV H201	Looking Forward: Academics and Careers *	1.0
Humanities and fine arts		12.0
Social sciences		9.0
International studies		6.0
Studies in diversity		6.0

Select one of the following Science Sequences: 8.0

Biology Sequence		
BIO 107	Cells, Genetics & Physiology	
BIO 108	Cells, Genetics and Physiology Laboratory	
BIO 109	Biological Diversity, Ecology & Evolution	
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	
Chemistry Sequence		
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
Physics Sequence		
PHYS 170	Electricity and Motion	
PHYS 175	Light and Sound	

Select one of the following Mathematics Sequences: 8.0

Analysis Sequence		
MATH 101	Introduction to Analysis I	
MATH 102	Introduction to Analysis II	
Calculus Sequence		
MATH 121	Calculus I	
MATH 122	Calculus II	

Communication Core Requirements

Theory Sequence		
COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0

COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	

Methods Sequence

COM 220	Qualitative Research Methods	3.0
COM 221	Quantitative Research Methods in Communication	3.0

Additional Core Requirements

COM 222	Interpersonal Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0

Additional Breadth in COM

COM 160	Introduction to Journalism	3.0
COM 181	Public Relations Principles and Theory	3.0
COM 261	Advanced Journalism	3.0
or COM 282	Public Relations Writing	
COM 310 [WJ]	Technical Communication	3.0
Two additional COM classes at 300 level or higher		6.0

Additional Electives

COM electives		28.0
Free electives		27.0

Total Credits 180.0

* Students taking this program online are not required to take CIVC 101, UNIV H101, or UNIV H201. Instead, online students are required to take AS-I 101 *Strategies for Online Learning* for 3.0 credits.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study: Communication Concentration (BS)

4 Year, one Co-op (4COP)

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COOP 101	1.0 COM 230	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PSY 101	3.0 COM 181 or 160	3.0 Humanities elective	3.0	
UNIV H101	1.0 Math sequence course 2	4.0 Free elective	3.0	
Math sequence course 1	4.0 Social Science elective	3.0		
	17	15	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221	3.0 PHIL 305	3.0
COM 222	3.0 COM 247	3.0 COM 261 or 282	3.0 COM electives	6.0
Science sequence course 1	4.0 LING 101 or 102	3.0 COM 310	3.0 Free elective	3.0
Free elective	3.0 Science sequence course 2	4.0 COM elective	3.0 Internationa or diversity elective	3.0
Humanities elective	3.0 COM elective	3.0 Free elective	3.0	
		Internationa or diversity elective	3.0	
	16	16	18	15
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM elective (above 300 level)	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 Free elective	3.0		
COM electives	6.0 Social Science elective	3.0		
Humanities elective	3.0 Internationa or diversity elective	3.0		
Free elective	3.0			
	16	12	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 400	3.0 COM 491	3.0 COM 492	3.0	

COM elective (above 300 level)	3.0 COM elective	3.0 COM electives	7.0
International or diversity elective	3.0 Humanities elective	3.0 Free elective	3.0
Free elective	3.0 Social Science elective	3.0	
	Free elective	3.0	
	12	15	13

Total Credits 180

5 Year, three Co-op (5COP)

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COOP 101	1.0 COM 230	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PSY 101	3.0 COM 181 or 160	3.0 Humanities elective	3.0	
UNIV H101	1.0 Math sequence course 2	4.0 Free elective	3.0	
Math sequence course 1	4.0 Social Science elective	3.0		
	17	15	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
Science sequence course 1	4.0 LING 101 or 102	3.0		
Free elective	3.0 Science sequence course 2	4.0		
Humanities elective	3.0 COM elective	3.0		
	16	16	0	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221	3.0 PHIL 301	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 261 or 282	3.0 COM electives	6.0		
COM 310	3.0 Free elective	3.0		
COM elective	3.0 Internationa or diversity elective	3.0		
Free elective	3.0			

International or diversity elective	3.0			
	18	15	0	0
Fourth Year				
Fall	Credits	Winter	Credits	Spring
COM 240	3.0	COM elective (above 300 level)	3.0	COOP EXPERIENCE
UNIV H201	1.0	Free elective	3.0	
COM electives	6.0	Social Science elective	3.0	
Humanities elective	3.0	International or diversity elective	3.0	
Free elective	3.0			
	16	12	0	0
Fifth Year				
Fall	Credits	Winter	Credits	Spring
COM 400	3.0	COM 491	3.0	COM 492
COM elective (above 300 level)	3.0	COM elective	3.0	COM electives
International or diversity elective	3.0	Humanities elective	3.0	Free elective
Free elective	3.0	Social science elective	3.0	
		Free elective	3.0	
	12	15	13	

Total Credits 180

Degree Requirements: Public Relations Concentration (BS)

General Requirements

CIVC 101	Introduction to Civic Engagement *	1.0
COOP 101	Career Management and Professional Development **	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSY 101	General Psychology I	3.0
UNIV H101	The Drexel Experience *	1.0
UNIV H201	Looking Forward: Academics and Careers *	1.0
Humanities and fine arts		12.0
Social sciences		9.0
International studies		6.0
Studies in diversity		6.0
Select one of the following Science Sequences:		8.0
Biology Sequence		
BIO 107	Cells, Genetics & Physiology	
BIO 108	Cells, Genetics and Physiology Laboratory	
BIO 109	Biological Diversity, Ecology & Evolution	
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	

Chemistry Sequence		
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
Physics Sequence		
PHYS 170	Electricity and Motion	
PHYS 175	Light and Sound	
Select one of the following Mathematics Sequences		8.0
Analysis Sequence		
MATH 101	Introduction to Analysis I	
MATH 102	Introduction to Analysis II	
Calculus Sequence		
MATH 121	Calculus I	
MATH 122	Calculus II	
Communication Core Requirements		
Theory Sequence		
COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	
Methods Sequence		
COM 220	Qualitative Research Methods	3.0
COM 284	Public Relations Research, Measurement and Evaluation	3.0
Additional Core Requirements		
COM 222	Interpersonal Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0
Public Relations Concentration Requirements		
COM 160	Introduction to Journalism	3.0
COM 181	Public Relations Principles and Theory	3.0
COM 282 [WI]	Public Relations Writing	3.0
COM 286	Public Relations Strategies and Tactics	3.0
COM 386	Public Relations Campaign Planning	3.0
MKTG 201	Introduction to Marketing Management	4.0
Visual Communication Courses ***		
COM 335	Digital Publishing	3.0
or COM 340	Modern Desktop Publishing	
Additional Electives		
COM electives		9.0
Free electives		42.0
Total Credits		180.0

* Students taking this program online are not required to take UNIV H101, UNIV H201 or CIVC 101. Instead, online students are required to take "Strategies for Online Learning" for 3 credits.

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major. COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101. Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

*** Or other courses as appropriate in COM or the College of Media Arts and Design.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Degree Requirements: Public Relations Concentration (BS)

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101 [†]	1.0 COM 160	3.0 VACATION	
COM 150	3.0 COM 181	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 COM 282	3.0	
PSY 101	3.0 Humanities elective	3.0 ENGL 103 or 113	3.0	
UNIV H101 [†]	1.0 Math sequence course 2 [†]	4.0 International or diversity elective	3.0	
Math sequence course 1 [†]	4.0			
	17	14	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 284	3.0 VACATION	
COM 222	3.0 COM 247	3.0 Free electives	9.0	
Humanities elective	3.0 LING 101 or 102	3.0 International or diversity elective	3.0	
Science sequence course 1 [†]	4.0 Science sequence course 2 [†]	4.0		
Social Science elective	3.0 Social Science elective	3.0		
	16	16	15	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MKTG 201	4.0 COM 240	3.0 COM 335 or 340 [†]	3.0 VACATION	
PHIL 305	3.0 COM 286	3.0 COM elective	3.0	

Free electives	6.0 UNIV H201 [†]	1.0 Free electives	6.0	
International or diversity elective	3.0 Free electives	6.0 Social Science elective	3.0	
	Humanities elective	3.0		
	16	16	15	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 386	3.0 COM 491	3.0 COM 492	3.0	
COM 400	3.0 COM elective	3.0 COM elective	3.0	
Free electives	6.0 Free electives	6.0 Free ** elective	4.0	
Humanities elective	3.0	International or diversity elective	3.0	
	15	12	13	
Total Credits 180				

* See degree requirements (p.).

** Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

4 year, one co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101 [†]	1.0 COM 160	3.0 VACATION	
COM 150	3.0 COM 181	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101 ^{**}	1.0 COM 282	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101 [†]	1.0 Humanities elective	3.0 International or diversity elective	3.0	
Math sequence course 1 [†]	4.0 Math sequence course 2 [†]	4.0		
	17	15	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 284	3.0 MKTG 201	4.0
COM 222	3.0 COM 247	3.0 Free electives	9.0 PHIL 305	3.0
Humanities elective	3.0 LING 101 or 102	3.0 International or diversity elective	3.0 Free electives	6.0
Science sequence course 1 [†]	4.0 Science sequence course 2 [†]	4.0	International or diversity elective	3.0
Social science elective	3.0 Social Science elective	3.0		
	16	16	15	16
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 335 or 340 [†]	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 286	3.0 COM elective	3.0		
UNIV H201 [†]	1.0 Free electives	6.0		

Free electives	6.0 Social Science elective	3.0		
Humanities elective	3.0			
16		15		0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 386	3.0 COM 491	3.0 COM 492	3.0	
COM 400	3.0 COM elective	3.0 COM elective	3.0	
Free electives	6.0 Free electives	6.0 Free elective	3.0	
Humanities elective	3.0	International or diversity elective	3.0	
15		12		12

Total Credits 180

* See degree requirements (p.).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160	3.0 VACATION	
COM 150	3.0 COM 181	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101**	1.0 COM 282	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101*	1.0 Humanities elective	3.0 International or diversity elective	3.0	
Math sequence course 1*	4.0 Math sequence course 2*	4.0		
17		15		15

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
Humanities elective	3.0 LING 101 or 102	3.0		
Science sequence course 1*	4.0 Science sequence course 2*	4.0		
Social Science elective	3.0 Social Science elective	3.0		
16		16		0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 284	3.0 MKTG 201	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Free electives	9.0 PHIL 305	3.0		

International or diversity elective	3.0 Free electives	6.0		
	International or diversity elective	3.0		
15		16		0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 335 or 340	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 286	3.0 COM elective	3.0		
UNIV H201*	1.0 Free electives	6.0		
Free electives	6.0 Social Science elective	3.0		
Humanities elective	3.0			
16		15		0

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 386	3.0 COM 491	3.0 COM 492	3.0	
COM 400	3.0 COM elective	3.0 COM elective	3.0	
Free electives	6.0 Free electives	6.0 Free elective	3.0	
Humanities elective	3.0	International or diversity elective	3.0	
15		12		12

Total Credits 180

* See degree requirements (p.).

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Degree Requirements: Technical and Science Communication Concentration (BS)

General Requirements

CIVC 101	Introduction to Civic Engagement*	1.0
COOP 101	Career Management and Professional Development**	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research or ENGL 111 English Composition I	3.0
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing or ENGL 112 English Composition II	3.0
ENGL 103	Composition and Rhetoric III: Themes and Genres or ENGL 113 English Composition III	3.0
PSY 101	General Psychology I	3.0
UNIV H101	The Drexel Experience*	1.0
UNIV H201	Looking Forward: Academics and Careers*	1.0
Social sciences		9.0
Humanities and fine arts		9.0
International studies		6.0
Studies in diversity		6.0

One of the following Science sequences: 8.0

Biology Sequence

BIO 107	Cells, Genetics & Physiology
BIO 108	Cells, Genetics and Physiology Laboratory
BIO 109	Biological Diversity, Ecology & Evolution
BIO 110	Biological Diversity, Ecology and Evolution Laboratory

Chemistry Sequence

CHEM 111	General Chemistry I
CHEM 112	General Chemistry II

Physics Sequence

PHYS 103	General Physics I
PHYS 104	General Physics II

One of the following Math sequences: 8.0

Analysis Sequence

MATH 101	Introduction to Analysis I
MATH 102	Introduction to Analysis II

Calculus Sequence

MATH 121	Calculus I
MATH 122	Calculus II

Communication Core Requirements

Theory Sequence

COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	

Methods Sequence

COM 220	Qualitative Research Methods	3.0
COM 221	Quantitative Research Methods in Communication	3.0

Additional Core Requirements

COM 222	Interpersonal Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0

Technical and Science Concentration Requirements

COM 160	Introduction to Journalism	3.0
COM 181	Public Relations Principles and Theory	3.0
COM 310 [WI]	Technical Communication	3.0
COM 320 [WI]	Science Writing	3.0
COM 335	Digital Publishing	3.0
COM 350 [WI]	Document Design and Evaluation	3.0
COM 420	Technical, Science and Health Editing	3.0

Technology, Science & Communication Breadth

Select three of the following: 9.0

COM 316	Campaigns for Health & Environment
COM 317 [WI]	Environmental Communication
COM 318	Film, Celebrity and the Environmental Movement
COM 330	Professional Presentations
COM 340	Modern Desktop Publishing
COM 345	Intercultural Communication
COM 351	Computer Mediated Communication
COM 355	Ethnography of Communication
COM 384	Free Speech & Censorship
COM 385	Media Effects

Multidisciplinary Breadth

Select three of the following: 9.0

ANTH 355	Digital Culture
ENGL 300 [WI]	Literature & Science
ENGL 302	Environmental Literature

HIST 285	Technology in Historical Perspective
INFO 101	Introduction to Computing and Security Technology
INFO 105	Introduction to Informatics
INFO 108	Foundations of Software
INFO 110	Introduction to Human-Computer Interaction
PHIL 361	Philosophy of Science
PSY 330	Cognitive Psychology

Additional Electives

COM electives	15.0
Free electives	22.0
Total Credits	180.0

* Students taking this program online are not required to take UNIV H101, UNIV H201 or CIVC 101. Instead, online students are required to take "Strategies for Online Learning" for 3.0 credits.

** Students not participating in co-op will not take COOP 101; instead they will take an additional Free Elective credit.

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Degree Requirements: Technical and Science Communication Concentration (BS)

4 year, no co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 COM 160	3.0 COM 181	3.0 VACATION	
COM 150	3.0 CIVC 101*	1.0 COM 230	3.0	
ENGL 101	3.0 ENGL 102	3.0 ENGL 103	3.0	
or 111	or 112	or 113		
PSY 101	3.0 Math Sequence course 2**	4.0 Humanities elective	3.0	

UNIV H101 [*]	1.0 Social Science elective	3.0 Social Sciences elective	3.0	
Math Sequence course 1 ^{**}	4.0			
	17	14	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221	3.0 VACATION	
COM 222	3.0 COM 247	3.0 COM 310	3.0	
Science Sequence course 1 ^{**}	4.0 LING 101 or 102	3.0 Free elective	4.0	
Multidisciplin electiv	3.0 Science Sequence course 2 ^{**}	4.0 Multidisciplin electiv	3.0	
Humanities electiv	3.0 Technology, Science, and Communication electiv	3.0 International or diversity electiv	3.0	
	16	16	16	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 335	3.0 COM 240	3.0 COM 320	3.0 VACATION	
PHIL 305	3.0 UNIV H201 [*]	1.0 COM 350	3.0	
COM electiv	3.0 Technology, Science, and Communication electiv	3.0 COM electiv	3.0	
Internationa or Diversity electiv	3.0 Free electiv	3.0 Free electives	6.0	
Technology, Science, and Communication electiv	3.0 Humanities electiv	3.0		
	COM electiv	3.0		
	15	16	15	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 400	3.0 COM 491	3.0 COM 492	3.0	
COM 420	3.0 COM electiv	3.0 Internationa or Diversity electiv	3.0	
International or Diversity electiv	3.0 Multidisciplin electiv	3.0 COM electiv	3.0	
Free electives	6.0 Social Science electiv	3.0 Free electiv	4.0	
	15	12	13	

Total Credits 180

* Students taking this program online are not required to take UNIV H101, UNIV H201 or CIVC 101. Instead, online students are required to take "Strategies for Online Learning" for 3.0 credits.

** See degree requirements (p.).

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101 [*]	1.0 COM 181	3.0 VACATION	
COM 150	3.0 COOP 101 ^{**}	1.0 COM 230	3.0	
ENGL 101 or 111	3.0 COM 160	3.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities electiv	3.0	
UNIV H101 [*]	1.0 Math Sequence course 2 ^{**}	4.0 Social Science electiv	3.0	
Math Sequence course 1 ^{**}	4.0 Social Science electiv	3.0		
	17	15	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221	3.0 COM 335	3.0
COM 222	3.0 COM 247	3.0 COM 310	3.0 PHIL 305	3.0
Science sequence course 1 ^{**}	4.0 LING 101 or 102	3.0 Free electiv	3.0 COM electiv	3.0
Multidisciplin electiv	3.0 Science Sequence course 2 ^{**}	4.0 Multidisciplin electiv	3.0 Internationa or Diversity electiv	3.0
Humanities electiv	3.0 Technology, Science, and Communication electiv	3.0 International or Diversity electiv	3.0 Technology, Science, and Communication electiv	3.0
	16	16	15	15
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 320	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201 [*]	1.0 COM 350	3.0		
Technology, Science, and Communication electiv	3.0 COM electiv	3.0		
Free electiv	3.0 Free electives	6.0		
Humanities electiv	3.0			
COM electiv	3.0			
	16	15	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 400	3.0 COM 491	3.0 COM 492	3.0	
COM 420	3.0 COM electiv	3.0 Internationa or Diversity electiv	3.0	
International or Diversity electiv	3.0 Multidisciplin electiv	3.0 COM electiv	3.0	
Free electives	6.0 Social Science electiv	3.0 Free electiv	4.0	
	15	12	13	

Total Credits 180

* Students taking this program online are not required to take UNIV H101, UNIV H201 or CIVC 101. Instead, online students are required to take "Strategies for Online Learning" for 3.0 credits.

** See degree requirements (p.).

*** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101*	1.0 COM 181	3.0 VACATION	
COM 150	3.0 COM 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101***	1.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities elective	3.0	
UNIV H101*	1.0 Math Sequence course 2**	4.0 Social Science elective	3.0	
Math Sequence course 1**	4.0 Social Science elective	3.0		
	17	15	15	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
Science sequence course 1**	4.0 LING 101 or 102	3.0		
Multidisciplin: elective	3.0 Science Sequence course 2**	4.0		
Humanities elective	3.0 Technology, Science, and Communication elective	3.0		
	16	16	0	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221	3.0 COM 335	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 310	3.0 PHIL 305	3.0		
Free elective	3.0 COM elective	3.0		
Multidisciplin: elective	3.0 International or Diversity elective	3.0		
International or Diversity elective	3.0 Technology, Science, and Communication elective	3.0		
	15	15	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 320	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201*	1.0 COM 350	3.0		

Technology, Science and Communication elective	3.0 COM elective	3.0		
Free elective	3.0 Free electives	6.0		
Humanities elective	3.0			
COM elective	3.0			
	16	15	0	0

Fifth Year			
Fall	Credits Winter	Credits Spring	Credits
COM 400	3.0 COM 491	3.0 COM 492	3.0
COM 420	3.0 COM elective	3.0 International or Diversity elective	3.0
International or Diversity elective	3.0 Multidisciplinary elective	3.0 COM elective	3.0
Free electives	6.0 Social Science elective	3.0 Free elective	4.0
	15	12	13

Total Credits 180

* Students taking this program online are not required to take UNIV H101, UNIV H201 or CIVC 101. Instead, online students are required to take "Strategies for Online Learning" for 3.0 credits.

** See degree requirements (p.).

*** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Communication Faculty

Ronald Bishop, III, PhD (*Temple University*). Professor. Investigative reporting, sports journalism, journalism history, journalism sourcing patterns, textual narrative and ideological analysis, cultural history of fame.

Karen Cristiano, MS (*Temple University*) Assistant Department Head of *Communication*. Teaching Professor. Journalism, medical writing, feature writing, copy editing, mass media and society.

Richard Forney Assistant Teaching Professor. Broadcast journalism technology and the effects of new technologies on personal and corporate communication skills.

Ernest A. Hakanen, PhD (*Temple University*) Director, *Graduate Programs in Communication, Culture & Media*. Professor. Telecommunications policy, adolescent media use, communication theory and history, global media, and semiotics.

Barbara Hoekje, PhD (*University of Pennsylvania*). Associate Professor. Sociolinguistic theory, discourse analysis, applied linguistics (language teaching, learning, and testing).

Alexander Jenkins, PhD (*Drexel University*). Assistant Teaching Professor. Digital games, video games, emotion, morality, online fan communities, emerging media, convergence.

Hyunmin Lee, PhD (*University of Missouri*) Director, *Undergraduate Programs in Communication*. Associate Professor. Social media strategies for relationship and reputation management in public relations; media messages of public health issues and its psychological and behavioral effects on the public.

Susan Magee, MFA Director *Online Teaching*. Instructor. Digital Publishing, Content creation, Blogging, Strategic Social Media, Public Relations, Business and Technical Communication

Julia May, PhD (*Drexel University*) Director, *Strategic and Digital Communication MS Program*. Associate Teaching Professor. Political communication; international politics and its news coverage; public opinion; transatlantic relations; war, torture and human rights; debate in the public sphere.

Alexander Nikolaev, PhD (*Florida State University*). Associate Professor. Public relations, political communication, organizational communication, mass communication, international communications and negotiations, communications theory.

Rakhmiel Peltz, PhD (*University of Pennsylvania*). Professor. Judaic studies, Yiddish culture and linguistics, ethnography of communication, immigrant cultural studies.

Douglas V. Porpora, PhD (*Temple University*). Professor. War, genocide, torture, and human rights; macro-moral reasoning in public sphere debate; contemporary social theory moral and political communication; religion.

Rachel R. Reynolds, PhD (*University of Illinois*). Associate Professor. Sociolinguistics, ethnography of communication and discourse analysis; violence against women in mass media; political economy of migration; semiotics including the textual, the visual and multimodal.

Rosemary Rys, MA (*Rowan University*). Assistant Teaching Professor. Public relations and marketing.

Wesley Shumar, PhD (*University of Pennsylvania*). Professor. Digital media and learning; culture of higher education; entrepreneurship education; craft culture; semiotic of consumer culture.

Allan Stegeman, MA (*University of Houston*). Teaching Professor. Communication, technology and mass media, video.

Scott Tattar, BA (*York College of Pennsylvania*) Faculty Advisor, *Drexel PRSSA, Communication Department Recruitment Liaison*. Instructor. Public relations

Hilde Van den Bulck, PhD (*Katholieke Universiteit Leuven*) Department Head of *Communication*. Professor. Political economy of media structures; media policies for digitized media ecologies; stakeholders and coalitions in media policies; digitization; convergence and legacy media; public (service) media; celebrity culture and industry; fandom and anti-fandom.

Asta Zelenkauskaitė, PhD (*Indiana University*). Associate Professor. Social media; user-generated content; computer-mediated communication; interactivity; active audience analysis; mobile communication; gender and online identity; prosumer culture; internet of things; quantitative/qualitative research.

Emeritus Faculty

Alexander Friedlander, PhD (*Carnegie Mellon University*). Associate Professor. Rhetorical theory and practice, document design, writing and technology.

Lawrence Souder, PhD (*Temple University*) Director, *Drexel Edits*. Teaching Professor. Science and technical writing, communication ethics, nonprofit communication.

Criminology and Justice Studies

Major: Criminology and Justice Studies

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 182.0

Co-op Options: One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 45.0401

Standard Occupational Classification (SOC) code: 11-9199

Criminal Justice Concentration

The Criminal Justice concentration is housed in the Department of Criminology and Justice Studies and was designed as the most flexible of our three concentrations. The Criminal Justice concentration focuses its curriculum primarily on the substance of criminal justice institutions and crime and does not require many of the analytics and computer-based courses that the other two concentrations require. This concentration is primarily intended for students seeking to double major, prepare for law school, take on multiple minors (e.g., a language and legal studies), or for students who desire a traditional criminal justice education. Because the Criminal Justice concentration reserves 41.0 credits of free electives, it easily allows students to explore a wide range of curriculum opportunities throughout Drexel. Students in the Criminal Justice concentration often double major in Psychology, Behavioral Health, Legal Studies, Business, and Global Studies; and they often take on a language minor. Moreover, although the Criminal Justice concentration does not require most of the analytical courses (e.g., Crime Mapping using Geographic Information Systems) as the other two concentration, it does allow students to take any number of those courses as electives while they pursue other curricular pathways.

The Criminal Justice concentration offers the same community-based learning and global perspective courses as the other two concentrations. Students in all three concentrations are encouraged to participate in at least one faculty-led study abroad program during which students will explore various justice related themes. Recent trips have been *The Legacy of Nazi Policing in Munich and Prague*; and *Crime and Justice in Scandinavia*. Please see the Study Abroad Program (<https://studyabroad.drexel.edu/?FuseAction=Programs.ListAll>) web page to view the location and itinerary of the 2019 study tour. The emphasis on comparative justice and study abroad reside at the leading edges of Drexel's core value of global citizenship.

Criminal Justice Concentration

Degree Requirements

General Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
CIVC 101	Introduction to Civic Engagement	1.0
COM 150	Mass Media and Society	3.0
COOP 101	Career Management and Professional Development **	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0

or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 101	Introduction to Western Philosophy	3.0
PSCI 100	Introduction to Political Science	4.0
PSY 101	General Psychology I	3.0
SOC 101	Introduction to Sociology	3.0
English Elective (any ENGL course over 200-level)		3.0
Fine Arts Elective		3.0
History Elective		4.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0

Math Sequences		
Take any two Math courses		6.0-8.0

Science Sequence		
Take any two Science courses with a lab from any combination of Biology, Chemistry, and Physics		8.0

Program in Criminology and Justice Studies Core Requirements		
CJS 100	Freshman Seminar in Crime and Justice	3.0
CJS 101	Introduction to Criminal Justice	3.0
CJS 200	Criminology	3.0
CJS 210	Race, Crime, and Justice	3.0
CJS 220	Crime and the City	3.0
CJS 260	Justice in Our Community	4.0
CJS 261	Prison, Society and You	3.0
CJS 290	Crime and Public Policy	3.0
CJS 375	Criminal Procedure	3.0
CJS 376	Sentencing	3.0
PHIL 330	Criminal Justice Ethics	3.0

Methods and Analytics Sequence		
CJS 250	Research Methods & Analytics I	3.0
CJS 300	Research Methods and Analytics II	3.0

Criminal Justice Thematic Concentration		
CJS 266	Crime Prevention Planning	3.0
CJS 276	Introduction to Computer Crime	3.0
CJS 278	Introduction to Law Enforcement	3.0
CJS 280	Communities and Crime	3.0
CJS 360	Juvenile Justice	3.0

Program Electives		
Complete 10 of the following courses: *		30.0

CJS 265	Criminal Investigation	
CJS 273	Surveillance, Technology, and the Law	
CJS 274	Sex, Violence, & Crime on the Internet	
CJS 275	Issues in Domestic Violence	
CJS 289	Terrorism	
CJS 295	International Field Experience	
CJS 301	Methods and Analytics III	
CJS 302	Advanced Criminological Theorizing	
CJS 320	Comparative Justice Systems	
CJS 330	Crime Mapping I Using Geographic Information Systems	
CJS 331	Crime Mapping II Using Geographic Information Systems	
CJS 362	Gender, Crime, and Justice	
CJS 365	Computer Investigations and the Law	
CJS 366	Technology and the Justice System	
CJS 372	Death Penalty - An American Dilemma	
CJS 373	Environmental Crime	
CJS 377	Intellectual Property Theft in the Digital Age	
CJS T380	Special Topics in Criminology and Justice Studies	
CJS I399	Independent Study in CJS	

PSCI 229	Theories of Justice	
Free Electives		42.0
Total Credits		183.0-185.0

- * Review the prerequisites before trying to register.
- ** COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101. Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

Criminal Justice Concentration

Sample Plan of Study

4 year, no co-op

First Year					
Fall	Credits	Winter	Credits	Spring	Credits
CJS 100	3.0	CJS 260	4.0	ANTH 101	3.0
CJS 101	3.0	COM 150	3.0	CIVC 101	1.0
ENGL 101	3.0	ENGL 102	3.0	CJS 200	3.0
or 111		or 112			
UNIV H101	1.0	PHIL 101	3.0	CJS 261	3.0
Math	3.0-4.0	Math	3.0-4.0	ENGL 103	3.0
sequence		sequence		or 113	
				PSCI 100	4.0
		13-14	16-17	17	0

Second Year					
Fall	Credits	Winter	Credits	Spring	Credits
CJS 210	3.0	CJS 300	3.0	CJS 266	3.0
CJS 250	3.0	CJS 360	3.0	CJS	6.0
				courses	
PHIL 330	3.0	CJS	3.0	Free	3.0
		course		elective	
SOC 101	3.0	Free	3.0	Science	4.0
		elective		sequence	
CJS	3.0	Science	4.0		
course		sequence			
		15	16	16	0

Third Year					
Fall	Credits	Winter	Credits	Spring	Credits
PSY 101	3.0	CJS 220	3.0	CJS 280	3.0
CJS	3.0	CJS 290	3.0	CJS 376	3.0
course					
Fine Arts	3.0	CJS 375	3.0	CJS	3.0
elective				course	
Free	6.0	Free	6.0	Free	4.0
electives		electives		elective	
				History	4.0
				elective	
		15	15	17	0

Fourth Year					
Fall	Credits	Winter	Credits	Spring	Credits
CJS 276	3.0	CJS 278	3.0	CJS	3.0
				course	
CJS	3.0	UNIV H201	1.0	Free	9.0
course				electives	
English	3.0	CJS	6.0		
200+		courses			
Free	6.0	Free	6.0		
electives		electives			
		15	16	12	

Total Credits 183-185

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

4 year, one co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 100	3.0 CJS 260	4.0 ANTH 101	3.0 VACATION	
CJS 101	3.0 COM 150	3.0 CIVC 101	1.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CJS 200	3.0	
UNIV H101	1.0 PHIL 101	3.0 CJS 261	3.0	
Math sequence	3.0-4.0 Math sequence	3.0-4.0 ENGL 103 or 113	3.0	
		PSCI 100	4.0	
	13-14	16-17	17	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 210	3.0 CJS 300	3.0 CJS 266	3.0 PSY 101	3.0
CJS 250	3.0 CJS 360	3.0 COOP 101*	1.0 CJS course	3.0
PHIL 330	3.0 CJS course	3.0 CJS courses	6.0 Fine Arts elective	3.0
SOC 101	3.0 Free elective	3.0 Free elective	3.0 Free electives	6.0
CJS course	3.0 Science sequence	4.0 Science sequence	4.0	
	15	16	17	15
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 220	3.0 CJS 280	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CJS 290	3.0 CJS 376	3.0		
CJS 375	3.0 CJS course	3.0		
Free electives	6.0 Free elective History elective	3.0 4.0		
	15	16	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
CJS 276	3.0 CJS 278	3.0 CJS course	3.0	
CJS course	3.0 UNIV H201	1.0 Free electives	9.0	
English 200+	3.0 CJS courses	6.0		
Free electives	6.0 Free electives	6.0		
	15	16	12	
Total Credits 183-185				

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Criminal Justice Concentration Professional Experiences

Students will complete one co-op (i.e., professional placement), typically during the spring and summer quarters of their Junior year. When they return for the start of their senior year, they can immediately begin their (impending) post-graduation job search with their co-op experience

still recent on their resume. Some placements are paid (usually in the private sector) and others are unpaid (primarily in the public sector). The placements earn students academic credit while providing professional socialization and learning with crime and justice professionals. The networking aspects of these placements are invaluable for future career development. In addition to the learning experiences, past students have received excellent letters of recommendation for future employment agencies and for graduate and law school admissions.

In recent years, students have been placed in local agencies such as the District Attorney's Office, the Institutional Law Project, the Juvenile Law Center, the Defendants Association of Philadelphia, the Philadelphia and Bucks County Prison Systems and the Pennsylvania Prison Society, Pennsylvania and New Jersey State Police. Several students have done co-ops and later worked full time at the Eastern State Penitentiary Historical Site and Museum. On the state level, co-op students have worked with the Board of Probation & Parole and other agencies. At the federal level, the US Customs Service had an agreement to accept cooperative education placements after having been screened by faculty. The faculty in Criminology and Justice Studies has been working over the past few years to expand its list of research co-ops (primarily for students working toward graduate school) and international co-ops.

Criminology and Justice Studies Faculty

Robert D'Ovidio, PhD (*Temple University*). Associate Professor. The intersection of computer technology, crime, and the criminal justice system; criminological theory; surveillance; and digital forensics.

Ashley Dickinson, PhD, MPH (*Indiana University of Pennsylvania*). Associate Teaching Professor. Offender rehabilitation; capital punishment; LGBTQ+ community (criminal behavior and victimization); crime and health.

Jordan Hyatt, PhD, JD (*University of Pennsylvania, Villanova University School of Law*). Associate Professor. Community corrections; drug treatment; homelessness; probation/parole; re-entry; risk assessment; sentencing.

Shannon K. Jacobsen, PhD (*Rutgers University*). Assistant Professor. Gender, crime and victimization; fear of crime and perceptions of risk; campus crime; public safety; communities and crime; social inequalities; mixed methods research

Robert J. Kane, PhD (*Temple University*) *Department Head*. Professor. Police authority and accountability; urban ecology and sociology; violence and public health; police strategies and practices.

Kathleen Powell, PhD (*Rutgers University*). Post-Doctoral Fellow. Crime, punishment, and the life course; the intersection of health and justice system involvement; legal financial obligations; correctional interventions.

Cyndi Rickards, EdD (*Drexel University*). Associate Teaching Professor. Director of Justice Studies. Issues of mass incarceration, community-engaged scholarship, intersection of mental health and the CJ system, the criminal justice system and the lived experience.

Kristene Unsworth, PhD (*University of Washington*). Assistant Teaching Professor. Information science, policy and ethics, critical discourse analysis and qualitative methodology.

Criminology and Justice Studies

Major: Criminology and Justice Studies

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 182.0

Co-op Options: One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 45.0401

Standard Occupational Classification (SOC) code: 11-9199

Justice Informatics Concentration

Program Description

With its thematic concentration in Justice Informatics (JI), Drexel University has transformed the traditional criminal justice degree program to produce graduates who possess knowledge and skills that are highly valued by criminal justice agencies in the 21st century. Namely, the program draws from criminology and criminal justice and computing and informatics to produce globally aware and technology proficient graduates who bring an analytical and information-led approach to solving the problems crime creates for society.

Each exposure to the criminal justice system represents a data collection point, which becomes part of a massive and disparate array of data held by the government. Students will learn how to collect, manage, visualize, and analyze large sources of information so that they can bring their expertise into the crime and justice occupational arena and/or graduate school. In addition to learning to work with "big" data in the public justice arena, students will learn how to identify, collect, manage, and use data from the expansive -- and rapidly growing -- private system of justice and security to create innovative solutions for identifying, solving, and preventing crime.

Graduates of Drexel's Justice Informatics concentration will be ideally suited to meet the demands of the growing job market for crime analysts among criminal justice, defense, and intelligence agencies and in the private-sector security community. Crime analysts have become an essential part of the modern criminal justice agency. They have become vital to, for example, the large police department looking to deploy resources in a manner that matches crime trends, the intelligence agency working to prevent terrorist events, and the financial services firm hoping to identify the fraudulent use of a credit card. JI graduates can also play an integral role on teams that build future information technology solutions for intelligence, defense, and criminal justice agencies from the public and private sectors.

Given the global nature of crime and justice issues, JI requires one course on international justice systems; and it encourages all students to participate in at least one faculty-led study abroad program during which students will explore various justice-related themes (examples of recent trips: *The Legacy of Nazi Policing and Cold War Justice in Munich and Prague*; and *Crime and Justice in Scandinavia*. Please visit the Study Abroad Program (<https://studyabroad.drexel.edu/?FuseAction=Programs.ListAll>) web page to view the location and itinerary of the 2019 study tour). The emphasis on comparative justice and study abroad reside at the leading edge of Drexel's core value of global citizenship.

The Justice Informatics thematic concentration reserves 27.0 credits of free electives so that students can earn a minor outside the Program in Criminology and Justice Studies. Students interested in intelligence/security-related careers should consider minoring in a language. Visit Drexel's Modern Languages Program (<https://drexel.edu/coas/academics/departments-centers/communication/>) web page for a list of language minors.

Additional Information

For more information about the Justice Informatics concentration, please contact:

Robert D'Ovidio, PhD

Associate Professor of Criminology and Justice Studies

College of Arts and Sciences

rd64@drexel.edu

Justice Informatics Concentration

Degree Requirements

General Degree Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
CIVC 101	Introduction to Civic Engagement	1.0
COM 150	Mass Media and Society	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 101	Introduction to Western Philosophy	3.0
PSCI 100	Introduction to Political Science	4.0
PSY 101	General Psychology I	3.0
SOC 101	Introduction to Sociology	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
English Elective (any ENGL course over 200-level)		3.0
Fine Arts Elective		3.0
History Elective		4.0

Math Sequences

Take any two math courses		6.0-8.0
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Science Sequences

Take any two Science courses with a lab from any combination of Biology, Chemistry, and Physics		8.0
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Program in Criminology and Justice Study Core Requirements

CJS 100	Freshman Seminar in Crime and Justice	3.0
CJS 101	Introduction to Criminal Justice	3.0
CJS 200	Criminology	3.0
CJS 210	Race, Crime, and Justice	3.0
CJS 220	Crime and the City	3.0
CJS 260	Justice in Our Community	4.0
CJS 261	Prison, Society and You	3.0
CJS 290	Crime and Public Policy	3.0
CJS 375	Criminal Procedure	3.0
CJS 376	Sentencing	3.0
PHIL 330	Criminal Justice Ethics	3.0

Global Perspectives

Any course across the University whose description is global and/or comparative		3.0
CJS 320	Comparative Justice Systems	3.0

Methods and Analytics Sequence

CJS 250	Research Methods & Analytics I	3.0
CJS 300	Research Methods and Analytics II	3.0
CJS 301	Methods and Analytics III	4.0
CJS 330	Crime Mapping I Using Geographic Information Systems	4.0
CJS 331	Crime Mapping II Using Geographic Information Systems	4.0

Justice Informatics Thematic Concentration

CJS 267	Introduction to Security Studies	3.0
CJS 273	Surveillance, Technology, and the Law	3.0

CJS 302	Advanced Criminological Theorizing	3.0
CJS 276	Introduction to Computer Crime	3.0
CJS 365	Computer Investigations and the Law	3.0
CJS 366	Technology and the Justice System	3.0
CJS 400	Capstone in Criminology and Justice Policy	3.0
INFO 101	Introduction to Computing and Security Technology	3.0
INFO 103	Introduction to Data Science	3.0
INFO 105	Introduction to Informatics	3.0
INFO 108	Foundations of Software	3.0
INFO 110	Introduction to Human-Computer Interaction	3.0
INFO 200	Systems Analysis I	3.0
INFO 210	Database Management Systems	3.0
INFO 440	Social Media Data Analysis	3.0
Free Electives		24.0
Total Credits		182.0-184.0

Sample Plan of Study - Justice Informatics Concentration

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 100	3.0 CJS 260	4.0 ANTH 101	3.0 VACATION	
CJS 101	3.0 COM 150	3.0 CIVC 101	1.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CJS 200	3.0	
UNIV H101	1.0 PHIL 101	3.0 CJS 261	3.0	
Math sequence	3.0-4.0 Math sequence	3.0-4.0 ENGL 103 or 113	3.0	
		PSCI 100	4.0	
	13-14	16-17	17	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 210	3.0 CJS 300	3.0 CJS 273	3.0 PSY 101	3.0
CJS 250	3.0 INFO 105	3.0 CJS 301	1.0 CJS 267	3.0
CJS 276	3.0 Global Perspectives course	3.0 INFO 108	3.0 INFO 200	3.0
INFO 101	3.0 Free elective	2.0 INFO 110	3.0 Fine Arts Elective	3.0
PHIL 330	3.0 Science sequence	4.0 Science sequence	4.0 SOC 101	3.0
	15	15	17	15
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 220	3.0 CJS 302	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CJS 290	3.0 CJS 320	3.0		
CJS 330	4.0 CJS 376	3.0		
CJS 375	3.0 INFO 210	3.0		
Free electives	6.0 Free elective	3.0		
	16	15	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
CJS 366	3.0 CJS 331	3.0 CJS 365	3.0	
History Elective	4.0 UNIV H201	1.0 CJS 400	3.0	
English 200+	3.0 INFO 240	6.0 INFO 440	3.0	
Free elective	3.0 Free electives	7.0 Free electives		
	13	15	12	
Total Credits	182-184			

Justice Informatics Concentration

Professional Experiences

Students will complete one co-op (i.e., professional placement), typically during the spring and summer quarters of their Junior year. This way, when they return for the start of their senior year, they can immediately begin their (impending) post-graduation job search with their co-op experience still recent on their resume. Some placements are paid (usually in the private sector) and others are unpaid (primarily in the public sector).

The placements earn students academic credit while providing professional socialization and learning with crime and justice professionals. The networking aspects of these placements are invaluable for future career development. In addition to the learning experiences, past students have received excellent letters of recommendation for future employment agencies and for graduate and law school admissions.

In recent years, students have been placed in local agencies such as the District Attorney's Office, the Institutional Law Project, the Juvenile Law Center, the Defendants Association of Philadelphia, the Philadelphia and Bucks County Prison Systems and the Pennsylvania Prison Society, Pennsylvania and New Jersey State Police. Several students have co-op'd and later worked full time at the Eastern State Penitentiary Historical Site and Museum. On the state level, co-op students have worked with the Board of Probation & Parole and other agencies. At the federal level, The US Customs Service had an agreement to accept cooperative education placements after having been screened by faculty. The faculty in Criminology and Justice Studies has been working over the past few years to expand its list of research co-ops (primarily for students working toward graduate school) and international co-ops.

Criminology and Justice Studies

Major: Criminology and Justice Studies

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 183.0

Co-op Options: One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 45.0401

Standard Occupational Classification (SOC) code: 21-0000

Justice Studies Concentration

Program Description

The Justice Studies concentration begins with the fundamental assertion that crime and crime policy are generally interconnected with social, economic, health, and environmental risk factors in ways that extend beyond the traditional criminal justice system. The Justice Studies concentration recognizes that housing policy is crime policy; that health policy is crime policy; that environmental policy is crime policy, and so on. Thus, while the other Criminology and Justice Studies concentrations focus largely on crime, criminology, crime science and analysis, Justice Studies more thoroughly considers issues of justice, fairness, and due process across a range of domains, groups, and places that are frequently – but not always – directly related to crime.

With emphases on engaged learning, co-curricular opportunities, data-driven problem-solving, study abroad, and cooperative education, the Justice Studies concentration both educates and gives students the tools needed to practice “justice” in myriad settings from the global to the hyper-local.

Degree Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
COM 150	Mass Media and Society	3.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 101	Introduction to Western Philosophy	3.0
PSCI 100	Introduction to Political Science	4.0
PSY 101	General Psychology I	3.0
SOC 101	Introduction to Sociology	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
CIVC 101	Introduction to Civic Engagement	1.0
English Elective (any ENGL course over 200-level)		3.0
Fine Arts Elective		3.0
History Elective		4.0
Math Sequence		
Take any two Math courses		6.0-8.0
Science Sequence		
Take any two Science courses with a lab from any combination of BEES, Biology, Chemistry, and Physics		8.0
Core Requirements		
CJS 100	Freshman Seminar in Crime and Justice	3.0
CJS 101	Introduction to Criminal Justice	3.0
CJS 200	Criminology	3.0
CJS 210	Race, Crime, and Justice	3.0
CJS 220	Crime and the City	3.0
CJS 260	Justice in Our Community	4.0
CJS 261	Prison, Society and You	3.0
CJS 290	Crime and Public Policy	3.0
CJS 375	Criminal Procedure	3.0
CJS 376	Sentencing	3.0
PHIL 330	Criminal Justice Ethics	3.0
Global Perspectives		
Any course across the university whose descriptions are global and/or comparative		6.0
Methods and Analytics Sequence		
CJS 250	Research Methods & Analytics I	3.0
CJS 300	Research Methods and Analytics II	3.0
CJS 301	Methods and Analytics III	4.0
CJS 302	Advanced Criminological Theorizing	3.0
CJS 320	Comparative Justice Systems	3.0
CJS 330	Crime Mapping I Using Geographic Information Systems	4.0
CJS 331	Crime Mapping II Using Geographic Information Systems	4.0
CJS 400	Capstone in Criminology and Justice Policy	3.0
Justice Studies Thematic Concentration		
CJS 262	Places of Justice	3.0
CJS 303	Applications of Justice	3.0

CJS 304	Mental Illness and the Criminal Justice System	3.0
CJS 263	Crime, Violence, and Climate Change	3.0
Justice Studies Program Electives		17.0
Students must take 17 credits of Justice Studies program electives, selecting any combination of courses from the following list*: *Other courses are feasible upon approval from the Program Director		
ANTH 110	Human Past: Anthropology and Prehistoric Archeology	
ANTH 112	Language, Culture & Cognition	
ANTH 117	Introduction to World Religions	
ANTH 212 [WI]	Topics in World Ethnography	
ANTH 215	Anthropology of Gender	
ARTH 200	Principles and Methods of Art History	
ANTH 240	Urban Anthropology	
ARTH 311	Twentieth Century American Art	
ARTH 314	Contemporary Art	
ARTH 315	African-American Art	
COM 181	Public Relations Principles and Theory	
COM 377	Communication for Civic Engagement	
COM 210	Theory and Models of Communication	
ECON 201	Principles of Microeconomics	
ECON 365	Behavioral Economics	
ENSS 120	Introduction to Environmental Studies	
ENSS 244	Sociology of the Environment	
ENSS 283	Introduction to Environmental Policy	
ENSS 285	Introduction to Urban Planning	
ENSS 326	Cities and Sustainability	
ENSS 346	Environmental Justice	
ENVS 275	Global Climate Change	
ENTP 210 [WI]	Leading Start-Ups	
ENTP 215	Building Entrepreneurial Teams	
ENTP 225 [WI]	Mindfulness & Wellbeing	
ENTP 250	Ideation	
ENTP 270	Social Entrepreneurship	
ENTP 275	Diversity Entrepreneurship	
ENTP 285	Organizational Development and Change for Corporate Entrepreneurs	
ENTP 290	An Entrepreneur's Introduction to Land: Its Essence, Ethics, and Opportunity	
GST 221	Introduction to Global Capital and Development	
GST 231	Introduction to Identities and Communities	
GST 241	Introduction to Power and Resistance	
GST 251	Introduction to Global Media, Arts, and Cultures	
GST 261	Introduction to Global Health and Sustainability	
PSY 150	Introduction to Social Psychology	
PSY 252	Death and Dying	
PSY 254	Psychology of Sexual Behavior	
PSY 270	Psychology of Hate	
SOC 210	Race, Ethnicity and Social Inequality	
SOC 220	Wealth and Power	
SOC 221	Sociology of the Family	
SOC 235	Sociology of Health and Illness	
SOC 240	Urban Sociology	
SOC 244	Sociology of the Environment	
SOC 318	Social Networks and Health	
SOC 406	Housing and Homelessness	
WGST 101	Introduction to Women's and Gender Studies	
WGST 201	Introduction to Feminisms	
WGST 225	Women & Human Rights Worldwide	
WGST 240	Women and Society in a Global Context	
WGST 275	Women's Health and Human Rights	
Free Electives		31.0
Total Credits		183.0-185.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 100	3.0 CJS 260	4.0 ANTH 101	3.0 VACATION	
CJS 101	3.0 COM 150	3.0 CIVC 101	1.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CJS 200	3.0	
UNIV H101	1.0 PHIL 101	3.0 CJS 261	3.0	
Math Sequence	3.0-4.0 Math Sequence	3.0-4.0 ENGL 103 or 113	3.0	
		PSCI 100	4.0	
	13-14	16-17	17	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 210	3.0 CJS 262	3.0 CJS 263	3.0 CJS 220	3.0
CJS 250	3.0 CJS 300	3.0 CJS 301	4.0 History Elective	4.0
COOP 101	1.0 SOC 101	3.0 CJS 320	3.0 English 200+	3.0
PSY 101	3.0 Science Sequence	4.0 Fine Arts Elective	3.0 Global Perspective	3.0
Science Sequence	4.0 Free Elective	3.0 Free Elective	3.0 Free Elective	3.0
Justice Studies Program Elective	3.0			
	17	16	16	16
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CJS 290	3.0 CJS 304	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
CJS 303	3.0 CJS 331	4.0		
CJS 330	4.0 Justice Studies Program Elective	3.0		
PHIL 330	3.0 Global Perspective	3.0		

Free Elective	3.0 Free Elective	3.0		
	16	16	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
CJS 375	3.0 CJS 302	3.0 CJS 400	3.0	
Justice Studies Program Electives	7.0 CJS 376	3.0 Free Electives	10.0	
Free Elective	3.0 UNIV H201	1.0		
	Justice Studies Program Elective	4.0		
	Free Elective	3.0		
	13	14	13	
Total Credits 183-185				

Professional Experiences

Criminology and Justice Studies Faculty

Robert D'Ovidio, PhD (*Temple University*). Associate Professor. The intersection of computer technology, crime, and the criminal justice system; criminological theory; surveillance; and digital forensics.

Ashley Dickinson, PhD, MPH (*Indiana University of Pennsylvania*). Associate Teaching Professor. Offender rehabilitation; capital punishment; LGBTQ+ community (criminal behavior and victimization); crime and health.

Jordan Hyatt, PhD, JD (*University of Pennsylvania, Villanova University School of Law*). Associate Professor. Community corrections; drug treatment; homelessness; probation/parole; re-entry; risk assessment; sentencing.

Shannon K. Jacobsen, PhD (*Rutgers University*). Assistant Professor. Gender, crime and victimization; fear of crime and perceptions of risk; campus crime; public safety; communities and crime; social inequalities; mixed methods research

Robert J. Kane, PhD (*Temple University*) *Department Head*. Professor. Police authority and accountability; urban ecology and sociology; violence and public health; police strategies and practices.

Kathleen Powell, PhD (*Rutgers University*). Post-Doctoral Fellow. Crime, punishment, and the life course; the intersection of health and justice system involvement; legal financial obligations; correctional interventions.

Cyndi Rickards, EdD (*Drexel University*). Associate Teaching Professor. Director of Justice Studies. Issues of mass incarceration, community-engaged scholarship, intersection of mental health and the CJ system, the criminal justice system and the lived experience.

Kristene Unsworth, PhD (*University of Washington*). Assistant Teaching Professor. Information science, policy and ethics, critical discourse analysis and qualitative methodology.

English

Major: English

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 181.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years)

Classification of Instructional Programs (CIP) code: 23.9999

Standard Occupational Classification (SOC) code: 25-1123

About the Program

The English curriculum focuses on three areas:

- A rich **Academic Core** grounded in disciplinary expertise that promotes literary exploration, sophisticated textual literacy, excellent writing, and other transferable skills;
- **Applied Learning** opportunities using skills in research, interpretation, analysis, and writing to solve real-world problems;
- Opportunities for **Civic Engagement**, connecting with community partners to promote social justice and the common good.

Our flexible curriculum offers three concentrations:

- Literary Studies (p. 52)
- Writing (p. 56)
- Secondary Education (p. 60)

We study British, American, and World literatures, stressing the cultural, historical, and political contexts that shape literary production. Courses in creative and professional writing are reinforced by opportunities for hands-on experience in writing, editing, and publishing.

The Department of English and Philosophy (<http://www.drexel.edu/coas/academics/departments-centers/english-philosophy/>) offers an intellectually stimulating learning experience that embraces opportunities in Philadelphia, in our region, and across the world. Our dedicated and award-winning faculty enable creativity and rigor within a supportive environment.

Students develop solid techniques in critical inquiry as well as in writing, literary analysis, and research skills. We engage issues critical to success in the twenty-first century: the connection between oral, written, and digital modes; analytical, ethical, and critical thinking; the relevance and relation of the past to the present; the relations between and among cultures; the role of literary and philosophical texts in our attempts to explain human motives and behavior; issues of personal and communal identity; and the connection of the literary arts to social change.

Co-op/Career Opportunities

English majors pursue a range of professions. Many go on to law school or graduate studies. Others build careers in business, politics and government, education, digital and popular media, publishing, and communications. The critical thinking, analytical, and writing skills provided by our program are essential for high-level decision-making and problem solving in any professional situation.

At Drexel, English majors gain valuable work experience through co-op employment and internship opportunities. They work as writers, analysts, and researchers at major corporations, Philadelphia-area museums, city government and visitors' bureaus, television and radio stations, law firms, and nonprofit organizations.

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) for more detailed information on co-op and post-graduate opportunities.

English Faculty

Jan Armon, PhD (*University of Michigan*). Associate Teaching Professor. Academic functions of personal writing, composition.

Kenneth Bingham, MA (*Temple University*). Teaching Professor. First-year writing; engineering ethics; literature of baseball.

Valerie Booth, PhD (*Emory University*). Associate Teaching Professor.

Paula Marantz Cohen, PhD (*Columbia University*) *Distinguished Professor, Dean of the Pennoni Honors College*. Co-editor, *Journal of Modern Literature*; Host of the Drexel Interview. Nineteenth- and early twentieth-century English and American literature; film studies.

Lisa DiMaio, MEd (*Temple University*). Teaching Professor. English as a second language

Dan Driscoll, MA (*Temple University*) *Associate Director University Writing Program*. Teaching Professor. Associate Director, University Writing Center: Curricular Initiatives. Co-Director, Minor in Writing. First-year writing.

Anne Erickson, PhD (*Purdue University*). Assistant Teaching Professor. Online educational applications; the short story cycle.

Nomi Eve, MFA (*Brown University*) *Director of the Creative Writing MFA Program*. Assistant Teaching Professor.

Robert Finegan, MFA (*University of Pittsburgh*). Associate Teaching Professor. First-year writing; technical and creative writing.

Valerie Fox, PhD (*SUNY at Binghamton*). Teaching Professor. Founding Editor, *Press 1*. Twentieth century drama; modern and contemporary American poetry; first-year writing.

Edward Fristrom, PhD (*State University of New York-Albany*). Associate Teaching Professor. Professional writing, creative writing, multimedia, and writing education.

Keunah Han, PhD (*Temple University*). Associate Teaching Professor. English as a Second Language (ESL)

Cassandra Hirsch, MFA (*Rosemont College*). Associate Teaching Professor. Fiction.

Gabriella Ibieta, PhD (*City University of New York*) *Director, Programs in English*. Associate Professor. Comparative literature; Cuban and Latin American fiction.

Henry Israeli, MFA (*University of Iowa*). Associate Teaching Professor. Founder and editor of Saturnalia Books, a publisher of contemporary poetry.

Kirsten Kaschock, PhD (*University of Georgia*). Associate Teaching Professor. Creative writing (poetry and prose).

Elizabeth Kimball, PhD (*Temple University*). Assistant Professor. College writing, civic engaged learning, multi lingual and trans lingual practice, history and theory of rhetoric, public and community writing, 18th and 19th century U.S. rhetorical history

Miriam Kotzin, PhD (*New York University*). Professor. Founding Editor, *Per Contra*. American literature; genre studies; creative writing; communications.

Roger Kurtz, PhD (*University of Iowa*) *Department Head*. Professor. Postcolonial and world literatures

Stephen Mandell, PhD (*Temple University*). Professor. First-year writing; technical writing; speech; American literature.

Deirdre McMahon, PhD (*University of Iowa*). Teaching Professor. 19th-century British literature and culture: empire, critical race studies and analyses of material culture.

Marianallet Mendez-Rivera, PhD (*University of Minnesota*). Assistant Teaching Professor. Use of the mass media to secure, maintain and enhance political power; international technical communication—including issues of translation v. localization.

Harriet Levin Millan, MFA (*University of Iowa*) *Director, Certificate in Writing and Publishing*. Associate Teaching Professor. Poetry.

Jill Moses, MFA (*University of Oregon*). Associate Teaching Professor. Dramatic literature; first-year writing.

Christopher T. Nielson, PhD (*Purdue University*). Teaching Professor. Shakespeare; Renaissance drama and literature; dramatic literature; first-year writing.

Karen Nulton, PhD (*Rutgers University*) *Director, Writing Assessment*. Teaching Professor. Writing assessment, writing pedagogy, and writing across the curriculum.

Margene Peterson, MA (*Rhode Island School of Design*). Assistant Teaching Professor. English as a Second Language (ESL); the learning styles and strategies of non-native speakers of English.

Maegan Poland, PhD (*University of Nevada, Las Vegas*). Assistant Teaching Professor. Creative writing; first-year writing

Abioseh Porter, PhD (*University of Alberta, Canada*). Professor. Comparative literature; postcolonial literatures

Donald Riggs, PhD (*University of North Carolina-Chapel Hill*). Teaching Professor. Cinematic monsters; science fiction and fantasy literature and film; Renaissance literature; creative writing; first-year writing.

Donna Rondolone, PhD (*University of Pennsylvania*). Associate Teaching Professor. Medieval literature; Arthurian legend; first-year writing.

Gail Rosen, JD (*Temple University*). Teaching Professor. Literature and law; first-year writing.

Doreen Alvarez Saar, PhD (*SUNY Buffalo*). Professor. Early American literature; Eighteenth-century America; race and gender studies.

Sheila Sandapen, PhD (*Indiana University of Pennsylvania*) *Assistant Director, First Year Writing Program*. Associate Teaching Professor. First-year writing; cultural studies; women's studies; history and film.

Fred A. Siegel, PhD (*New York University*) *Director, First-Year Writing Program*. Teaching Professor. Popular theater; dramatic literature, creative non-fiction; first-year writing.

Scott Stein, MFA (*University of Miami*) *Director, Drexel Publishing Group*. Teaching Professor. Creative writing; first-year writing; Founding Editor, *When Falls the Coliseum: A Journal of American Culture* (Or Lack Thereof).

Eva Thury, PhD (*University of Pennsylvania*). Associate Professor. Mythology; classical literature; drama; first-year writing; desktop publishing and software documentation.

Kathleen Volk Miller, MA (*Rutgers University*). Teaching Professor. Co-Editor, *Painted Bride Quarterly* (PBQ); creative writing; first-year writing.

Maria Volynsky, EdD (*Temple University*) *Associate Director, First-Year Writing Program; ESL Coordinator*. Associate Teaching Professor. English as a Second Language (ESL).

Scott Warnock, PhD (*Temple University*) *Associate Dean for Undergraduate Education*. Professor. Rhetoric and composition; medical writing; information technology and literacy.

Robert A. Watts, MA (*Temple University*). Associate Teaching Professor. Creative writing; first-year writing.

Vincent Williams, PhD (*Temple University*). Associate Teaching Professor. First-year writing; the intersection of race, gender, class and urbanism.

Jennifer Yusin, PhD (*Emory University*). Associate Professor. Postcolonial literature; trauma theory; literary theory; psychoanalysis, and memory studies in contemporary literature in English.

Emeritus Faculty

Valarie Arms, PhD (*Temple University*). Professor Emeritus. Rhetoric and Composition

Richard Astro, PhD (*University of Washington*) *Distinguished Professor*. Provost Emeritus. Twentieth-century American literature; literature and sports.

Raymond Brebach, PhD (*University of Illinois*). Professor Emeritus. Modern British fiction; the novel; textual studies.

English

Major: English

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 181.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years)

Classification of Instructional Programs (CIP) code: 23.1399

Standard Occupational Classification (SOC) code: 25-1123

Literary Studies Concentration

English majors who select the concentration in Literary Studies benefit from the full range of courses and opportunities that we offer. These include core courses taken by all our majors, offering a strong foundation in textual and rhetorical analysis along with writing skills.

The concentration offers additional in-depth study of British, American, and World literatures. We develop skills in literary and cultural analysis and in related research. We take full advantage of our location to tap into the rich opportunities in literary and dramatic arts in Philadelphia.

Degree Requirements

UNIVERSITY REQUIREMENTS (minimum 63 credits)

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0

UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
ENGL 101 or ENGL 111	Composition and Rhetoric I: Inquiry and Exploratory Research English Composition I	3.0
ENGL 102 or ENGL 112	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing English Composition II	3.0
ENGL 103 or ENGL 113	Composition and Rhetoric III: Themes and Genres English Composition III	3.0
Mathematics elective courses for a minimum of 6.0 credits		6.0
Science elective courses for a minimum of 6.0 credits		6.0
Social/Behavioral Science elective courses for a minimum of 12 credits		12.0
Humanities elective courses (other than ENGL or WRIT) for a minimum of 6 credits		6.0
Diversity Studies elective courses for a minimum of 6 credits		6.0
International Studies elective courses for a minimum of 6 credits		6.0
Foreign Language requirement (2 consecutive courses, reaching at least 103)		8.0

MAJOR REQUIREMENTS (30-credit CORE plus 36-credit concentration)

Core Courses

ENGL 195	English Freshman Seminar	3.0
ENGL 207 [WI]	African American Literature	3.0
ENGL 301	English Major Colloquium (1-credit course, repeat twice for 3 credits total)	3.0
ENGL 315 [WI]	Shakespeare	3.0
ENGL 325	Topics in World Literature	3.0
ENGL 355 [WI]	Women and Literature	3.0
ENGL 495	Senior Project in Literature	3.0
WRIT 195	Threshold Concepts in Writing	3.0
WRIT 200	Language Puzzles and Word Games: Issues in Modern Grammar	3.0
WRIT 225 [WI]	Creative Writing	3.0

Concentration in Literary Studies 36.0

Literature Surveys - Select 4 for a minimum of 12 credits	
ENGL 200 [WI]	Classical to Medieval Literature
ENGL 201	Renaissance to the Enlightenment
ENGL 202 [WI]	Romanticism to Modernism
ENGL 203 [WI]	Survey of World Literature
ENGL 204	Post-Colonial Literature
ENGL 205 [WI]	American Literature I
ENGL 206 [WI]	American Literature II
ENGL 211 [WI]	British Literature I
ENGL 212	British Literature II
Authors and Periods - Select 1 for a minimum of 3 credits	
ENGL 310 [WI]	Period Studies
ENGL 320 [WI]	Major Authors
Literary Impacts - Select 1 for a minimum of 3 credits	
ENGL 300 [WI]	Literature & Science
ENGL 323	Literature and Other Arts
ENGL 360 [WI]	Literature and Society
Literary Traditions - Select 1 for a minimum of 3 credits	
ENGL 330	The Bible as Literature
ENGL 335	Mythology
Literary Theory - 3 credits	
ENGL 380	Literary Theory
Literature Seminars - Take both for a minimum of 6 credits	
ENGL 490	Seminar in English and American Literature
ENGL 492	Seminar in World Literature
English Electives - minimum of 6 credits	
Choose any additional 2 courses (300+) in WRIT or ENGL for a minimum of 6 credits	

ELECTIVES 52.0-54.0

Choose 52 credits from any discipline. Consider a second major or minor, or education certification.

Total Credits 181.0-183.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, one co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 WRIT 200	3.0 ENGL 207	3.0	
Foreign Language Course (1st consecutive course)	4.0 Foreign Language Course (2nd consecutive course, at least 103-level)	4.0 WRIT 195	3.0	
Mathematics elective	3.0 Mathematics elective	3.0 Social/ Behavioral Science elective	3.0	
Social/ Behavioral Science elective	3.0 Social/ Behavioral Science elective	3.0 Science elective	3.0	
17		17		16
0				
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 301 (1st of 3)	1.0 Literature Survey (2nd of 4)	3.0 ENGL 301 (2nd of 3)	1.0 ENGL 325	3.0
WRIT 225	3.0 Authors & Periods (1st of 1)	3.0 ENGL 315	3.0 Literature Survey (4th of 4)	3.0
Science elective	3.0 Diversity Studies	3.0 Literature Survey (3rd of 4)	3.0 Literary Impacts (1st of 1)	3.0

Literature Survey (1st of 4)	3.0 International Studies elective	3.0 Diversity Studies	3.0 Free Electives	6.0
International Studies elective	3.0 Humanities elective	3.0 Humanities elective	3.0	
Social/ Behavioral Science elective	3.0	Free elective	3.0	
16		15		15

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (3rd of 3)	1.0 Free Electives	15.0
		ENGL 380	3.0	
		Free Electives	9.0	
0		0		13

Fourth Year

Fall	Credits Winter	Credits Spring	Credits	
UNIV H201	1.0 ENGL 355	3.0 ENGL 495	3.0	
Literary Traditions (1st of 1)	3.0 ENGL 492	3.0 Free Electives	9.0	
ENGL 490	3.0 English Elective (ENGL or WRIT)	3.0		
English Elective (ENGL or WRIT)	3.0 Free Electives	6.0		
Free Electives	6.0			
16		15		12

Total Credits 183

5 year, 3 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 WRIT 200	3.0 ENGL 207	3.0	
Foreign Language Course (1st consecutive course)	4.0 Foreign Language Course (2nd consecutive course, at least 103-level)	4.0 WRIT 195	3.0	
Math Elective	3.0 Math Elective	3.0 Social/ Behavioral Science	3.0	
Social/ Behavioral Sciences Elective	3.0 Social/ Behavioral Science Elective	3.0 Science Elective	3.0	
17		17		16

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (1st of 3)	1.0 Literature Survey (2nd of 4)	3.0

Total Credits 183

	WRIT 225	3.0 Diversity Studies	3.0	
	Science Elective	3.0 International Studies Elective	3.0	
	Literature Survey (1st of 4)	3.0 Humanities Elective	3.0	
	International Studies Elective	3.0 Free elective	3.0	
	Social/ Behavioral Sciences	3.0		
0		0		16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (2nd of 3)	1.0 ENGL 325	3.0
		ENGL 315	3.0 Literature Survey (4th of 4)	3.0
		Literature Survey (3rd of 4)	3.0 Free Electives	9.0
		Authors and Periods (1st of 1)	3.0	
		Diversity Studies	3.0	
		Humanities Elective	3.0	
0		0		16

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (3rd of 3)	1.0 Free Electives	15.0
		ENGL 355	3.0	
		Literary Impacts (1st of 1)	3.0	
		Literary Traditions (1st of 1)	3.0	
		Free Electives	3.0	
0		0		13

Fifth Year

Fall	Credits Winter	Credits Spring	Credits	
UNIV H201	1.0 ENGL 492	3.0 ENGL 495	3.0	
English Elective (ENGL or WRIT)	3.0 English Elective (ENGL or WRIT)	3.0 Free Electives	12.0	
ENGL 380	3.0 Free Electives	6.0		
ENGL 490	3.0			
Free Electives	6.0			
16		12		15

Total Credits 183

* See degree requirements

English Faculty

Jan Armon, PhD (*University of Michigan*). Associate Teaching Professor. Academic functions of personal writing, composition.

Kenneth Bingham, MA (*Temple University*). Teaching Professor. First-year writing; engineering ethics; literature of baseball.

Valerie Booth, PhD (*Emory University*). Associate Teaching Professor.

Paula Marantz Cohen, PhD (*Columbia University*) *Distinguished Professor, Dean of the Pennoni Honors College*. Co-editor, *Journal of Modern Literature*; Host of the Drexel Interview. Nineteenth- and early twentieth-century English and American literature; film studies.

Lisa DiMaio, MEd (*Temple University*). Teaching Professor. English as a second language

Dan Driscoll, MA (*Temple University*) *Associate Director University Writing Program*. Teaching Professor. Associate Director, University Writing Center: Curricular Initiatives. Co-Director, Minor in Writing. First-year writing.

Anne Erickson, PhD (*Purdue University*). Assistant Teaching Professor. Online educational applications; the short story cycle.

Nomi Eve, MFA (*Brown University*) *Director of the Creative Writing MFA Program*. Assistant Teaching Professor.

Robert Finegan, MFA (*University of Pittsburgh*). Associate Teaching Professor. First-year writing; technical and creative writing.

Valerie Fox, PhD (*SUNY at Binghamton*). Teaching Professor. Founding Editor, *Press 1*. Twentieth century drama; modern and contemporary American poetry; first-year writing.

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Henry Israeli, MFA (*University of Iowa*). Associate Teaching Professor. Founder and editor of Saturnalia Books, a publisher of contemporary poetry.

Kirsten Kaschock, PhD (*University of Georgia*). Associate Teaching Professor. Creative writing (poetry and prose).

Elizabeth Kimball, PhD (*Temple University*). Assistant Professor. College writing, civic engaged learning, multi lingual and trans lingual practice, history and theory of rhetoric, public and community writing, 18th and 19th century U.S. rhetorical history

Miriam Kotzin, PhD (*New York University*). Professor. Founding Editor, *Per Contra*. American literature; genre studies; creative writing; communications.

Roger Kurtz, PhD (*University of Iowa*) *Department Head*. Professor. Postcolonial and world literatures

Stephen Mandell, PhD (*Temple University*). Professor. First-year writing; technical writing; speech; American literature.

Deirdre McMahon, PhD (*University of Iowa*). Teaching Professor. 19th-century British literature and culture: empire, critical race studies and analyses of material culture.

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Karen Nulton, PhD (*Rutgers University*) *Director, Writing Assessment*. Teaching Professor. Writing assessment, writing pedagogy, and writing across the curriculum.

Margene Peterson, MA (*Rhode Island School of Design*). Assistant Teaching Professor. English as a Second Language (ESL); the learning styles and strategies of non-native speakers of English.

Maegan Poland, PhD (*University of Nevada, Las Vegas*). Assistant Teaching Professor. Creative writing; first-year writing

Abioseh Porter, PhD (*University of Alberta, Canada*). Professor. Comparative literature; postcolonial literatures

Donald Riggs, PhD (*University of North Carolina-Chapel Hill*). Teaching Professor. Cinematic monsters; science fiction and fantasy literature and film; Renaissance literature; creative writing; first-year writing.

Donna Rondolone, PhD (*University of Pennsylvania*). Associate Teaching Professor. Medieval literature; Arthurian legend; first-year writing.

Gail Rosen, JD (*Temple University*). Teaching Professor. Literature and law; first-year writing.

Doreen Alvarez Saar, PhD (*SUNY Buffalo*). Professor. Early American literature; Eighteenth-century America; race and gender studies.

Sheila Sandapen, PhD (*Indiana University of Pennsylvania*) *Assistant Director, First Year Writing Program*. Associate Teaching Professor. First-year writing; cultural studies; women's studies; history and film.

Fred A. Siegel, PhD (*New York University*) *Director, First-Year Writing Program*. Teaching Professor. Popular theater; dramatic literature, creative non-fiction; first-year writing.

Scott Stein, MFA (*University of Miami*) *Director, Drexel Publishing Group*. Teaching Professor. Creative writing; first-year writing; Founding Editor, *When Falls the Coliseum: A Journal of American Culture (Or Lack Thereof)*.

Eva Thury, PhD (*University of Pennsylvania*). Associate Professor. Mythology; classical literature; drama; first-year writing; desktop publishing and software documentation.

Kathleen Volk Miller, MA (*Rutgers University*). Teaching Professor. Co-Editor, *Painted Bride Quarterly* (PBQ); creative writing; first-year writing.

Maria Volynsky, EdD (*Temple University*) Associate Director, *First-Year Writing Program*; *ESL Coordinator*. Associate Teaching Professor. English as a Second Language (ESL).

Scott Warnock, PhD (*Temple University*) Associate Dean for *Undergraduate Education*. Professor. Rhetoric and composition; medical writing; information technology and literacy.

Robert A. Watts, MA (*Temple University*). Associate Teaching Professor. Creative writing; first-year writing.

Vincent Williams, PhD (*Temple University*). Associate Teaching Professor. First-year writing; the intersection of race, gender, class and urbanism.

Jennifer Yusin, PhD (*Emory University*). Associate Professor. Postcolonial literature; trauma theory; literary theory; psychoanalysis, and memory studies in contemporary literature in English.

Emeritus Faculty

Valarie Arms, PhD (*Temple University*). Professor Emeritus. Rhetoric and Composition

Richard Astro, PhD (*University of Washington*) *Distinguished Professor*. Provost Emeritus. Twentieth-century American literature; literature and sports.

Raymond Brebach, PhD (*University of Illinois*). Professor Emeritus. Modern British fiction; the novel; textual studies.

English

Major: English

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 181.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years)

Classification of Instructional Programs (CIP) code: 23.1399

Standard Occupational Classification (SOC) code: 25-1123

Writing Concentration

English majors who select the concentration in Writing benefit from the full range of courses and opportunities that we offer. These include core courses taken by all our majors, offering a strong foundation in textual and rhetorical analysis along with writing skills.

The concentration offers additional in-depth coursework in creative and professional writing, backed up by opportunities for hands-on experience in writing, editing, and publishing. Students may take full advantage of the opportunities for growth and experience offered by our Drexel Publishing Group, the Writers Room, and the Drexel Writing Center.

Degree Requirements

UNIVERSITY REQUIREMENTS (minimum 63 credits)

CIVC 101	Introduction to Civic Engagement	1.0
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COOP 101	Career Management and Professional Development	1.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
ENGL 101 or ENGL 111	Composition and Rhetoric I: Inquiry and Exploratory Research English Composition I	3.0
ENGL 102 or ENGL 112	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing English Composition II	3.0
ENGL 103 or ENGL 113	Composition and Rhetoric III: Themes and Genres English Composition III	3.0
Mathematics elective courses for a minimum of 6.0 credits		6.0
Science elective courses for a minimum of 6.0 credits		6.0
Social/Behavioral Science elective courses for a minimum of 12 credits		12.0
Humanities elective courses (other than ENGL or WRIT) for a minimum of 6 credits		6.0
Diversity Studies elective courses for a minimum of 6 credits		6.0
International Studies elective courses for a minimum of 6 credits		6.0
Foreign Language requirement (2 consecutive courses, reaching at least 103)		8.0

MAJOR REQUIREMENTS (30-credit CORE plus 36-credit concentration)

Core Courses

ENGL 195	English Freshman Seminar	3.0
ENGL 207 [WI]	African American Literature	3.0
ENGL 301	English Major Colloquium (1-credit course, repeat twice for 3 credits total)	3.0
ENGL 315 [WI]	Shakespeare	3.0
ENGL 325	Topics in World Literature	3.0
ENGL 355 [WI]	Women and Literature	3.0
ENGL 495	Senior Project in Literature	3.0
WRIT 195	Threshold Concepts in Writing	3.0
WRIT 200	Language Puzzles and Word Games: Issues in Modern Grammar	3.0
WRIT 225 [WI]	Creative Writing	3.0

Concentration in Writing

36.0

Foundations - Select 1 for a minimum of 3 credits

WRIT 210 [WI]	The Peer Reader in Context or WRIT 21: Advanced Composition
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Rhetoric and Technique - Select 1 for a minimum of 3 credits

WRIT 212	Argument and Rhetoric or WRIT 29: Forms Seminar
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Audience Awareness - Select 1 for a minimum of 3 credits

WRIT 312 [WI]	Writing for Target Audiences or WRIT 31: Writing for Social Change
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Writing Practices - Select 7 additional courses for a minimum of 21 credits (at least 5 must be WRIT or ENGL courses)

WRIT 210 [WI]	The Peer Reader in Context
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WRIT 211	Advanced Composition
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WRIT 212	Argument and Rhetoric
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WRIT 215 [WI]	Story Medicine
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WRIT 220 [WI]	Creative Nonfiction Writing
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WRIT 226	Writing in Public Spaces
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WRIT 250	"Mistakes Were Made": Truth, Writing, and Responsibility
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WRIT 295	Forms Seminar
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WRIT 301 [WI]	Writing Poetry
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WRIT 302 [WI]	Writing Fiction
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WRIT 303	Writing Humor and Comedy
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WRIT 305	Life is Beautiful
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WRIT 306	Writing About the Media
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WRIT 310	Literary Editing & Publication
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WRIT 311	Writing and Reading the Memoir
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WRIT 312 [WI]	Writing for Target Audiences
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WRIT 315	Writing for Social Change
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WRIT T380	Special Topics in Writing
WRIT 400 [WI]	Writing for -- and about -- the Web
WRIT 401	Advanced Poetry Workshop
WRIT 402	Advanced Fiction Workshop
WRIT 405	Internship in Publishing
ENGL 312	Research Project Development
COM 160	Introduction to Journalism
COM 270 [WI]	Business Communication
COM 310 [WI]	Technical Communication
COM 375 [WI]	Grant Writing
SCRIP 220	Playwriting I
SCRIP 270 [WI]	Screenwriting I
English Electives - minimum of 6 credits	
Choose any additional 2 courses (300+) in WRIT or ENGL for a minimum of 6 credits	
ELECTIVES	52.0-54.0
Choose 52 credits from any discipline. Consider a second major or minor, or education certification.	
Total Credits	181.0-183.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, one co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 WRIT 200	3.0 ENGL 207	3.0	
Foreign Language Course (1st consecutive course)	4.0 Foreign Language Course (2nd consecutive course, at least 103-level)	4.0 WRIT 195	3.0	

Mathematics elective	3.0 Mathematics elective	3.0 Social/ Behavioral Science elective	3.0	
Social/ Behavioral Science elective	3.0 Social/ Behavioral Science elective	3.0 Science elective	3.0	
17		17	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 301	1.0 WRIT 212 or 295	3.0 ENGL 301 (2nd of 3)	1.0 ENGL 325	3.0
WRIT 225	3.0 Writing Practice Course (1 of 7)	3.0 ENGL 315	3.0 Writing Practice Course (3 of 7)	3.0
WRIT 210 or 211	3.0 Diversity Studies	3.0 Writing Practice Course (2 of 7)	3.0 Writing Practice Course (4 of 7)	3.0
Science elective	3.0 International Studies elective	3.0 Diversity Studies	3.0 Free Electives	6.0
International Studies elective	3.0 Humanities elective	3.0 Humanities elective	3.0	
Social/ Behavioral Science elective	3.0	Free elective	3.0	
16		15	16	15

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (3rd of 3)	1.0 Writing Practice Course (6 of 7)	3.0
		WRIT 312 or 315	3.0 Free Electives	12.0
		Writing Practice Course (5 of 7)	3.0	
		Free Electives	6.0	
0		0	13	15

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
UNIV H201	1.0 ENGL 355	3.0 ENGL 495	3.0	
Writing Practice Course (7 of 7)	3.0 English Elective	3.0 Free Electives	9.0	
English Elective (ENGL or WRIT)	3.0 Free Electives	9.0		
Free Electives	9.0			
16		15	12	

Total Credits 183

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	

ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0
UNIV H101	1.0 WRIT 200	3.0 ENGL 207	3.0
Foreign Language Course (1st consecutive course)	4.0 Foreign Language Course (2nd consecutive course, at least 103-level)	4.0 WRIT 195	3.0
Math Elective	3.0 Math Elective	3.0 Social/Behavioral Science	3.0
Social/Behavioral Sciences Elective	3.0 Social/Behavioral Science Elective	3.0 Science Elective	3.0
17		16	

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (1st of 3)	1.0 WRIT 212 or 295	3.0
		WRIT 225	3.0 Writing Practice Course (1 of 7)	3.0
		WRIT 210 or 211	3.0 Diversity Studies	3.0
		Science Elective	3.0 International Studies Elective	3.0
		International Studies Elective	3.0 Humanities Elective	3.0
		Social/Behavioral Sciences	3.0	
0		16		15

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (2nd of 3)	1.0 ENGL 325	3.0
		ENGL 315	3.0 Writing Practice Course (4 of 7)	3.0
		Writing Practice Course (2 of 7)	3.0 Free Electives	9.0
		Writing Practice Course (3 of 7)	3.0	
		Diversity Studies	3.0	
		Humanities Elective	3.0	
0		16		15

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (3rd of 3)	1.0 Writing Practice Course (6 of 7)	3.0
		WRIT 312 or 315	3.0 Free Electives	12.0
		ENGL 355	3.0	

Writing Practice Course (5 of 7)	3.0
Free Electives	3.0
0	

13 **15**

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
UNIV H201	1.0 English Elective	3.0 ENGL 495	3.0
Writing Practice Course (7 of 7)	3.0 Free Electives	9.0 Free Electives	12.0
English Elective (ENGL or WRIT)	3.0		
Free Electives	9.0		
16		15	

Total Credits 183

* See degree requirements

English Faculty

Jan Armon, PhD (*University of Michigan*). Associate Teaching Professor. Academic functions of personal writing, composition.

Kenneth Bingham, MA (*Temple University*). Teaching Professor. First-year writing; engineering ethics; literature of baseball.

Valerie Booth, PhD (*Emory University*). Associate Teaching Professor.

Paula Marantz Cohen, PhD (*Columbia University*) *Distinguished Professor, Dean of the Pennoni Honors College*. Co-editor, *Journal of Modern Literature*; Host of the *Drexel Interview*. Nineteenth- and early twentieth-century English and American literature; film studies.

Lisa DiMaio, MEd (*Temple University*). Teaching Professor. English as a second language

Dan Driscoll, MA (*Temple University*) *Associate Director University Writing Program*. Teaching Professor. Associate Director, University Writing Center: Curricular Initiatives. Co-Director, Minor in Writing. First-year writing.

Anne Erickson, PhD (*Purdue University*). Assistant Teaching Professor. Online educational applications; the short story cycle.

Nomi Eve, MFA (*Brown University*) *Director of the Creative Writing MFA Program*. Assistant Teaching Professor.

Robert Finegan, MFA (*University of Pittsburgh*). Associate Teaching Professor. First-year writing; technical and creative writing.

Valerie Fox, PhD (*SUNY at Binghamton*). Teaching Professor. Founding Editor, *Press 1*. Twentieth century drama; modern and contemporary American poetry; first-year writing.

Edward Fristrom, PhD (*State University of New York-Albany*). Associate Teaching Professor. Professional writing, creative writing, multimedia, and writing education.

Keunah Han, PhD (*Temple University*). Associate Teaching Professor. English as a Second Language (ESL)

Cassandra Hirsch, MFA (*Rosemont College*). Associate Teaching Professor. Fiction.

Gabriella Ibieta, PhD (*City University of New York*) *Director, Programs in English*. Associate Professor. Comparative literature; Cuban and Latin American fiction.

Henry Israeli, MFA (*University of Iowa*). Associate Teaching Professor. Founder and editor of Saturnalia Books, a publisher of contemporary poetry.

Kirsten Kaschock, PhD (*University of Georgia*). Associate Teaching Professor. Creative writing (poetry and prose).

Elizabeth Kimball, PhD (*Temple University*). Assistant Professor. College writing, civic engaged learning, multi lingual and trans lingual practice, history and theory of rhetoric, public and community writing, 18th and 19th century U.S. rhetorical history

Miriam Kotzin, PhD (*New York University*). Professor. Founding Editor, *Per Contra*. American literature; genre studies; creative writing; communications.

Roger Kurtz, PhD (*University of Iowa*) *Department Head*. Professor. Postcolonial and world literatures

Stephen Mandell, PhD (*Temple University*). Professor. First-year writing; technical writing; speech; American literature.

Deirdre McMahon, PhD (*University of Iowa*). Teaching Professor. 19th-century British literature and culture: empire, critical race studies and analyses of material culture.

Marianaliet Mendez-Rivera, PhD (*University of Minnesota*). Assistant Teaching Professor. Use of the mass media to secure, maintain and enhance political power; international technical communication—including issues of translation v. localization.

Harriet Levin Millan, MFA (*University of Iowa*) *Director, Certificate in Writing and Publishing*. Associate Teaching Professor. Poetry.

Jill Moses, MFA (*University of Oregon*). Associate Teaching Professor. Dramatic literature; first-year writing.

Christopher T. Nielson, PhD (*Purdue University*). Teaching Professor. Shakespeare; Renaissance drama and literature; dramatic literature; first-year writing.

Karen Nulton, PhD (*Rutgers University*) *Director, Writing Assessment*. Teaching Professor. Writing assessment, writing pedagogy, and writing across the curriculum.

Margene Peterson, MA (*Rhode Island School of Design*). Assistant Teaching Professor. English as a Second Language (ESL); the learning styles and strategies of non-native speakers of English.

Maegan Poland, PhD (*University of Nevada, Las Vegas*). Assistant Teaching Professor. Creative writing; first-year writing

Abioseh Porter, PhD (*University of Alberta, Canada*). Professor. Comparative literature; postcolonial literatures

Donald Riggs, PhD (*University of North Carolina-Chapel Hill*). Teaching Professor. Cinematic monsters; science fiction and fantasy literature and film; Renaissance literature; creative writing; first-year writing.

Donna Rondolone, PhD (*University of Pennsylvania*). Associate Teaching Professor. Medieval literature; Arthurian legend; first-year writing.

Gail Rosen, JD (*Temple University*). Teaching Professor. Literature and law; first-year writing.

Doreen Alvarez Saar, PhD (*SUNY Buffalo*). Professor. Early American literature; Eighteenth-century America; race and gender studies.

Sheila Sandapen, PhD (*Indiana University of Pennsylvania*) *Assistant Director, First Year Writing Program*. Associate Teaching Professor. First-year writing; cultural studies; women's studies; history and film.

Fred A. Siegel, PhD (*New York University*) *Director, First-Year Writing Program*. Teaching Professor. Popular theater; dramatic literature, creative non-fiction; first-year writing.

Scott Stein, MFA (*University of Miami*) *Director, Drexel Publishing Group*. Teaching Professor. Creative writing; first-year writing; Founding Editor, *When Falls the Coliseum: A Journal of American Culture (Or Lack Thereof)*.

Eva Thury, PhD (*University of Pennsylvania*). Associate Professor. Mythology; classical literature; drama; first-year writing; desktop publishing and software documentation.

Kathleen Volk Miller, MA (*Rutgers University*). Teaching Professor. Co-Editor, *Painted Bride Quarterly (PBQ)*; creative writing; first-year writing.

Maria Volynsky, EdD (*Temple University*) *Associate Director, First-Year Writing Program; ESL Coordinator*. Associate Teaching Professor. English as a Second Language (ESL).

Scott Warnock, PhD (*Temple University*) *Associate Dean for Undergraduate Education*. Professor. Rhetoric and composition; medical writing; information technology and literacy.

Robert A. Watts, MA (*Temple University*). Associate Teaching Professor. Creative writing; first-year writing.

Vincent Williams, PhD (*Temple University*). Associate Teaching Professor. First-year writing; the intersection of race, gender, class and urbanism.

Jennifer Yusin, PhD (*Emory University*). Associate Professor. Postcolonial literature; trauma theory; literary theory; psychoanalysis, and memory studies in contemporary literature in English.

Emeritus Faculty

Valarie Arms, PhD (*Temple University*). Professor Emeritus. Rhetoric and Composition

Richard Astro, PhD (*University of Washington*) *Distinguished Professor*. Provost Emeritus. Twentieth-century American literature; literature and sports.

Raymond Brebach, PhD (*University of Illinois*). Professor Emeritus. Modern British fiction; the novel; textual studies.

English

Major: English

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 181.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years)

Classification of Instructional Programs (CIP) code: 23.1399

Standard Occupational Classification (SOC) code: 25-1123

Secondary Education Concentration

English majors who select the concentration in Secondary Education benefit from the full range of courses and opportunities that we offer. These include core courses taken by all our majors, offering a strong foundation in textual and rhetorical analysis along with writing skills. Students receive a strong grounding in English to prepare for a career in teaching.

The concentration offers additional courses, including coursework and student teaching through the School of Education, that prepare students to meet the certification requirements for a career as a high school English teacher.

Degree Requirements

UNIVERSITY REQUIREMENTS (minimum 64 credits)

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Mathematics courses for a minimum of 6.0 credits		6.0
MATH 171	Introduction to Analysis A	
MATH 172	Introduction to Analysis B	
Science courses for a minimum of 6.0 credits		6.0
ENVS 260	Environmental Science and Society	
PHYS 181	Astronomy	
Social/Behavioral Science courses for a minimum of 13 credits		13.0
HIST 201	United States History to 1815	
or HIST 202	United States History, 1815-1900	
or HIST 203	United States History since 1900	
PSY 101	General Psychology I	
PSY 320 [WI]	Educational Psychology	
SOC 335	Sociology of Education	
Humanities courses (other than ENGL or WRIT) for a minimum of 6 credits		6.0
ARTH 101	History of Art I	
or ARTH 102	History or Art II	
or ARTH 103	History or Art III	
MUSC 130	Introduction to Music	
Diversity Studies courses for a minimum of 6 credits		6.0
EDUC 312	Educational Policy, Law & Advocacy	
EDUC 365	Foundations in Instructing English Language Learners	
International Studies courses for a minimum of 6 credits		6.0
Foreign Language requirement (2 consecutive courses, reaching at least 103)		8.0
MAJOR REQUIREMENTS (30-credit CORE plus 36-credit concentration)		
Core Courses		

ENGL 195	English Freshman Seminar	3.0
ENGL 207 [WI]	African American Literature	3.0
ENGL 315 [WI]	Shakespeare	3.0
EDUC 105	Freshman Pedagogy Seminar ((1-credit course, repeat twice for 3 credits total))	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 405	Senior Pedagogy Seminar	1.0
ENGL 325	Topics in World Literature	3.0
ENGL 355 [WI]	Women and Literature	3.0
WRIT 195	Threshold Concepts in Writing	3.0
WRIT 200	Language Puzzles and Word Games: Issues in Modern Grammar	3.0
WRIT 225 [WI]	Creative Writing	3.0
Education Concentration		36.0

English Education Language & Methods - take all for 15 credits

INFO 101	Introduction to Computing and Security Technology
COM 230	Techniques of Speaking
EDUC 358	English Teaching Methods
LING 101	Introduction to Linguistics
WRIT 211	Advanced Composition

Literature Surveys - Select any 4 for 12 credits

ENGL 200 [WI]	Classical to Medieval Literature
ENGL 201	Renaissance to the Enlightenment
ENGL 202 [WI]	Romanticism to Modernism
ENGL 203 [WI]	Survey of World Literature
ENGL 204	Post-Colonial Literature
ENGL 205 [WI]	American Literature I
ENGL 206 [WI]	American Literature II
ENGL 211 [WI]	British Literature I
ENGL 212	British Literature II

Advanced Literature Courses - Select all for 9 credits

ENGL 304	Young Adult Fiction
ENGL 490	Seminar in English and American Literature
ENGL 492	Seminar in World Literature

Additional credits for Education Certification - select all for 51 credits **51.0**

ECON 201	Principles of Microeconomics
EDEX 142	Special Education Foundations: Referral and Assessment
EDEX 344	Inclusionary Practices for Exceptional Students
EDEX 366 [WI]	Literacy and Content Skill Development 7-12
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective
EDUC 113	Organizational Structure of Secondary Schools
EDUC 308	Creating a Positive Classroom Climate
EDUC 322	Evaluation of Instruction
EDUC 325	Multimedia in Instructional Design
EDUC 409	Student Teaching Seminar I
EDUC 410 [WI]	DragonsTeach Student Teaching
MATH 173	Introduction to Analysis C
or MATH 107	Probability and Statistics for Liberal Arts
NFS 100	Nutrition, Foods, and Health
or NFS 101	Introduction to Nutrition & Food

Total Credits

181.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic

advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, one co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
EDUC 101	3.0 CIVC 101	1.0 EDEX 142	3.0 VACATION	
EDUC 105*	1.0 EDUC 105*	1.0 EDUC 105*	1.0	
ENGL 101 or 111	3.0 EDUC 113	3.0 ENGL 103 or 113	3.0	
ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 207	3.0	
MATH 171	3.0 MATH 172	3.0 MATH 173	3.0	
UNIV H101	1.0 WRIT 200	3.0 WRIT 195	3.0	
	14	14	16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
EDEX 344	3.0 INFO 101	3.0 ARTH 101, 102, or 103	3.0 ECON 201	4.0
EDUC 205	1.0 LING 101	3.0 COOP 101	1.0 EDUC 322	3.0
EDUC 312	3.0 PSY 101	3.0 EDEX 366	3.0 ENGL 315	3.0
EDUC 365	3.0 Literature Survey	3.0 EDUC 305	1.0 HIST 201, 202, or 203	4.0
WRIT 225	3.0 Foreign Language	4.0 MUSC 130	3.0 International Studies	3.0
Literature Survey	3.0	Foreign language	4.0	
	16	16	15	17
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	COM 230	3.0 ENGL 304	3.0
EDUC 358	3.0 Literature Survey	3.0 ENGL 325	3.0 ENVS 260	3.0
		ENGL 490	3.0 PHYS 181	3.0
		PSY 320	3.0 SOC 335	3.0
		UNIV H201	1.0 Literature Survey	3.0
		WRIT 211	3.0	
	3	3	16	15
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
EDUC 308	3.0 EDUC 325	3.0 EDUC 405	1.0	
EDUC 409	9.0 EDUC 410	9.0 ENGL 355	3.0	
		ENGL 492	3.0	
		NFS 100	2.0	

	12	12	12
International Studies			3.0
Total Credits	181		

* EDUC 105 is taken three times for a total of 3.0 credits.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
EDUC 101	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
EDUC 105*	1.0 EDUC 105*	1.0 EDEX 142	3.0	
ENGL 101 or 111	3.0 EDUC 113	3.0 EDUC 105*	1.0	
ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
MATH 171	3.0 MATH 172	3.0 ENGL 207	3.0	
UNIV H101	1.0 WRIT 200	3.0 MATH 173	3.0	
		WRIT 195	3.0	
	14	14	17	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ARTH 101, 102, or 103	3.0 ECON 201	4.0
		EDEX 366	3.0 EDUC 322	3.0
		EDUC 305	1.0 ENGL 315	3.0
		MUSC 130	3.0 HIST 201, 202, or 203	4.0
		Foreign Language	4.0 Foreign language	4.0
	0	0	14	18
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	UNIV H201	1.0 ENGL 304	3.0
EDUC 358	3.0 Literature Survey (1st of 4)	3.0 PSY 320	3.0 ENVS 260	3.0
		ENGL 325	3.0 PHYS 181	3.0
		COM 230	3.0 SOC 335	3.0
		WRIT 211	3.0 Literature Survey	3.0
		ENGL 490	3.0	
	3	3	16	15
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	EDUC 205	1.0 INFO 101	3.0
		EDEX 344	3.0 LING 101	3.0
		EDUC 365	3.0 PSY 101	3.0
		EDUC 312	3.0 Literature Survey	3.0
		Literature Survey (3rd of 4)	3.0 International Studies	3.0
		WRIT 225	3.0	
	0	0	16	15
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
EDUC 308	3.0 EDUC 325	3.0 EDUC 405	1.0	
EDUC 409	9.0 EDUC 410	9.0 ENGL 355	3.0	
		ENGL 492	3.0	
		NFS 100	2.0	

	International Studies	3.0
12	12	12
Total Credits 181		

* EDUC 105 is taken 3 times for a total of 3.0 credits.

English Faculty

Jan Armon, PhD (*University of Michigan*). Associate Teaching Professor. Academic functions of personal writing, composition.

Kenneth Bingham, MA (*Temple University*). Teaching Professor. First-year writing; engineering ethics; literature of baseball.

Valerie Booth, PhD (*Emory University*). Associate Teaching Professor.

Paula Marantz Cohen, PhD (*Columbia University*) *Distinguished Professor, Dean of the Pennoni Honors College*. Co-editor, *Journal of Modern Literature*; Host of the Drexel Interview. Nineteenth- and early twentieth-century English and American literature; film studies.

Lisa DiMaio, MEd (*Temple University*). Teaching Professor. English as a second language

Dan Driscoll, MA (*Temple University*) *Associate Director University Writing Program*. Teaching Professor. Associate Director, University Writing Center: Curricular Initiatives. Co-Director, Minor in Writing. First-year writing.

Anne Erickson, PhD (*Purdue University*). Assistant Teaching Professor. Online educational applications; the short story cycle.

Nomi Eve, MFA (*Brown University*) *Director of the Creative Writing MFA Program*. Assistant Teaching Professor.

Robert Finegan, MFA (*University of Pittsburgh*). Associate Teaching Professor. First-year writing; technical and creative writing.

Valerie Fox, PhD (*SUNY at Binghamton*). Teaching Professor. Founding Editor, *Press 1*. Twentieth century drama; modern and contemporary American poetry; first-year writing.

Edward Fristrom, PhD (*State University of New York-Albany*). Associate Teaching Professor. Professional writing, creative writing, multimedia, and writing education.

Keunah Han, PhD (*Temple University*). Associate Teaching Professor. English as a Second Language (ESL)

Cassandra Hirsch, MFA (*Rosemont College*). Associate Teaching Professor. Fiction.

Gabriella Ibieta, PhD (*City University of New York*) *Director, Programs in English*. Associate Professor. Comparative literature; Cuban and Latin American fiction.

Henry Israeli, MFA (*University of Iowa*). Associate Teaching Professor. Founder and editor of Saturnalia Books, a publisher of contemporary poetry.

Kirsten Kaschock, PhD (*University of Georgia*). Associate Teaching Professor. Creative writing (poetry and prose).

Elizabeth Kimball, PhD (*Temple University*). Assistant Professor. College writing, civic engaged learning, multi lingual and trans lingual practice,

history and theory of rhetoric, public and community writing, 18th and 19th century U.S. rhetorical history

Miriam Kotzin, PhD (*New York University*). Professor. Founding Editor, *Per Contra*. American literature; genre studies; creative writing; communications.

Roger Kurtz, PhD (*University of Iowa*) *Department Head*. Professor. Postcolonial and world literatures

Stephen Mandell, PhD (*Temple University*). Professor. First-year writing; technical writing; speech; American literature.

Deirdre McMahon, PhD (*University of Iowa*). Teaching Professor. 19th-century British literature and culture: empire, critical race studies and analyses of material culture.

Marianaliet Mendez-Rivera, PhD (*University of Minnesota*). Assistant Teaching Professor. Use of the mass media to secure, maintain and enhance political power; international technical communication—including issues of translation v. localization.

Harriet Levin Millan, MFA (*University of Iowa*) *Director, Certificate in Writing and Publishing*. Associate Teaching Professor. Poetry.

Jill Moses, MFA (*University of Oregon*). Associate Teaching Professor. Dramatic literature; first-year writing.

Christopher T. Nielson, PhD (*Purdue University*). Teaching Professor. Shakespeare; Renaissance drama and literature; dramatic literature; first-year writing.

Karen Nulton, PhD (*Rutgers University*) *Director, Writing Assessment*. Teaching Professor. Writing assessment, writing pedagogy, and writing across the curriculum.

Margene Peterson, MA (*Rhode Island School of Design*). Assistant Teaching Professor. English as a Second Language (ESL); the learning styles and strategies of non-native speakers of English.

Maegan Poland, PhD (*University of Nevada, Las Vegas*). Assistant Teaching Professor. Creative writing; first-year writing

Abioseh Porter, PhD (*University of Alberta, Canada*). Professor. Comparative literature; postcolonial literatures

Donald Riggs, PhD (*University of North Carolina-Chapel Hill*). Teaching Professor. Cinematic monsters; science fiction and fantasy literature and film; Renaissance literature; creative writing; first-year writing.

Donna Rondolone, PhD (*University of Pennsylvania*). Associate Teaching Professor. Medieval literature; Arthurian legend; first-year writing.

Gail Rosen, JD (*Temple University*). Teaching Professor. Literature and law; first-year writing.

Doreen Alvarez Saar, PhD (*SUNY Buffalo*). Professor. Early American literature; Eighteenth-century America; race and gender studies.

Sheila Sandapen, PhD (*Indiana University of Pennsylvania*) *Assistant Director, First Year Writing Program*. Associate Teaching Professor. First-year writing; cultural studies; women's studies; history and film.

Fred A. Siegel, PhD (*New York University*) *Director, First-Year Writing Program*. Teaching Professor. Popular theater; dramatic literature, creative non-fiction; first-year writing.

Scott Stein, MFA (*University of Miami*) Director, *Drexel Publishing Group*. Teaching Professor. Creative writing; first-year writing; Founding Editor, *When Falls the Coliseum: A Journal of American Culture (Or Lack Thereof)*.

Eva Thury, PhD (*University of Pennsylvania*). Associate Professor. Mythology; classical literature; drama; first-year writing; desktop publishing and software documentation.

Kathleen Volk Miller, MA (*Rutgers University*). Teaching Professor. Co-Editor, *Painted Bride Quarterly (PBQ)*; creative writing; first-year writing.

Maria Volynsky, EdD (*Temple University*) Associate Director, *First-Year Writing Program*; *ESL Coordinator*. Associate Teaching Professor. English as a Second Language (ESL).

Scott Warnock, PhD (*Temple University*) Associate Dean for *Undergraduate Education*. Professor. Rhetoric and composition; medical writing; information technology and literacy.

Robert A. Watts, MA (*Temple University*). Associate Teaching Professor. Creative writing; first-year writing.

Vincent Williams, PhD (*Temple University*). Associate Teaching Professor. First-year writing; the intersection of race, gender, class and urbanism.

Jennifer Yusin, PhD (*Emory University*). Associate Professor. Postcolonial literature; trauma theory; literary theory; psychoanalysis, and memory studies in contemporary literature in English.

Emeritus Faculty

Valarie Arms, PhD (*Temple University*). Professor Emeritus. Rhetoric and Composition

Richard Astro, PhD (*University of Washington*) *Distinguished Professor*. Provost Emeritus. Twentieth-century American literature; literature and sports.

Raymond Brebach, PhD (*University of Illinois*). Professor Emeritus. Modern British fiction; the novel; textual studies.

Environmental Science

Major: Environmental Science

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 186-190 credits

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: *03.0104*

Standard Occupational Classification (SOC) code: 19-2041

About the Program

The Environmental Science program at Drexel University is committed to educating undergraduates for technical careers and graduate study in the diverse areas of environmental science vital to understanding, conservation, and restoration of clean and healthy natural environments in the 21st century. The affiliation between the Academy of Natural Sciences (<https://ansp.org/>) and Drexel University offers students unique opportunities to take a leadership role in ecology, environmental science, and environmental policy, and to grow the scope, capacity, and reputation of the natural sciences at the University. The philosophy of the

Biodiversity, Earth & Environmental Science Department is "*Experiential Learning Early and Often*."

Environmental science is a multidisciplinary field designed to examine environmental problems and find solutions. This field requires understanding of a number of disciplines including biology, physics, and chemistry. Solving some of our environmental problems also requires knowledge of environmental policy, ethics, and scientific data analysis.

The program has an integrated curricular approach designed around student laboratory and field investigations. The goal of this program is to give students not only knowledge about biology, chemistry, and ecology, but also the ability to use the tools and skills of a scientist. The program includes extensive use of computers in the laboratory and students make frequent oral and written presentations based on their laboratory projects.

Field experience electives may include trips to local aquatic and terrestrial habitats, such as streams, lakes, the John Heinz National Wildlife Refuge, New Jersey Pine Barrens, Delaware, Barnegat and Chesapeake Bays, and the Appalachian Mountains. Students are also encouraged to take advantage of study abroad (<http://www.drexel.edu/studyabroad/>) options, including ENVS field courses. These programs often require early planning, so it is advisable for interested students to speak to their advisor about opportunities in their first year.

Concentrations are available in:

- Ecology & Evolution
- Applied Environmental Science

Additional Information

For more information about the program, visit the Department of Biodiversity, Earth & Environmental Science's (<http://www.drexel.edu/coas/academics/departments-centers/bees/>) web page.

Susan Cole
Undergraduate Advisor
Environmental Science
coless@drexel.edu or email bees@drexel.edu.

Degree Requirements

The program is designed to prepare students for careers in environmental science, environmental assessment, marine science, basic and applied ecology, biodiversity, evolutionary biology, and conservation and paleontology. The requirements for specific concentrations in Biodiversity and Evolution, Earth Science, and Ecology and Conservation, as well as Environmental Science, follow the list of degree requirements.

Degree Requirements

Humanities and Social Science		
CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COM 310 [WI]	Technical Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
	or ENGL 111 English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
	or ENGL 112 English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
	or ENGL 113 English Composition III	
PHIL 340	Environmental Ethics	3.0
	or PHIL 341 Environmental Philosophy	

Humanities/Social Science electives	6.0
UNIV S101 The Drexel Experience	1.0
UNIV S201 Looking Forward: Academics and Careers	1.0
Mathematics, Statistics & Computing	21.0
Select one of the following sequences:	
Calculus sequence	
MATH 121 Calculus I	
MATH 122 Calculus II	
MATH 123 Calculus III	
Analysis sequence	
MATH 101 Introduction to Analysis I	
MATH 102 Introduction to Analysis II	
MATH 239 Mathematics for the Life Sciences	
Additional required math & computing courses:	
MATH 410 Scientific Data Analysis I	
MATH 411 Scientific Data Analysis II	
CS 171 Computer Programming I	
Physical Sciences	
CHEM 101 General Chemistry I	3.5
CHEM 102 General Chemistry II	4.5
CHEM 103 General Chemistry III	5.0
Choose two chemistry electives from:	5.0-7.0
CHEM 241 Organic Chemistry I	
ENVS 302 Environmental Chemistry Laboratory	
ENVS 310 Introduction to Environmental Chemistry	
Physics sequence	
PHYS 152 Introductory Physics I	4.0
PHYS 153 Introductory Physics II	4.0
PHYS 154 Introductory Physics III	4.0
Biological Sciences	
BIO 131 Cells and Biomolecules	4.0
BIO 132 Genetics and Evolution	4.0
BIO 133 Physiology and Ecology	4.0
BIO 134 Cells and Biomolecules Lab	1.0
BIO 135 Genetics and Evolution Lab	1.0
BIO 136 Anatomy and Ecology Lab	1.0
Geoscience Requirements	
GEO 101 Physical Geology	4.0
GEO 103 Introduction to Field Methods in Earth Science	2.0
GEO 201 [WI] Earth Systems Processes	3.0
Environmental Science Core Requirements	
ENVS 101 Introduction to Environmental Science	5.0
ENVS 102 Natural History, Research and Collections	2.0
ENVS 201 Practical Identification of Plants and Animals	2.0
ENVS 212 Evolution	4.0
ENVS 284 Physiological and Population Ecology	3.0
ENVS 286 Community and Ecosystem Ecology	3.0
ENVS 308 GIS and Environmental Modeling	3.0
ENVS 441 [WI] Issues in Global Change I: Seminar	2.0
ENVS 442 Issues in Global Change II: Research	2.0
ENVS 443 Issues in Global Change III: Synthesis	2.0
Choose one of the following:	3.0-4.0
ENSS 283 Introduction to Environmental Policy	
ENSS 326 Cities and Sustainability	
ENSS 348 Delaware River Issues and Policy	
PSCI 284 Environmental Politics	
Environmental Science Lab Requirements	2.0
Environmental Concentration Requirements	14.0-15.0
See list of concentration requirements below.	
Environmental Electives	12.0

Free Electives	24.0
Total Credits	186.0-190.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

Environmental Science Concentrations

Ecology & Evolution Concentration	14.0-15.0
Choose 5 from below:	
ENVS 202 Tree of Life	
ENVS 312 Systematic Biology	
ENVS 328 Conservation Biology	
ENVS 470 Advanced Topics in Evolution	
BIO 244 Genetics I	
BIO 436 Population Genetics	
Total Credits	14.0-15.0

Applied Environmental Science Concentration	14.0-15.0
Required Courses	
ENVS 203 The Watershed Approach	
ENVS 275 Global Climate Change	
ENVS 372 Environmental Assessment	
Choose 2 from below:	
ENVS 376 Environmental and Ecological Remediation	
ENVS 401 Chemistry of the Environment	
GEO 306 Environmental Geology	
Total Credits	14.0-15.0

Notes about Environmental Science opportunities:

- Field experience electives include quantitative environmental measurements in local aquatic and terrestrial habitats, such as streams, lakes, the Delaware Bay, the Poconos, and the New Jersey Pine Barrens (for example, Field Botany: NJ Pine Barrens; Ecology of the Pine Barrens; Marine Field Methods).
- Students are required to consult frequently with their academic advisors for curriculum planning. Many of the graduate courses in environmental science are also open to qualified seniors who wish to become familiar with some of the applications in the field. Prerequisites and descriptions of available graduate courses appear in the graduate catalog.
- The Equatorial Guinea: Bioko Island Study Abroad Program offers a unique opportunity for undergraduates and recent graduates to study tropical biodiversity and its conservation, with an emphasis on field work that takes advantage of Bioko Island's pristine rainforests ranging from sea level to over 10,000 feet in altitude, its seven species of rare monkeys, and its four species of nesting sea turtles. For more information, please visit the Drexel Study Abroad Office (<http://www.drexel.edu/studyabroad/>).

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

The plan of study below is a generic plan, suited for all four concentrations. Contact the program advisor for additional details.

4 Year, No co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 101	3.5 BIO 132	4.0 BIO 133	4.0 VACATION	
ENGL 101 or 111	3.0 BIO 135	1.0 BIO 136	1.0	
ENVS 101	5.0 CHEM 102	4.5 CHEM 103	5.0	
MATH 101 or 121	4.0 CIVC 101	1.0 GEO 103	2.0	
UNIV S101	1.0 ENGL 102 or 112	3.0 MATH 239 or 123	4.0	
	MATH 102 or 122	4.0		
	16.5	17.5	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CS 171	3.0 ENVS 212	4.0 VACATION	
BIO 134	1.0 ENVS 286	3.0 GEO 101	4.0	
ENGL 103 or 113	3.0 GEO 201	3.0 PHYS 152	4.0	
ENVS 102	2.0 Concentration Course	3.0 PHIL 340 or 341	3.0	
ENVS 201	2.0 Free Elective	4.0 Concentration Course	2.0-3.0	
ENVS 284	3.0			
	15	16	17-18	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 MATH 410	3.0 MATH 411	3.0 VACATION	
ENVS 308	3.0 PHYS 154	4.0 Concentration Course	3.0	
PHYS 153	4.0 Concentration Course	3.0 ENV CHEM Elective	2.0-3.0	
UNIV S201	1.0 CHEM Elective	3.0-4.0 ENSS Elective	3.0-4.0	
ENVS Elective	3.0 Humanities/Social Science Elective	3.0 Free Elective	3.0	
Free Elective	3.0			
	17	16-17	14-16	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 310	3.0 ENVS 442	2.0 ENVS 443	2.0	

ENVS 441	2.0 Environmental Science (ENVS) Elective	3.0 Environmental Science (ENVS) Electives	6.0
Concentration Course	3.0 Humanities/Social Science Elective	3.0 Free Electives	6.0
Environmental Science (ENVS) Lab Elective	2.0 Free Electives	6.0	
Free Elective	3.0		
	13	14	14

Total Credits 186-190

4 Year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 101	3.5 BIO 132	4.0 BIO 133	4.0 VACATION	
ENGL 101 or 111	3.0 BIO 135	1.0 BIO 136	1.0	
ENVS 101	5.0 CHEM 102	4.5 CHEM 103	5.0	
MATH 101 or 121	4.0 CIVC 101	1.0 COOP 101	1.0	
UNIV S101	1.0 ENGL 102 or 112	3.0 GEO 103	2.0	
	MATH 102 or 122	4.0 MATH 239 or 123	4.0	
	16.5	17.5	17	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CS 171	3.0 ENVS 212	4.0 COM 230	3.0
BIO 134	1.0 ENVS 286	3.0 GEO 101	4.0 ENVS 308	3.0
ENGL 103 or 113	3.0 GEO 201	3.0 PHYS 152	4.0 PHYS 153	4.0
ENVS 102	2.0 Concentration Course	3.0 PHIL 340 or 341	3.0 UNIV S201	1.0
ENVS 201	2.0 Free Elective	3.0 Concentration Course	2.0-3.0 ENVS Elective	3.0
ENVS 284	3.0		Free Elective	3.0
	15	15	17-18	17

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 410	3.0 MATH 411	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHYS 154	4.0 Concentration Course	3.0		
Concentration Course	3.0 ENV CHEM Elective	2.0-3.0		
CHEM Elective	3.0-4.0 ENSS Elective	3.0-4.0		
Humanities/Social Science Elective	3.0 Free Elective	3.0		
	16-17	14-16	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 310	3.0 ENVS 442	2.0 ENVS 443	2.0	

ENVS 441	2.0 Environmental Science (ENVS) Elective	3.0 Environmental Science (ENVS) Electives	6.0
Concentration Course	3.0 Humanities/Social Science Elective	3.0 Free Electives	6.0
Environmental Science (ENVS) Lab Elective	2.0 Free Electives	6.0	
Free Elective	3.0		
	13	14	14

Total Credits 186-190

5 Year, 3 Co-ops

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 101	3.5 ENGL 102 or 112	3.0 BIO 133	4.0 VACATION	
ENGL 101 or 111	3.0 BIO 132	4.0 BIO 136	1.0	
ENVS 101	5.0 BIO 135	1.0 CHEM 103	5.0	
MATH 101 or 121	4.0 CHEM 102	4.5 COOP 101	1.0	
UNIV S101	1.0 MATH 102 or 122	4.0 GEO 103	2.0	
	CIVC 101	1.0 MATH 239 or 123	4.0	
	16.5	17.5	17	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CS 171	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
BIO 134	1.0 ENVS 286	3.0		
ENGL 103 or 113	3.0 GEO 201	3.0		
ENVS 102	2.0 Concentration Course	3.0		
ENVS 201	2.0 Free Elective	3.0		
ENVS 284	3.0			
	15	15	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENVS 212	4.0 COM 230	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
GEO 101	4.0 ENVS 308	3.0		
PHIL 340 or 341	3.0 PHYS 153	4.0		
PHYS 152	4.0 UNIV S201	1.0		
Concentration Course	2.0-3.0 ENVS Elective	3.0		
	Free Elective	3.0		
	17-18	17	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 410	3.0 MATH 411	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHYS 154	4.0 Concentration Course	3.0		

Concentration Course	3.0 ENV CHEM Elective	2.0-3.0	
CHEM Elective	3.0-4.0 ENSS Elective	3.0-4.0	
Humanities/Social Science Elective	3.0 Free Elective	3.0	
	16-17	14-16	0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
COM 310	3.0 ENVS 442	2.0 ENVS 443	2.0
ENVS 441	2.0 Environmental Science (ENVS) Elective	3.0 Environmental Science (ENVS) Electives	6.0
Concentration Course	3.0 Humanities/Social Science Elective	3.0 Free Electives	6.0
Environmental Science (ENVS) Lab Elective	2.0 Free Electives	6.0	
Free Elective	3.0		
	13	14	14

Total Credits 186-190

* See degree requirements (p. 63).

Co-op/Career Opportunities

Environmental scientists pursue careers in environmental assessment, environmental health, ecology, conservation, marine science, and atmospheric science.

Co-op Opportunities

Co-op and research opportunities will be available with the scientists at the Academy of Natural Sciences (<http://www.ansp.org/>). In addition, recent co-op experiences have included:

- CHPlanning, Center City Philadelphia
- Lakes Environmental Assn., Maine
- US Environmental Protection Agency, Center City Philadelphia
- Criterion Lab Inc, Philadelphia, PA Suburbs
- Philadelphia Water Department, Philadelphia
- Temple University, Philadelphia
- Fairway Testing Co., NYC
- University of Alaska, Fairbanks, Alaska
- Bioko Biodiversity Protection Program, Equatorial Guinea
- React Environmental Professional Services Group Inc., Philadelphia
- Air Management Services, Philadelphia
- Exelon Corporation, Philadelphia

Graduate Opportunities

Graduates in this major typically work for government environmental agencies, in environmental consulting firms, and in environmental departments of various industries. Additional training at the graduate level is an option for many students.

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) page for more detailed information on co-op and post-graduate opportunities.

Environmental Science Faculty

Jon Gelhaus, PhD (*University of Kansas*) *Curator, Department of Entomology: Academy of Natural Sciences*. Professor. Systematic expertise in crane flies (Tipuloidea); phylogenetic reconstruction; historical and ecological biogeography; biodiversity measures and evolution of morphological character systems.

Danielle Kreeger, PhD (*Oregon State University*). Research Associate Professor. Trophic interactions in aquatic ecosystems.

Stefanie Kroll, PhD (*SUNY College of Environmental Science and Forestry*) *Watershed Ecology Section Leader, Academy of Natural Sciences*. Assistant Research Professor. Aquatic macroinvertebrate ecology, bioindicators of human stressors on aquatic ecosystems, monitoring the effects of watershed conversation, management and restoration.

Marie J. Kurz, PhD (*University of Florida*) *Biogeochemistry Section Leader, Academy of Natural Sciences*. Assistant Research Professor. Interactions between geochemical, ecological & hydrologic processes in freshwater systems. Availability, transport and cycling of stream solutes; Stream ecosystem structure & function; Groundwater-surface water interactions; Adaptive management & restoration of water resources & aquatic ecosystems.

Tatyana Livshultz, PhD (*Cornell University*) *Assistant Curator of Botany*. Assistant Professor. Expertise of the milkweed and dogbane family (Apocynaceae); evolution and species diversity of the genus *Dischidia*; differences in floral form and function.

Amanda Lough, PhD (*Washington University in St. Louis*). Assistant Professor. Volcanic seismicity and the relation to magma plumbing systems; glacial seismicity and the seismicity of Antarctica; intraplate seismicity.

Richard McCourt, PhD (*University of Arizona*) *Curator of Botany, Academy of Natural Sciences of Drexel University; 2010-2012: Program Director, Division of Graduate Education, National Science Foundation*. Professor. Evolution, ecology, systematics of green algae.

Michael O'Connor, MD, PhD (*MD, Johns Hopkins University; PhD, Colorado State*). Professor. Biophysical and physiological ecology, thermoregulation of vertebrates, ecological modeling.

Sean O'Donnell, PhD (*University of Wisconsin-Madison*). Professor. Climate ecology, focusing on geographic variation and species differences in thermal physiology; Behavior and ecology of army ant/bird interactions; Neurobiology, focusing on brain plasticity and brain evolution in social insects.

Marina Potapova, PhD (*Russian Academy of Sciences*) *Associate Curator of Diatoms: Academy of Natural Sciences*. Assistant Professor. Taxonomy, ecology, and biogeography of freshwater and coastal diatoms.

Gary Rosenberg, PhD (*Harvard University*) *Pilsbry Chair of Malacology*. Professor. Magnitude and origin of species-level diversity in the Mollusca. Biodiversity informatics

Jacob Russell, PhD (*University of Arizona*). Professor. Microbiomes and metagenomics; ecology and evolution of symbiosis.

Jocelyn A. Sessa, PhD (*Penn State University*) *Assistant Curator of Invertebrate Paleontology: Academy of Natural Sciences*. Assistant Professor. Paleoecology; paleobiology; extinction recovery dynamics; climate change; isotope geochemistry; fossil and modern mollusks

David J. Velinsky, PhD (*Old Dominion University*) *Department Head, Biodiversity, Earth and Environmental Science*. Professor. Geochemical cycling of organic and inorganic constituents of sediments and waters; Sedimentary diagenesis of major and minor elements; Isotope biogeochemistry of carbon, nitrogen and sulfur in marine and freshwater systems.

Dane Ward, PhD (*Drexel University*). Assistant Teaching Professor. Urban agriculture and sustainability both in Philadelphia and Cienfuegos, Cuba, as well as insect community structure and population ecology of reptiles and amphibians in the New Jersey Pine Barrens.

Elizabeth B. Watson, PhD (*University of California, Berkeley*). Associate Professor. The implications of global and regional environmental change and unraveling the interacting effects of multiple anthropogenic stressors on coastal ecosystems to promote more informed management, conservation, and restoration.

Jason Weckstein, PhD (*Louisiana State University*) *Associate Curator of Ornithology*. Associate Professor. Avian phylogenetics, comparative biology and evolutionary history; biodiversity surveys of birds and their parasites and pathogens; coevolutionary history of birds and their parasites.

Emeritus Faculty

Susan S. Kilham, PhD (*Duke University*). Professor Emeritus. Aquatic ecology: phytoplankton; physiological ecology, especially of diatoms in freshwater and marine systems; large lakes; food webs; biogeochemistry.

John G. Lundberg, PhD (*University of Michigan*). Professor Emeritus. Diversity and diversification of fishes; documenting and interpreting the morphological, molecular, and taxonomic diversity of living and fossil fishes in the interrelated fields of systematic, faunistics and biogeography and paleobiology; exploration and collecting in poorly-known tropical freshwater habitats and regions.

Daniel Otte, PhD (*University of Michigan*) *Senior Curator, Systematics and Evolutionary Biology*. Professor Emeritus. Taxonomy and biogeography of Orthoptera (grasshoppers, crickets, katydids and their relatives).

James R. Spotila, PhD (*University of Arkansas*) *L. D. Betz Chair Professor*. Professor Emeritus. Physiological and biophysical ecology, thermoregulation of aquatic vertebrates, biology of sea turtles.

Environmental Studies and Sustainability

Major: Environmental Studies and Sustainability

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 183.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 03.0103

Standard Occupational Classification (SOC) code: 19-2041

About the Program

The BA in Environmental Studies and Sustainability (ENSS) is administered in the Department of Biodiversity, Earth and Environmental Science (BEES). It is a multidisciplinary degree that takes advantage of existing courses in both the Arts and Sciences to educate graduates who will be able to work in government agencies, corporations, and nonprofit organizations who develop, implement, or are affected by environmental policies.

Objective

The objective of this major is to educate students so that they will be successful in finding solutions to environmental challenges that all societies will face in the 21st century. Graduates will be educated with the goal of thinking in terms of cross-cultural ideas and dialogue. In that way they will be encouraged to help people of all cultures understand environmental problems and act in the area of environmental stewardship.

The BA in Environmental Studies and Sustainability will provide graduates with a broad understanding of environmental science, policy development, needs of decision makers, attorneys and engineers, urban and international concerns, and current environmental issues. Important to any future position in fields of environmental policy, planning, and sustainability, the program builds on communication skills, collaboration abilities and team building, a "customer" orientation, creativity and innovative thinking ability, analytical ability, critical thinking and problem solving ability, a work orientation with professionalism and a positive attitude, occupation-specific skill and knowledge through co-op, and leadership ability. Students may opt to specialize in different study tracks including Policy, Government, and Business; Social Awareness and Action, and Scientific Inquiry.

Drexel Advantage

There is a distinct advantage to a student in undertaking an Environmental Studies and Sustainability degree at Drexel. Drexel University was one of the first universities in the nation to establish an undergraduate environmental science degree in the late 1960s. Since that time, Drexel has expanded to areas of environmental policy and sustainability. Over the long history of the program, Drexel has established an extensive network of co-op employers who value Drexel students, including federal and state governments, consulting firms, research institutions, non-profit organizations, and industry, with work ranging from biological field sampling to developing policy with governmental decision makers, action plans for non-profit organizations, or model environmental strategies with industrial sustainability offices. Drexel students take advantage of the co-op program to both get more extensive experience and get paid while doing so. By graduation, students' resumes include real-world experiences.

Degree Requirements

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development *	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0

or ENGL 113	English Composition III	
MATH 101	Introduction to Analysis I	4.0
MATH 107	Probability and Statistics for Liberal Arts	3.0
UNIV S101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Social and Behavioral Sciences		
SOC 101	Introduction to Sociology	3.0
or ANTH 101	Introduction to Cultural Diversity	
PSY 101	General Psychology I	3.0
PSCI 110	American Government	4.0
Social Behavior elective		3.0
Physical and Natural Sciences		
BIO 109	Biological Diversity, Ecology & Evolution	3.0
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	1.0
ENVS 101	Introduction to Environmental Science	5.0
ENVS 230	General Ecology	3.0
ENSS 275	Global Climate Change	3.0
or ENVS 289	Global Warming, Biodiversity and Your Future	
GEO 201 [WI]	Earth Systems Processes	3.0
Humanities and Fine Arts		
Humanities & Fine Arts Electives		
COM 317 [WI]	Environmental Communication	3.0
or COM 320	Science Writing	
PHIL 340	Environmental Ethics	3.0
or PHIL 341	Environmental Philosophy	
Diversity Electives		
6.0		
International Studies		
6.0		
Foreign Language		
8.0		
Students must complete at least 8 credits of a foreign language and, at minimum, must complete the 103 level of the target language (or beyond if they place higher).		
ENSS Core Requirements		
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENSS 120	Introduction to Environmental Studies	3.0
ENSS 283	Introduction to Environmental Policy	3.0
ENSS 244	Sociology of the Environment	4.0
ENSS 285	Introduction to Urban Planning	3.0
ENSS 326	Cities and Sustainability	3.0
ENSS 346	Environmental Justice	4.0
ENVS 260	Environmental Science and Society	3.0
PBHL 101	Public Health 101	3.0
PSCI 284	Environmental Politics	4.0
Modeling and Research		
ENVS 308	GIS and Environmental Modeling	3.0
SOC 241	Research Design: Qualitative Methods	4.0
SOC 242	Research Design: Quantitative Methods	4.0
ENSS Electives		
21.0		
Senior Sequence		
ENVS 441 [WI]	Issues in Global Change I: Seminar	2.0
ENVS 442	Issues in Global Change II: Research	2.0
ENVS 443	Issues in Global Change III: Synthesis	2.0
Free Electives		24.0
Total Credits		
183.0		

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are

advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, No co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 BIO 109	3.0 ENGL 103 or 113	3.0 VACATION	
ENSS 120	3.0 BIO 110	1.0 MATH 107	3.0	
ENVS 101	5.0 CIVC 101	1.0 SOC 101 or ANTH 101	3.0	
MATH 101	4.0 ENGL 102 or 112	3.0 Foreign Language	4.0	
UNIV S101	1.0 PSY 101	3.0 Free elective	4.0	
	Foreign Language	4.0		
	16	15	17	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENSS 283	3.0 ENSS 244	4.0 COM 317	3.0 VACATION	
ENVS 260	3.0 ENSS 275 or ENVS 289	3.0 ECON 201	4.0	
PBHL 101	3.0 ENVS 230	3.0 ENSS 285	3.0	
PSCI 110	4.0 ENVS 308	3.0 UNIV H201	1.0	
	Free Elective	3.0 Free Elective	3.0	
	13	16	14	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 202	4.0 PHIL 340 or 341	3.0 ENSS 326	3.0 VACATION	
GEO 201	3.0 SOC 241	4.0 SOC 242	4.0	
PSCI 284	4.0 ENSS Elective	3.0 ENSS Electives	6.0	
ENSS Elective	3.0 Free Elective	3.0 Diversity Elective	3.0	
Humanities/ Fine Arts Elective	3.0 Humanities/ Fine Arts Elective	3.0		
	17	16	16	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
ENSS 346	4.0 ENVS 442	2.0 ENVS 443	2.0	

ENVS 441	2.0 ENSS Elective	3.0 ENSS Elective	3.0
ENSS Elective	3.0 Diversity Elective	3.0 International Elective	3.0
SOC/ Behavior Elective	3.0 International Elective	3.0 Free Electives	6.0
Free Elective	3.0 Free Elective	3.0	
	15	14	14

Total Credits 183

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 BIO 109	3.0 COOP 101	1.0 VACATION	
ENSS 120	3.0 BIO 110	1.0 ENGL 103 or 113	3.0	
ENVS 101	5.0 CIVC 101	1.0 MATH 107	3.0	
MATH 101	4.0 ENGL 102 or 112	3.0 SOC 101 or ANTH 101	3.0	
UNIV S101	1.0 PSY 101	3.0 Foreign Language	4.0	
	Foreign Language	4.0 Free Elective	3.0	
	16	15	17	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENSS 283	3.0 ENSS 244	4.0 COM 317	3.0 ECON 202	4.0
ENVS 260	3.0 ENVS 230	3.0 ECON 201	4.0 GEO 201	3.0
PBHL 101	3.0 ENVS 275 or 289	3.0 ENSS 285	3.0 PSCI 284	4.0
PSCI 110	4.0 ENVS 308	3.0 UNIV H201	1.0 ENSS Elective	3.0
	Free Elective	3.0 Free Elective	3.0 Humanities/ Fine Arts Elective	3.0
	13	16	14	17

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 340 or 341	3.0 ENSS 326	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
SOC 241	4.0 SOC 242	4.0		
ENSS Elective	3.0 ENSS Electives	6.0		
Humanities/ Fine Arts Elective	3.0 Diversity Elective	3.0		
Free Elective	3.0			
	16	16	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
ENSS 346	4.0 ENVS 442	2.0 ENVS 443	2.0	
ENVS 441	2.0 ENSS Elective	3.0 ENSS Elective	3.0	
ENSS Elective	3.0 Diversity Elective	3.0 International Elective	3.0	
SOC/ Behavior Elective	3.0 International Elective	3.0 Free Electives	6.0	

Free Elective	3.0 Free Elective	3.0	
		15	14

Total Credits 183

5 year, 3 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 BIO 109	3.0 COOP 101	1.0 VACATION	
ENSS 120	3.0 BIO 110	1.0 ENGL 103 or 113	3.0	
ENVS 101	5.0 CIVC 101	1.0 MATH 107	3.0	
MATH 101	4.0 ENGL 102 or 112	3.0 SOC 101 or ANTH 101	3.0	
UNIV S101	1.0 PSY 101	3.0 Foreign Language	4.0	
	Foreign Language	4.0 Free elective	3.0	
	16	15	17	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENSS 283	3.0 ENSS 244	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
ENVS 260	3.0 ENSS 275 or ENVS 289	3.0		
PBHL 101	3.0 ENVS 230	3.0		
PSCI 110	4.0 ENVS 308	3.0		
	Free Elective	3.0		
	13	16	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 317	3.0 ECON 202	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
ECON 201	4.0 GEO 201	3.0		
ENSS 285	3.0 PSCI 284	4.0		
UNIV H201	1.0 ENSS Elective	3.0		
Free Elective	3.0 Humanities/ Fine Arts Elective	3.0		
	14	17	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 340 or 341	3.0 ENSS 326	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
SOC 241	4.0 SOC 242	4.0		
ENSS Elective	3.0 ENSS Electives	6.0		
Humanities/ Fine Arts Elective	3.0 Diversity Elective	3.0		
Free Elective	3.0			
	16	16	0	0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
ENSS 346	4.0 ENVS 442	2.0 ENVS 443	2.0
ENVS 441	2.0 ENSS Elective	3.0 ENSS Elective	3.0
ENSS Elective	3.0 Diversity Elective	3.0 International Elective	3.0

SOC/ Behavior Elective	3.0 International Elective	3.0 Free Electives	6.0
Free Elective	3.0 Free Elective	3.0	
	15	14	14

Total Credits 183

Career Opportunities

The largest job opportunities exist in the areas of environmental communication, sustainability, environmental policy, community action, water quality, parks and outdoor recreation, ecotourism, natural resources and conservation, international environmental policy, renewable energy, and climate change.

This major will educate individuals who seek careers and/or additional academic training in the following fields:

- Sustainability planning and implementation
- Urban, regional, and community planning
- Geographic information systems
- Environmental communications
- Environmental journalism
- Environmental law
- Park management and outdoor recreation
- Environmental consulting
- Environmental policy analysis
- Natural resource management

Environmental Studies and Sustainability Faculty

Mariangeles Arce H., PhD (*Pontificia Universidade Católica do Rio Grande do Sul*) Collections Manager at the Academy of Natural Sciences. Adjunct Professor. Biodiversity and evolution. Phylogenetics, taxonomy, molecular and morphological studies of Neotropical freshwater fishes. Global warming and conservation efforts.

Richardson Dilworth, PhD (*Johns Hopkins University*) Director, Center for Public Policy. Professor. American political development, urban politics, public policy.

Erin R. Graham, PhD (*Ohio State University*). Associate Professor. International institutions, international relations theory, global environmental politics.

Amanda McMillan Lequieu, PhD (*University of Wisconsin-Madison*). Assistant Professor. Environmental sociology, political economy, place and space, rural-urban interface, qualitative and historical methodologies.

Gwen Ottinger, PhD (*University of California, Berkeley*). Associate Professor. Social studies of science and technology, environmental justice, environmental political theory, citizen science, science and engineering ethics.

Jaclyn Rhoads, PhD (*Drexel University*) Assistant Executive Director at Pinelands Preservation Alliance. Lead on environmental policy and lobbying, sustainability planning and development, and watershed restoration and climate resilience.

Alexis Schulman, PhD (*Massachusetts Institute of Technology*) Director of the Environmental Studies and Sustainability Program. Assistant

Research Professor. Environmental policy and politics; urban planning; sustainability and resilience transitions; local knowledge and community science

Diane Sicotte, PhD (*Arizona State University*). Associate Professor. Sociology of environmental justice; inequalities in the citing of environmental hazards; community-based research in neighborhoods dealing with industrial hazards; sociology of the environment; urban sociology; social inequalities.

Andrew Smith, PhD (*SUNY, Stony Brook*). Associate Professor. Philosophy, social and political philosophy, American philosophy.

Dane Ward, PhD (*Drexel University*). Assistant Teaching Professor. Urban agriculture and sustainability both in Philadelphia and Cienfuegos, Cuba, as well as insect community structure and population ecology of reptiles and amphibians in the New Jersey Pine Barrens.

Elizabeth B. Watson, PhD (*University of California, Berkeley*). Associate Professor. The implications of global and regional environmental change and unraveling the interacting effects of multiple anthropogenic stressors on coastal ecosystems to promote more informed management, conservation, and restoration.

Jason Weckstein, PhD (*Louisiana State University*) Associate Curator of Ornithology. Associate Professor. Avian phylogenetics, comparative biology and evolutionary history; biodiversity surveys of birds and their parasites and pathogens; coevolutionary history of birds and their parasites.

Geoscience

Major: Geoscience

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 183.0

Co-op Options: Three Co-op (Five years)

Classification of Instructional Programs (CIP) code: 40.0699

Standard Occupational Classification (SOC) code: 11-9121

About the Program

From energy to climate change to environmental degradation, many of the most pressing societal issues of the coming century will pertain to geoscience. The study of the Earth is central to maintaining clean drinking water, mitigating environmental contamination, providing ores and rare elements necessary for industry, and locating new sources of energy.

The Biodiversity, Earth and Environmental Science (BEES) Department offers a major in geoscience designed to meet the needs of students wishing to pursue graduate school or immediate employment in the geosciences.

The core requirements encompass foundational courses in science, writing, and math, and traditional courses that form the backbone of the geosciences. Building upon these are innovative courses focused on Earth systems processes, key environmental issues, practical field experiences, and advanced geological study.

In addition to nourishing and honing the passions of students studying the Earth, the core curriculum is designed to:

- Instill key technical skills early on as a pathway to high-quality co-op opportunities

- Lay the groundwork for our students to pursue advanced graduate study in the geosciences and other disciplines
- Enable our graduates to translate marketable skills and knowledge into high-quality jobs in industry and government

Geoscience majors will begin their field experiences during the first term of their freshmen year. Most courses include a laboratory section or a hands-on recitation section ("dry lab"), plus at least three field trips to relevant regional geological sites. These courses, combined with the co-op experience and summer geological field camp, provide students real-world experience in the field.

Additional Information

For more information about this program, visit the Biodiversity, Earth and Environmental Science (BEES) Department website.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COM 310 [WI]	Technical Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 340	Environmental Ethics	3.0
or PHIL 341	Environmental Philosophy	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Humanities or Social Science electives		6.0
Free electives		24.0

Mathematics and Statistics

MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 410	Scientific Data Analysis I	3.0
MATH 411	Scientific Data Analysis II	3.0

Computer Science

CS 150	Computer Science Principles	3.0
CS 171	Computer Programming I	3.0

Physical Sciences

CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103	General Chemistry III	5.0
Complete one of the following Physics sequences:		12.0
PHYS 101	Fundamentals of Physics I	
& PHYS 102	and Fundamentals of Physics II	
& PHYS 201	and Fundamentals of Physics III	
PHYS 152	Introductory Physics I	
& PHYS 153	and Introductory Physics II	
& PHYS 154	and Introductory Physics III	

Environmental Science

ENVS 101	Introduction to Environmental Science	5.0
ENVS 102	Natural History, Research and Collections	2.0

Geoscience Core Courses

GEO 101	Physical Geology	4.0
GEO 102	History of the Earth	4.0
GEO 103	Introduction to Field Methods in Earth Science	2.0

GEO 201 [WI]	Earth Systems Processes	3.0
GEO 215	Mineralogy	4.0
GEO 301	Advanced Field Methods in Earth Science	3.0
GEO 309	Geochemistry	4.0
GEO 312	Sedimentology and Stratigraphy	3.5
GEO 320	Invertebrate Paleobiology and Paleocology	3.5
GEO 325	Structural Geology	5.0
GEO 401	Igneous and Metamorphic Petrology	5.0
GEO 375	Field Camp	6.0
GEO Electives		28.0
Total Credits		183.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

The sample plan of study is a general guideline that can be used for each of the three concentrations depending on course selections in certain terms.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CHEM 101	3.5 CHEM 102	4.5 VACATION	
ENVS 101	5.0 CIVC 101	1.0 COOP 101	1.0	
GEO 101	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
MATH 121	4.0 GEO 102	4.0 ENVS 102	2.0	
UNIV S101	1.0 MATH 122	4.0 GEO 103	2.0	
		MATH 123	4.0	
	17	15.5	16.5	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 103 or 101	5.0 GEO 201	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHYS 101 or 152	4.0 PHYS 102 or 153	4.0		
CS 150	3.0 CS 171	3.0		
GEO or Free elective	3.0 COM 230	3.0		

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHYS 201 or 154	4.0 UNIV S201	1.0 COOP EXPERIENCE	COOP EXPERIENCE	
GEO 312	3.5 GEO 215	4.0	GEO 375	3.0
MATH 410	3.0 MATH 411	3.0		
PHIL 340 or 341	3.0 GEO elective	3.0		
	Free elective	3.0		
	13.5	14	0	3
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 310	3.0 GEO 309	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
GEO 320	3.5 GEO 325	5.0	GEO 375	3.0
GEO 401	5.0 Humanities/Social Science elective	3.0		
Humanities/Social Science elective	3.0 Free elective	3.0		
	14.5	15	0	3
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
GEO 301	3.0 GEO electives	7.0 GEO electives	8.0	
GEO electives	7.0 Free electives	6.0 Free electives	6.0	
Free Elective	3.0			
	13	13	14	

Total Credits 183

Co-Op/Career Opportunities

Co-Op Opportunities

There are over one hundred environmental, geophysical, and geotechnical firms within the greater Philadelphia region. Additionally, there are opportunities with federal, state, and municipal agencies, jobs in central Pennsylvania related to the Marcellus Shale, and research opportunities between Drexel and the Academy of Natural Sciences.

All geoscience majors follow the five-year, three co-op plan of study program. Transfer students may be granted an exception for a two co-op plan of study so that they may remain on schedule. The summer geological field camp will occur during the third co-op cycle. In this third co-op, geoscience students attend field camp and also partake in an abbreviated co-op work experience.

Career Opportunities

According to the US Bureau of Labor Statistics (BLS), employment for geoscientists through 2020 is expected to grow faster than the average for all occupations. In addition, the geosciences are expected to outpace life, physical, and social sciences in job creation. The employment outlook for geoscientists in Drexel's surrounding area is particularly bright, with a

robust environmental consulting industry and exploding demand related to Marcellus Shale drilling.

The geoscience major, with its three concentrations, prepares students who are interested in entering the workforce immediately as well as those who are interested in pursuing related research in graduate schools.

Facilities and Field Sites

Facilities

The Geoscience major leverages resources at Drexel University and the Academy of Natural Sciences (<https://ansp.org/>) such as a mineral collection with 9,000 specimens, over a million fossil specimens, Dinosaur Hall, The Patrick Center for Environmental Research, a state-of-the-art fossil preparation lab, notable research programs, and faculty with expertise in geology, paleontology, and related disciplines.

Summer Geological Field Camp

Summer geological field camp is the quintessential undergraduate experience for geosciences students. It is a long-held tradition in geology departments that students head out West, during the summer before graduation, to apply their knowledge to real-world situations and to acquire field skills that will serve them throughout their careers. This is particularly important for students in eastern schools where the mountains are small and outcrops are scarce. Field camp also provides networking and bonding opportunities for students. Friends made at field camp often become colleagues for life. At the Geological Society of America meeting, reunions are organized by the university *and* by field camp.

The summer geological field camp for Geoscience students will occur during the third co-op cycle.

Barneget Bay Coastal Field Station

The BEES field station on Barneget Bay in Waretown, NJ provides Geoscience students with opportunities to engage in hands-on research in coastal geology, barrier island morphology, oceanography, and sedimentology. The facility includes a lodge, two classrooms/meeting rooms, dining hall, dormitories, and rustic cabins. The field station is located on 194 acres of diverse coastal habitat, including a maritime forest, tidal creek, salt marsh, fresh water pond, brackish impoundment, and bayshore environments. The department's research vessel gives students access to back-bay and near-shore marine environments.

The department holds its introductory field session for incoming freshmen and other events at the field station. The facility may also serve as a base for excursions into the Pine Barrens, a heavily forested area containing a number of interesting deposits related to the last glacial period.

Red Hill Fossil Site

The Red Hill fossil site in Tioga County, PA, exposes Devonian coastal sedimentary rocks that preserve a rich fossil fauna. Of particular importance is a fossil fish species, studied by Dr. Ted Daeschler, representing a critical transition between fish and tetrapods (land animals.) This site offers opportunities for studying vertebrate paleontology, stratigraphy, and sedimentology and provides students with a window into an important moment in the history of life on Earth.

Inversand Fossil Site: Local Training Ground for Geoscience Majors

The Inversand fossil site is a unique resource for geological education, research, and STEM outreach. The quarry is located in Gloucester Country, NJ, only 20 minutes from Drexel's campus, making it possible

to conduct field exercises there within a three-hour class period. The geological formations that outcrop in the Inversand Quarry have yielded many new fossil species. The site has significance beyond vertebrate paleontology however, and will provide a local laboratory for classes in geochemistry, geophysics, stratigraphy, sedimentology, hydrogeology, and environmental geology. As such, it will provide a valuable training ground only a short distance from campus for all Drexel Geoscience majors.

Geoscience Faculty

Ted Daeschler, PhD (*University of Pennsylvania*) *Curator of Vertebrate Zoology; Vice President for Systematic Biology and the Library: Academy of Natural Sciences*. Associate Professor. Fossil vertebrate faunas from the Late Devonian Period in eastern North America; systematic work focusing on freshwater vertebrates; nature of early non-marine ecosystems; fossil collecting and care of museum collections.

Marie J. Kurz, PhD (*University of Florida*) *Biogeochemistry Section Leader, Academy of Natural Sciences*. Assistant Research Professor. Interactions between geochemical, ecological & hydrologic processes in freshwater systems. Availability, transport and cycling of stream solutes; Stream ecosystem structure & function; Groundwater-surface water interactions; Adaptive management & restoration of water resources & aquatic ecosystems.

Amanda Lough, PhD (*Washington University in St. Louis*). Assistant Professor. Volcanic seismicity and the relation to magma plumbing systems; glacial seismicity and the seismicity of Antarctica; intraplate seismicity.

Gary Rosenberg, PhD (*Harvard University*) *Pilsbry Chair of Malacology*. Professor. Magnitude and origin of species-level diversity in the Mollusca. Biodiversity informatics

Jocelyn A. Sessa, PhD (*Penn State University*) *Assistant Curator of Invertebrate Paleontology: Academy of Natural Sciences*. Assistant Professor. Paleoecology; paleobiology; extinction recovery dynamics; climate change; isotope geochemistry; fossil and modern mollusks

Loyc Vanderkluisen, PhD (*University of Hawaii*). Associate Professor. Lava flow emplacement; cyclicity of volcanic eruptions, volcanic degassing processes, and large igneous provinces.

David J. Velinsky, PhD (*Old Dominion University*) *Department Head, Biodiversity, Earth and Environmental Science*. Professor. Geochemical cycling of organic and inorganic constituents of sediments and waters; Sedimentary diagenesis of major and minor elements; Isotope biogeochemistry of carbon, nitrogen and sulfur in marine and freshwater systems.

Global Studies

Major: Global Studies

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 30.2001

Standard Occupational Classification (SOC) code: 19-3094

About the Program

Global Studies practices socially-responsible global citizenship through a unique combination of research-oriented and multilingual instruction, professional experience, and meaningful engagement with communities both here in Philadelphia and abroad.

Our students experience Global Studies by:

- Examining the movement of peoples, goods, and cultures across countries and regions
- Studying global issues in concrete socio-economic, cultural, and geographical contexts
- Tackling structural inequalities from a variety of perspectives and disciplines
- Developing intercultural and language skills through unique pedagogical models
- Working with employers and communities in Philadelphia and around the world through Drexel's Co-Op opportunities

Degree Requirements

Global Media, Arts, and Cultures Concentration

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSCI 150	International Politics	4.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0

Global Studies Core Requirements

GST 101	Becoming Global: Language and Cultural Context	3.0
GST 102	Understanding Global: Markets and Governance	3.0
GST 103	Acting Global: Research Methods in Global Studies	3.0
Four 200+ level GST courses		12.0
GST 400	Senior Project in Global Studies	3.0

Language minor in Spanish, French, or Japanese, or minor in Asian Studies, or Middle East and North Africa Studies

Students must complete at least 24 credits above the 103 language level to earn a language minor.

Media, Arts, and Cultures Distribution Requirements

ANTH 212 [WI]	Topics in World Ethnography	3.0
ANTH 330	Media Anthropology	3.0
ENGL 325	Topics in World Literature	3.0
WEST 100	Introduction to Digital Design Tools	3.0
PHIL 305	Ethics and the Media	3.0

Select one of the following:

ARTH 101	History of Art I	
ARTH 102	History of Art II	
ARTH 103	History of Art III	

Media, Arts, and Cultures Distribution Options

Students must complete at least 24 distribution credits from the approved list

ANTH 210 [WI] Worldview: Science, Religion and Magic

ANTH 250	Anthropology of Immigration
ANTH 310	Societies In Transition: The Impact of Modernization and the Third World
ANTH 312	Approaches to Intercultural Behavior
ANTH 345	Visual Anthropology
ANTH 355	Digital Culture
ANTH 375	Digital Ethnography
ANTH 410	Cultural Theory I
ARCH 141	Architecture and Society I
COM 210	Theory and Models of Communication
COM 342	English Worldwide
COM 345	Intercultural Communication
COM 355	Ethnography of Communication
COM 360	International Communication
COM 375 [WI]	Grant Writing
COM 376	Nonprofit Communication
COM 385	Media Effects
COM 390 [WI]	Global Journalism
CULA 405 [WI]	Culture and Gastronomy I
ENGL 200 [WI]	Classical to Medieval Literature
ENGL 201	Renaissance to the Enlightenment
ENGL 203 [WI]	Survey of World Literature
ENGL 204	Post-Colonial Literature
ENGL 300 [WI]	Literature & Science
ENGL 323	Literature and Other Arts
ENGL 325	Topics in World Literature
ENGL 335	Mythology
ENGL 355 [WI]	Women and Literature
ENGL 360 [WI]	Literature and Society
FMST T280	Special Topics in Film Studies
GST 221	Introduction to Global Capital and Development
GST 231	Introduction to Identities and Communities
GST 241	Introduction to Power and Resistance
GST 251	Introduction to Global Media, Arts, and Cultures
GST 261	Introduction to Global Health and Sustainability
GST 321	Advanced Studies in Global Capital and Development
GST 331	Advanced Studies in Identities and Communities
GST 341	Advanced Studies in Power and Resistance
GST 351	Advanced Studies in Global Media, Arts, and Cultures
GST 361	Advanced Studies in Global Health and Sustainability
GST 435	Model Organization of American States
GST T280	Special Topics in Global Studies
GST T380	Special Topics in Global Studies
MUSC 130	Introduction to Music
MUSC 331	World Musics
NFS 446	Perspectives in World Nutrition
PHIL 211	Metaphysics: Philosophy of Reality
PHIL 231	Aesthetics: Philosophy of Art
PHIL 241	Social & Political Philosophy
PHIL 335	Global Ethical Issues
PHIL 391	Philosophy of Religion
PSCI 120	History of Political Thought
PSCI 330	Public Opinion & Propaganda
PSCI 335	Political Communication
SOC 210	Race, Ethnicity and Social Inequality
SOC 340	Globalization
WGST 240	Women and Society in a Global Context
WRIT 310	Literary Editing & Publication

Electives **53.0-49.0**

Total Credits **180.0**

Global Business, Economics, and Development Concentration

General Requirements		
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSCI 150	International Politics	4.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0

Global Studies Core Requirements

GST 101	Becoming Global: Language and Cultural Context	3.0
GST 102	Understanding Global: Markets and Governance	3.0
GST 103	Acting Global: Research Methods in Global Studies	3.0
Four 200+ level GST courses		12.0
GST 400	Senior Project in Global Studies	3.0

Language minor in Spanish, French, or Japanese, or minor in Asian Studies, or Middle East and North Africa Studies **24.0**

Students must complete at least 24.0 credits above the 103 language level to earn a language minor.

Global Business, Economics, and Development Concentration Requirements

BLAW 340	International Business Law	4.0
ECON 342	Economic Development	4.0
ENGL 308 [WI]	The Literature of Business	3.0
PHIL 301	Business Ethics	3.0
PSCI 255	International Political Economy	4.0

Select one of the following **4.0**

INTB 332	Multinational Corporations	
INTB 334	International Trade	
INTB 336	International Money and Finance	

Global Business, Economics, and Development Distribution Options **24.0**

Students must complete at least 24.0 distribution credits from the approved list

ANTH 310	Societies In Transition: The Impact of Modernization and the Third World	
ANTH 312	Approaches to Intercultural Behavior	
COM 270 [WI]	Business Communication	
COM 345	Intercultural Communication	
COM 360	International Communication	
COM 362	International Negotiations	
COM 375 [WI]	Grant Writing	
ECON 301	Microeconomics	
ECON 321	Macroeconomics	
ECON 326	Economic Ideas [WI]	
ECON 331	International Macroeconomics	
ECON 351	Resource and Environmental Economics	
ENGL 325	Topics in World Literature	
ENGL 360 [WI]	Literature and Society	
ENTP 270	Social Entrepreneurship	
ENTP 370	Global Entrepreneurship	
ENTP 390	Energy Entrepreneurship	
FIN 301	Introduction to Finance	
FIN 346	Global Financial Management	
GST 221	Introduction to Global Capital and Development	
GST 231	Introduction to Identities and Communities	

GST 241	Introduction to Power and Resistance	
GST 251	Introduction to Global Media, Arts, and Cultures	
GST 261	Introduction to Global Health and Sustainability	
GST 321	Advanced Studies in Global Capital and Development	
GST 331	Advanced Studies in Identities and Communities	
GST 341	Advanced Studies in Power and Resistance	
GST 351	Advanced Studies in Global Media, Arts, and Cultures	
GST 361	Advanced Studies in Global Health and Sustainability	
GST 435	Model Organization of American States	
GST T280	Special Topics in Global Studies	
GST T380	Special Topics in Global Studies	
HIST 315	History of Capitalism	
INTB 332	Multinational Corporations	
INTB 334	International Trade	
INTB 336	International Money and Finance	
INTB 338	Regional Studies in Economic Policies and International Business	
MGMT 370	For-Profit Business Consulting	
MGMT 371	Nonprofit Business Consulting	
MKTG 201	Introduction to Marketing Management	
MKTG 322	Advertising & Integrated Marketing Communications	
MKTG 351	Marketing for Non-Profit Organizations	
MKTG 357	Global Marketing	
PSCI 351	The United Nations in World Politics	
PSCI 352	Ethics and International Relations	
PSCI 357	The European Union in World Politics	
SOC 220	Wealth and Power	
SOC 330	Development and Underdevelopment in the Global South	
SOC 340	Globalization	
SOC 355 [WI]	Classical Social Theory	
SOC 410	Imagining Multiple Democracies	
STAT 201	Introduction to Business Statistics	
STAT 202	Business Statistics II	
WGST 240	Women and Society in a Global Context	

Electives **49.0-45.0**

Total Credits **180.0**

Global Health and Sustainability Concentration

General Requirements		
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSCI 150	International Politics	4.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0

GST Core Curriculum Requirements

GST 101	Becoming Global: Language and Cultural Context	3.0
GST 102	Understanding Global: Markets and Governance	3.0
GST 103	Acting Global: Research Methods in Global Studies	3.0
Four 200+ level GST courses		12.0
GST 400	Senior Project in Global Studies	3.0

Language minor in Spanish, French, or Japanese, or minor in Asian Studies, or Middle East and North Africa Studies 24.0

Students must complete at least 24.0 credits above the 103 language level to earn a language minor.

Global Health and Sustainability Concentration Requirements

ANTH 360	Culture and the Environment	3.0-4.0
or SOC 244	Sociology of the Environment	
PBHL 301	Epidemiology in Public Health	3.0
PBHL 303	Overview of Issues in Global Health	3.0
PSCI 334	Politics of Environment and Health	4.0
or SOC 346	Environmental Justice	

Choose one of the following English classes 3.0

ENGL 300 [WI]	Literature & Science	
ENGL 302	Environmental Literature	
ENGL 370	Topics in Literature and Medicine	

Choose one of the following Ethics courses 3.0

PBHL 309	Public Health Ethics	
PHIL 321	Biomedical Ethics	
PHIL 340	Environmental Ethics	

Global Health and Sustainability Distribution Options 24.0

Students must complete at least 24.0 distribution credits from the approved list

ANTH 210 [WI]	Worldview: Science, Religion and Magic	
ANTH 265	Health & Healing Practices in Cross-Cultural Perspective	
ANTH 310	Societies In Transition: The Impact of Modernization and the Third World	
ANTH 360	Culture and the Environment	
BIO 109	Biological Diversity, Ecology & Evolution	
BIO 264	Ethnobotany	
BIO 312	Genetically Modified Foods	
CJS 373	Environmental Crime	
COM 316	Campaigns for Health & Environment	
COM 317 [WI]	Environmental Communication	
COM 320 [WI]	Science Writing	
COM 375 [WI]	Grant Writing	
CULA 426	The Kitchen Garden: Summer	
CULA 427	The Kitchen Garden: Fall	
ECON 301	Microeconomics	
ECON 321	Macroeconomics	
ECON 351	Resource and Environmental Economics	
ENGL 300 [WI]	Literature & Science	
ENGL 302	Environmental Literature	
ENGL 370	Topics in Literature and Medicine	
ENSS 285	Introduction to Urban Planning	
ENSS 326	Cities and Sustainability	
ENTP 390	Energy Entrepreneurship	
ENVS 169	Environmental Science	
ENVS 247	Native Plants and Sustainability	
ENVS 275	Global Climate Change	
ENVS 289	Global Warming, Biodiversity and Your Future	
ENVS 328	Conservation Biology	
GST 221	Introduction to Global Capital and Development	
GST 231	Introduction to Identities and Communities	
GST 241	Introduction to Power and Resistance	
GST 251	Introduction to Global Media, Arts, and Cultures	
GST 261	Introduction to Global Health and Sustainability	
GST 321	Advanced Studies in Global Capital and Development	
GST 331	Advanced Studies in Identities and Communities	
GST 341	Advanced Studies in Power and Resistance	
GST 351	Advanced Studies in Global Media, Arts, and Cultures	
GST 361	Advanced Studies in Global Health and Sustainability	
GST 435	Model Organization of American States	
GST T280	Special Topics in Global Studies	

GST T380	Special Topics in Global Studies	
HIST 287	History of Science: Ancient to Medieval	
HIST 288	History of Science: Medieval to Enlightenment	
HIST 289	History of Science: Enlightenment to Modernity	
HIST 321	Themes in Global Environmental History	
HIST 322	Empire and Environment	
HIST 385	Transnational History of Science, Technology and Environment	
HSAD 312	Development of World Health Care	
HSAD 316	Health Care across Cultures	
NFS 345	Foods and Nutrition of World Cultures	
NFS 446	Perspectives in World Nutrition	
PBHL 302	Introduction to the History of Public Health	
PBHL 304	Introduction to Health & Human Rights	
PBHL 305	Women and Children: Health & Society	
PBHL 306	Introduction to Community Health	
PBHL 317	The World's Water	
PBHL 320	Exploring the HIV/AIDS Pandemic	
PBHL 321	Disease Outbreak Investigations	
PBHL 333	Health Inequality	
PHIL 321	Biomedical Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
PHIL 341	Environmental Philosophy	
PHIL 351	Philosophy of Technology	
PHIL 361	Philosophy of Science	
PSCI 252	Global Governance	
PSCI 284	Environmental Politics	
PSCI 305	Social Development: A Global Approach	
PSCI 334	Politics of Environment and Health	
PSCI 351	The United Nations in World Politics	
PSCI 352	Ethics and International Relations	
PSCI 353	International Human Rights	
PSY 352	Psychology of Sustainability	
SOC 235	Sociology of Health and Illness	
SOC 315	HIV/AIDS and Africa	
SOC 330	Development and Underdevelopment in the Global South	
SOC 340	Globalization	
WGST 240	Women and Society in a Global Context	
WGST 275	Women's Health and Human Rights	

Electives 52.0-47.0

Total Credits 180.0

Global Justice and Human Rights Concentration**General Requirements**

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSCI 150	International Politics	4.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0
GST Core Curriculum Requirements		
GST 101	Becoming Global: Language and Cultural Context	3.0

GST 102	Understanding Global: Markets and Governance	3.0
GST 103	Acting Global: Research Methods in Global Studies	3.0
Four 200+ level GST courses		12.0
GST 400	Senior Project in Global Studies	3.0
Language minor in Spanish, French, or Japanese, or minor in Asian Studies, or Middle East and North Africa Studies		24.0
Students must complete at least 24 credits above the 103 language level to earn a language minor.		
Global Justice and Human Rights Distribution Requirements		
ANTH 310	Societies In Transition: The Impact of Modernization and the Third World	3.0-4.0
or SOC 330	Development and Underdevelopment in the Global South	
ENGL 360 [WI]	Literature and Society	3.0
PHIL 335	Global Ethical Issues	3.0-4.0
or PSCI 352	Ethics and International Relations	
PSCI 120	History of Political Thought	4.0
or PSCI 229	Theories of Justice	
PSCI 353	International Human Rights	4.0
Select one of the following:		3.0-4.0
GST 435	Model Organization of American States	
PSCI 351	The United Nations in World Politics	
PSCI 357	The European Union in World Politics	
Global Justice and Human Rights Distribution Options		24.0
Students must complete at least 24 distribution credits from the approved list		
AFAS T280	Special Topics in Africana Studies (Course must have a global theme)	
ANTH 250	Anthropology of Immigration	
ANTH 312	Approaches to Intercultural Behavior	
or COM 345	Intercultural Communication	
CJS 260	Justice in Our Community	
CJS 261	Prison, Society and You	
CJS 289	Terrorism	
CJS 320	Comparative Justice Systems	
COM 360	International Communication	
COM 362	International Negotiations	
COM 375 [WI]	Grant Writing	
CULA 426	The Kitchen Garden: Summer	
or CULA 427	The Kitchen Garden: Fall	
ECON 301	Microeconomics	
ECON 321	Macroeconomics	
ECON 342	Economic Development	
ECON 351	Resource and Environmental Economics	
ENGL 325	Topics in World Literature	
GST 221	Introduction to Global Capital and Development	
GST 231	Introduction to Identities and Communities	
GST 241	Introduction to Power and Resistance	
GST 251	Introduction to Global Media, Arts, and Cultures	
GST 261	Introduction to Global Health and Sustainability	
GST 321	Advanced Studies in Global Capital and Development	
GST 331	Advanced Studies in Identities and Communities	
GST 341	Advanced Studies in Power and Resistance	
GST 351	Advanced Studies in Global Media, Arts, and Cultures	
GST 361	Advanced Studies in Global Health and Sustainability	
GST 435	Model Organization of American States	
GST T280	Special Topics in Global Studies	
GST T380	Special Topics in Global Studies	
HIST 385	Transnational History of Science, Technology and Environment	
PHIL 241	Social & Political Philosophy	
PHIL 335	Global Ethical Issues	
PHIL 341	Environmental Philosophy	
PHIL 385	Philosophy of Law	
PHIL 391	Philosophy of Religion	

PBHL 303	Overview of Issues in Global Health
PBHL 304	Introduction to Health & Human Rights
PSCI 229	Theories of Justice
PSCI 240	Comparative Politics II
PSCI 250	American Foreign Policy
PSCI 252	Global Governance
PSCI 255	International Political Economy
PSCI 260 [WI]	Power in Protest: Social Movements in Comparative Perspective
PSCI 305	Social Development: A Global Approach
PSCI 325	Political Theory from Below
PSCI 351	The United Nations in World Politics
PSCI 352	Ethics and International Relations
PSCI 357	The European Union in World Politics
PSCI 360	International Law
PSCI 361	The Politics of LGBT Movements and Rights
SOC 210	Race, Ethnicity and Social Inequality
SOC 220	Wealth and Power
SOC 315	HIV/AIDS and Africa
SOC 340	Globalization
SOC 346	Environmental Justice
SOC 355 [WI]	Classical Social Theory
SOC 444	Social Movements
WGST 240	Women and Society in a Global Context
WGST T280	Special Topics in Women's and Gender Studies (Course must have a global theme)

Electives **51.0-44.0**

Total Credits **180.0**

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

Global Media, Arts, and Cultures Concentration

4 year, 1 co-op

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ENGL 101 or 111	3.0	ENGL 102 or 112	3.0	CIVC 101	1.0	VACATION	

GST 101	3.0	GST 102	3.0	COOP 101*	1.0
MATH 101	4.0	MATH 102	4.0	ENGL 103 or 113	3.0
UNIV H101	1.0	Language course	4.0	GST 103	3.0
Language course	4.0		PSCI 150	4.0	
			Language course	4.0	
15		14		16	

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ECON 201	4.0	ECON 202	4.0	Language course	4.0	Language course	3.0
Language course	4.0	Language course	4.0	GST 200+ level course	3.0	MAC Distribution course	3.0
Free elective	3.0	Science elective	3.0	MAC Distribution course	3.0	MAC Concentration required course	3.0
GST 200+ course	3.0	MAC Distribution course	3.0	MAC Concentration required course	3.0	Science elective	3.0
MAC Concentration requirement	3.0	Free elective	3.0	Free elective	3.0	Free elective	3.0
17		17		16		15	

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE**	3.0	COOP EXPERIENCE**	3.0	Language course	3.0	Language course	3.0
				MAC Distribution course	3.0	MAC Concentration required course	3.0
				GST 200+ level course	3.0	MAC Distribution course	6.0
				Free electives	6.0	Free elective	3.0
0		0		15		15	

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
UNIV H201	1.0	GST 400	3.0	MAC Distribution course	3.0		
Language course	3.0	MAC Distribution course	3.0	Free electives	9.0		
MAC Concentration required course	3.0	Mac concentration course	3.0				
GST 200+ level course	3.0	Free electives	6.0				
Free elective	3.0						
13		15		12		15	

Total Credits 180

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

5 year, 3 co-ops

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ENGL 101 or 111	3.0	ENGL 102 or 112	3.0	CIVC 101	1.0	VACATION	
GST 101	3.0	GST 102	3.0	COOP 101*	1.0		
MATH 101	4.0	MATH 102	4.0	ENGL 103	3.0		
UNIV H101	1.0	Language course	4.0	GST 103	3.0		
Language course	4.0		PSCI 150	4.0			
			Language course	4.0			
15		14		16		0	

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE**	3.0	COOP EXPERIENCE**	3.0	ECON 201	4.0	ECON 202	4.0
				Language course	4.0	Language course	4.0
				Free elective	3.0	Science elective	3.0
				GST 200+ course	3.0	MAC Distribution course	3.0
				MAC concentration requirement	3.0	Free elective	3.0
0		0		17		17	

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE**	3.0	COOP EXPERIENCE**	3.0	Language course	4.0	Language course	3.0
				GST 200+ level course	3.0	MAC Distribution course	3.0
				MAC Distribution course	3.0	MAC concentration required course	3.0
				MAC concentration required course	3.0	Science elective	3.0
				Free elective	3.0	Free elective	3.0
0		0		16		15	

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE**	3.0	COOP EXPERIENCE**	3.0	Language course	3.0	Language course	3.0
				MAC Distribution course	3.0	MAC Concentration required course	3.0
				GST 200+ level course	3.0	MAC Distribution courses	6.0
				Free electives	6.0	Free elective	3.0
0		0		15		15	

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
UNIV H201	1.0 GST 400	3.0 MAC Distribution course	3.0
Language course	3.0 MAC Distribution course	3.0 Free electives	9.0
MAC Concentration required course	3.0 MAC Concentration required course	3.0	
GST 200+ level course	3.0 Free electives	6.0	
Free elective	3.0		
	13	15	12

Total Credits 180

- * COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.
- ** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

Global Business, Economics and Development Concentration

4 year, 1 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CIVC 101	1.0 VACATION	
GST 101	3.0 GST 102	3.0 COOP 101	1.0	
MATH 101	4.0 MATH 102	4.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Language course	4.0 GST 103	3.0	
Language course	4.0	PSCI 150	4.0	
		Language course	4.0	
	15	14	16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 201	4.0 ECON 202	4.0 Language course	4.0 Language course	3.0
Language course	4.0 BED concentration required course	3.0 Free elective	3.0 BED Distribution course	3.0
BED Distribution course	3.0 Language course	4.0 BED concentration required course	4.0 BED concentration required course	4.0
200+ level GST course	3.0 Free elective	3.0 GST 200+ level course	3.0 Free elective	3.0
Free elective	3.0 Science	3.0	Science elective	3.0
	17	17	14	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Language course	3.0 Language course	3.0
		BED Concentration required course	4.0 BED Distribution courses	6.0
		BED Distribution course	3.0 BED Concentration required course	3.0
		GST 200+ level course	3.0 Free elective	3.0
		Free elective	3.0	
	0	0	16	15

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
UNIV H201	1.0 GST 400	3.0 BED Distribution course	3.0
Language course	3.0 BED Distribution course	3.0 Free electives	9.0
BED Concentration required course	3.0 Free electives	6.0	
BED Distribution option	3.0		
GST 200+ level course	3.0		
Free elective	3.0		
	16	12	12

Total Credits 180

- * COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.
- ** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

5 year, 3 co-ops

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CIVC 101	1.0 VACATION	
GST 101	3.0 GST 102	3.0 COOP 101	1.0	
MATH 101	4.0 MATH 102	4.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Language course	4.0 GST 103	3.0	
Language course	4.0	PSCI 150	4.0	
		Language course	4.0	
	15	14	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ECON 201	4.0 ECON 202	4.0
		Language course	4.0 BED Concentration required course	3.0
		BED Distribution course	3.0 Language course	4.0
		200+ level GST course	3.0 Free elective	3.0
		Free elective	3.0 Science	3.0
0		0	17	17

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Language course	4.0 Language course	3.0
		BED Concentration required course	4.0 BED Distribution course	3.0
		GST 200+ level course	3.0 BED Concentration required course	4.0
		Free elective	3.0 Science elective	3.0
			Free elective	3.0
0		0	14	16

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Language course	3.0 Language course	3.0
		BED Concentration required course	4.0 BED Distribution courses	6.0
		GST 200+ level course	3.0 BED Concentration required course	3.0
		BED Distribution course	3.0 Free elective	3.0
		Free elective	3.0	
0		0	16	15

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
UNIV H201	1.0 GST 400	3.0 BED Distribution course	3.0	
Language course	3.0 BED Distribution course	3.0 Free elective	9.0	
BED Concentration required course	3.0 Free electives	6.0		
BED Distribution option	3.0			

GST	3.0		
200+ level course			
Free elective	3.0		
16		12	12

Total Credits 180

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** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

Global Health & Sustainability Concentration

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CIVC 101	1.0 VACATION	
GST 101	3.0 GST 102	3.0 COOP 101	1.0	
MATH 101	4.0 MATH 102	4.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Language course	4.0 GST 103	3.0	
Language course	4.0	PSCI 150	4.0	
		Language course	4.0	
15		14	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 201	4.0 ECON 202	4.0 GHS Distribution option	3.0 GHS Distribution option	3.0
Language course	4.0 GHS Distribution option	3.0 GST 200+ level course	3.0 GHS Concentration required course	3.0
GHS Distribution Option	3.0 Language course	4.0 GHS Concentration required course	3.0 Language course	3.0
GHS Concentration required course	3.0 Science elective	3.0 Language course	4.0 Science elective	3.0
200+ level GST course	3.0 GHS Concentration required course	3.0 Free elective	3.0 Free elective	3.0
17		17	16	15

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	0.0 Language course	3.0 GHS Distribution option	3.0
		GST 200+ level course	3.0 Language course	3.0
		Free electives	6.0 Free Electives	6.0

		GHS Distribution option	3.0 GHS Concentration required course	3.0
	0	0	15	15
Fourth Year				
Fall	Credits	Winter	Credits	Spring
UNIV H201	1.0	GST 400	3.0	GHS Distribution option
				3.0
GHS Concentration required course	3.0	GHS Distribution option	3.0	Free electives
				9.0
200+ level GST course	3.0	Free elective	6.0	
GHS Distribution option	3.0			
Language course	3.0			
Free elective	3.0			
	16		12	12

Total Credits 180

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

5 year, 3 co-ops

First Year				
Fall	Credits	Winter	Credits	Spring
ENGL 101 or 111	3.0	ENGL 102 or 112	3.0	CIVC 101
				1.0
GST 101	3.0	GST 102	3.0	COOP 101
				1.0
MATH 101	4.0	MATH 102	4.0	ENGL 103 or 113
				3.0
UNIV H101	1.0	Language course	4.0	GST 103
				3.0
Language course	4.0		PSCI 150	4.0
			Language course	4.0
	15		14	16

Second Year				
Fall	Credits	Winter	Credits	Spring
COOP EXPERIENCE	COOP EXPERIENCE		ECON 201	4.0
				4.0
			Language course	4.0
				GHS Distribution option
				3.0
			GHS Distribution option	3.0
				Language course
				4.0
			GHS Concentration required course	3.0
				Science elective
				3.0

		200+ level GST course	3.0	GHS Concentration required course
	0	0	17	17
Third Year				
Fall	Credits	Winter	Credits	Spring
COOP EXPERIENCE	COOP EXPERIENCE		GHS Distribution option	3.0
				GHS Concentration required course
				3.0
			GST 200+ level course	3.0
				Language course
				4.0
			Free elective	3.0
				Free elective
				3.0
	0	0	16	15

Fourth Year				
Fall	Credits	Winter	Credits	Summer
COOP EXPERIENCE	COOP EXPERIENCE		Language course	3.0
				GHS Distribution option
				3.0
			GST 200+ level course	3.0
				Language course
				6.0
			Free electives	6.0
				GHS Distribution option
				3.0
			GHS Concentration required course	3.0
	0	0	15	15

Fifth Year				
Fall	Credits	Winter	Credits	Spring
UNIV H201	1.0	GST 400	3.0	GHS Distribution option
				3.0
GHS Concentration required course	3.0	GHS Distribution option	3.0	Free electives
				9.0
200+ level GST course	3.0	Free elective	6.0	
GHS Distribution option	3.0			
Language course	3.0			
Free elective	3.0			
	16		12	12

Total Credits 180

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** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

Global Justice and Human Rights Concentration

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CIVC 101	1.0 VACATION	
GST 101	3.0 GST 102	3.0 COOP 101	1.0	
MATH 101	4.0 MATH 102	4.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Language course	4.0 GST 103	3.0	
Language course	4.0	PSCI 150	4.0	
		Language course	4.0	
	15	14	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 201	4.0 ECON 202	4.0 Language course	4.0 Language course	3.0
Language course	4.0 Language course	4.0 GST 200+ level course	3.0 JHR Distribution course	3.0
JHR concentration required course	3.0 Science elective	3.0 Free elective	3.0 JHR concentration required course	4.0
200+ level GST course	3.0 JHR concentration required course	3.0 JHR concentration required course	3.0 Science elective	3.0
	JHR Distribution course	4.0 JHR Distribuion course	3.0 Free elective	3.0
	14	18	16	16

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Language course	3.0 Language course	3.0
		JHR Distribution course	3.0 JHR Distribution course	3.0
		GST 200+ level course	3.0 JHR concentration required course	4.0
		Free electives	6.0 Free elective	6.0
	0	0	15	16

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	Credits
UNIV H201	1.0 GST 400	3.0 JHR Distribution course	3.0	
GST 200+ level course	3.0 JHR Distribution course	3.0 Free electives	9.0	
Language course	3.0 Free electives	6.0		
JHR Distribution course	3.0			

JHR concentration required course	3.0		
Free elective	3.0		
	16	12	12

Total Credits 180

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** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

5 year, 3 co-ops

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CIVC 101	1.0 VACATION	
GST 101	3.0 GST 102	3.0 COOP 101	1.0	
MATH 101	4.0 MATH 102	4.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Language course	4.0 GST 103	3.0	
Language course	4.0	PSCI 150	4.0	
		Language course	4.0	
	15	14	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP Experience	COOP EXPERIENCE	ECON 201	4.0 ECON 202	4.0
		Language course	4.0 Language course	4.0
		JHR concentration required course	3.0 Science elective	3.0
		GST 200+ level course	3.0 JHR concentration required course	3.0
			JHR Distribution course	4.0
	0	0	14	18

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Language course	4.0 Language course	3.0
		GST 200+ level course	3.0 JHR Distribution course	3.0
		Free elective	3.0 JHR concentration required course	4.0
		JHR concentration required course	3.0 Free elective	3.0

		JHR Distribution course	3.0 Science elective	3.0
		0	0	16
		0	0	16

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Language course	3.0 Language course	3.0
		JHR Distribution course	3.0 JHR Distribution course	3.0
		GST 200+ level course	3.0 JHR concentration required course	4.0
		Free electives	6.0 Free electives	6.0
		0	0	15
		0	0	16

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
UNIV H201	1.0 GST 400	3.0 JHR Distribution course	3.0	
GST 200+ level course	3.0 JHR Distribution course	3.0 Free electives	9.0	
Language course	3.0 Free electives	6.0		
JHR Distribution course	3.0			
JHR concentration required course	3.0			
Free elective	3.0			
		16	12	12

Total Credits 180

- * COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.
- ** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

Global Studies Faculty

Octavio Borges-Delgado, PhD (*Michigan State University*). Assistant Teaching Professor. Caribbean Literature and cultures, Latino/a studies, migration studies, Latin American diaspora, Critical race theory, Gender and sexuality in a global context.

Rebecca Clothey, PhD (*University of Pittsburgh*) Associate Department Head. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

Steve Vásquez Dolph, PhD (*University of Pennsylvania*). Assistant Teaching Professor. Early modern cultural production; ecology and representation; history and sociology of science; historical bibliography; politics and poetics of translation

Brenda Dyer, MA (*University of Pennsylvania*). Associate Teaching Professor. Language acquisition pedagogy, teaching writing, seventeenth and eighteenth century French literature, women writers, translation.

Natalie N. Hiratsuka Marley, MA (*University of Hawai'i*). Assistant Teaching Professor. Japanese Linguistics with an emphasis on pedagogy and topics concerning second language acquisition and teaching

Parfait Kouacou, PhD (*City University of New York*). Assistant Teaching Professor. Francophone African Literature and Cinema, Human Rights in Literary Studies, Childhood in Literature, Postcolonial Studies, Oral Literature.

Hiroimi Koyama, MA (*Okayama University, Japan*). Instructor.

Brent Luvaas, PhD (*UCLA*). Associate Professor. DIY and independent media production; transnational consumer culture; popular music; new media and mediated subjectivities; youth culture in the US and Indonesia.

Celeste Dolores Mann, MA (*University of Iowa*). Assistant Teaching Professor. Second Language Acquisition, Language Pedagogy, Colonial Latin American Literature and Early Modern Spanish Literature

Montserrat Bores Martínez, MA (*University of Western Ontario, Canada*). Assistant Teaching Professor. Second Language Acquisition Language Pedagogy Colonial Latin American Literature Early Modern Spanish Literature

Nada Matta, PhD (*New York University*). Assistant Professor. Political Economy, Social Movements, Middle East Studies, Gender Studies, Revolutions, Inequality.

Maria delaluz Matus-Mendoza, PhD (*Temple University*) Language Program Coordinator. Associate Professor. Spanish Linguistic variation in the US; the relationship between language variation and mobility (social and geographical) among the Mexican communities in Mexico and in the United States; second language acquisition; language variation in media.

Usha Menon, PhD (*University of Chicago*). Professor. Self, identity & personhood, emotional functioning, Hindu morality, gender relations in Hindu society, adult development, popular Hinduism, post-colonial feminism, Hindu religious nationalism and Islamic radicalism.

Amel Mili, PhD (*Rutgers University*). Assistant Teaching Professor. The intersection between religion and law Gender politics Constitutional transition Language education

Rogelio Minana, PhD (*Penn State*) Department Head, *Global Studies and Modern Languages*. Professor. The role of classic cultural icons, particularly Don Quixote, in 21st century political and social justice discourse; the interplay between the traditional humanities, youth organizations, and digital storytelling.

Joel E. Oestreich, PhD (*Brown University*) Director of the *Global Studies major*. Professor. International organizations, international finance, development, and human rights.

Sunmi Oh, MA (*Daegu Catholic University, S. Korea*).

Ni Ou, MA (*University of Pennsylvania*). Assistant Teaching Professor.

Simone Schlichting-Artur, EdD (*University of Pennsylvania*) Senior Assistant Dean of *Global Initiatives*. Teaching Professor. International business communication (Germany and the U.S.), public health policy

and languages, German post-war history through film and literature, development of writing assessment tools for German minor.

Emeritus Faculty

Barbara Hornum, PhD (*Bryn Mawr College*) *Director of Center for Academic Excellence (DCAE)*. Associate Professor Emeritus. Comparative gerontology, planned communities, continuing care communities, retirement, faculty development.

Julie Mostov, PhD (*New York University*). Professor Emeritus. Modern political thought, democratic theory, nationalism, gender studies, South Eastern Europe and the Balkans.

History

Major: History

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 181.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 54.0101

Standard Occupational Classification (SOC) code: 19-3093

About the Program

The history program reflects the strengths of Drexel University, including specialization in transnational history and in the history of science, technology and the environment. A series of required courses in history build skills in research and interpretation of the past while elective courses within and outside the history program allow students to shape their curriculum to meet their needs and interests. Our history graduates go to graduate school in history, to professional schools in law, medicine, and business, and to work in business, government agencies, and non-profit organizations.

We apply Drexel's experiential, research-intensive approach to the discipline of history. Using the extensive historical resources of Philadelphia, the region, and the digital world, students develop a profound understanding of history and the ways it is made. We also encourage students to enrich their education through co-op, study abroad, and summer research projects working alongside department faculty.

Degree Offered

The **Bachelor of Arts (BA)** provides a course of study that includes foreign language courses and a broad grounding in the liberal arts, with flexibility for students to choose courses to fulfill humanities, social science, math, and science requirements that will contribute to their overall educational and career plans.

The Minor in History (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/historyminor/>) allows students in other majors to explore the historical background of their discipline, to better understand the origins of the contemporary world, and to build the knowledge and skills needed to understand the development of human societies over time and to understand historical episodes into their proper contexts. The minor in History is highly flexible and allows students to choose those History courses which appeal to them and which will contribute to their broader education. To complete the minor, students must take a total of six History courses (24.0 credits), five of which must be at the 200-level or above.

The Minor in War and Society (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/warandsocietyminor/>) is an interdisciplinary minor offered by history in which students examine the history and politics of warfare, the military, and related institutions. In the Minor in the History of Capitalism (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/historyofcapitalismminor/>), students explore capitalism and the emergence of the modern world economy from a global, historical perspective.

Additional Information

For more information about this program, please visit the Department of History (<http://drexel.edu/history/>) website or contact:

Jonathan Seitz, PhD
Assistant Department Head
Teaching Professor of History
jwseitz@drexel.edu

Degree Requirements (BA)

General Education Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV H101	The Drexel Experience	1.0
COOP 101	Career Management and Professional Development	1.0
CIVC 101	Introduction to Civic Engagement	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Math courses		6.0-8.0
Science courses *		6.0-8.0

Foundation Requirements

Diversity electives		6.0
Two Consecutive Foreign Language courses (must complete level 201)		7.0-8.0
Humanities/Fine Arts electives		12.0
Social Science electives		12.0
International Studies electives		6.0

Core History Requirements

HIST 101	Introductory Seminar in History I **	
HIST 102	Introductory Seminar in History II **	
HIST 296	Research Methods in History I **	
HIST 301	The Study of History **	
HIST 396	Research Methods in History II **	
HIST 490 [WI]	Senior Seminar I **	
HIST 491 [WI]	Senior Seminar II **	
Any 1 Advanced History Seminar (Topics will vary)		
HIST 380	Advanced History Seminar	
History Distribution Courses***		20.0
Any 2 non-U.S. History courses		
Any 1 U.S. History Course		
Any 1 History courses covering pre-1700 history (May not be HIST 201)		
Any 1 History of Science, Technology, and Environment course		
History Concentration courses or any 7 History courses (at least four must be 200-level and above)		28.0
Free electives †		33.0

Total Credits

181.0-186.0

* Any Biology (BIO), Chemistry (CHEM), Nutrition (NFS), Physics (PHYS), Geoscience (GEO), Environmental Science (ENVS), or Physics-Environmental Science (PHEV).

** These courses must be taken in sequence.

*** Only 200-level and above HIST courses will fulfill this this requirement.

† Thirty-three (33.0) credits is the minimum allowed. Variations in concentration requirements and actual elective choices may result in earning more free elective credits.

Optional History Concentrations

Students may select one of the two following concentrations in the History BA, or they may elect not to undertake a concentration. The courses in the required history distribution list may count toward the 28.0 credits in a concentration; the courses in the required core sequence may not count toward the 28.0 credits in the concentration.

History of Science, Technology, and Environment Concentration

HIST 302	The Study of Science, Technology, and Environment in History	4.0
Select 1 Environmental History course from the following list:		4.0
HIST 320	Disaster in Global History	
HIST 321	Themes in Global Environmental History	
HIST T280	Special Topics in History (with approval when appropriate topic offered)	
HIST T380	Special Topics in History (with approval when appropriate topic offered)	
Select 1 Transnational Histories of Science and Technology course from the following list:		4.0
HIST 290	Technology and the World Community	
HIST 385	Transnational History of Science, Technology and Environment	
HIST T280	Special Topics in History (with approval when appropriate topic offered)	
HIST T380	Special Topics in History (with approval when appropriate topic offered)	
Select 1 History of Medicine and Disabilities course from the following list:		4.0
HIST 340	History of Bodies in Science, Technology, and Medicine	
HIST 341	Disabilities in History	
HIST T280	Special Topics in History (with approval when appropriate topic offered)	
HIST T380	Special Topics in History (with approval when appropriate topic offered)	
Concentration Electives (select three from the following list)		12.0
HIST 278	Medicine Before Germs	
HIST 279	History of Modern Medicine	
HIST 283	Technology and Identity	
HIST 285	Technology in Historical Perspective	
HIST 287	History of Science: Ancient to Medieval	
HIST 288	History of Science: Medieval to Enlightenment	
HIST 289	History of Science: Enlightenment to Modernity	
HIST 290	Technology and the World Community	
HIST 291	Global History of Engineering	
HIST 292	Technology in American Life	
HIST 320	Disaster in Global History	
HIST 321	Themes in Global Environmental History	
HIST 322	Empire and Environment	
HIST 340	History of Bodies in Science, Technology, and Medicine	
HIST 341	Disabilities in History	
HIST 365	Science and State Power: Colonialism	
HIST T280	Special Topics in History (with approval when appropriate topic offered)	

HIST T380 Special Topics in History (with approval when appropriate topic offered)

Total Credits **28.0**

Global History Concentration

HIST 303	The Study of Global History	4.0
Global Engagement Course †		4.0
One Foreign Language Course ††		3.0-4.0
Concentration Electives (select any four from the following list) †††		16.0
HIST 235	The Great War, 1914-1918	
HIST 236	World War II	
HIST 250	European Revolutionary Movements and Ideology, 1815-1914	
HIST 251	Fascism	
HIST 254	Russian History Before 1900	
HIST 255	Twentieth Century Russia & the USSR	
HIST 256	Germany & the World of Hitler	
HIST 257	The Reformation Age	
HIST 261	Making of Modern South Asia	
HIST 263	The World and China	
HIST 264	East Asia in Modern Times	
HIST 267	Twentieth Century World I	
HIST 268	Twentieth Century World II	
HIST 270 [WI]	Introduction to Latin American History	
HIST 271	History of Mexico	
HIST 274	Conquest of Mexico	
HIST 290	Technology and the World Community	
HIST 291	Global History of Engineering	
HIST 315	History of Capitalism	
HIST 320	Disaster in Global History	
HIST 321	Themes in Global Environmental History	
HIST 322	Empire and Environment	
HIST 355	Venice and the Mediterranean from the Middle Ages to Napoleon	
HIST 365	Science and State Power: Colonialism	
HIST 385	Transnational History of Science, Technology and Environment	
HIST T280	Special Topics in History (with approval when appropriate topic offered)	
HIST T380	Special Topics in History (with approval when appropriate topic offered)	

Total Credits **27.0-28.0**

† Courses which may fulfill the global engagement requirement include designated travel-integrated courses, study abroad courses (with approval), Global Classroom courses in history, or independent study courses (with approval.)

†† In addition to the required CoAS Foundation Requirements foreign language courses (two courses, including completion of a language through 201) in one language, students in the global history concentration must take at least one courses in a second foreign language.

††† At least two courses must be 300-level and above.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic

advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study (BA) History BA - No concentration

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
HIST 101	4.0 ENGL 102 or 112	3.0 US History course	4.0	
UNIV H101	1.0 HIST 102	4.0 Mathematics course	3.0-4.0	
Foreign Language course (103-level or above)	4.0 Foreign Language course (201-level or above)	3.0-4.0 Free electives	4.0	
Non-US History course	4.0 Mathematics course	3.0-4.0		
	16	14-16	14-15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 296	4.0 History of Science, Technology and Environment course	4.0 Non-U.S. History course	4.0 VACATION	
Science elective***	3.0-4.0 Humanities/ fine arts elective	3.0 Humanities/ fine arts elective	3.0	
History course covering pre-1700 history**	4.0 Social and behavioral science elective	3.0 Social and behavioral science elective	3.0	
Free electives	3.0-4.0 Science elective*** Free elective	3.0-4.0 Free electives	6.0	
	14-16	16-18	16	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
History electives†	8.0 HIST 301	4.0 HIST 396	4.0 VACATION	
International Studies elective	3.0 UNIV H201	1.0 HIST 380	4.0	

Diversity elective	3.0 History elective†	4.0 History elective†	4.0
Free elective	3.0-4.0 Social and Behavioral Science elective	3.0 Humanities/ Fine Arts elective	3.0
	International Studies elective	3.0 Free elective	3.0-4.0
	17-18	15	18-19
	0		0
Fourth Year			
Fall	Credits Winter	Credits Spring	Credits
HIST 490	4.0 HIST 491	4.0 History elective†	4.0
History elective†	4.0 History elective†	4.0 Free electives	9.0-10.0
Social and Behavioral Science elective	3.0 Humanities/ Fine Arts elective	3.0	
Free elective	3.0-4.0 Free elective	3.0-4.0	
	14-15	14-15	13-14

Total Credits 181-193

History BA - no concentration 4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
HIST 101	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 HIST 102	4.0 US History course	4.0	
Foreign Language course (103-level or above)	4.0 Foreign Language course (201-level or above)	3.0-4.0 Mathematics course	3.0-4.0	
Non-US History course	4.0 Mathematics course	3.0-4.0 Free elective	3.0-4.0	
	16	14-16	14-16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 296	4.0 History of Science, Technology and Environment course	4.0 Non-US History course	4.0 History electives†	8.0
Science elective***	3.0-4.0 Humanities/ Fine Arts elective	3.0 Humanities/ Fine Arts elective	3.0 International Studies elective	3.0
History course covering pre-1700 history**	4.0 Social and Behavioral Science elective	3.0 Social and Behavioral Science elective	3.0 Diversity elective	3.0
Free elective	3.0-4.0 Science elective*** Free elective	3.0-4.0 Free electives	6.0 Free elective	3.0-4.0
	14-16	16-18	16	17-18

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 301	4.0 HIST 380	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 HIST 396	4.0		
History elective [†]	4.0 History elective [†]	4.0		
Social and Behavioral Science elective	3.0 Humanities/ Fine Arts elective	3.0		
International Studies elective	3.0 Free elective	3.0-4.0		
15		18-19		0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 490	4.0 HIST 491	4.0 History elective [†]		4.0
History elective [†]	4.0 History elective [†]	4.0 Free electives		9.0-10.0
Social and Behavioral Science elective	3.0 Humanities/ Fine Arts elective	3.0		
Free elective	3.0-4.0 Free elective	3.0-4.0		
14-15		14-15		13-14

Total Credits 181-194

History BA - no concentration

5 year, 3 co-ops

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
HIST 101	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 HIST 102	4.0 US History course [*]	4.0	
Foreign Language course (103-level or higher)	4.0 Foreign Language course (201-level or higher)	3.0-4.0 Mathematic: course	3.0-4.0	
Non-US History course	4.0 Mathematics course	3.0-4.0 Free elective	3.0-4.0	
16		14-16		14-16

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 296	4.0 History of Science, Technology, and Environment course [*]	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Science elective ^{***}	3.0-4.0 Humanities/ Fine Arts elective	3.0		
History course covering pre-1700 history ^{**}	4.0 Social and Behavioral Science elective	3.0		

Free elective	3.0-4.0 Science elective ^{***}	3.0-4.0		
	Free elective	3.0-4.0		
14-16		16-18		0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Non-US History course [*]	4.0 History electives [†]	8.0 COOP EXPERIENCE	COOP EXPERIENCE	
Humanities/ Fine Arts elective	3.0 International Studies elective	3.0		
Social and Behavioral Science elective	3.0 Diversity elective	3.0		
Free electives	6.0 Free elective	3.0-4.0		
16		17-18		0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 201	4.0 HIST 380	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 HIST 396	4.0		
History elective [†]	4.0 History elective [†]	4.0		
Social and Behavioral Science elective	3.0 Humanities/ Fine Arts elective	3.0		
International Studies elective	3.0 Free elective	3.0-4.0		
15		18-19		0

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 490	4.0 HIST 491	4.0 History elective [†]		4.0
History elective [†]	4.0 History elective [†]	4.0 Free electives		9.0-11.0
Social and Behavioral Sciences elective	3.0 Humanities/ Fine Arts elective	3.0		
Free elective	3.0-4.0 Free elective	3.0-4.0		
14-15		14-15		13-15

Total Credits 181-195

- * Must be 200-level or above.
- ** Must be 200-level or above. May not be HIST 201.
- *** See degree requirements (p.).
- † At least four core courses must be 200-level or above.

History BA - Science, Technology, and Environment Concentration

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 101	4.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
ENGL 101 or 111	3.0 HIST 102	4.0 US History course [*]	4.0	

UNIV H101	1.0 ENGL 102 or 112	3.0 Mathematics course	3.0-4.0
Non-US History course	4.0 Foreign Language course (201-level or higher)	3.0-4.0 Free electives	6.0-7.0
Foreign Language course (103-level or higher)	4.0 Mathematics course	3.0-4.0	
16		14-16	

Second Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 296	4.0	HIST 385	4.0	Non-US History course	4.0	VACATION	4.0
Concentration elective	4.0	Concentration elective	4.0	History course covering pre-1700 history**	4.0		
Diversity elective	3.0	Diversity elective	3.0	Science elective**	3.0	3.0-4.0	
Free electives	6.0-7.0	Social or Behavioral Science elective	3.0	Social or Behavioral Sciences elective	3.0		
		Free elective	3.0-4.0				
17-18		17-18		14-15		0	

Third Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
History of Science, Technology, and Environment course*	4.0	HIST 301	4.0	HIST 302	4.0	VACATION	4.0
Science elective***	3.0-4.0	HIST 380	4.0	HIST 396	4.0		
Social or Behavioral Science elective	3.0	UNIV H201	1.0	Humanities/ Fine Arts elective	3.0		
International Studies elective	3.0	Social or Behavioral Science elective	3.0	Free elective	3.0	3.0-4.0	
Free elective	3.0-4.0	International Studies elective	3.0				
16-18		15		14-15		0	

Fourth Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 490	4.0	HIST 491	4.0	Concentration elective	4.0		
History of Medicine and Disabilities course	4.0	Environmental History course	4.0	Humanities/ Fine Arts elective	3.0		
Humanities/ Fine Arts elective	3.0	Humanities/ Fine Arts elective	3.0	Free electives	7.0-9.0		

Free elective	3.0-4.0	Free elective	3.0-4.0
14-15		14-15	
14-15		14-16	

Total Credits 181-195

4 year, 1 co-op

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ENGL 101 or 111	3.0	CIVC 101	1.0	COOP 101	1.0	VACATION	1.0
HIST 101	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
UNIV H101	1.0	HIST 102	4.0	US History course	4.0		
Non-US History course	4.0	Foreign Language course (201-level or higher)	3.0-4.0	Mathematics course	3.0-4.0		
Foreign Language course (103-level or higher)	4.0	Mathematics course	3.0-4.0	Free electives	6.0-7.0		
16		14-16		17-19		0	

Second Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 296	4.0	HIST 385	4.0	Non-US History course	4.0	History of Science, Technology, and Environment course*	4.0
Concentration elective	4.0	Concentration elective	4.0	History course covering pre-1700 history**	4.0	Science elective***	3.0-4.0
Diversity elective	3.0	Diversity elective	3.0	Science elective***	3.0	3.0-4.0 Social or Behavioral Science elective	3.0
Free electives	6.0-7.0	Social or Behavioral Science elective	3.0	Social or Behavioral Sciences elective	3.0	International Studies elective	3.0
		Free elective	3.0-4.0			Free elective	3.0-4.0
17-18		17-18		14-15		16-18	

Third Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 301	4.0	HIST 302	4.0	COOP EXPERIENCE	4.0	COOP EXPERIENCE	4.0
HIST 380	4.0	HIST 396	4.0				
UNIV H201	1.0	Humanities/ Fine Arts elective	3.0				
Social or Behavioral Science elective	3.0	Free elective	3.0-4.0				
International Studies elective	3.0						
15		14-15		0		0	

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
HIST 490	4.0 HIST 491	4.0 Concentration elective	4.0
History of Medicine and Disabilities course	4.0 Environmen History course	4.0 Humanities/ Fine Arts elective	3.0
Humanities/ Fine Arts elective	3.0 Humanities/ Fine Arts elective	3.0 Free electives	7.0-9.0
Free elective	3.0-4.0 Free elective	3.0-4.0	
14-15		14-16	

Total Credits 182-196

5 year, 3 co-ops

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
HIST 101	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113		3.0
UNIV H101	1.0 HIST 102	4.0 US History course		4.0
Non-US History course	4.0 Foreign Language course (201-level or higher)	3.0-4.0 Mathematics course		3.0-4.0
Foreign Language course (103-level or higher)	4.0 Mathematics course	3.0-4.0 Free elective		6.0-7.0
16		14-16		17-19
				0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 296	4.0 HIST 385	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Concentration elective	4.0 Concentration elective	4.0		
Diversity elective	3.0 Diversity elective	3.0		
Free electives	6.0-7.0 Social or Behavioral Science elective	3.0		
	Free elective	3.0-4.0		
17-18		17-18		0
				0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Non-US History course	4.0 History of Science, Technology, and Environment course	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
History course covering pre-1700 history**	4.0 Science elective***	3.0-4.0		

Science elective***	3.0-4.0 Social or Behavioral Science elective	3.0		
Social or Behavioral Sciences elective	3.0 International Studies elective		3.0	
	Free elective	3.0-4.0		
14-15		16-18		0
				0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 301	4.0 HIST 302	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
HIST 380	4.0 HIST 396	4.0		
UNIV H201	1.0 Humanities/ Fine Arts elective	3.0		
Social or Behavioral Science elective	3.0 Free elective	3.0-4.0		
International Studies elective	3.0			
15		14-15		0
				0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
HIST 490	4.0 HIST 491	4.0 Concentration elective	4.0
History of Medicine and Disabilities course	4.0 Environmental History course	4.0 Humanities/ Fine Arts elective	3.0
Humanities/ Fine Arts elective	3.0 Humanities/ Fine Arts elective	3.0 Free electives	7.0-9.0
Free elective	3.0-4.0 Free elective	3.0-4.0	
14-15		14-15	
			14-16

Total Credits 182-196

- * Must be 200-level or above.
- ** Must be 200-level or above. May not be HIST 201.
- *** See degree requirements

History BA - Global History Concentration
4 year, no co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
HIST 101	4.0 ENGL 102 or 112	3.0 US History course		4.0
UNIV H101	1.0 HIST 102	4.0 Mathematics course		3.0-4.0
Foreign Language course (103-level or above)	4.0 Foreign Language course (201-level or above)	3.0-4.0 Free electives		6.0-7.0

Non-US History course	4.0 Mathematics course	3.0-4.0		
	16	14-16	16-18	0

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 296	4.0	Concentration elective**	4.0	History of Science, Technology, and Environment course*	4.0	VACATION	

Concentration elective**	4.0	Foreign Language Concentration requirement	4.0	History course covering pre-1700 history***	4.0		
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Diversity elective	3.0	Diversity elective	3.0	Global Engagement course†	4.0		
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Free electives	6.0-7.0	Social or Behavioral Science elective	3.0	Science elective†	3.0-4.0		
	17-18	14	15-16	0			

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
Non-US History course	4.0	HIST 301	4.0	HIST 303	4.0	VACATION	

Science elective†	3.0-4.0	HIST 380	4.0	HIST 396	4.0		
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Social or Behavioral Science elective	3.0	UNIV H201	1.0	Social or Behavioral Science elective	3.0		
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International Studies elective	3.0	Social or Behavioral Science elective	3.0	Humanities/Fine Arts elective	3.0		
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Free elective	3.0-4.0	International Studies elective	3.0	Free elective	3.0-4.0		
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	16-18	15	17-18	0			
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Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 490	4.0	HIST 491	4.0	Concentration elective**	4.0		

Concentration elective**	4.0	Humanities/Fine Arts elective	3.0	Humanities/Fine Arts elective	3.0		
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Humanities/Fine Arts elective	3.0	Free electives	6.0-8.0	Free electives	6.0-8.0		
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Free elective	3.0-4.0						
	14-15	13-15	13-15				

Total Credits 180-194

4 year, one co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ENGL 101 or 111	3.0	CIVC 101	1.0	COOP 101	1.0	VACATION	

HIST 101	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
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UNIV H101	1.0	HIST 102	4.0	US History course*	4.0		
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Foreign language course (103-level or above)	4.0	Foreign language course (201-level or above)	3.0-4.0	Mathematics course	3.0-4.0		
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Non-US History course	4.0	Mathematics course	3.0-4.0	Free electives	6.0-7.0		
	16	14-16	17-19	0			

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 296	4.0	Concentration elective**	4.0	History of Science, Technology, and Environment course*	4.0	Non-US History course	4.0

Concentration elective**	4.0	Foreign Language concentration requirement	4.0	History course covering pre-1700 history***	4.0	Science elective†	3.0-4.0
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Diversity elective	3.0	Diversity elective	3.0	Global Engagement course†	4.0	Social or Behavioral Science elective	3.0
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Free electives	6.0-7.0	Social or Behavioral Science elective	3.0	Science elective†	3.0-4.0	International studies elective	3.0
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						Free elective	3.0-4.0
	17-18	14	15-16	16-18			

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 301	4.0	HIST 303	4.0	COOP EXPERIENCE	4.0	COOP EXPERIENCE	

HIST 380	4.0	HIST 396	4.0				
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UNIV H201	1.0	Social or Behavioral Science elective	3.0				
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Social or Behavioral Science elective	3.0	Humanities/Fine Arts elective	3.0				
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International Studies elective	3.0	Free elective	3.0-4.0				
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	15	17-18	0	0			
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Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
HIST 490	4.0	HIST 491	4.0	Concentration elective**	4.0		

Concentration elective**	4.0	Humanities/Fine Arts elective	3.0	Humanities/Fine Arts elective	3.0		
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Humanities/Fine Arts elective	3.0	Free electives	6.0-8.0	Free electives	6.0-8.0		
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Free elective	3.0-4.0						
	14-15	13-15	13-15				

Total Credits 181-195

5 year, three co-ops

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
HIST 101	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 HIST 102	4.0 US History course*	4.0	
Foreign Language course (103-level or above)	4.0 Foreign Language course (201-level or above)	3.0-4.0 Mathematics course	3.0-4.0	
Non-US History course	4.0 Mathematics course	3.0-4.0 Free elective	6.0-7.0	
	16	14-16	17-19	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 296	4.0 Concentration elective**	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Concentration elective**	4.0 Foreign Language Concentration requirement	4.0		
Diversity elective	3.0 Diversity elective	3.0		
Free electives	6.0-7.0 Social or Behavioral Science elective	3.0		
	17-18	14	0	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
History of Science, Technology, and Environment course*	4.0 Non-US History course*	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
History course covering pre-1700 history***	4.0 Science elective†	3.0-4.0		
Global Engagement course†	4.0 Social or Behavioral Science elective	3.0		
Science elective†	3.0-4.0 International Studies elective	3.0		
	Free elective	3.0-4.0		
	15-16	16-18	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
HIST 301	4.0 HIST 303	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
HIST 380	4.0 HIST 396	4.0		
UNIV H201	1.0 Social or Behavioral Science elective	3.0		

Social or Behavioral Science elective	3.0 Humanities/ Fine Arts elective	3.0		
International Studies elective	3.0 Free elective	3.0-4.0		
	15	17-18	0	0

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
HIST 490	4.0 HIST 491	4.0 Concentration elective**	4.0	
Concentration elective**	4.0 Humanities/ Fine Arts elective	3.0 Humanities/ Fine Arts elective	3.0	
Humanities/ Fine Arts elective	3.0 Free electives	6.0-8.0 Free electives	6.0-8.0	
Free elective	3.0-4.0			
	14-15	13-15	13-15	

Total Credits 181-195

- * Must be 200-level or above.
- ** Two must be 200-level or above.
- *** Must be 200-level or above. May not be HIST 201.
- † See degree requirements (p.).

Co-Op/Career Opportunities

Co-Op Experiences

History majors have a wide variety of co-op experiences from which to choose. Business and public utilities offer many possibilities, and local, state, and federal governments; museums and archives; and law firms present many additional interesting co-op placements. Pre-law students, for example, are especially eager to see the inside of a law office, whether the co-op job they receive is clerical or a more challenging paralegal assignment. These practical experiences in the “real” world can reinforce the lessons of the classroom, sharpen skills, and establish important contacts. Sample co-op positions include:

- Law clerk/paralegal, Joe Davidson, Attorney-at-Law, Philadelphia
- Research analyst, Legislative Office for Research Liaison, Harrisburg, PA
- Legislative intern, Corporate Public Affairs Division, Philadelphia Electric Company
- Assistant lobbyist, Government Relations Office, Drexel University
- Education intern, Philadelphia Museum of Art
- Researcher, Philadelphia Chamber of Commerce
- Assistant, Office of the Governor, Harrisburg, PA

Career Opportunities

The flexible programs allow students to shape a curriculum that meets their needs, whether they are preparing for the business world, graduate school in history or political science, the MS in Science, Technology, and Society program (<http://catalog.drexel.edu/graduate/collegeofartsandsciences/sciencetechnologyandsociety/>), an MBA or other business program, or law school.

History Faculty

Lloyd Ackert, PhD (*Johns Hopkins University*). Teaching Professor. History of science and technology; ecology; Russian science.

Debjani Bhattacharyya, PhD (*Emory University*). Associate Professor. Urban history, South Asian history, environmental history, legal history, transnational history, post-colonial theory, subaltern studies, history of modern economic thought and feminist history.

Yeonsil Kang, PhD (*Korea Advanced Institute of Science and Technology*). Visiting Assistant Professor. Science and technology studies, history of technology, environmental history.

Alison Kenner, PhD (*Rensselaer Polytechnic Institute*). Associate Professor. Science, technology, and health; environmental health problems; cities and place; feminist theory; medical anthropology; digital humanities

Scott G. Knowles, PhD (*Johns Hopkins University*) *Department Head, History*. Professor. Urban history, Philadelphia history, history of technology, history of disasters, modern history.

Jonson Miller, PhD (*Virginia Tech*). Teaching Professor. Science and technology, American history, military history.

Toni Pitock, PhD (*University of Delaware*) *Co-director, Judaic Studies Program*. Assistant Teaching Professor. Atlantic World, Jewish Migration and Diaspora, Economic Culture, Trade Networks, Colonial American History

Nic John Ramos, PhD (*University of Southern California*). Assistant Professor. African American History, history of Medicine, History of Psychiatry, urban History, 20th Century US History, History of Racial Capitalism, History of Sexuality

Rosalind Remer, PhD (*University of California, Los Angeles*) *Vice Provost & Executive Director, Lenfest Center for Cultural Partnerships; Affiliated Faculty Member*. History of the Book, Early American economic and business history, Public History, Museum planning, Non-profit Management

Tiago Saraiva, PhD (*Universidad Autónoma de Madrid*). Associate Professor. History of science and technology; transnational history; environmental history

Jonathan Seitz, PhD (*University of Wisconsin*) *Assistant Department Head, History*. Teaching Professor. History of religion, science, medicine, witchcraft, early modern Europe, Italy.

Amy Slaton, PhD (*University of Pennsylvania*). Professor. History of science and technology; history of standards and metrology; intersectionality, race, labor.

Kathryn Steen, PhD (*University of Delaware*). Associate Professor. History of technology, history of industry and business, and comparative history.

Donald F. Stevens, PhD (*University of Chicago*). Professor. Modern Latin American history.

Michael Yudell, MPH, PhD (*Columbia University*) *Chair, Department of Community Health*. Associate Professor. Department of Community Health and Prevention. Public health ethics; history of public health; race and racism; autism.

Emeritus Faculty

Eric Dorn Brose, PhD (*Ohio State University*). Professor Emeritus. German and European history.

Robert Zaller, PhD (*Washington University*). Professor Emeritus. English history and early modern European history.

Mathematics

Major: Mathematics

Degree Awarded: Bachelor of Arts (BA) or Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 181.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 27.0101

Standard Occupational Classification (SOC) code: 15-2021

About the Program

The mathematics major at Drexel provides a supportive learning environment in which students obtain a firm grounding in the core areas of mathematics and apply this knowledge to problems encountered in a technological society. The Department of Mathematics (<http://drexel.edu/coas/academics/departments-centers/mathematics/>) offers students the option of either a BA or a BS degree.

The Mathematics Department takes pride in offering a balanced and flexible curriculum. Three very different kinds of skills are emphasized in the mathematics major:

Abstract Reasoning

All students majoring in mathematics take courses that emphasize abstract reasoning. Students read and write proofs, and graduate well prepared to enter a PhD program in mathematics.

Computing

All students majoring in mathematics take a series of computing courses. This emphasis on computing is one of the distinctive features of the mathematics program at Drexel, and provides students with a competitive advantage in the job market.

Mathematical Modeling

All students majoring in mathematics take multidisciplinary courses that focus on the interplay between mathematics and an area of application. Students often use electives to focus on an area of personal interest. The Department of Mathematics encourages students to minor in a subject where mathematics is applied. The Department provides an advisor to assist students in selecting electives and planning career paths.

Degree Requirements (BA)

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	

ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Computer Science sequence:		9.0
CS 150	Computer Science Principles	
or CS 164	Introduction to Computer Science	
CS 171	Computer Programming I	
CS 172	Computer Programming II	
Humanities and fine arts electives		6.0
International studies electives		6.0
Science electives		6.0
Social and behavioral sciences electives		6.0
Studies in diversity electives		6.0
Free Electives *		66.0
Core Mathematics Requirements		
MATH 121	Calculus I **	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0
MATH 210	Differential Equations	4.0
MATH 220 [WI]	Introduction to Mathematical Reasoning	3.0
MATH 331	Abstract Algebra I	3.0-4.0
or MATH 401	Elements of Modern Analysis I	
Math Major Electives ***		30.0
Select a minimum of 30 credits from the following:		
MATH 205	Survey of Geometry	
MATH 221	Discrete Mathematics	
MATH 222 [WJ]	Combinatorics	
MATH 235	Math Competition Problem Solving Seminar	
MATH 238	History of Mathematics	
MATH 250	Mathematics of Investment and Credit	
MATH 285	Differential Equations II	
MATH 300	Numerical Analysis I	
MATH 301	Numerical Analysis II	
MATH 305	Introduction to Optimization Theory	
MATH 311	Probability and Statistics I	
MATH 312	Probability and Statistics II	
MATH 313	Probability and Statistics III	
MATH 316	Mathematical Applications of Symbolic Software	
MATH 318 [WJ]	Mathematical Applications of Statistical Software	
MATH 319	Techniques of Data Analysis	
MATH 320	Actuarial Mathematics	
MATH 321	Vector Calculus	
MATH 322	Complex Variables	
MATH 323	Partial Differential Equations	
MATH 332	Abstract Algebra II	
MATH 387	Linear Algebra II	
MATH 401	Elements of Modern Analysis I	
or MATH 331	Abstract Algebra I	
MATH 402	Elements of Modern Analysis II	
MATH 422	Introduction to Topology	
MATH 449	Mathematical Finance	
MATH 450	Introduction to Graph Theory	
MATH 475	Cryptography	
MATH 483	Discrete Event Simulation	
MATH 489	Tensor Calculus	

Total Credits 181.0-182.0

* Students not participating in co-op, will take one additional credit of Free Elective instead of COOP 101.

** Math majors must pass MATH 121 with a grade of B or higher.

*** If a student takes both of MATH 331 and MATH 401, then one of these can count as a Mathematics Elective. Up to 3 mathematics-related courses from other departments may be substituted for Mathematics Electives with departmental permission. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.

Categories of Electives

- Humanities and arts electives**
Designated courses in art, art history, communication studies, foreign languages (300-level or above), history, literature, music, philosophy, religion, and theatre arts.
- International electives**
Designated courses in anthropology, art history, history, literature, music, politics and sociology. Courses with an international focus may be used to fulfill requirements in other categories as well.
- Science electives**
Students select two courses from chemistry, biology or physics. Both courses may be in the same subject or they may be in different subject areas.
- Social and behavioral sciences electives**
Designated courses in anthropology, economics, criminology & justice studies, international relations, history, politics, psychology and sociology.
- Studies in diversity electives**
Designated courses in Africana studies, anthropology, communication, English, history, Judaic studies, linguistics, music, sociology and women's & gender studies.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Degree Requirements (BS)

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development *	1.0
COM 230	Techniques of Speaking	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0

Computer Science sequence: 9.0

CS 150	Computer Science Principles	
or CS 164	Introduction to Computer Science	
CS 171	Computer Programming I	
CS 172	Computer Programming II	
Any Biology (BIO) course		3.0-4.0
Any Chemistry (CHEM) course		3.0-4.0
Any Physics (PHYS) course		3.0-4.0
Humanities electives		6.0
Social sciences electives		15.0
International studies or studies in diversity electives		6.0
Free electives		40.0

Mathematics Requirements

MATH 121	Calculus I **	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0
MATH 210	Differential Equations	4.0
MATH 220 [WI]	Introduction to Mathematical Reasoning	3.0
MATH 331	Abstract Algebra I	4.0
MATH 332	Abstract Algebra II	3.0
MATH 401	Elements of Modern Analysis I	3.0
MATH 402	Elements of Modern Analysis II	3.0

Math Major Electives *** 40.0

Select a minimum of 40 credits from the following:

MATH 222	Combinatorics [W]	
MATH 235	Math Competition Problem Solving Seminar	
MATH 250	Mathematics of Investment and Credit	
MATH 285	Differential Equations II	
MATH 300	Numerical Analysis I	
MATH 301	Numerical Analysis II	
MATH 305	Introduction to Optimization Theory	
MATH 311	Probability and Statistics I	
MATH 312	Probability and Statistics II	
MATH 313	Probability and Statistics III	
MATH 316	Mathematical Applications of Symbolic Software	
MATH 318	Mathematical Applications of Statistical Software [W]	
MATH 319	Techniques of Data Analysis	
MATH 320	Actuarial Mathematics	
MATH 321	Vector Calculus	
MATH 322	Complex Variables	
MATH 323	Partial Differential Equations	
MATH 387	Linear Algebra II	
MATH 422	Introduction to Topology	

MATH 449	Mathematical Finance
MATH 450	Introduction to Graph Theory
MATH 475	Cryptography
MATH 483	Discrete Event Simulation
MATH 489	Tensor Calculus

Total Credits 181.0-184.0

* Students not participating in co-op will take one additional credit of Free Elective instead of COOP 101.

** Math majors must pass MATH 121 with a grade of B or higher.

*** MATH special topics courses may be substituted for Math Major Electives with departmental permission. MATH 100, MATH 101, MATH 102, MATH 110, MATH 119, MATH 180, MATH 171, MATH 172, MATH 173, and MATH 239 do not count towards the degree unless approved by the department.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study (BA)

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CS 150 or 164	3.0 CIVC 101	1.0 CS 172	3.0 VACATION	
ENGL 101 or 111	3.0 CS 171	3.0 ENGL 103 or 113	3.0	
MATH 121*	4.0 ENGL 102 or 112	3.0 MATH 123	4.0	
UNIV S101	1.0 MATH 122	4.0 MATH 220	3.0	
Science elective	3.0-4.0 Science elective	3.0-4.0 Social and Behavioral Science elective	3.0	
14-15			16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 Mathematics (MATH)** courses**	6.0 MATH 210	4.0 VACATION	

MATH 200	4.0 Humanities/ Fine Arts elective	3.0 Mathematic: (MATH) course	3.0
MATH 201	4.0 Free electives	6.0 Social and Behavioral Science elective	3.0
Diversity Studies elective	3.0	Humanities/ Fine Arts elective	3.0
International Studies elective	3.0	Free elective	3.0
	17	15	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Mathematics (MATH) course**	3.0 MATH 401 or 331	3.0-4.0 UNIV S201	1.0 VACATION	
Diversity Studies elective	3.0 Mathematics (MATH) course**	3.0 Mathematics (MATH) course**	4.0	
Free electives	9.0 International Studies elective	3.0 Free electives	10.0	
	Free electives	6.0		
	15	15-16	15	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
Mathematics (MATH) course**	4.0 Mathematics (MATH) course	3.0 Mathematics (MATH) course**	4.0
Free electives	12.0 Free electives	11.0 Free electives	10.0
	16	14	14

Total Credits 181-184

- * Math majors must pass MATH 121 with a grade of B or higher.
- ** If a student takes both of MATH 331 and MATH 401, then one of these can count as a Mathematics Elective. Up to 3 mathematics-related courses from other departments may be substituted for Mathematics Electives with departmental permission. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.

4 year, 1 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CS 150 or 164	3.0 CIVC 101	1.0 COOP 101**	1.0 VACATION	
ENGL 101 or 111	3.0 CS 171	3.0 CS 172	3.0	
MATH 121*	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV S101	1.0 MATH 122	4.0 MATH 123	4.0	
Science elective	3.0-4.0 Science elective	3.0-4.0 MATH 220	3.0	
		Social and Behavioral Science elective	3.0	
	14-15	14-15	17	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 Mathematics (MATH) courses***	6.0 MATH 210	4.0 Mathematics (MATH) course***	3.0
MATH 200	4.0 Humanities/ Fine Arts elective	3.0 Mathematic: (MATH) course***	3.0 Diversity Studies elective	3.0
MATH 201	4.0 Fine Arts elective	6.0 Social and Behavioral Science elective	3.0 Free elective	9.0
Diversity Studies elective	3.0	Humanities/ Fine Arts elective	3.0	
International Studies elective	3.0	Free elective	3.0	
	17	15	16	15

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 401 or 331	3.0-4.0 UNIV S201	1.0 COOP EXPERIENCE	COOP EXPERIENCE	
Mathematic: (MATH) course***	3.0 Mathematic: (MATH) course***	4.0		
International Studies elective	3.0 Free electives	9.0		
Free electives	6.0			
	15-16	14	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
Mathematics (MATH) course***	4.0 Mathematics (MATH) course***	3.0 Mathematics (MATH) course***	4.0
Free electives	12.0 Free electives	11.0 Free electives	10.0
	16	14	14

Total Credits 181-184

- * Math majors must pass MATH 121 with a grade of B or higher.
- ** COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.
- *** If a student takes both of MATH 331 and MATH 401, then one of these can count as a Mathematics Elective. Up to 3 mathematics-related courses from other departments may be substituted for Mathematics Electives with departmental permission. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.

5-year, 3 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CS 150 or 164	3.0 CIVC 101	1.0 COOP 101**	1.0 VACATION	
ENGL 101 or 111	3.0 CS 171	3.0 CS 172	3.0	
MATH 121*	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV S101	1.0 MATH 122	4.0 MATH 123	4.0	
Science elective	3.0-4.0 Science elective	3.0-4.0 MATH 220	3.0	

		Social and Behavioral Science elective	3.0	
	14-15	14-15	17	0
Second Year				
Fall	Credits	Winter	Credits	Spring
COM 230	3.0	Mathematics (MATH)*** courses	6.0	COOP EXPERIENCE
MATH 200	4.0	Humanities/ Fine Arts elective	3.0	
MATH 201	4.0	Free electives	6.0	
Diversity Studies elective	3.0			
International Studies elective	3.0			
	17	15	0	0
Third Year				
Fall	Credits	Winter	Credits	Spring
MATH 210	4.0	Mathematics (MATH)*** course	3.0	COOP EXPERIENCE
Mathematic: (MATH)*** course	3.0	Diversities Studies elective	3.0	
Social and Behavioral Science elective	3.0	Free electives	9.0	
Humanities/ Fine Arts elective	3.0			
Free elective	3.0			
	16	15	0	0
Fourth Year				
Fall	Credits	Winter	Credits	Spring
MATH 401 or 331	3.0	UNIV S201	1.0	COOP EXPERIENCE
Mathematic: (MATH)*** course	3.0	Mathematic: (MATH)*** courses	4.0	
International Studies elective	3.0	Free electives	9.0	
Free electives	6.0			
	15	14	0	0
Fifth Year				
Fall	Credits	Winter	Credits	Spring
Mathematics (MATH)*** course	4.0	Mathematics (MATH)*** course	3.0	Mathematics (MATH)*** course
Free electives	12.0	Free electives	11.0	Free electives
	16	14	14	

Total Credits 181-183

* Math majors must pass MATH 121 with a grade of B or higher.
 ** COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

*** If a student takes both of MATH 331 and MATH 401, then one of these can count as a Mathematics Elective. Up to 3 mathematics-related courses from other departments may be substituted for Mathematics Electives with departmental permission. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.

Sample Plan of Study (BS)

4 year, no coop

First Year				
Fall	Credits	Winter	Credits	Spring
CS 150 or 164	3.0	CIVC 101	1.0	CS 172
ENGL 101 or 111	3.0	CS 171	3.0	ENGL 103 or 113
MATH 121	4.0	ENGL 102 or 112	3.0	MATH 123
UNIV S101	1.0	MATH 122	4.0	MATH 200
Any Biology (BIO) course	3.0	Any Chemistry (CHEM) course	3.0	Any Physics (PHYS) course
	14	14	17-18	0
Second Year				
Fall	Credits	Winter	Credits	Spring
COM 230	3.0	MATH 210	4.0	MATH 331
MATH 201	4.0	Social Science elective	3.0	Humanities elective
MATH 220	3.0	Mathematics (MATH)** elective	3.0	Mathematics (MATH)*** elective
Social Sciences electives	6.0	International Studies or Studies in Diversity elective	3.0	Social Science elective
	16	13	14	0
Third Year				
Fall	Credits	Winter	Credits	Spring
MATH 332	3.0	MATH 401	3.0	MATH 402
Humanities elective	3.0	Mathematic: (MATH)*** elective	3.0	UNIV S201
International Studies or Studies in Diversity elective	3.0	Free electives	6.0	Mathematics (MATH)*** electives
Mathematic: (MATH)*** elective	4.0	Social Science elective	3.0	Free electives
Free elective	3.0			
	16	15	17	0
Fourth Year				
Fall	Credits	Winter	Credits	Spring
Mathematics (MATH)*** electives	8.0	Mathematics (MATH)*** electives	7.0	Mathematics (MATH)*** electives
	6.0			

Free electives	7.0-8.0 Free electives	8.0 Free electives	9.0-10.0
15-16		15	15-16

Total Credits 181-184

- * Students not participating in co-op will take one additional credit of Free Elective instead of COOP 101.
- ** Math majors must pass MATH 121 with a grade of B or higher.
- *** If a student takes both MATH 331 and MATH 401, then one of these can count as a Mathematics Elective. Up to 3 mathematics-related courses from other departments may be substituted for Mathematics Electives with departmental permission. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.
MATH 100, MATH 101, MATH 102, MATH 110, MATH 119, MATH 180, MATH 171, MATH 172, MATH 173, and MATH 239 do not count towards the degree unless approved by the department

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CS 150 or 164	3.0 CIVC 101	1.0 CS 172	3.0 VACATION	
ENGL 101 or 111	3.0 COOP 101	1.0 ENGL 103 or 113	3.0	
MATH 121	4.0 CS 171	3.0 MATH 123	4.0	
UNIV S101	1.0 ENGL 102 or 112	3.0 MATH 200	4.0	
Any Biology (BIO) course	3.0 MATH 122	4.0 Any Physics (PHYS) course	3.0-4.0	
	Any Chemistry (CHEM) course	3.0		
14		15	17-18	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 MATH 210	4.0 MATH 331	4.0 MATH 332	3.0
Social Sciences electives	6.0 Social Science elective	3.0 Humanities elective	3.0 Humanities elective	3.0
MATH 201	4.0 Mathematics (MATH) elective	3.0 Mathematics (MATH) elective	4.0 International Studies or Studies in Diversity elective	3.0
MATH 220	3.0 International Studies or Studies in Diversity elective	3.0 Social Science elective	3.0 Mathematics (MATH) elective	4.0
			Free elective	3.0
16		13	14	16

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 401	3.0 MATH 402	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
Social Science elective	3.0 UNIV S201	1.0		
Mathematics (MATH) elective	3.0 Mathematics (MATH) electives	7.0		

Free electives	6.0 Free electives	6.0		
15		17	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
Mathematics (MATH) electives	8.0 Mathematics (MATH) electives	7.0 Mathematics (MATH) electives	6.0
Free electives	6.0-7.0 Free electives	8.0 Free electives	9.0
14-15		15	15

Total Credits 181-183

- * Math majors must pass MATH 121 with a grade of B or higher.
- ** COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select student may be eligible to take COOP 001 in place of COOP 101.
- *** If a student takes both MATH 331 and MATH 401, then one of these can count as a Mathematics Elective. Up to 3 mathematics-related courses from other departments may be substituted for Mathematics Electives with departmental permission. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.
MATH 100, MATH 101, MATH 102, MATH 110, MATH 119, MATH 180, MATH 171, MATH 172, MATH 173, and MATH 239 do not count towards the degree unless approved by the department

5 year, three co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CS 150 or 164	3.0 CIVC 101	1.0 CS 172	3.0 VACATION	
ENGL 101 or 111	3.0 COOP 101**	1.0 ENGL 103 or 113	3.0	
MATH 121*	4.0 CS 171	3.0 MATH 123	4.0	
UNIV S101	1.0 ENGL 102 or 112	3.0 MATH 200	4.0	
Any Biology (BIO) course	3.0 MATH 122	4.0 Any Physics (PHYS) course	3.0-4.0	
	Any Chemistry (CHEM) course	3.0		
14		15	17-18	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 MATH 210	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
MATH 201	4.0 Social Science elective	3.0		
MATH 220	3.0 Mathematics (MATH) elective	3.0		
Social Science electives	6.0 International Studies or Studies in Diversity elective	3.0		
16		13	0	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 331	4.0 MATH 332	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
Humanities elective	3.0 Humanities elective	3.0		
Mathematics (MATH) elective***	4.0 International Studies or Studies in Diversity elective	3.0		
Social Science elective	3.0 Mathematics (MATH) elective***	4.0		
	Free elective	3.0		
	14	16	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 401	3.0 MATH 402	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
Social Science elective	3.0 UNIV S201	1.0		
Mathematics (MATH) electives***	3.0 Mathematics (MATH) electives	7.0		
Free electives	6.0 Free electives	6.0		
	15	17	0	0
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
Mathematics (MATH) electives	8.0 Mathematics (MATH) electives	7.0 Mathematics (MATH) electives***	6.0	
Free electives	6.0-7.0 Free electives	8.0 Free electives	9.0	
	14-15	15	15	
Total Credits 181-183				

* Math majors must pass MATH 121 with a grade of B or higher.

** COOP 101 registration is determined by the co-op cycle assigned and may be in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

*** If a student takes both MATH 331 and MATH 401 then one of these can count as a Mathematics Elective. Up to 3 mathematics-related courses from other departments may be substituted for Mathematics Electives with departmental permission. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.

MATH 100, MATH 101, MATH 102, MATH 110, MATH 119, MATH 180, MATH 171, MATH 172, MATH 173, and MATH 239 do not count towards the degree unless approved by the department

Co-op/Career Opportunities

Mathematicians are employed in a variety of capacities in business, industry, and government. Students can combine courses in economics or finance and mathematics to prepare for careers in the actuarial field, banks, stock exchanges, or finance departments of large corporations or other financial institutions. Students interested in science careers may focus on probability and statistics in order to work for industries like pharmaceutical manufacturers. Many others combine math studies with computer science courses to prepare for careers in information systems or engineering.

Teacher certification is also a career option available through a joint program in mathematics and teacher education.

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) for more detailed information on co-op and post-graduate opportunities.

Dual Degree Bachelor's Programs

Since applied mathematics plays an important role in many different disciplines, mathematics majors often choose to pursue specialization in a second field of study. Students may choose a dual major that involves completing the requirements of two separate majors or they can opt for a minor, which involves completing the major in one field and a smaller set of courses in another.

Dual majors are common in mathematics/computer science and mathematics/physics. Students interested in a dual major should consult with their advisor or contact the assistant department head. Dual majors in other fields are also possible, but early planning and discussions with advisors is essential.

Mathematics Faculty

David M. Ambrose, PhD (*Duke University*) Associate Department Head, *Mathematics*. Professor. Applied analysis and computing for systems of nonlinear partial differential equations, especially free-surface problems in fluid dynamics.

Jason Aran, MS (*Drexel University*). Associate Teaching Professor.

Jonah D. Blasiak, PhD (*University of California at Berkeley*). Associate Professor. Algebraic combinatorics, representation theory, and complexity theory.

Yasmine Boolakee-Pant, MS (*University of Freiburg*). Instructor.

Robert P. Boyer, PhD (*University of Pennsylvania*). Professor. Functional analysis, C^* -algebras and the theory of group.

Fernando Carreon, PhD (*University of Texas at Austin*). Teaching Professor.

Patrick Clarke, PhD (*University of Miami*). Associate Professor. Homological mirror symmetry, Landau-Ginzburg models, algebraic geometry, symplectic geometry.

Daryl Falco, MS (*Drexel University*). Associate Teaching Professor. Discrete mathematics and automata theory.

Raymond Favocci, MS (*Drexel University*). Associate Teaching Professor.

Darij Grinberg, PhD (*Massachusetts Institute of Technology*). Assistant Professor. Algebraic Combinatorics, Noncommutative Algebra, Symmetric Functions, Hopf Algebras, Enumerative Combinatorics, Invariant Theory

Pavel Grinfeld, PhD (*Massachusetts Institute of Technology*). Associate Professor. Intersection of physics, engineering, applied mathematics and computational science.

Anatolii Grinshpan, PhD (*University of California at Berkeley*). Associate Teaching Professor. Function theory and operator theory, harmonic analysis, matrix theory.

Yixin Guo, PhD (*University of Pittsburgh*). Associate Professor. Biomathematics, dynamical systems, ordinary and partial differential equations and math education.

R. Andrew Hicks, PhD (*University of Pennsylvania*). Professor. Geometry; optics; computer vision.

Pawel Hitczenko, PhD (*Warsaw University*). Professor. Probability theory and its applications to analysis, combinatorics, wavelets, and the analysis of algorithms.

Jeffrey LaComb, PhD (*Duke University*). Assistant Teaching Professor. Rare Event Simulation, Dynamical Systems, Numerical Analysis and Mathematical Biology

Georgi S. Medvedev, PhD (*Boston University*). Professor. Ordinary and partial differential equations, mathematical neuroscience.

Cecilia Mondaini, PhD (*Federal University of Rio de Janeiro*). Assistant Professor. Analysis of Partial Differential Equations, Fluid Dynamics, Stochastic Processes

Shari Moskow, PhD (*Rutgers University*) *Department Head*. Professor. Partial differential equations and numerical analysis, including homogenization theory, numerical methods for problems with rough coefficients, and inverse problems.

Oksana P. Odintsova, PhD (*Omsk State University*). Teaching Professor. Math education; geometrical modeling.

Dimitrios Papadopoulos, MS (*Drexel University*). Assistant Teaching Professor.

Joel Pereira, PhD (*University of North Carolina*). Assistant Teaching Professor. Commutative Algebra

Ronald K. Perline, PhD (*University of California at Berkeley*) *Undergraduate Adviser*. Associate Professor. Applied mathematics, numerical analysis, symbolic computation, differential geometry, mathematical physics.

Marci A. Perlstadt, PhD (*University of California at Berkeley*). Associate Professor. Applied mathematics, computed tomography, numerical analysis of function reconstruction, signal processing, combinatorics.

Adam C. Rickert, MS (*Drexel University*). Associate Teaching Professor.

Eric Schmutz, PhD (*University of Pennsylvania*). Professor. Probabilistic combinatorics, asymptotic enumeration.

Li Sheng, PhD (*Rutgers University*). Associate Professor. Discrete optimization, combinatorics, operations research, graph theory and its application in molecular biology, social sciences and communication networks, biostatistics.

Gideon Simpson, PhD (*Columbia University*). Associate Professor. Partial differential equations, scientific computing and applied mathematics.

Xiaoming Song, PhD (*University of Kansas*). Associate Professor. Stochastic Calculus, Large Deviation Theory, Theoretical Statistics, Data Network Modeling and Numerical Analysis.

Jeanne M. Steuber, MS (*Boston University*). Associate Teaching Professor.

Kenneth P. Swartz, PhD (*Harvard University*). Assistant Teaching Professor. Applied statistics, data analysis, calculus, discrete mathematics, biostatistics.

K. Shwetketu Virbhadra, PhD (*Physical Research Laboratory*). Instructor.

Richard D. White, MS (*Penn State University*). Assistant Teaching Professor.

Hugo J. Woerdeman, PhD (*Vrije Universiteit, Amsterdam*). Professor. Matrix and operator theory, systems theory, signal and image processing, and harmonic analysis.

J. Douglas Wright, PhD (*Boston University*) *Associate Department Head*. Professor. Partial differential equations, specifically nonlinear waves and their interactions.

Dennis G. Yang, PhD (*Cornell University*). Associate Teaching Professor. Dynamical systems, neurodynamics.

Thomas (Pok-Yin) Yu, PhD (*Stanford University*). Professor. Multiscale mathematics, wavelets, applied harmonic analysis, subdivision algorithms, nonlinear analysis, applied differential geometry and data analysis.

Matthew Ziemke, PhD (*University of South Carolina*). Assistant Teaching Professor. Functional Analysis, Operator Algebras, Semigroups, Mathematical Physics

Emeritus Faculty

Howard Anton, PhD (*Polytechnic Institute of Brooklyn*). Professor Emeritus.

Loren N. Argabright, PhD (*University of Washington*). Professor Emeritus. Functional analysis, wavelets, abstract harmonic analysis, the theory of group representations.

Robert C. Busby, PhD (*University of Pennsylvania*). Professor Emeritus. Functional analysis, C^* -algebras and group representations, computer science.

Ewaugh Finney Fields, EdD (*Temple University*) *Dean Emeritus*. Professor Emeritus. Mathematics education, curriculum and instruction, minority engineering education.

William M.Y. Goh, PhD (*Ohio State University*). Associate Professor Emeritus. Number theory, approximation theory and special functions, combinatorics, asymptotic analysis.

Patricia Henry Russell, MS (*Drexel University*). Teaching Professor Emerita.

Bernard Kolman, PhD (*University of Pennsylvania*). Professor Emeritus. Lie algebras; theory, applications, and computational techniques; operations research.

Charles J. Mode, PhD (*University of California at Davis*). Professor Emeritus. Probability and statistics, biostatistics, epidemiology, mathematical demography, data analysis, computer-intensive methods.

Chris Rorres, PhD (*Courant Institute, New York University*). Professor Emeritus. Applied mathematics, scattering theory, mathematical modeling in biological sciences, solar-collection systems.

Justin R. Smith, PhD (*Courant Institute, New York University*). Professor Emeritus. Homotopy theory, operad theory, quantum mechanics, quantum computing.

Jet Wimp, PhD (*University of Edinburgh*). Professor Emeritus. Applied mathematics, special factors, approximation theory, numerical techniques, asymptotic analysis.

Philosophy

Major: Philosophy

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: One Co-op (Four years); No Co-op (Four years); Three

Co-op (Five years)

Classification of Instructional Programs (CIP) code: 38.0101

Standard Occupational Classification (SOC) code: 25-1126

About the Program

A great philosopher once said, "Philosophers have just interpreted the world—but the point is to *change* it." At Drexel, we believe ideas do affect and change the world—ideas about what matters, what to do, and what is to be learned from our experiences and activity. The most important reason to do philosophy is that we all *can* change the world by living "the examined life" and being more reflective, thoughtful, and critical in our lives in concrete ways. Our classes seek to engage students in the active development of their reflective, creative, rational, logical, and linguistic abilities in thoughtful concern for some of the most important and fundamental questions and problems of life and of the world.

The Drexel Philosophy major is an excellent preparation for success in any field of endeavor that values thoughtful reflection, logical thinking, and clear communication about real issues and concerns. It is particularly valuable as a preparation for careers in education and law, in graduate study in philosophy, or in fields related to philosophy like critical media studies, public policy, or science, technology, and society (STS).

Drexel Philosophy majors take a mixture of historical and topical courses in the major fields of philosophical inquiry. These include ethics, metaphysics (philosophy of reality), epistemology (philosophy of knowledge), aesthetics (philosophy of art), social and political philosophy, philosophy of science, and logic. Our elective classes cover a wide range of subjects including technology, medicine, law, religion, science, the environment, and more. Our upper-level seminar classes are discussion-driven, reading- and writing-intensive classes usually limited to 12-16 students.

Prior to the end of sophomore year, students may choose to focus their philosophical studies in one of three areas of concentration. These are:

- Ethical Theory and Practice
- Philosophy and Law
- Philosophy, Technology, and Science

Students may also remain in the general Philosophy concentration, which gives them the widest range of options from which to select their courses.

Prior to the end of junior year, students may opt to work on a 9.0 credit senior thesis. This is a yearlong, faculty-mentored independent research and writing project on a topic developed by the student working with a chosen faculty member, culminating in a defense before the program's

faculty and students. This project consists of three one-on-one tutorials directed by a faculty member of the student's choosing.

The philosophy BA includes approximately 50.0 credits of free electives, which makes it possible for many students to double major. Our program also offers a minor in Philosophy (24.0 credits) and certificate programs in Ethical Theory and Practice; Philosophy, Arts, and Humanities; and Philosophy, Science, and Technology (18.0 credits each).

Additional Information

For more information about Drexel Philosophy classes and programs, please visit the Department of English & Philosophy website or drop by to see our director anytime. The Department of English & Philosophy is located in MacAlister Hall, Room 5044. The director can be contacted at:

Dr. Peter Amato

Director of Programs in Philosophy

Department of English & Philosophy

MacAlister 5030

215-895-1353

peterama@drexel.edu

Degree Requirements

As an alternative to PHIL 421 [WI], PHIL 431 [WI], and PHIL 461 [WI], students may select PHIL T480 *Special Topics*, PHIL 481 [WI] *Philosophical School or Movement*, or PHIL 485 [WI] *Major Philosopher* class with program approval.

College of Arts and Sciences Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 105	Critical Reasoning	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two Arts & Humanities Electives		6.0
Two International Studies Electives		6.0
Two Math Electives		6.0
Two Natural Science Electives		6.0
Three Social and Behavioral Sciences Electives		9.0
Two Studies in Diversity Electives		6.0
Language Requirement*		8.0

Major Requirements - All Concentrations

COM 230	Techniques of Speaking	3.0
LING 101	Introduction to Linguistics	3.0
PHIL 101	Introduction to Western Philosophy	3.0
PHIL 211	Metaphysics: Philosophy of Reality	3.0
PHIL 212	Ancient Philosophy	3.0
PHIL 214	Modern Philosophy	3.0
PHIL 215	Contemporary Philosophy	3.0
PHIL 221	Epistemology: Philosophy of Knowledge	3.0
PHIL 251	Ethics	3.0
PHIL 421 [WI]	Seminar in Ancient Philosophy	3.0
or PHIL 481	Seminar in a Philosophical School	
PHIL 431 [WI]	Seminar in Modern Philosophy	3.0

or PHIL 485	Seminar in a Major Philosopher	
PHIL 461 [WI]	Seminar in Contemporary Philosophy	3.0
or PHIL 481	Seminar in a Philosophical School	
WRIT 211	Advanced Composition	3.0
Applied Ethics Elective		
Select one of the following:		3.0
PHIL 301	Business Ethics	
PHIL 305	Ethics and the Media	
PHIL 311	Ethics and Information Technology	
PHIL 315	Engineering Ethics	
PHIL 317	Ethics and Design Professions	
PHIL 321	Biomedical Ethics	
PHIL 323	Organizational Ethics	
PHIL 325	Ethics in Sports Management	
PHIL 330	Criminal Justice Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
Thesis or Non-Thesis Option		9.0
Thesis Option:		
PHIL 497 [WI]	Senior Essay I: Research & Thesis Development	
PHIL 498 [WI]	Senior Essay II: Argument Construction	
PHIL 499 [WI]	Senior Essay III: Defense	
Non-Thesis Option:		
PHIL 481 [WI]	Seminar in a Philosophical School	
PHIL 485 [WI]	Seminar in a Major Philosopher	
Select one of the following:		
PHIL 341	Environmental Philosophy	
PHIL 351	Philosophy of Technology	
PHIL 355	Philosophy of Medicine	
PHIL 361	Philosophy of Science	
PHIL 381 [WI]	Philosophy in Literature	
PHIL 385	Philosophy of Law	
PHIL 391	Philosophy of Religion	
Electives		
Free Electives		45.0
Concentration Option		21.0
General Philosophy Concentration:		
PHIL 111	Symbolic Logic I	
PHIL 231	Aesthetics: Philosophy of Art	
or PHIL 218 Philosophy of Mathematics		
PHIL 481 [WI]	Seminar in a Philosophical School	
PHIL 485 [WI]	Seminar in a Major Philosopher	
Select one of the following courses:		
PHIL 121	Symbolic Logic II	
PHIL 301	Business Ethics	
PHIL 305	Ethics and the Media	
PHIL 311	Ethics and Information Technology	
PHIL 315	Engineering Ethics	
PHIL 317	Ethics and Design Professions	
PHIL 321	Biomedical Ethics	
PHIL 323	Organizational Ethics	
PHIL 325	Ethics in Sports Management	
PHIL 330	Criminal Justice Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
Select two of the following courses:		
PHIL 341	Environmental Philosophy	
PHIL 351	Philosophy of Technology	
PHIL 355	Philosophy of Medicine	
PHIL 361	Philosophy of Science	
PHIL 381 [WI]	Philosophy in Literature	
PHIL 385	Philosophy of Law	

PHIL 391	Philosophy of Religion	
Philosophy & Law Concentration:		
PHIL 111	Symbolic Logic I	
PHIL 121	Symbolic Logic II	
PHIL 241	Social & Political Philosophy	
PHIL 385	Philosophy of Law	
PHIL 391	Philosophy of Religion	
PHIL 481 [WI]	Seminar in a Philosophical School	
or PHIL 485 Seminar in a Major Philosopher		
Select one of the following courses:		
PHIL 301	Business Ethics	
PHIL 305	Ethics and the Media	
PHIL 311	Ethics and Information Technology	
PHIL 315	Engineering Ethics	
PHIL 317	Ethics and Design Professions	
PHIL 321	Biomedical Ethics	
PHIL 323	Organizational Ethics	
PHIL 325	Ethics in Sports Management	
PHIL 330	Criminal Justice Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
Ethical Theory & Practice Concentration:		
PHIL 102	Introduction to Eastern Philosophy	
PHIL 231	Aesthetics: Philosophy of Art	
or PHIL 241 Social & Political Philosophy		
PHIL 385	Philosophy of Law	
PHIL 391	Philosophy of Religion	
PHIL 481 [WI]	Seminar in a Philosophical School	
PHIL 485 [WI]	Seminar in a Major Philosopher	
Select one of the following courses:		
PHIL 301	Business Ethics	
PHIL 305	Ethics and the Media	
PHIL 311	Ethics and Information Technology	
PHIL 315	Engineering Ethics	
PHIL 317	Ethics and Design Professions	
PHIL 321	Biomedical Ethics	
PHIL 323	Organizational Ethics	
PHIL 325	Ethics in Sports Management	
PHIL 330	Criminal Justice Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
Philosophy, Technology & Science Concentration:		
PHIL 111	Symbolic Logic I	
PHIL 121	Symbolic Logic II	
PHIL 218	Philosophy of Mathematics	
or PHIL 231 Aesthetics: Philosophy of Art		
PHIL 351	Philosophy of Technology	
PHIL 361	Philosophy of Science	
PHIL 481 [WI]	Seminar in a Philosophical School	
PHIL 485 [WI]	Seminar in a Major Philosopher	

Total Credits**180.0**

* Students are required to take a minimum of two consecutive courses in a foreign language and must complete at least through the 103 level. Reaching at least the 201 level is recommended for students considering graduate school in Philosophy.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are

advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

NOTE: The plan of study below is one way to complete the General Concentration in Philosophy. Students should consult with their academic advisor in choosing the concentration that best suits their interests, goals, and career plans.

Four Year, No Co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
PHIL 101	3.0 ENGL 102 or 112	3.0 PHIL 251	3.0	
PHIL 105	3.0 PHIL 111	3.0 Diversity elective	3.0	
UNIV H101	1.0 Math elective	3.0 Natural Science elective	3.0	
Language elective	4.0 Language elective	4.0 Social Science elective	3.0	
Math elective	3.0 Social Science elective	3.0		
	17	17	15	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 212 or 211	3.0 LING 101	3.0 COM 230	3.0 VACATION	
Arts & Humanities elective	3.0 PHIL 214 or 221	3.0 PHIL 121	3.0	
Diversity elective	3.0 PHIL 481	3.0 PHIL 215	3.0	
Free elective	3.0 Arts & Humanities elective	3.0 PHIL 485	3.0	
Natural Science elective	3.0 Free elective	3.0 Social Science elective	3.0	
	15	15	15	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 221 or 214	3.0 PHIL 221 or 214	3.0 International Studies elective	3.0 VACATION	
PHIL 231 or 218	3.0 PHIL 431 or 485	3.0 Applied Ethics elective	3.0	
PHIL 421 or 481	3.0 International Studies elective	3.0 Free electives	9.0	
UNIV H201	1.0 Free electives	6.0		
WRIT 211	3.0			
Free elective	3.0			
	16	15	15	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
PHIL 497 (Or Philosophy elective PHIL 341 - PHIL 395)	3.0 PHIL 498 or 485	3.0 PHIL 461 or 481	3.0	
Philosophy elective PHIL 341 - PHIL 391	3.0 Philosophy elective PHIL 341 - PHIL 391	3.0 PHIL 499 or 481	3.0	
Free electives	7.0 Free electives	9.0 Free electives	6.0	
	13	15	12	

Total Credits 180

* Students must complete two consecutive courses in a foreign language and must reach the 103 level.

Four Year, One Co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101**	1.0 VACATION	
PHIL 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PHIL 105	3.0 PHIL 111 or 102	3.0 PHIL 251	3.0	
UNIV H101	1.0 Math elective	3.0 Diversity elective	3.0	
Language elective	4.0 Language elective	4.0 Natural Science elective	3.0	
Math elective	3.0 Social Science elective	3.0 Social Science elective	3.0	
	17	17	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 212 or 211	3.0 LING 101	3.0 COM 230	3.0 PHIL 211 or 212	3.0
Arts & Humanities elective	3.0 PHIL 214 or 221	3.0 PHIL 121	3.0 PHIL 231 or 218	3.0
Diversity elective	3.0 PHIL 481	3.0 PHIL 215	3.0 PHIL 421 or 481	3.0
Free elective	3.0 Arts & Humanities elective	3.0 PHIL 485	3.0 UNIV H201	1.0

Natural Science elective	3.0 Free elective	3.0 Social Science elective	3.0 WRIT 211	3.0
			Free elective	3.0
15		15	15	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 221	3.0 International Studies elective	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHIL 431	3.0 Applied Ethics elective	3.0		
International Studies elective	3.0 Free electives	9.0		
Free electives	6.0			
15		15	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
PHIL 497 (Or Philosophy elective PHIL 341 - PHIL 395)	3.0 PHIL 498 (Or 485)	3.0 PHIL 461 (Or 481)	3.0
Philosophy elective PHIL 341 - PHIL 391	3.0 Philosophy elective PHIL 341 - PHIL 391	3.0 PHIL 499 (Or 481)	3.0
Free electives	6.0 Free electives	9.0 Free electives	6.0
12		15	12

Total Credits 180

* Students must complete two consecutive courses in a foreign language and must reach the 103 level.

** COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101. Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

Five year, 3 Co-ops

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101**	1.0 VACATION	
PHIL 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PHIL 105	3.0 PHIL 111 or 102	3.0 PHIL 251	3.0	
UNIV 101	1.0 Math elective	3.0 Diversity electie	3.0	
Language elective	4.0 Language elective	4.0 Natural Science elective	3.0	
Math elective	3.0 Social Science elective	3.0 Social Science elective	3.0	
17		17	16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 212	3.0 LING 101	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
Arts & Humanities elective	3.0 PHIL 214 or 221	3.0		
Diversity elective	3.0 PHIL 481	3.0		
Natural Science elective	3.0 Arts & Humanities elective	3.0		
Free elective	3.0 Free elective	3.0		
15		15	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 PHIL 211 or 212	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHIL 121	3.0 PHIL 231 or 218	3.0		
PHIL 215	3.0 PHIL 421 or 481	3.0		
PHIL 485	3.0 UNIV H201	1.0		
Social Science elective	3.0 WRIT 211	3.0		
		Free elective	3.0	
15		16	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 221 or 214	3.0 International Studies elective	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHIL 431 or 485	3.0 Applied Ethics	3.0		
International Studies elective	3.0 Free electives	9.0		
Free electives	6.0			
15		15	0	0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
PHIL 497 (Or Philosophy elective PHIL 341 - PHIL 395)	3.0 PHIL 498 (Or 485)	3.0 PHIL 461 (Or 481)	3.0
Philosophy elective (PHIL 341 - PHIL 391)	3.0 Philosophy elective PHIL 341 - PHIL 391	3.0 PHIL 499 (Or 481)	3.0
Free electives	6.0 Free electives	9.0 Free electives	6.0
12		15	12

Total Credits 180

Co-op/Career Opportunities

No major prepares students for success in as wide a variety of careers as philosophy. Because philosophical work helps students develop superior reasoning, communication, and analytical skills, a philosophy major can

be an ideal choice for pre-med or pre-law students. It is also particularly valuable as a preparation for graduate study in philosophy and fields related to it, such as critical media studies, public policy, education, and science, technology, and society (STS). The Drexel Philosophy major is an excellent preparation for success in any field of endeavor that values thoughtful reflection, logical thinking, and clear communication. Philosophy majors graduate into a wide range of successful careers in business, industry, law, government, education, and service organizations and agencies, as well as many fields of graduate study and research.

In just its first five years, the Drexel Philosophy BA program graduated students into careers including teaching, the law, public policy, and academic research.

Co-op Experiences

Philosophy students at Drexel are encouraged to seek out interesting co-op opportunities related to the skills and interests they are developing through their philosophical studies and potential career options they would like to explore. These can be as broad as the difference between an ethics-related co-op that has the student shadowing an ethicist working for a hospital's board of institutional review, to a student who is interested in aesthetics and politics working with the Philadelphia Mural Arts Program in liaison with community groups. Students in philosophy who are pre-law frequently pursue law-related co-ops and co-ops at public and private agencies and organizations that employ lawyers and law students. Students in philosophy who are thinking about careers in academia have the full gamut of writing, editing, and publishing co-ops available to them, as well as research-related co-ops they can develop by working with professors. While academically oriented co-ops and co-ops in the humanities generally pay less than those in the sciences, business, law, and engineering—if they pay at all—they are still enormously valuable as a way for students to develop a sense of what various careers might actually be like and how they work.

For detailed information on co-op and career opportunities, visit the Drexel Steinbright Career Development Center webpage. For further information about co-op and career prospects related to Philosophy, contact the Drexel Philosophy program director:

Dr. Peter Amato
 Director of Programs in Philosophy
 Department of English & Philosophy
 MacAlister 5030
 215-895-1353
 peterama@drexel.edu

Philosophy Faculty

Stacey Ake, PhD (*Pennsylvania State University*). Teaching Professor. Ethics, semiotics, existentialism

Peter Amato, PhD (*Fordham University*) Director, *Philosophy*. Teaching Professor. Ethics, Marxism, Continental philosophy.

Jacques N. Catudal, PhD (*Temple University*). Associate Professor. Ancient philosophy, epistemology, aesthetics.

Nathan Hanna, PhD (*Syracuse University*). Associate Professor. Ethics, philosophy of law, philosophy of punishment

Adam Knowles, PhD (*The New School for Social Research*). Associate Teaching Professor. Continental philosophy, phenomenology, Heidegger

Carol Mele, PhD (*University of Pennsylvania*). Associate Teaching Professor. Ethical Theory, social and political philosophy, Rawls.

Flavia Padovani, PhD (*University of Geneva*). Associate Professor. History and philosophy of science, epistemology, logic.

Marilyn Piety, PhD (*McGill University*). Professor. History of philosophy, philosophy of religion, Kierkegaard.

Andrew Smith, PhD (*SUNY, Stony Brook*). Associate Professor. Philosophy, social and political philosophy, American philosophy.

Philosophy, Politics and Economics

Major: Philosophy, Politics and Economics

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 190.0

Co-op Options: No Co-op (Four years); One Co-op (Four years); Three Co-op (Five years)

Classification of Instructional Programs (CIP) code: 45.1004

Standard Occupational Classification (SOC) code: 25-1065

About the Program

Drexel University's BA degree Philosophy, Politics & Economics, or PPE as it is often called, exemplifies Drexel's commitment to comprehensive education at the intersection of thought and practice. A joint endeavor of the School of Economics, the Department of Politics, and the Department of English & Philosophy, the BA in PPE provides a multidisciplinary foundation for professionals and researchers who want to address the complex, interconnected challenges of contemporary life. It prepares students for a wide variety of excellent careers that require thoughtful analysis and engaged leadership including, but not limited to, public service, government, international and domestic business, law, community organizing, publishing, journalism, education, academic research, and more.

PPE began in the early 20th century at Oxford University in the United Kingdom in an effort to ensure that scholars were ready to apply their learning in practical, governmental, and business contexts to become leaders and change agents. Historically, political science and economics descend from what had been called "political economy." PPE acknowledges what is often lost in the separation and specialization of these fields—the political wisdom that understands economic imperatives and the economic intelligence that recognizes the limits of political initiative. The philosophical dimension of PPE represents the vital reflective and critical aspects that are essential to bringing political and economic insights into conversation for understanding and leadership. PPE is devoted to the idea that great learning should inspire and empower students to have an impact on the world.

Students in the Drexel BA in PPE begin with the interdisciplinary class PPE 101 *Introduction to Philosophy, Politics and Economics*, which presents the field through a discussion of how the aims and methods of the three constitutive disciplines work together and discussion of the political, economic, and philosophical dimensions of specific topics and themes. The Philosophy classes in the major are mainly focused on issues in ethics, logic, philosophy of law, and social and political philosophy. The Politics classes cover a variety of subjects and constitute a solid foundation in political science covering topics that include comparative politics, history of political thought, qualitative or

quantitative research methods, theories of justice, American foreign policy, social protest movements in comparative perspective, and more. The Economics classes are designed to give the student a foundation for profound analysis and insight. These include microeconomics, macroeconomics, economic ideas, public finance, and electives chosen from courses which include Game Theory and Applications, Economics of Small Business, Labor Economics, Comparative Economic Systems, Resource and Environmental Economics, and more.

PPE majors also take electives in Sociology, choosing from courses like Race, Ethnicity and Social Inequality, Wealth and Power, Gender and Society, Development and Underdevelopment in the Global South, Environmental Justice, and more. In the interactive seminar capstone course PPE 450, students work with an instructor as they formulate, evaluate, and criticize public policy proposals, research, and/or theoretical perspectives on political and economic issues using the research tools, arguments, and methods drawn from the three fields. PPE majors at Drexel have access to the widest range of co-op positions related to public service, government, international and domestic business, law, community organizing, education, publishing, journalism, academic research, and many more areas.

Admission Requirements

The interdisciplinary Philosophy, Politics and Economics (PPE) program exemplifies Drexel's commitment to comprehensive education at the intersection of thought and practice. A joint endeavor of the School of Economics, the Department of Politics, and the Department of English and Philosophy, the BA in PPE provides a multidisciplinary foundation for professionals who will address the complex, interconnected challenges of contemporary life. It prepares students for careers that require careful analysis, clear foresight, and thoughtful leadership: government, politics, law, public policy, public service, and business. Our program starts from the idea that the economy is fundamentally political, politics are fundamentally economic, and both are shaped by centuries of philosophical inquiry. We build on a foundation of rigorous philosophical thought, political and economic theory, and applied research skills.

Degree Requirements

College of Arts and Sciences Requirements:

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development *	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 105	Critical Reasoning	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Two Studies in Diversity classes		6.0
Two International Studies classes		6.0
Two Natural Science classes		6.0
A Mathematics sequence of at least two classes in either Analysis or Calculus **		8.0
Two Social and Behavioral Science classes		6.0
Two Arts & Humanities classes ***		6.0
Two classes in one Foreign Language completing level 103 †		8.0
Free Electives		25.0
Major Requirements:		
PPE 101	Introduction to Philosophy, Politics and Economics	3.0

PHIL 101	Introduction to Western Philosophy	3.0
PSCI 110	American Government	4.0
or PSCI 140	Comparative Politics I	
or PSCI 150	International Politics	
PHIL 111	Symbolic Logic I	3.0
PSCI 120	History of Political Thought	4.0
One of these Political Science Methods classes:		4.0
PSCI 231	Qualitative and Mixed-Methods Research in Political Science	
PSCI 232	Quantitative Research Methods in Political Science	
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ECON 326 [WI]	Economic Ideas	4.0
PHIL 121	Symbolic Logic II	3.0
PHIL 241	Social & Political Philosophy	3.0
PHIL 251	Ethics	3.0
Two of these Political Science Area classes:		8.0
PSCI 210	American Political Development	
PSCI 229	Theories of Justice	
PSCI 250	American Foreign Policy	
PSCI 252	Global Governance	
PSCI 260 [WI]	Power in Protest: Social Movements in Comparative Perspective	
Two of these Sociology Elective classes:		8.0
SOC 210	Race, Ethnicity and Social Inequality	
SOC 220	Wealth and Power	
SOC 230	Gender and Society	
SOC 330	Development and Underdevelopment in the Global South	
SOC 346	Environmental Justice	
Three of these Economics / International Business Elective classes: ††		12.0
ECON 203 [WI]	Survey of Economic Policy	
Up to three ECON classes numbered 250 and higher		
INTB 334	International Trade	
INTB 336	International Money and Finance	
ECON 334	Public Finance	4.0
SOC 355 [WI]	Classical Social Theory	4.0
SOC 356 [WI]	Contemporary Social Theory	4.0
PHIL 385	Philosophy of Law	3.0
Any two Political Science 300 and/or 400-level classes		8.0
Any two Philosophy 400-level classes		6.0
PPE 450	Senior Seminar in Philosophy, Politics and Economics	4.0
Total Credits		190.0

- * Students not taking co-op, will take one extra credit of Free elective.
- ** For Analysis, take either MATH 101 and MATH 102, or MATH 172 and MATH 173 and any necessary prerequisites, For Calculus, take either MATH 116 and MATH 117 or MATH 121 and any necessary prerequisites.
- *** Recommended electives: HIST 222, HIST 315, or HIST 316.
- † The 103 level class requires 102 and 101 (all 4 credits each) unless one tests out of 101 or 102. A student who tests out of 102 must take 103 and 201.
- †† Recommended electives: ECON 301 and ECON 321.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic

advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
PPE 101	3.0 ENGL 102 or 112	3.0 PHIL 105	3.0	
UNIV H101	1.0 PSCI 120	4.0 Diversity Studies course	3.0	
Foreign Language course	4.0 Foreign Language course	4.0 Natural Science course	3.0	
Math Analysis or Calculus	4.0 Math Analysis or Calculus	4.0 Arts & Humanities elective	3.0	
	15	16	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 201	4.0 ECON 202	4.0 ECON 326	4.0 VACATION	
PHIL 101	3.0 PHIL 121	3.0 PHIL 241	3.0	
PHIL 111	3.0 PSCI 110	4.0 PSCI 231 or 232	4.0	
Natural Science course	3.0 Social & Behavioral Science course	3.0 Diversity Studies course	3.0	
Arts & Humanities elective	3.0 Free elective	3.0 Free elective	4.0	
	16	17	18	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
SOC 210	4.0 PHIL 251	3.0 ECON 334	4.0 VACATION	
UNIV H201	1.0 SOC 230	4.0 PSCI 210	4.0	
Social & Behavioral Science course	3.0 International Studies course	3.0 International Studies course	3.0	
Free electives	9.0 Free electives	6.0 Free electives	4.0	
	17	16	15	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
ECON 361	4.0 ECON 301	4.0 PPE 450	4.0	
PSCI 252	4.0 PHIL 385	3.0 ECON 250-level or higher elective	4.0	

PSCI 252	4.0 PHIL 385	3.0 ECON 250-level or higher elective	4.0
SOC 355	4.0 SOC 356	4.0 PHIL 400-level elective	3.0
PHIL 400-level elective	3.0 PSCI 300-level or higher elective	4.0 PSCI 300-level or higher elective	4.0
	15	15	15

Total Credits 190

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
PPE 101	3.0 ENGL 102 or 112	3.0 PHIL 105	3.0	
UNIV H101	1.0 PSCI 120	4.0 Diversity Studies course	3.0	
Foreign Language course	4.0 Foreign Language course	4.0 Natural Science course	3.0	
Math Analysis or Calculus	4.0 Math Analysis or Calculus	4.0 Arts & Humanities elective	3.0	
	15	16	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 201	4.0 ECON 202	4.0 COOP 101*	1.0 SOC 210	4.0
PHIL 101	3.0 PHIL 121	3.0 ECON 326	4.0 UNIV H201	1.0
PHIL 111	3.0 PSCI 110	4.0 PHIL 241	3.0 Social & Behavioral Science course	3.0
Natural Science course	3.0 Social & Behavioral Science course	3.0 PSCI 231 or 232	4.0 Free electives	9.0
Arts & Humanities elective	3.0 Free elective	3.0 Diversity Studies course	3.0	
		Free elective	3.0	
	16	17	18	17
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 251	3.0 ECON 334	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
SOC 230	4.0 PSCI 210	4.0		
International Studies course	3.0 International Studies course	3.0		
Free electives	6.0 Free electives	4.0		
	16	15	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
ECON 361	4.0 ECON 301	4.0 PPE 450	4.0	
PSCI 252	4.0 PHIL 385	3.0 ECON 250-level or higher elective	4.0	

SOC 355	4.0 SOC 356	4.0 PHIL 400-level elective	3.0
PHIL 400-level elective	3.0 PSCI 300- level or higher elective	4.0 PSCI 300- level or higher elective	4.0
	15	15	15

Total Credits 190

* Select students may be eligible to take COOP 001 in place of COOP 101.

5 year, 3 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101	3.0 CIVC 101	1.0 COOP 101*	1.0 VACATION	
PPE 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 PSCI 120	4.0 PHIL 105	3.0	
Foreign Language class	4.0 Foreign Language class	4.0 Diversity Studies course	3.0	
Math Analysis or Calculus	4.0 Math Analysis or Calculus	4.0 Natural Science course	3.0	
		Arts & Humanities elective	3.0	
	15	16	16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 201	4.0 ECON 202	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHIL 101	3.0 PHIL 121	3.0		
PHIL 111	3.0 PSCI 110	4.0		
Natural Science course	3.0 Social & Behavioral Science course	3.0		
Arts & Humanities elective	3.0 Free elective	3.0		
	16	17	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ECON 326	4.0 SOC 210	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHIL 241	3.0 UNIV H201	1.0		
PSCI 231 or 232	4.0 Social & Behavioral Science course	3.0		
Diversity Studies course	3.0 Free electives	9.0		
Free elective	3.0			
	17	17	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHIL 251	3.0 ECON 334	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
SOC 230	4.0 PSCI 210	4.0		

International Studies course	3.0 International Studies course	3.0
Free electives	6.0 Free electives	4.0
	16	15
		0
		0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
ECON 361	4.0 ECON 301	4.0 PPE 450	4.0
PSCI 252	4.0 PHIL 385	3.0 ECON 250-level or higher elective	4.0
SOC 355	4.0 SOC 356	4.0 PHIL 400-level elective	3.0
PHIL 400-level elective	3.0 PSCI 300- level or higher elective	4.0 PSCI 300- level or higher elective	4.0
	15	15	15

Total Credits 190

* Select students may be eligible to take COOP 001 in place of COOP 101.

Affiliated Faculty

Peter Amato, PhD (<https://drexel.edu/coas/faculty-research/faculty-directory/amato-peter/>) (*Fordham University*) Teaching Professor of Philosophy. Ethics, Marxism, Continental Philosophy

Debjeni Bhattacharyya, PhD (<https://drexel.edu/coas/faculty-research/faculty-directory/DebjeniBhattacharyya/>) (*Emory University*) Assistant Professor of History. South Asia, Environmental History, Global History

Sebastien Bradley, PhD (University of Michigan) Associate Professor of Economics. Public Economics, Real Estate. Applied Econometrics

Zoltán Búzás, PhD (<https://drexel.edu/coas/faculty-research/faculty-directory/Zoltan-Buzas/>) (*The Ohio State University*) Assistant Professor of Politics. International Norms, Human Rights, Race and Ethnicity in International Politics

Erin Graham, PhD (<https://drexel.edu/coas/faculty-research/faculty-directory/ErinGraham/>) (*The Ohio State University*) Associate Professor of Politics. International Organization, Institutional Design and Development, Climate Change

Nathan Hanna, PhD (<https://drexel.edu/coas/faculty-research/faculty-directory/HannaNathan/>) (*Syracuse University*) Associate Professor of Philosophy. Ethics, Philosophy of Law, Philosophy of Punishment

Amelia Hoover Green, PhD (<https://drexel.edu/coas/faculty-research/faculty-directory/hover-green-amelia/>) (*Yale University*) Associate Professor of Politics. Armed Conflict, Political Violence, Empirical Research Methods

Roger A. McCain, PhD (Louisiana State University) Professor of Economics. History of Economic Ideas, Welfare Economics, Game Theory

Carol Mele, PhD (University of Pennsylvania) Associate Teaching Professor of Philosophy. Ethical Theory, Social and Political Philosophy, Rawls

Joel E. Oestreich, PhD (Brown University) Professor of Politics and Global Studies. Human Rights, Economic Development, International Relations Theory

Maria Olivero, PhD (Duke University) Associate Professor of Economics. Open Economy Macroeconomics, Monetary Economics, Quantitative Methods

Flavia Padovani, PhD (University of Geneva) Associate Professor of Philosophy. History and Philosophy of Science, Epistemology, Logic.

Rachel Reynolds, PhD (University of Illinois at Chicago) Associate Professor of Communication. Language and Linguistics. Immigration, African Studies

Andrew Smith, PhD (SUNY, Stony Brook) Associate Professor of Philosophy. Environmental Philosophy, Social and Political Philosophy, American Philosophy

José A. Tapia, MBBCH, MPH, PhD (New School for Social Research) Associate Professor of Politics. Climate Change, Social Development, Economic Effects on Health

Physics

Major: Physics

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: Three Co-op (Five years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 40.0801

Standard Occupational Classification (SOC) code: 19-2012

About the Program

Drexel's undergraduate program provides a solid foundation in physics suitable for graduate study or to branch out into other scientific or technical disciplines. The physics program offers an innovative curriculum in a top-notch learning environment: small class sizes, personal input from faculty, and close interaction with researchers who are leaders in their fields. Students explore the span of universal phenomenon—from the farthest reaches of astrophysics and cosmology, to molecular biophysics and subatomic particle physics—providing a solid foundation for continued study and exploration. Most undergraduates actively participate in research projects, including co-authoring publications and presenting results at conferences.

Virtually every course in the physics major is designed to extend the students' ability to handle real-world problems solved by state-of-the-art techniques. An important feature of the program is the large number of electives, which allow a student to pursue topics of special interest. There are numerous elective courses in areas as diverse as biophysics and cosmology, nanoscience and particle physics. Students can also choose electives to meet teacher certification requirements.

The Laboratory for High-Performance Computational Physics is a venue for students to become proficient in numerical techniques, parallel processing, electronic communication, and the basic computer languages and software relevant to advanced studies and research in physics.

The Department of Physics (<http://www.drexel.edu/coas/academics/departments-centers/physics/>) conducts a broad array of outreach activities including the Kaczmarczik Lecture Series, public observing nights at the Lynch Observatory (<http://www.physics.drexel.edu/>)

observatory/), and demonstrations in grade school performed by the Drexel Chapter of the Society of Physics Students (<http://www.drexel.edu/coas/academics/departments-centers/physics/student-organizations/society-physics-students/>) (SPS) and the Women in Physics Society (<https://drexel.edu/coas/academics/departments-centers/physics/student-organizations/WiPS/>) (WiPS).

In addition to the physics major, the Department also offers (p. 4) a minor in physics as well as a minor in astrophysics and a minor in biophysics.

The Physics Department is dedicated to equity and inclusiveness, and strives to be a welcoming environment to students of all races, backgrounds, genders, and orientations.

Degree Requirements

Core Physics Requirements

PHYS 105	Computational Physics I	3.0
PHYS 113	Contemporary Physics I	5.0
PHYS 114	Contemporary Physics II	5.0
PHYS 115	Contemporary Physics III	5.0
PHYS 128	Introduction to Experimental Physics	3.0
PHYS 217	Thermodynamics	4.0
PHYS 311	Classical Mechanics I	4.0
PHYS 317	Statistical Mechanics	3.0
PHYS 321	Electromagnetic Fields I	4.0
PHYS 322	Electromagnetic Fields II	4.0
PHYS 326	Quantum Mechanics I	4.0
PHYS 327	Quantum Mechanics II	4.0
PHYS 328 [WI]	Advanced Laboratory	3.0
PHYS 491	Senior Research I	3.0
PHYS 492	Senior Research II	3.0
PHYS 493 [WI]	Senior Research III	3.0
PHYS 408	Physics Seminar (To be taken 3 times.)	3.0

Method Classes: Complete 12.0 credits from the following * **12.0**

MATH 322	Complex Variables	
MATH 323	Partial Differential Equations	
MATH 331	Abstract Algebra I	
MATH 401	Elements of Modern Analysis I	
PHYS 160	Introduction to Scientific Computing	
PHYS 226	Instrumentation for Scientists I	
PHYS 227	Instrumentation for Scientists II	
PHYS 232	Observational Astrophysics	
PHYS 305	Computational Physics II	
PHYS 324	Topics in Mathematical Physics	
PHYS 325	Computational Physics III	
PHYS 405	Advanced Computational Physics	
PHYS 440	Big Data Physics	

Subject Courses: Complete 15.0 credits from the following: ** **15.0**

HNRS 301	Colloquium II (Special Relativity)	
PHYS 231	Introductory Astrophysics	
PHYS 233	Introduction to Relativity	
PHYS 262	Introduction to Biophysics	
PHYS 330	Introduction to Nuclear Physics	
PHYS 312	Classical Mechanics II	
PHYS 428	Quantum Mechanics III	
PHYS 431	Galactic Astrophysics	
PHYS 432	Cosmology	
PHYS 452	Solid State Physics	
PHYS 453	Nanoscience	
PHYS 461	Biophysics	
PHYS 462	Computational Biophysics	

PHYS 476	Particle Physics	
Math and Technical Requirements		
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	3.0-4.0
or MATH 261	Linear Algebra	
MATH 210	Differential Equations	4.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
Sciences		
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103 OR Any Bio OR an ENGR class at 200 or higher		3.0-5.0
CS 171	Computer Programming I	3.0
or CS 143	Computer Programming Fundamentals	
General Education		
CIVC 101	Introduction to Civic Engagement	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers (For students pursuing graduate degree only.) <small>Students who are not required to take this course will take an additional credit of free elective.</small>	1.0
COOP 101	Career Management and Professional Development	1.0
Liberal electives		9.0
Technical elective ***		3.0
Business elective		4.0
Free electives		24.0
Total Credits		180.0-183.0

- * At least 6.0 credits must have a PHYS subject code.
- ** Courses at the 400 level and above will also be accepted.
- *** Technical electives can be any course in BIO, CHEM, ENVS, GEO, MATH, PHYS, or any course from the College of Engineering.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses

with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
MATH 121	4.0 CS 143	3.0 MATH 200	4.0	
PHYS 113	5.0 ENGL 102 or 112	3.0 PHYS 105	3.0	
PHYS 128	3.0 MATH 122	4.0 PHYS 115	5.0	
UNIV S101	1.0 PHYS 114	5.0		
	16	16	15	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 101	3.5 CHEM 102	4.5 PHYS 326	4.0 VACATION	
MATH 201 or 261	4.0 MATH 210	4.0 One of the following:	3.0-5.0	
MATH 291	4.0 PHYS 311	4.0 CHEM 103		
PHYS 217	4.0 Subject course*	3.0 Any Biology (BIO) course		
		Any ENGR course 200-level or higher		
		Method course**	3.0	
		Free elective	3.0	
	15.5	15.5	13-15	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHYS 317	3.0 PHYS 321	4.0 PHYS 322	4.0 VACATION	
PHYS 327	4.0 Subject courses*	6.0 PHYS 328	3.0	
Method course**	3.0 Technical elective	3.0 Method course**	3.0	
Free elective	3.0 Free elective	3.0 Liberal Studies elective	3.0	
Liberal Studies elective	3.0	Free elective	3.0	
	16	16	16	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
PHYS 408	1.0 PHYS 408	1.0 PHYS 408	1.0	
PHYS 491	3.0 PHYS 492	3.0 PHYS 493	3.0	
UNIV S201***	1.0 Subject course*	3.0 Method course**	3.0	
Subject Course	3.0 Free electives	6.0 Free electives	6.0	
Liberal Studies elective	3.0			

Business Elective	4.0		
	15	13	13

Total Credits 180-182

* Courses at the 400 level and above will also be accepted.

** At least 6.0 credits must have a PHYS subject code.

*** For students pursuing graduate study only; other students add an additional credit of Free elective.

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101*	1.0 VACATION	
MATH 121	4.0 CS 143	3.0 ENGL 103 or 113	3.0	
PHYS 113	5.0 ENGL 102 or 112	3.0 MATH 200	4.0	
PHYS 128	3.0 MATH 122	4.0 PHYS 105	3.0	
UNIV S101	1.0 PHYS 114	5.0 PHYS 115	5.0	
	16	16	16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 101	3.5 CHEM 102	4.5 PHYS 326	4.0 PHYS 317	3.0
MATH 201 or 261	3.0-4.0 MATH 210	4.0 One of the following:	3.0-5.0 PHYS 327	4.0
MATH 291	4.0 PHYS 311	4.0 CHEM 103	Method course***	3.0
PHYS 217	4.0 Subject course**	3.0 Any Biology (BIO) course	Free elective	3.0
		Any ENGR course 200-level or higher	Liberal studies elective	3.0
		Method course***	3.0	
		Free elective	3.0	
	14.5-15.5	15.5	13-15	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHYS 321	4.0 PHYS 322	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Two subject courses**	6.0 PHYS 328	3.0		
Technical elective	3.0 Method course***	3.0		
Free elective	3.0 Liberal Studies elective	3.0		
	Free elective	3.0		
	16	16	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
PHYS 408	1.0 PHYS 408	1.0 PHYS 408	1.0
PHYS 491	3.0 PHYS 492	3.0 PHYS 493	3.0
UNIV S201†	1.0 Subject course**	3.0 Method course***	3.0

Subject course**	3.0 Free electives	6.0 Free electives	6.0
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Liberal Studies elective	3.0		
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Business elective	4.0		
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	15	13	13
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Total Credits 180-183

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** Courses at the 400 level and above will also be accepted.

*** At least 6.0 credits must have PHYS subject code.

† For students pursuing graduate study only; other students add an additional credit of Free elective.

5 year, 3 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101*	1.0 VACATION	
MATH 121	4.0 CS 143	3.0 ENGL 103 or 113	3.0	
PHYS 113	5.0 ENGL 102 or 112	3.0 MATH 200	4.0	
PHYS 128	3.0 MATH 122	4.0 PHYS 105	3.0	
UNIV S101	1.0 PHYS 114	5.0 PHYS 115	5.0	
	16	16	16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CHEM 101	3.5 CHEM 102	4.5 COOP EXPERIENCE	COOP EXPERIENCE	
MATH 201 or 261	3.0-4.0 MATH 210	4.0		
MATH 291	4.0 PHYS 311	4.0		
PHYS 217	4.0 Subject course**	3.0		
	14.5-15.5	15.5	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHYS 326	4.0 PHYS 317	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
One of the following:	3.0-5.0 PHYS 327	4.0		
CHEM 103	Method course***	3.0		
Any Biology (BIO) course	Free elective	3.0		
Any ENGR course 200-level or higher	Liberal Studies elective	3.0		
Method course***	3.0			
Free elective	3.0			
	13-15	16	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PHYS 321	4.0 PHYS 322	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Two subject courses**	6.0 PHYS 328	3.0		
Technical elective	3.0 Method course***	3.0		
Free elective	3.0 Liberal Studies elective	3.0		
	Free elective	3.0		
	16	16	0	0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
PHYS 408	1.0 PHYS 408	1.0 PHYS 408	1.0
PHYS 491	3.0 PHYS 492	3.0 PHYS 493	3.0
UNIV S201†	1.0 Subject course**	3.0 Method course***	3.0
Subject course**	3.0 Free electives	6.0 Free electives	6.0
Liberal Studies elective	3.0		
Business elective	4.0		
	15	13	13

Total Credits 180-183

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** Courses at the 400 level and above will also be accepted.

*** At least 6.0 credits must have PHYS subject code.

† For students pursuing graduate study only; other students add an additional credit of free elective.

Co-op/Career Opportunities

Students who complete a degree in physics have many options. Some enter graduate school with the intention of obtaining a master's or a PhD. Others attend medical school. Engineering is yet another option, and graduates of an undergraduate physics program can enter this field with an unusually solid background in fundamental physical principles, mathematics, and computation. It is also possible for physics graduates to work in business and finance; for example, Wall Street employs many analysts trained in such "hard sciences" as physics.

Many Drexel physics graduates proceed directly into graduate schools, or medical or other professional programs. Physics graduates have attended some of the best graduate programs in the United States, including Columbia, Harvard, and CalTech. Other graduates have found jobs in engineering and business, and with such government agencies as the National Bureau of Standards.

Co-op employers for physics majors include:

- Lockheed Martin
- Princeton Plasma Physics
- Children's Hospital of Philadelphia
- Harvard University
- MIT

- University of Pennsylvania
- Academy of Natural Sciences
- Brandywine Photonics
- National Board of Medical Examiners
- Philadelphia Water Department
- C. & J. Nyheim Plasma Institute
- II-VI Optical Systems
- Comcast Corporation

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) for more detailed information on co-op and post-graduate opportunities.

Facilities

Astrophysics Facilities:

- The Numerical Astrophysics Facility emphasizes theoretical and numerical studies of stars, star formation, planetary systems, star clusters, galaxy distributions, cosmological modeling, gravitational lensing, and the early universe. The facility employs a high-performance Graphics Processing Unit (GPU) compute cluster, each node containing two 6-core, 2.7 GHz Intel Xeon CPUs and 96 Gbytes of RAM, accelerated by 4–6 Nvidia Fermi/Titan GPUs, and connected by QDR infiniband, affording computational speeds of up to 50 trillion floating point operations per second.
- The Joseph R. Lynch Observatory houses a 16-inch Meade Schmidt-Cassegrain telescope equipped with an SBIG CCD camera.
- Drexel is an institutional member of the Legacy Survey of Space and Time (LSST) that will be conducted with the Simonyi Survey Telescope at the Vera C. Rubin Observatory, currently under construction in Chile as a joint project of the National Science Foundation and Department of Energy. Faculty and students are developing LSST-related machine learning tools and analyzing simulated LSST data to prepare for "first light" in 2022.

Biophysics Facilities:

- Bio-manipulation and microscopy laboratories. Four optical tables and six research grade microscopes are configured to perform microscopic spectroscopy and manipulation on solutions and individual cells. A spatial light modulator allows spatial patterns to be encoded on samples and explored; all microscopes are temperature controlled with state of the art cameras, including a 2,000 frame per second high speed system. Each optical table is also equipped with high power lasers for photolysis or fluorescence spectroscopy.
- Wet lab for studies of proteins and biomimetic lipids, and protein purification and characterization. The laboratory has a variety of chromatographic equipment, large and small centrifuges, fume hood, a spectrophotometer and a spectrofluorimeter. In addition, the laboratory houses a small microfluidic fabrication facility.
- The Computational Biophysics facility also includes: (i) a Beowulf cluster with 46 dual Quad-core hyperthreaded Xeon CPU (736 cores) and 12Gb of RAM nodes plus a master with 1Tb of storage and 24Gb of RAM, (ii) a Beowulf cluster with 44 dual-core Xeon CPU (344 cores), (iii) a dual Quad-core hyperthreaded Xeon CPU workstation with 24Gb RAM and 3Tb disk with two Tesla C2050 GPU CUDA-accelerated graphics card, (iv) a dual Quad-core hyperthreaded Xeon CPU workstation with 8Gb RAM and 4Tb disk with an NVIDIA N280 GPU CUDA-accelerated graphics card, (v) a quad 8-core hyperthreaded Xeon CPU workstation with 128Gb RAM and 16Tb

total disk, (vi) a 72Tb file server with 12Gb RAM, (vii) a 96Tb quad 6-core file server with 64Gb RAM, (viii) and several Linux workstations connected through a gigabit network.

Condensed Matter Physics Research Facilities:

- The Energy Materials Research Laboratory includes a Variable Temperature UHV Scanning Probe Microscope for studies of 2D correlated electron materials and quantum systems.
- Ultrafast Structural Dynamics Laboratory includes a transient electron diffraction setup with sub-picosecond temporal resolution used in studies of quantum materials.
- Single crystal growth laboratory utilizes different techniques for growing high quality single crystals of strongly correlated materials including dichalcogenides.
- The Magnetic Material Laboratory conducts research on amorphous magnetic thin films and fiber optical sensors.
- The Surface Science Laboratory has several scanning probe microscopy setups to study surface structure interfaces at the atomic level.
- The Ultra-Low Temperature Laboratory has a cryogenic dilution refrigerator and microwave sources and detectors to study quantum phenomena in nano- and microscale devices, superconducting qubits, nanostructures, and quantum fluids and solids.
- The Mesoscale Materials Laboratory investigates light-matter interactions and the extent and effects of ordering of lattice, charge and spin degrees of freedom on electronic phases and functional properties in solids, with an emphasis on bulk and epitaxial film complex oxides. Facilities include instrumentation for pulsed laser deposition of epitaxial complex oxide films, atomic layer deposition, variable-temperature characterization of carrier transport (DC to 20 GHz), and a laser spectroscopy lab enabling high-resolution Raman scattering spectroscopy at temperatures to 1.5 K and under magnetic field to 7 T.
- Condensed Matter Physics group has active collaborations with DOE Argonne National Laboratory near Chicago (visiting faculty Dr. Valentyn Novosad) with numerous experimental capabilities available at the Materials Science Division and Center for Nanoscale Materials. Graduates students in experimental condensed matter physics have an opportunity to conduct part or all of their thesis research at Argonne as part of collaborative projects with the research groups there.
- Local high performance computing facility.
- The Experimental Condensed Matter group is actively utilizing local user facilities at Drexel (Core Research Facilities (<http://crf.coe.drexel.edu> (<http://crf.coe.drexel.edu/>)), University of Pennsylvania (Singh Center for Nanotechnology (<https://www.nano.upenn.edu> (<https://www.nano.upenn.edu/>)), and Temple University (Science and Education and Research Center (<https://cst.temple.edu/research/SERC>) (<https://cst.temple.edu/research/SERC/>)) to access top of the line instrumentation for nanoscale fabrication and characterization of materials.
- Faculty in Condensed Matter Physics thrust participate in several large-scale collaborations such as Energy Frontier Research Center (DOE EFRC--CCM), detector development for South Pole Telescope Collaboration and others.

Particle Physics Facilities:

- The Drexel Particle Physics Group researches fundamental neutrino properties with the DUNE long baseline experiment hosted by Fermilab and the PROSPECT short baseline reactor experiment, as well as the planned nEXO neutrinoless double beta decay experiment.
- We are also active in the IceCube neutrino telescope located at the geographic South Pole.
- The Bubble Chamber Laboratory develops superheated-liquid detectors for rare-interaction searches, including the PICO dark matter experiment located at SNOLAB in Canada.

Laboratory for High-Performance Computational Physics:

- In addition to the department computing cluster (15 Linux workstations), high-performance computing resources include a dual-processor server with two Xeon E5-2650 processors (16 cores), 128 GB of RAM, and two Xeon Phi P5110 co-processor cards (480 cores). Department researchers also have access to a cluster of 18 Dell PowerEdge C6145 servers (AMD Opteron 6378 Piledriver CPU's, 64 cores/server, 256 GB RAM/server) with a total of 1152 cores and 4.5TB RAM.

Physics Faculty

Eric Brewe, PhD (*Arizona State University*). Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Luis R. Cruz Cruz, PhD (*MIT*). Associate Professor. Computational studies of confinement effects on the folding of amyloidogenic proteins, spatial correlations of neurons in the brain, firing dynamics of neuronal networks, fluid flow through porous media.

N. John DiNardo, PhD (*University of Pennsylvania*). Professor. Physics education research, surface physics, condensed matter physics, materials science.

Michelle Dolinski, PhD (*University of California, Berkeley*) *Associate Dean of Graduate Education*. Associate Professor. Neutrino physics, rare nuclear decays, cryogenic detector technologies.

Frank A. Ferrone, PhD (*Princeton University*). Professor. Experimental and theoretical protein dynamics, kinetics of biological self-assembly, including sickle cell and Alzheimer's disease, sickle cell testing and diagnostic devices.

David M. Goldberg, PhD (*Princeton University*) *Associate Department Head for Undergraduate Studies*. Professor. Theoretical and computational cosmology, extragalactic astrophysics, gravitational lensing.

Goran Karapetrov, PhD (*Oregon State University*). Professor. Experimental solid state physics, scanning probe microscopy, nanoscale catalysis, mesoscopic superconductivity.

Rachael M. Kratzer, PhD (*Drexel University*). Associate Teaching Professor. Quasars, active galactic nuclei

Charles Lane, PhD (*California Institute of Technology*). Professor. Experimental tests of invariance principles and conservation laws, neutrino oscillations and properties.

Christina Love, PhD (*Temple University*). Associate Teaching Professor. Educational methods and technology, STEM education, science literacy and outreach, particle physics, astrophysics.

Stephen L. W. McMillan, PhD (*Harvard University*) *Department Head*. Professor. Stellar dynamics, star cluster formation, large-scale computations of stellar systems, high-performance special-purpose computers

Naoko Kurahashi Neilson, PhD (*Stanford University*). Associate Professor. Neutrino physics, high energy astro-particle physics.

Russell Neilson, PhD (*Stanford University*). Associate Professor. Dark matter, neutrino physics.

Gordon Richards, PhD (*University of Chicago*). Professor. Quasars, active galactic nuclei, supermassive black holes, galaxy evolution, sky surveys, infrared/X-ray/radio astronomy

Jonathan E. Spanier, PhD (*Columbia University*) *Department Head, Mechanical Engineering and Mechanics*. Professor. Light-matter interactions in electronic materials, including ferroelectric semiconductors, complex oxide thin film science; laser spectroscopy, including Raman scattering.

Somdev Tyagi, PhD (*Brigham Young University*). Professor. Nanobiophysics, Raman spectroscopy, magnetic materials.

Brigita Urbanc, PhD (*University of Ljubljana, Slovenia*) *Associate Department Head for Graduate Studies*. Professor. Computational and experimental biophysics of protein folding and assembly, relevant to Alzheimer's and Parkinson's disease; discrete molecular dynamics of coarse-grained protein and lipid models.

Jörn Venderbos, PhD (*Leiden University*). Assistant Professor. Theory of quantum materials: topological insulators, topological semimetals, materials prediction and design, strongly correlated electron materials, complex electronic ordering phenomena, unconventional superconductors

Michael Vogeley, PhD (*Harvard University*) *Associate Department Head for Graduate Studies*. Professor. Cosmology; galaxy formation and evolution; statistical analysis of large data sets; active galactic nuclei.

Emeritus Faculty

Shyamalendu Bose, PhD (*University of Maryland*). Professor Emeritus.

Leonard D. Cohen, PhD (*University of Pennsylvania*). Professor Emeritus.

Leonard X. Finegold, PhD (*University of London*). Professor Emeritus.

Robert Gilmore, PhD (*Massachusetts Institute of Technology*). Professor Emeritus.

Richard D. Haracz, PhD (*Wayne State University*). Professor Emeritus.

Frederick House, PhD (*University of Wisconsin*). Professor Emeritus.

Arthur P. Joblin, PhD (*Drexel University*). Professor Emeritus.

Donald C. Larson, PhD (*Harvard University*). Professor Emeritus.

Teck-Kah Lim, PhD (*University of Adelaide*). Professor Emeritus.

Arthur E. Lord, PhD (*Columbia University*). Professor Emeritus.

James McCray, PhD (*California Institute of Technology*). Professor Emeritus.

Richard I Steinberg, PhD (*Yale University*). Professor Emeritus.

T. S. Venkataraman, PhD (*Worcester Polytechnic Institute*). Professor Emeritus.

Jian-Min Yuan, PhD (*University of Chicago*). Professor Emeritus.

Political Science

Major: Political Science

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years)

Classification of Instructional Programs (CIP) code: 45.1001

Standard Occupational Classification (SOC) code: 19-3094

About the Program

The Political Science program in the Department of Politics (<http://www.drexel.edu/coas/academics/departments-centers/politics/>) helps students cultivate perspective; develop critical thinking, communication, and data analysis skills; and understand the economic, social, and political systems within which we live and work. Our curriculum builds on the department's research focuses and strengths. These include public policy, environmental politics, international organizations, human rights, and law and society. This flexible program allows students to shape a curriculum that meets their needs whether they are preparing for public service, the business world, graduate school in political science, an MBA or other business program, or law school.

Degree Offered

The department offers a Bachelor of Arts (BA) in Political Science, which includes study of a foreign language and allows for options in the fulfillment of humanities, social science, math, and science requirements.

Degree Requirements

General Education Requirements

ENGL 101 or ENGL 111	Composition and Rhetoric I: Inquiry and Exploratory Research English Composition I	3.0
ENGL 102 or ENGL 112	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing English Composition II	3.0
ENGL 103 or ENGL 113	Composition and Rhetoric III: Themes and Genres English Composition III	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
Two Math courses		6.0-8.0
Two Science courses **		6.0-8.0

Foundation Requirements

Studies in Diversity electives	6.0
Three Consecutive Foreign Language courses (must complete level 201) ***	11.0-12.0
Humanities/Fine Arts electives	12.0
Social Science electives	12.0
International Studies electives	6.0

Core Political Science Requirements

PSCI 110	American Government	4.0
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PSCI 120	History of Political Thought	4.0
PSCI 140	Comparative Politics I	4.0
PSCI 150	International Politics	4.0
Political Science Research Methods Sequence		
PSCI 131 [WI]	Research Design for Political Science	4.0
PSCI 231	Qualitative and Mixed-Methods Research in Political Science	4.0
PSCI 232	Quantitative Research Methods in Political Science	4.0
Intermediate Courses		16.0
Select four of the following courses:		
PSCI 210	American Political Development	
PSCI 220	Constitutional Law I	
PSCI 223	Comparative Political Thought	
PSCI 229	Theories of Justice	
PSCI 240	Comparative Politics II	
PSCI 250	American Foreign Policy	
PSCI 252	Global Governance	
PSCI 260 [WI]	Power in Protest: Social Movements in Comparative Perspective	
PSCI 330	Public Opinion & Propaganda	
PSCI 363	Constitutional Law II	
Political Science Electives †		32.0
Free Electives		32.0
Total Credits		180.0-185.0

- * Select students may be eligible to take COOP 001 in place of COOP 101.
- ** Any Biology (BIO), Chemistry (CHEM), Geoscience (GEO), Nutrition (NFS), Physics (PHYS) or Environmental Science (ENVS) course.
- *** University requirement is two consecutive courses; the third language course, though listed here, is a departmental requirement.
- † Choose eight 200-level or above PSCI courses.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
PSCI 110	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PSCI 120, 140, or 150	4.0 PSCI 120, 140, or 150	4.0 PSCI 120, 140, or 150	4.0	
UNIV H101	1.0 PSCI 131	4.0 Foreign Language course	3.0	
Foreign Language course	4.0 Foreign Language course	4.0 Diversity Studies elective	3.0	
		Social Science elective	3.0	
	16	16	17	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PSCI 232	4.0 PSCI 231	4.0 Intermediate course	4.0 Political Science elective	4.0
Intermediate course	4.0 Intermediate course	4.0 Humanities/ Fine Arts elective	3.0 Free electives	8.0
Mathematics course	3.0 Mathematics course	3.0 Science elective	3.0	
Diversity Studies elective	3.0 Social Science elective	3.0 Political Science elective	4.0	
Free elective	3.0 Free elective	3.0 Free elective	3.0	
	17	17	17	12
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Intermediate course	4.0 Social Science elective	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
Political Science elective	4.0 Humanities/ Fine Arts elective	3.0		
Humanities/ Fine Arts elective	3.0 Political Science elective	4.0		
Social Science elective	3.0 Free elective	3.0		
	14	13	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
UNIV H201	1.0 International Area Studies elective	3.0 Political Science elective	4.0	
Social Science elective	3.0 Political Science electives	8.0 International Area Studies elective	3.0	
Humanities/ Fine Arts elective	3.0 Free elective	3.0 Free electives	6.0	

Political Science elective	4.0		
Free elective	3.0		
	14	14	13

Total Credits 180

5 year, 3 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
UNIV H101	1.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PSCI 110	4.0 PSCI 120, 140, or 150	4.0 PSCI 120, 140, or 150	4.0	
PSCI 120, 140, or 150	4.0 PSCI 131	4.0 Foreign Language course	3.0	
Foreign Language course	4.0 Foreign Language course	4.0 Diversity Studies elective	3.0	
		Social Science elective	3.0	
	16	16	17	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PSCI 232	4.0 PSCI 231	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Intermediate course	4.0 Intermediate course	4.0		
Mathematics course	3.0 Social Science course	3.0		
Diversity Studies elective	3.0 Mathematics course	3.0		
Free elective	3.0 Free elective	3.0		
	17	17	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Intermediate course	4.0 Political Science elective	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Political Science elective	4.0 Free electives	8.0		
Humanities/ Fine Arts elective	3.0			
Science elective	3.0			
Free elective	3.0			
	17	12	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Intermediate course	4.0 Social Science elective	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
Political Science elective	4.0 Humanities/ Fine Arts elective	3.0		

Humanities/ Fine Arts elective	3.0 Political Science elective	4.0	
Social Science elective	3.0 Free elective	3.0	
	14	13	0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
UNIV H201	1.0 International Area Studies elective	3.0 Political Science elective	4.0
Social Science elective	3.0 Political Science electives	8.0 International Area Studies elective	3.0
Humanities/ Fine Arts elective	3.0 Free elective	3.0 Free electives	6.0
Political Science elective	4.0		
Free elective	3.0		
	14	14	13

Total Credits 180

Co-Op/Career Opportunities

Political Science majors have a wide variety of co-op experiences from which to choose. Business and public utilities offer many lucrative possibilities, and local, state, and federal governments, museums and archives, and law firms present many additional interesting co-op placements. Pre-law students, for example, are especially eager to see the inside of a law office whether the co-op job they receive is clerical or a more challenging paralegal assignment. These practical experiences in the “real” world can reinforce the lessons of the classroom, sharpen skills, and establish important contacts. Sample co-op positions include:

- Law clerk/paralegal, Joe Davidson, Attorney-at-Law, Philadelphia
- Research analyst, Legislative Office for Research Liaison, Harrisburg, PA
- Legislative intern, Corporate Public Affairs Division, Philadelphia Electric Company
- Assistant lobbyist, Government Relations Office, Drexel University
- Education intern, Philadelphia Museum of Art
- Researcher, Philadelphia Chamber of Commerce
- Assistant, Office of the Governor, Harrisburg, PA

Career Opportunities

The flexible programs allow students to shape a curriculum that meets their needs whether they are preparing for the business world, graduate school in history or political science, the department’s master’s program in Science, Technology, and Society (<http://drexel.edu/coas/academics/departments-centers/science-technology-society/>), an MBA or other business program, or law school.

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) page for more detailed information on co-op and post-graduate opportunities.

Politics Faculty

Zoltán Búzás, PhD (*Ohio State University*). Assistant Professor. International relations theory, international security, race and politics, diplomatic history.

Rose Corrigan, PhD (*Rutgers University*) Director of the Center for Law, Policy, and Social Action. Associate Professor. Women, public law, American politics and policy.

Richardson Dilworth, PhD (*Johns Hopkins University*) Director, Center for Public Policy. Professor. American political development, urban politics, public policy.

Erin R. Graham, PhD (*Ohio State University*). Associate Professor. International institutions, international relations theory, global environmental politics.

Amelia Hoover Green, PhD (*Yale University*). Associate Professor. Dynamics of conflict-related violence; intra-armed group politics and socialization; statistics in human rights.

Christian Hunold, PhD (*University of Pittsburgh*). Professor. Environmental policy; comparative politics; urban wildlife; political theory.

Alison Kenner, PhD (*Rensselaer Polytechnic Institute*). Associate Professor. Science, technology, and health; environmental health problems; cities and place; feminist theory; medical anthropology; digital humanities

Joel E. Oestreich, PhD (*Brown University*) Director of the Global Studies major. Professor. International organizations, international finance, development, and human rights.

Gwen Ottinger, PhD (*University of California, Berkeley*). Associate Professor. Social studies of science and technology, environmental justice, environmental political theory, citizen science, science and engineering ethics.

William L. Rosenberg, PhD (*Temple University*). Professor. Behavioral politics, public opinion, and political communication.

Jack Santucci, PhD (*Georgetown University*). Assistant Teaching Professor. Electoral Systems, Political Parties, American Political Development.

Chloe Silverman, PhD (*University of Pennsylvania*) Director, Center for Science, Technology & Society. Associate Professor. Parent advocacy for autism, neurodiversity, and pollinator health research.

Jose Tapia, PhD (*New School for Social Research*). Associate Professor. Social development, world economy, climate change, macroeconomic effects on health

Emeritus Faculty

Julie Mostov, PhD (*New York University*). Professor Emeritus. Modern political thought, democratic theory, nationalism, gender studies, South Eastern Europe and the Balkans.

Psychology

Major: Psychology

Degree Awarded: Bachelor of Science (BS)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 42.2799

Standard Occupational Classification (SOC) code: 19-3031

About the Program

Drexel University's Department of Psychology is a tight-knit, active community of internationally known faculty and impressive student scholars. The department defines psychology as a science of mind and behavior. From the neurophysiological underpinnings of cognition to defining the impact of human behaviors within the judicial systems and policies. Psychology contributes the human behavioral aspects to other fields, including STEM, medicine, law, arts and social sciences. Our students work alongside professors on cutting-edge research and clinical projects in a range of areas, including health, forensic, neuropsychology, human development, experimental, cognitive and clinical psychology. Undergraduates also benefit from Drexel's cooperative education program, gaining hands-on, extensive work experience in areas of their interest.

Bachelors of Science in Psychology

Students in the Bachelor of Science in Psychology program learn how to ask and answer important questions regarding human behavior, cognition and emotion, and how to apply their findings to improve lives. Within the program, students have the option to concentrate in specific areas:

Mind, Brain and Behavior

The Mind, Brain and Behavior (MBB) area of focus allows psychology majors to concentrate their plan of study on how the mind and brain produce human behavior. Situating the mind within its biological substrate is one of the great scientific challenges of the 21st century. MBB covers introductory through advanced courses, exposing students to the formal study of the human mind and behavior and their underlying brain systems and structures

Human Development

This area allows students to focus on issues affecting human development across the lifespan. Using a biological, cognitive and socio-emotional perspective, students gain both breadth and depth in the understanding of current issues in child, adolescent and adult development.

Clinical and Health

For those interested in health and service careers, this area of focus includes coursework, experiential learning, and individualized mentorship, providing students with practical experience in the field.

Combined Bachelors/Masters Degree

There is an accelerated MS program entitled the Psychology BS/MS Scholars program to which undergraduates may apply. For more information, visit the Drexel University Department of Psychology (<http://www.drexel.edu/coas/academics/departments-centers/psychology/>) homepage.

Additional Information

To schedule an appointment students should contact the Psychology department's academic advisor:

Devon M. Thomas
 Academic Advisor, Undergraduate Program
 Phone: 215-895-0487
 Email: dmt356@drexel.edu
 Office: Stratton 103A

Degree Requirements

College Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management and Professional Development *	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
Select one of the following:		8.0
MATH 101	Introduction to Analysis I	
& MATH 102	and Introduction to Analysis II	
MATH 121	Calculus I	
& MATH 122	and Calculus II	
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Business elective		4.0
Fine Arts elective		3.0
Anthropology (ANTH) elective		3.0
English (ENGL) electives, 200-level or above		6.0
History (HIST) electives		8.0
Philosophy (PHIL) elective		3.0
Political Science (PSCI) elective		4.0
Sociology (SOC) elective		3.0-4.0
Select one of the following sequences:		8.0
Biology		
BIO 107	Cells, Genetics & Physiology	
BIO 108	Cells, Genetics and Physiology Laboratory	
BIO 109	Biological Diversity, Ecology & Evolution	
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	
Chemistry		
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
Physics		
PHYS 103	General Physics I	
PHYS 104	General Physics II	
Free electives		48.0

Departmental Requirements

General Psychology Requirements

PSY 111	Pre-Professional General Psychology I **	3.0
PSY 112	Pre-Professional General Psychology II **	3.0

100-Level Requirements

Select two of the following:		6.0
PSY 120	Developmental Psychology	
PSY 140	Approaches to Personality	
PSY 150	Introduction to Social Psychology	

Required Psychology Courses

PSY 212	Physiological Psychology	3.0
PSY 240 [WI]	Abnormal Psychology	3.0
PSY 264	Computer-Assisted Data Analysis I	3.0
PSY 265	Computer-Assisted Data Analysis II	3.0
PSY 280	Psychological Research	3.0
PSY 290	History and Systems of Psychology	3.0

PSY 325	Psychology of Learning	3.0
PSY 330	Cognitive Psychology	3.0
PSY 360 [WI]	Experimental Psychology	3.0
PSY 380	Psychological Testing and Assessment	3.0
Advanced Psychology Electives		
Any non-required PSY course at the 200-level or above.		12.0
Senior Seminar Sequence OR Psychology Electives ***		
PSY 490 [WI]	Psychology Senior Thesis I	4.0
PSY 491 [WI]	Psychology Senior Thesis II	4.0
PSY 492 [WI]	Psychology Senior Thesis III	4.0
Total Credits		180.0-181.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101. Select students may be eligible to take COOP 001 in place of COOP 101.

** Students with AP psychology, or transfer students with PSY 101 credit, should check the AP Student Placement Exam Crosswalk (http://www.drexel.edu/provost/policies/pdf/supporting/ap_crosswalk.pdf) or check with their advisor.

*** Students who do not wish to complete the research seminar sequence are required to complete 12.0 credits of additional advanced Psychology electives instead.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, No co-op

First Year				
Fall	Credits	Winter	Credits	Spring
ENGL 101 or 111	3.0	CIVC 101	1.0	ENGL 103 or 113
PSY 111	3.0	ENGL 102 or 112	3.0	PSY 240
MATH 121 or 101	4.0	MATH 102 or 122	4.0	UNIV H201
UNIV H101	1.0	PSY 112	3.0	PSY 120, 140, or 150
Select one of the following:	4.0	PSY 120, 140, or 150	3.0	Anthropology (ANTH) Elective

CHEM 111	Select one of the following:	4.0 Fine Arts Elective	3.0	
PHYS 103	BIO 109 & BIO 110			
BIO 107 & BIO 108	CHEM 112			
	PHYS 104			
	15	18	16	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PSY 264	3.0 COM 230	3.0 PSY 212	3.0 VACATION	
PSY 290	3.0 PSY 265	3.0 PSY 280	3.0	
English (ENGL) elective, 200-level or above	3.0 PSY 330	3.0 PSY 360	3.0	
Political Science (PSCI) Elective	4.0 English (ENGL) Elective, 200-level or above	3.0 Psychology Elective	3.0	
Sociology (SOC) Elective	3.0-4.0 Philosophy (PHIL) Elective	3.0 Business Elective	4.0	
	16-17	15	16	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PSY 325	3.0 Free Electives	7.0 Free Electives	12.0 VACATION	
PSY 380	3.0 History Elective	4.0 Psychology Elective	3.0	
History Elective	4.0 Psychology Elective	3.0		
Free Elective	3.0			
Psychology Elective	3.0			
	16	14	15	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
PSY 490**	4.0 PSY 491**	4.0 PSY 492**	4.0	
Free Electives	9.0 Free Electives	9.0 Free Electives	9.0	
	13	13	13	

Total Credits 180-181

* See degree requirements (p. 117).

** Students who do not wish to complete the research seminar sequence are instead required to complete 12.0 credits of additional advanced Psychology electives.

4 year, 1 co-op*

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
PSY 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
MATH 121 or 101	4.0 MATH 102 or 122	4.0 PSY 240	3.0	
UNIV H101	1.0 PSY 112	3.0 UNIV H201	1.0	

Select one of the following:	4.0 PSY 120, 140, or 150	3.0 PSY 120, 140, or 150	3.0	
CHEM 111	Select one of the following:	4.0 Anthropology (ANTH) Elective	3.0	
PHYS 103	BIO 109 & BIO 110	Fine Arts Elective	3.0	
BIO 107 & BIO 108	CHEM 112			
	PHYS 104			
	15	18	17	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PSY 264	3.0 COM 230	3.0 PSY 212	3.0 PSY 325	3.0
PSY 290	3.0 PSY 265	3.0 PSY 280	3.0 PSY 380	3.0
English (ENGL) elective, 200-level or above	3.0 PSY 330	3.0 PSY 360	3.0 Psychology Elective	3.0
Political Science (PSCI) elective	4.0 English (ENGL) elective, 200-level or above	3.0 Psychology Elective	3.0 History Elective	4.0
Sociology (SOC) elective	3.0-4.0 Philosophy (PHIL) elective	3.0 Business Elective	4.0 Free Elective	3.0
	16-17	15	16	16
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Psychology Elective**	3.0 Psychology Elective**	3.0
		History Elective	4.0 Free Electives†	12.0
		Free Electives	6.0	
	0	0	13	15
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
PSY 490***	4.0 PSY 491***	4.0 PSY 492***	4.0	
Free Electives	9.0 Free Electives	9.0 Free Electives	9.0	
	13	13	13	

Total Credits 180-181

* Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major. COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term.

** See degree requirements (p. 117).

*** Students who do not wish to complete the research seminar sequence are instead required to complete 12.0 credits of additional advanced Psychology electives.

† If student selects a 4.0 credit SOC elective, the Free Electives in this term will be 11.0 credits.

5 year, 3 Co-ops*

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	

PSY 111	3.0 ENGL 102 or 112	3.0 UNIV H201	1.0
MATH 121 or 101	4.0 MATH 102 or 122	4.0 ENGL 103 or 113	3.0
UNIV H101	1.0 PSY 112	3.0 PSY 240	3.0
Select one of the following:	4.0 PSY 120, 140, or 150	3.0 PSY 120, 140, or 150	3.0
CHEM 111	Select one of the following:	4.0 Anthropology (ANTH) elective	3.0
PHYS 103	BIO 109 & BIO 110	Fine Arts elective	3.0
BIO 107 & BIO 108	CHEM 112		
	PHYS 104		

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	PSY 264	3.0 COM 230	3.0
		PSY 290	3.0 PSY 265	3.0
		English (ENGL) elective, 200-level or above	3.0 PSY 330	3.0
		Political Science (PSCI) elective	4.0 English (ENGL) elective, 200-level or above	3.0
		Sociology (SOC) elective	3.0-4.0 Philosophy (PHIL) elective	3.0
	0	0	16-17	15

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	PSY 212	3.0 PSY 325	3.0
		PSY 280	3.0 PSY 380	3.0
		PSY 360	3.0 Psychology elective	3.0
		Psychology elective	3.0 History elective	4.0
		Business elective	4.0 Free elective	3.0
	0	0	16	16

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	Psychology elective	3.0 Psychology elective	3.0
		History elective	4.0 Free electives***	12.0
		Free electives	6.0	
	0	0	13	15

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
PSY 490†	4.0 PSY 491†	4.0 PSY 492†	4.0	
Free electives	9.0 Free electives	9.0 Free electives	9.0	
	13	13	13	

Total Credits 180-181

* Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term.

** See degree requirements (p. 117).

*** If a student selects a 4.0 credit SOC elective the Free electives in this term will be 11.0 credits.

† Students who do not wish to complete the research seminar sequence are instead required to complete 12.0 credits of additional advanced Psychology electives.

Co-op/Career Opportunities

Some graduates seek employment immediately after receiving their bachelor's degrees. They are well trained to work as research assistants in consulting firms and medical settings or to provide front-line services in mental health and educational settings. Other graduates go on to professional schools in law, business, medicine, and other health professions. Still others pursue graduate training in psychology and related fields. Students build skills and knowledge that provide a foundation for advanced study, create opportunities for future growth, and can be used to improve the quality of life for others.

Co-Op Experiences

Drexel University has long been known for its co-operative education programs, through which students mix periods of full-time, career-related employment with their studies. Co-op/internship employment is an option for psychology majors. Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) page for more detailed information on co-op and post-graduate opportunities.

Psychology Faculty

Meaghan Butryn, PhD (*Drexel University*). Associate Professor. Treatment and prevention of obesity and eating disorders, behavioral treatment, acceptance and commitment therapy.

Dorothy Charbonnier, PhD (*State University of New York at Stony Brook*). Associate Teaching Professor. The nature of the creative process and writing.

Evangelia Chrysikou, PhD (*Temple University*). Associate Professor. Cognitive neuroscience, neuropsychology, neural basis of language, memory, and executive functions, neurocognitive processes associated with problem solving and flexible thought

Brian Daly, PhD (*Loyola University, Chicago*) *Interim Department Head*. Associate Professor. Pediatric neuropsychology, intervention with at-risk youth.

David DeMatteo, PhD, JD (*MCP Hahnemann University; Villanova University School of Law*) *Director of the JD-PhD Program in Law and Psychology*. Professor. Psychopathy, forensic mental health assessment, drug policy; offender diversion.

Evan M. Forman, PhD (*University of Rochester*) *Director WELL Center*. Professor. Clinical psychology: mechanisms and measurement of psychotherapy outcome, cognitive-behavioral and acceptance based psychotherapies, the development and evaluation of acceptance-based interventions for health behavior change (for problems of obesity and

cardiac disease) as well as mood and anxiety disorders; neurocognition of eating.

Pamela Geller, PhD (*Kent State University*) Director, *Clinical Training*. Associate Professor. Stressful life events and physical and mental health outcomes, particularly in the area of women's reproductive health (e.g. pregnancy, pregnancy loss, infertility, medical education).

Maureen Gibney, PsyD (*Widener University*). Teaching Professor. Clinical psychopathology; neuropsychological evaluation and intervention with the elderly.

Naomi Goldstein, PhD (*University of Massachusetts*) Co-Director of the *JD-PhD Program*; *Stoneleigh Foundation Fellow*. Professor. Forensic psychology; juvenile justice; Miranda rights comprehension; false confessions; juvenile justice treatment outcome research; anger management intervention development; child and adolescent behavior problems.

Kirk Heilbrun, PhD (*University of Texas at Austin*). Professor. Forensic psychology, juvenile and adult criminality, violence risk assessment, forensic psychological assessment, treatment of mentally disordered offenders, academic-sports mentoring.

Adrienne Juarascio, PhD (*Drexel University*) Director, *Practicum Training*. Assistant Professor. Enhancing treatment outcomes for eating disorders and obesity; Acceptance-based behavioral treatments; Evaluating mechanisms of action in behavioral treatments

Marlin Killen, PhD (*Trident University International*). Teaching Professor. Authentic teaching methods in Psychology as well as student persistence behavior.

John Kounios, PhD (*University of Michigan*) Director, *PhD Program in Applied Cognitive and Brain Sciences*. Professor. Cognitive neuroscience, especially creativity, problem solving, and cognitive enhancement.

David Kutzik, PhD (*Temple University*). Professor. Social and cultural theory, political economy, gerontology, materialisms, activity theory, reflection theories, communities of practice and labor theories of culture.

Michael Lowe, PhD (*Boston College*). Professor. Prevention and treatment of eating disorders and obesity; effects of appetitive responsiveness and dietary restraint on eating regulation; psychobiology of obesity-proneness; empirical foundations of unconscious processes.

John Medaglia, PhD (*The Pennsylvania State University*). Assistant Professor. Applying models and methods developed in neuropsychology, cognitive neuroscience and graph theory to understand and treat brain dysfunction and enhance healthy functioning

Megan Meyer, PhD (*Temple University*). Assistant Teaching Professor. Influences on preferred body type; changes in body image, self-esteem, and self-efficacy in females as a function of strength training; Sensation and Perception

Danette Morrison, PhD (*University of Maryland - College Park*). Assistant Teaching Professor. Social and academic motivation within school context; Social relationships and identity development; Educational attainment of ethnic minorities

Arthur Nezu, PhD, DHLL, ABPP (*State University of New York at Stony Brook*). Distinguished University Professor of Psychology, Professor of Medicine, Professor of Community Health and Prevention. Behavioral medicine applications of problem-solving therapy and other cognitive-

behavior therapies (e.g., to decrease emotional and psychosocial risk factors; improve adherence), particularly with regard to patients with cardiovascular disease; assessment.

Christine Maguth Nezu, PhD (*Fairleigh Dickinson University*). Professor of Psychology, Professor of Medicine. Cognitive-behavioral assessment and treatment for mood, anxiety, personality disorders, and coping with chronic illness; mind/body studies; stress and coping; developmental disabilities and comorbid behavioral and emotional disorders; spirituality and psychology.

Nancy Raitano Lee, PhD (*University of Denver*) Director of *MS and BS/MS Programs*. Associate Professor. Neuropsychological and neuroanatomic correlates of intellectual and developmental disabilities; Verbal memory and language difficulties in Down syndrome and other genetic disorders; Comorbid autism spectrum disorder symptoms in youth with genetic disorders; Neuroanatomic correlates of individual differences in typical and atypical cognition

Diana Robins, PhD (*University of Connecticut*) Interim Director, *AJ Drexel Autism Institute*. Professor. Autism screening, early detection of autism

Ludo Scheffer, PhD (*University of Pennsylvania*) Director of *Undergraduate Studies*. Teaching Professor. Meta-cognitive development, writing, and computers; Language and literacy development in the early years in the context of family and schooling; Youth-at-risk; School violence and bullying; Program/intervention effectiveness

Maria Schultheis, PhD (*Drexel University*) Vice Provost of Research, *Office of Research and Innovation*. Professor. Clinical Neuropsychology and rehabilitation following neurological compromise (brain injury, stroke, multiple sclerosis), application of technologies in psychology. Specialization in the use of virtual reality (VR) simulation, and evaluation of the demands of driving after disability.

Jennifer Schwartz, PhD (*Idaho State University*) Director of *Psychological Services Center*. Teaching Professor. Adult psychopathology; evidence-based clinical practice; competency-based training; competency-based clinical supervision.

Julia Sluzenski, PhD (*Temple University*). Assistant Teaching Professor. Spatial and episodic memory, memory loss across the lifespan, developmental psychology.

Fengqing (Zoe) Zhang, PhD (*Northwestern University*). Associate Professor. Neuroimaging data analysis; Data mining; Bayesian inference; High dimensional data analysis

Eric A Zillmer, PsyD (*Florida Institute of Technology*) Carl R. Pacifico Professor of Neuropsychology and the Director of Athletics. Professor. Psychological assessment (neuropsychological, cognitive, personality), psychiatric and neurological disorders, behavioral medicine, neurogerontology, mathematical modeling, sports psychology, psychology of genocide.

Emeritus Faculty

Donald Bersoff, JD, PhD (*Yale University, New York University*). Professor Emeritus. Law and psychology; mental health law.

James Calkins, PhD. Professor Emeritus.

Douglas L. Chute, PhD (*University of Missouri*) *Louis and Bessie Stein Fellow*. Professor Emeritus. Neuropsychology and rehabilitation;

technological applications for the cognitively compromised and those with acquired brain injuries.

Myrna Shure, PhD (*Cornell University*). Professor Emeritus. Child development, problem-solving interventions with children, prevention programs.

Mary Spiers, PhD (*University of Alabama at Birmingham*). Professor Emeritus. Clinical neuropsychology and medical psychology; memory and practical applications for memory disorders in the elderly; cognitive health of women.

Sociology

Major: Sociology

Degree Awarded: Bachelor of Arts (BA)

Calendar Type: Quarter

Total Credit Hours: 180.0

Co-op Options: Three Co-op (Five years); One Co-op (Four years); No Co-op (Four years)

Classification of Instructional Programs (CIP) code: 45.1101

Standard Occupational Classification (SOC) code: 19-3041

About the Program

The sociology major at Drexel University has three components: theory, methods, and substantive coursework. It also features specialized coursework relating to social justice issues.

Sociology is the systematic study of societies. Society is the sum total of individual and group interactions and relations, from small groups and families to global networks and complex social organizations. The discipline covers a wide variety of fields of inquiry. Sociologists examine structural relations and are committed to developing a *critical understanding* of these relationships. Thus, the sociology major stresses theory, research methods, and quantitative and qualitative data analysis. These are then applied to a wide variety of substantive areas including, but not limited to, social inequality, political power, gender, sexuality, class, race, ethnicity, family, health, cities and neighborhoods, technology and environmental change, as well as social and political movements connected with social change. The stress on *critical understanding* means that sociology majors will strive not only to develop strong analytic abilities but an intellectual and ethical engagement reflected in sociologically informed thinking and action. The research and analytical skills developed in our program are sought after by a wide variety of professions.

Specialized social justice coursework is typically carried out in connection with community groups and organizations. It is a way the Sociology Program and Drexel University as a whole seek to become practically engaged with the wider community while promoting social justice.

For more information about the sociology major, visit the Department of Sociology (<http://www.drexel.edu/coas/academics/departments-centers/sociology/>) web page.

Degree Requirements

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0

or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Four Humanities/Fine Arts Courses		12.0
Two Mathematics Courses		6.0
Two Science Courses		6.0
Two Consecutive Foreign Language Courses		8.0
Social and Behavioral Sciences		12.0
SOC 101	Introduction to Sociology	
Social and Behavioral Sciences Electives (9.0 credits)		
International Studies		6.0
Two International Studies Courses		
Studies in Diversity		6.0
Two Studies in Diversity Courses		
Sociology Core Requirements		
Required Major Capstone		4.0
SOC 450	Capstone in Sociology	
Theory Sequence		8.0
SOC 355 [WI]	Classical Social Theory	
SOC 356 [WI]	Contemporary Social Theory	
Methods Sequence		8.0
SOC 241	Research Design: Qualitative Methods	
SOC 242	Research Design: Quantitative Methods	
Required Sociology Electives		40.0
Select at least 10 of the following: (At least four must be at the 300 or 400 level; and at least one must be at the 400-level.)		
SOC 115	Social Problems	
SOC 210	Race, Ethnicity and Social Inequality	
SOC 215	Sociology of Work	
SOC 220	Wealth and Power	
SOC 221	Sociology of the Family	
SOC 222	Sex and Society	
SOC 230	Gender and Society	
SOC 235	Sociology of Health and Illness	
SOC 238	Sociology of Health Professions	
SOC 240	Urban Sociology	
SOC 244	Sociology of the Environment	
SOC 268	Sociology of Sport	
SOC 271	Sociology of Aging	
SOC 276	Global Climate Change	
SOC 313	Sociology of Global Health	
SOC 315	HIV/AIDS and Africa	
SOC 318	Social Networks and Health	
SOC 320	Sociology of Deviance	
SOC 330	Development and Underdevelopment in the Global South	
SOC 340	Globalization	
SOC 341	Global Environmental Movements	
SOC 346	Environmental Justice	
SOC 349	Sociology of Disasters	
SOC 370	Practicum in Applied and Community Sociology	
SOC 405	Medicine, Technology and Science	
SOC 406	Housing and Homelessness	
SOC 410	Imagining Multiple Democracies	
SOC 420	Love, Rage & Debt: The Debt Society	
SOC 430	Politics of Life	
SOC 444	Social Movements	
SOC 490	Sociology Research Seminar I: Research Design	
SOC 491	Sociology Research Seminar II: Data Acquisition and Analysis	
SOC 492	Sociology Research Seminar III: Practicum in Sociological Research	

SOC T380 Special Topics in SOC	
Free Electives **	51.0
Total Credits	180.0

* At least one foreign language course must be at the 200-level. In addition, the department recommends students take 2 additional foreign language courses as free electives.

** Students not participating in co-op (NCOP) will not take COOP 101 and will need 52.0 free elective credits.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 year, no co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 ENGL 103 or 113	3.0 VACATION	
SOC 101	3.0 ENGL 102 or 112	3.0 Diversity Studies elective	3.0	
UNIV H101	1.0 Foreign Language course	4.0 Free electives	7.0	
Foreign Language course	4.0 Social and Behavioral Science elective	3.0		
Mathematics course	3.0 Sociology required elective	4.0		
	14	15	13	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
SOC 241	4.0 SOC 242	4.0 SOC 355	4.0 VACATION	
Mathematic: course	3.0 Humanities/ Fine Arts elective	3.0 Diversity Studies elective	3.0	
Sociology required electives	8.0 Science course*	3.0 Free electives	6.0	

	15	14	16	0
Sociology required elective		4.0 Social and Behavioral Sciences elective		3.0
Third Year	15	14	16	0
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
SOC 356	4.0 UNIV H201	1.0 Free electives	6.0 VACATION	
Free electives	6.0 Free electives	6.0 Humanities/ Fine Arts elective	3.0	
Social and Behavioral Sciences elective	3.0 Sociology required elective	4.0 International Studies elective	3.0	
Sociology required elective (300-level)	4.0 Sociology required elective (300-level)	4.0 Sociology required elective (300-level)	4.0	
	17	15	16	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits	
Free electives	6.0 Free electives	6.0 SOC 450	4.0	
Humanities/ Fine Arts elective	3.0 Humanities/ Fine Arts elective	3.0 Free elective	3.0	
Science course*	3.0 Sociology required elective (400-level)	4.0 Humanities/ Fine Arts electives	6.0	
Sociology required elective	4.0	Internationa Studies elective	3.0	
	16	13	16	
Total Credits 180				

* See degree requirements (p. 121).

4 year, 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101*	1.0 VACATION	
SOC 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Foreign Language course	4.0 Diversity Studies elective	3.0	
Mathematic: course	3.0 Social and Behavioral Science elective	3.0 Free electives	6.0	
Foreign Language course	4.0 Sociology required elective	4.0		
	14	15	13	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
SOC 341	4.0 SOC 242	4.0 SOC 355	4.0 SOC 356	4.0
Mathematic: course	3.0 Humanities/ Fine Arts elective	3.0 Free electives	6.0 Free electives	6.0

Sociology required electives	8.0 Science course**	3.0 Diversity Studies elective	3.0 Social and Behavioral Sciences elective	3.0
	Sociology required elective	4.0 Social and Behavioral Sciences elective	3.0 Sociology required elective (300-level)	4.0
				17
				15
				14
				16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
UNIV H201	1.0 Free electives	6.0 COOP EXPERIENCE	COOP EXPERIENCE	
Free electives	6.0 Humanities/ Fine Arts elective	3.0		
Sociology required elective	4.0 International Studies elective	3.0		
Sociology required elective (300-level)	4.0 Sociology required elective (300-level)	4.0		
				0
				15
				16
				0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
Free electives	6.0 Free electives	6.0 SOC 450	4.0
Humanities/ Fine Arts elective	3.0 Humanities/ Fine Arts elective	3.0 Free elective	3.0
Science course**	3.0 Sociology Required elective (400-level)	4.0 Humanities/ Fine Arts electives	6.0
Sociology required elective	4.0	International Studied elective	3.0
			16
			13
			16

Total Credits 180

* Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** See degree requirements (p. 121).

5 year, 3 co-ops

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101*	1.0 VACATION	
SOC 101	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Foreign Language course	4.0 Free electives	6.0	
Mathematics course	3.0 Social and Behavioral Science elective	3.0 Diversity Studies elective	3.0	
Foreign Language course	4.0 Sociology required elective	4.0		
				0
				14
				15
				13

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
SOC 241	4.0 SOC 242	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Mathematic course	3.0 Humanities/ Fine Arts elective	3.0		
Sociology required electives	8.0 Science course**	3.0		
	Sociology required elective	4.0		
				0
				15
				14
				0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
SOC 355	4.0 SOC 356	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
Diversity Studies elective	3.0 Free electives	6.0		
Free electives	6.0 Social and Behavioral Sciences elective	3.0		
Social and Behavioral Sciences elective	3.0 Sociology required elective (300-level)	4.0		
				0
				16
				17
				0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
UNIV H201	1.0 Free electives	6.0 COOP EXPERIENCE	COOP EXPERIENCE	
Free electives	6.0 Humanities/ Fine Arts elective	3.0		
Sociology required elective	4.0 International Studies elective	3.0		
Sociology required elective (300-level)	4.0 Sociology required elective (300-level)	4.0		
				0
				15
				16
				0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
Free electives	6.0 Free electives	6.0 SOC 450	4.0
Humanites/ Fine Arts elective	3.0 Humanities/ Fine Arts elective	3.0 Free elective	3.0
Science course**	3.0 Sociology required elective (400-level)	4.0 Humanities/ Fine Arts electives	6.0
Sociology required elective	4.0	International Studies elective	3.0
			16
			13
			16

Total Credits 180

* Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 101 in place of COOP 101.

** See degree requirements (p. 121).

Co-op/Career Opportunities

An undergraduate degree in sociology is excellent preparation for law school, medical school, or for graduate work in such fields as sociology, history, gerontology, or political science.

Outside of academics, sociologists work in a wide variety of settings. Some serve as statistical analysts for market research firms, health care agencies, and government. Others are involved in urban planning, survey research, public relations, agency management, trend analysis, or criminal justice. There are sociologists of religion working for national church organizations, and sociologists specializing in gerontology who are engaged in research or administration for agencies concerned with the aged.

Co-op Experiences

Some recent co-op positions held by sociology students include the following:

- Human Resources Assistant, National Board of Medical Examiners (<http://www.nbme.org/>)
- Giving Corps Intern, Cradles to Crayons (<https://www.cradlestocrayons.org/>)
- Organizing Internship, Food & Water Watch (<https://www.foodandwaterwatch.org/>)
- Marketing Intern, Stradley Ronon Stevens & Young LLP (<http://www.stradley.com/>)
- Small Business Outreach Co-op, The Welcoming Center for New Pennsylvanians (<http://welcomingcenter.org/>)

Visit the Drexel Steinbright Career Development Center (<http://www.drexel.edu/scdc/>) page for more detailed information on co-op and post-graduate opportunities.

Sociology Faculty

Susan E. Bell, PhD (*Brandeis University*) *Department Head, Sociology*. Professor. Sociology of health and illness; global and transnational health; reproductive health, rights, and justice; experience of illness; narrative; visual sociology

Mary Ebeling, PhD (*University of Surrey*). Associate Professor. Science and technology studies; emerging technologies and biocapital; media and democratic cultures; radical social movements; sociology of markets; political sociology; and ethnographic methodologies.

Sarah Hosman, PhD (*Boston University*). Assistant Teaching Professor. Urban sociology, Gentrification, Cultural sociology, Economic Sociology, Narratives of place, Ethnography

Sonali Jain, PhD (*Boston University*). Associate Teaching Professor. South Asia, Race, Ethnicity, Gender, Transnationalism.

Kelly Joyce, PhD (*Boston College*) *Director, Master's Program in Science Technology & Society*. Professor. Science, medicine and technology;

aging and technology; qualitative social science methods; healthcare and medicine.

Emmanuel F. Koku, PhD (*University of Toronto*). Associate Professor. Social network analysis; qualitative/quantitative research; medical sociology; social epidemiology; social demography; sociology of development; communication and information technology; community and urban sociology.

Nada Matta, PhD (*New York University*). Assistant Professor. Political Economy, Social Movements, Middle East Studies, Gender Studies, Revolutions, Inequality.

Elizabeth McGhee Hassrick, PhD (*University of Chicago*). Assistant Professor. . Sociology of Education; Educational Inequality; Social Networks; Organizational Sociology; Sociology of Disability

Amanda McMillan Lequieu, PhD (*University of Wisconsin-Madison*). Assistant Professor. Environmental sociology, political economy, place and space, rural-urban interface, qualitative and historical methodologies.

Jason Orne, PhD (*University of Wisconsin-Madison*). Assistant Professor. Urban Sociology, Sexualities Studies, Qualitative Methodologies, Sociology of Race and Ethnicity, Social Psychology, Social Theory

Diane Sicotte, PhD (*Arizona State University*). Associate Professor. Sociology of environmental justice; inequalities in the citing of environmental hazards; community-based research in neighborhoods dealing with industrial hazards; sociology of the environment; urban sociology; social inequalities.

Kelly Underman, PhD (*University of Illinois at Chicago*). Assistant Professor. Medical education, the social construction of bodies and emotions and the politics of scientific knowledge production.

Emeritus Faculty

Robert J. Brulle, PhD (*George Washington University*). Professor Emeritus. Environmental policy and politics, critical theory, marine risk, social movements, environmental sociology.

Arthur Shostak, PhD (*Princeton University*). Professor Emeritus. Futurism, race and ethnic relations, social implications of 20th century technology, urban sociology.

General Humanities and Social Sciences (Undeclared)

About the Program

The GHSS (General Humanities and Social Sciences) Undeclared program allows students to explore academic options within the College of Arts and Sciences before declaring a major and while staying on track during their first year.

GHSS is not a major; however, all the courses in year 1 are required in some form in the various majors in the Humanities/Social Science side of the College of Arts and Sciences. This selection of courses will “follow” the student to an eventual chosen major in the college. With the help of an advisor, students can select courses based on their interests and goals. No later than the end of spring term in the first academic year, students are required to select an appropriate major which will lead to a bachelor’s degree.

Students will complete co-ops in accordance with the requirements for the major that they choose.

Admission Requirements

There are no specific requirements for admission into the General Humanities and Social Sciences (GHSS) option beyond those that are required for any student applying to majors in Humanities or Social Sciences at Drexel University.

Program Requirements

Students are required to choose a major by the end of the first year. All students will work closely with their advisor to identify where their interests lie so that they can declare their major as soon as possible. Courses taken during the first year will all count towards the degree requirements for majors in the Humanities and the Social Sciences.

Program Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV H101	The Drexel Experience	1.0

College Requirements

SOC 101	Introduction to Sociology	3.0
COM 111	Principles of Communication	3.0
PSY 101	General Psychology I	3.0
PHIL 105	Critical Reasoning	3.0
CJS 101	Introduction to Criminal Justice	3.0
COM 150	Mass Media and Society	3.0
GST 101	Becoming Global: Language and Cultural Context	3.0
PSCI 100	Introduction to Political Science	4.0

MATH or Language Requirement *		8.0
Electives		70.0
Major Requirements **		66.0
Total Credits		180.0

* Two MATH or language courses according to placement

** Declared majors include ENGL, PHIL, HIST, PSCI, SOC, COM, GST, PPE, CJS, PSY

Sample Plan of Study

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 111	3.0 CIVC 101	1.0 CJS 101	3.0 VACATION	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 COM 150	3.0	
MATH or Language	4.0 MATH or Language	4.0 ENGL 103 or 113	3.0	
SOC 101	3.0 PHIL 105	3.0 GST 101	3.0	
UNIV H101	1.0 PSY 101	3.0 PSCI 100	4.0	
	14	14	16	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Declared	12.0 Declared	12.0 Declared	9.0 VACATION	
Major Credits **	Major Credits **	Major Credits **		
UG	4.0 UG	3.0 UG	6.0	
Elective Credits	Elective Credits	Elective Credits		
	16	15	15	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Declared	6.0 Declared	9.0 Declared	6.0 VACATION	
Major Credits **	Major Credits **	Major Credits **		
UG	9.0 UG	6.0 UG	9.0	
Elective Credits	Elective Credits	Elective Credits		
	15	15	15	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
Declared	6.0 Declared	3.0 Declared	3.0
Major Credits **	Major Credits **	Major Credits **	
UG	9.0 UG	12.0 UG	12.0
Elective Credits	Elective Credits	Elective Credits	
	15	15	15

Total Credits 180

* MATH or language courses according to placement

** Declared majors include ENGL, PHIL, HIST, PSCI, SOC, COM, GST, PPE, CJS, PSY

Biological Sciences BS/ Biological Sciences MS

Major: Biological Sciences

Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)

Calendar Type: Quarter

Total Credit Hours: 230.0

Co-op Options: Two Co-ops (Five years); One Co-op (Five years)

Classification of Instructional Programs (CIP) code: 26.0101

Standard Occupational Classification (SOC) code: 19-1029

About the Program

The Accelerated BS/MS in Biological Sciences is designed for academically qualified students who are looking to advance their learning in the discipline by earning both a bachelor's and graduate degree in 5 years. The BS/MS in Biological Sciences is a degree program with both thesis and non-thesis options available.

Requirements for the graduate portion of the program are the same as for the MS in Biological Sciences. The BS/MS program in Biological Sciences is a rigorous and challenging program that builds on a strong undergraduate foundation to allow students to engage in more extensive study of the discipline at a graduate level. Students applying to this program are often advanced in their plans of study, typically arriving with advanced placement credit when they matriculate.

Eligibility

Exceptional students with a cumulative GPA of at least 3.5 and who are enrolled in the four-year or five-year co-op option are eligible for the BS/

MS program. Students participating in co-op will need to be on the spring-summer cycle. Students formally apply to the program after they have completed 90.0 credits but before they have completed 120.0 credits. Students are strongly encouraged to begin planning for the program as early as their freshman year.

Application Process

Prior to applying to the program, students are advised to meet with the respective advisor(s) in the department. The application must be accompanied by a Plan of Study prepared in consultation with the undergraduate and graduate advisors in the department. A brief statement of purpose indicating the applicant's academic and professional interest in pursuing the BS/MS degree is required. Applicants are then formally reviewed by the Biology Graduate Committee.

Requirements

Students enrolled in the Accelerated BS/MS in Biological Sciences must complete 180.0 undergraduate quarter credits for the bachelor's degree and at least 45 graduate quarter credits for the master's degree. Courses may not be double-counted for both the BS and MS degree. All undergraduate and graduate course requirements must be satisfied in full, including producing a thesis (if the thesis-option master's program is elected) no later than the Spring Quarter of the final year. Students in the BS/MS program must maintain a cumulative GPA of 3.0 in their undergraduate and graduate coursework to remain in the program.

If you are interested in applying for the BS/MS, please contact: Biology Graduate Advisor Kate Pelusi at kp475@drexel.edu and submit your current plan of study, along with your statement of purpose communicating your interest in pursuing the BS/MS degree.

Admission Requirements

Exceptional students with a cumulative GPA of at least 3.5 and who are enrolled in the four-year or five-year co-op option are eligible for the BS/MS program. Students participating in co-op will need to be on the spring-summer cycle. Students formally apply to the program after they have completed 90.0 credits but before they have completed 120.0 credits. Students are strongly encouraged to begin planning for the program as early as their freshman year.

Degree Requirements

Requirements

Humanities and Social Sciences

CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COM 310 [WI]	Technical Communication	3.0
or COM 320	Science Writing	
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 251	Ethics	3.0
or PHIL 321	Biomedical Ethics	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Humanities and Social Science Electives		9.0
Science, Technology, Health and Human Affairs Elective		3.0

Mathematics and Statistics

Select one of the following sequences: 12.0

Intro to Analysis		
MATH 101 & MATH 102 & MATH 239	Introduction to Analysis I and Introduction to Analysis II and Mathematics for the Life Sciences	
Calculus		
MATH 121 & MATH 122 & MATH 123	Calculus I and Calculus II and Calculus III	
MATH 410	Scientific Data Analysis I	3.0
MATH 411	Scientific Data Analysis II	3.0

Physical Sciences

BIO 311	Biochemistry	4.0
or CHEM 243	Organic Chemistry III	
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103	General Chemistry III	5.0
CHEM 241	Organic Chemistry I	4.0
CHEM 242	Organic Chemistry II	4.0
PHYS 152	Introductory Physics I	4.0
PHYS 153	Introductory Physics II	4.0
PHYS 154	Introductory Physics III	4.0

Core Biology Courses

BIO 131	Cells and Biomolecules	4.0
BIO 134	Cells and Biomolecules Lab	1.0-2.0
or BIO 142	SEA-PHAGES I	
BIO 132	Genetics and Evolution	4.0
BIO 135	Genetics and Evolution Lab	1.0-2.0
or BIO 143	SEA-PHAGES II	
BIO 133	Physiology and Ecology	4.0
BIO 136	Anatomy and Ecology Lab	1.0-2.0
or BIO 144	SEA-PHAGES III	
BIO 207	Applications in Biology I	1.0
BIO 208	Applications in Biology II	1.0
BIO 209	Cell, Molecular & Developmental Biology I	4.0
BIO 211	Cell, Molecular & Developmental Biology II	4.0
BIO 219 [WI]	Techniques in Molecular Biology	3.0
BIO 224	Form, Function & Evolution of Vertebrates	4.0
BIO 225	Vertebrate Biology and Evolution Laboratory	2.0
BIO 471	Seminar in Biological Sciences	2.0
BIO 472	Seminar in Biological Sciences	2.0
BIO 473 [WI]	Seminar in Biological Sciences	2.0
ENVS 212	Evolution	4.0

Concentration Courses 28.0-30.0

Free electives 24.0

Graduate Courses

BIO 500	Biochemistry I	3.0
BIO 635	Advanced Genetics and Molecular Biology	3.0
BIO 632	Advanced Cell Biology	3.0
ENVS 506	Biostatistics	3.0
MS BIO Electives		33.0

Total Credits 230.0-235.0

Students select one of five concentration and fulfill the requirements, as outlined below.

1. The Cell/Molecular/Genetics/Biochemistry (CMGB) Concentration

This concentration provides exposure to several vital disciplines within Biology, and will prepare students for a diversity of careers in research, medicine, and industry. Students interested in tailoring their studies more

specifically may follow the suggested "focus areas" when selecting their two CMGB Concentration electives.

Cell/Molecular/Genetics/Biochemistry (CMGB) Concentration Requirements

BIO 244	Genetics I	3.0
or BIO 444	Human Genetics	
BIO 314	Pharmacology	3.0
or BIO 404	Structure and Function of Biomolecules	
or BIO 416	Biochemistry of Major Diseases	
BIO 318	Biology of Cancer	3.0
or BIO 430	Cell Biology of Disease	
BIO 410	Advanced Molecular Biology	3.0

Cell/Molecular/Genetics/Biochemistry (CMGB) Concentration Electives (See Lists Below)

Two Cell/Molecular/Genetics/Biochemistry (CMGB) Electives (see list below)	6.0
Organismal/Physiology Elective (see list below)	3.0
Ecology/Evolution/Genomics Elective (see list below)	3.0

Concentration Laboratory Courses

Two Laboratory Electives (see list below)	4.0
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Total Credits **28.0**

* Students interested in pursuing a focus area in Neurobiology, Pharmaceutics, Cell Biology, Biochemistry, Molecular Biology or Genetics should contact the academic advisor in the Biology Department for specific focus recommendations.

Cell/Molecular/Genetics/Biochemistry (CMGB) Electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 414	Behavioral Genetics	3.0
BIO 415	Proteins	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 447	Advanced Genetics and Molecular Biology	3.0
BIO 451	Genetic Reg Development	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0
BIO 465	Neurobiology of Disease	3.0
ENVS 326	Molecular Ecology	3.0

Organismal/Physiology Electives

BIO 201	Human Physiology I	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 323	Parasitology	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0

BIO 426	Immunology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
ENVS 254	Invertebrate Morphology and Physiology	3.0
ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0

Ecology/Evolution/Genomics Electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 470	Advanced Topics in Evolution	3.0

Laboratory Electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 394	Entomology Laboratory	2.0

2. The Organismal Biology/Physiology Concentration

This concentration combines courses in organismal biology and physiology with an opportunity to focus on human physiology. The concentration is designed to appeal to students interested in health and medicine, but also accommodates students seeking a wider breadth of knowledge in organismal diversity. Students can focus their electives in human physiology or can choose courses that study non-human organisms.

Organismal Biology/Physiology Concentration Requirements

BIO 201	Human Physiology I	4.0
or ENVS 254	Invertebrate Morphology and Physiology	
BIO 203	Human Physiology II	4.0
or BIO 256	Vertebrate Morphology and Physiology	

BIO 373	Developmental Biology	3.0
Select one of the following:		
BIO 412	Biology of Aging	3.0
or BIO 284	Biology of Stress	
or BIO 466	Endocrinology	
or BIO 468	Pathophysiology	
Organismal Biology/Physiology Concentration Concentration Electives (See List Below)		
Cell/Molecular/Genetics/Biochemistry (CMGB) Elective		3.0
Two Organismal/Physiology Electives		6.0
Ecology/Evolution/Genomics Elective		3.0
Concentration Laboratory Courses		
Two Laboratory Electives		4.0
Total Credits		30.0

* Students interesting in pursuing a focus area in Human Physiology or Organismal Biology should contact the academic advisor in the Biology Department for specific focus recommendations.

***Cell/Molecular/Genetics/Biochemistry (CMGB) electives**

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 410	Advanced Molecular Biology	3.0
BIO 414	Behavioral Genetics	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0
ENVS 326	Molecular Ecology	3.0

****Organismal/Physiology electives**

BIO 201	Human Physiology I	4.0
BIO 203	Human Physiology II	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 264	Ethnobotany	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 320	Microbial Pathogenesis	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 426	Immunology	3.0
BIO 435	Immunobiology of Disease	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
BIO 466	Endocrinology	4.0
BIO 468	Pathophysiology	4.0
ENVS 254	Invertebrate Morphology and Physiology	3.0

ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0

***** Ecology/Evolution/Genomics electives**

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

+Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 434 [WI]	Advanced Cell Biology Laboratory	2.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 394	Entomology Laboratory	2.0

3. The Ecology/Evolution/Genomics Concentration

This concentration focuses on ecological and evolutionary aspects of biology for biology majors who also have specific interests in ecology, evolution or genomics. This concentration is designed to maintain a breadth of knowledge in biology, but also allows students to tailor their course work more specifically to reflect their specific area of interest.

ENVS 326	Molecular Ecology	3.0
BIO 228	Evolutionary Biology & Human Health	3.0
or BIO 331	Bioinformatics I	
BIO 436	Population Genetics	3.0-4.0
or ENVS 230	General Ecology	
Select one of the following:		3.0-5.0
BIO 221	Microbiology	

BIO 256	Vertebrate Morphology and Physiology	
BIO 323	Parasitology	
BIO 413	Genomics	
BIO 420	Virology	
ENVS 254	Invertebrate Morphology and Physiology	
ENVS 360	Evolutionary Developmental Biology	
ENVS 382	Field Botany of the New Jersey Pine Barrens	
ENVS 391	Freshwater and Marine Algae	
ENVS 392	Ichthyology and Herpetology	
ENVS 393	Entomology	
ENVS 438	Biodiversity	
Ecology/Evolution/Genomics concentration electives		
Select one Cell/Molecular/Genetics/Biochemistry (CMGB) elective (see list below)		3.0
Select one Organismal/Physiology elective (see list below)		3.0
Select two Ecology/Evolution/Genomics electives (see list below)		6.0
Concentration Laboratory Courses		
Select two Laboratory electives (see list below)		4.0
Total Credits		28.0-31.0

* Students interested in pursuing a focus area in Ecology, Evolutionary Biology or Genomics should contact the academic advisor in the Biology Department for specific focus recommendations.

Cell/Molecular/Genetics/Biochemistry (CMGB) electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 410	Advanced Molecular Biology	3.0
BIO 414	Behavioral Genetics	3.0
BIO 415	Proteins	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0

Organismal/Physiology electives

BIO 201	Human Physiology I	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 264	Ethnobotany	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 426	Immunology	3.0
BIO 461	Neurobiology of Autism Disorders	3.0

ENVS 254	Invertebrate Morphology and Physiology	3.0
ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0

Ecology/Evolution/Genomics electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 332	Bioinformatics II	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
ENVS 315	Plant Animal Interactions	3.0
ENVS 322	Tropical Ecology	3.0
ENVS 328	Conservation Biology	3.0
ENVS 330	Aquatic Ecology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 336	Terrestrial Ecology	5.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 390	Marine Ecology	3.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 410	Physiological Ecology	3.0
ENVS 412	Biophysical Ecology	3.0
ENVS 413	Advanced Population Ecology	3.0
ENVS 414	Advanced Community Ecology	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research (by permission of the department)	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 327	Molecular Ecology Laboratory	2.0
ENVS 336	Terrestrial Ecology	5.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 394	Entomology Laboratory	2.0

4. The Pathobiology Concentration

The Pathobiology concentration focuses on pathogenesis, and provides a unique option for students that differs from the more traditional disciplines in cell/molecular/genetics/biochemistry. This concentration is designed to appeal to students with an interest in pursuing careers in areas of public and allied health.

BIO 221	Microbiology	3.0
BIO 320	Microbial Pathogenesis	3.0
BIO 323	Parasitology	3.0
or BIO 420	Virology	
or BIO 435	Immunobiology of Disease	
BIO 426	Immunology	3.0
Select one Cell/Molecular/Genetics/Biochemistry (CMGB) elective (see list below)		3.0
Select two Organismal/Physiology electives (see list below)		6.0
Select one Evolutionary Bio/Ecology elective (see list below)		3.0
Concentration Laboratory Courses		
Two Laboratory electives (see list below)		4.0
Total Credits		28.0

Cell/Molecular/Genetics/Biochemistry (CMGB) electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 410	Advanced Molecular Biology	3.0
BIO 414	Behavioral Genetics	3.0
BIO 415	Proteins	3.0
BIO 416	Biochemistry of Major Diseases	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 463	Molecular Mechanisms of Neurodegeneration	3.0
ENVS 326	Molecular Ecology	3.0

Organismal/Physiology electives

BIO 201	Human Physiology I	4.0
BIO 203	Human Physiology II	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 435	Immunobiology of Disease	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
BIO 466	Endocrinology	4.0

BIO 468	Pathophysiology	4.0
ENVS 254	Invertebrate Morphology and Physiology	3.0

Ecology/Evolution/Genomics electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 413	Genomics	3.0
BIO 436	Population Genetics	4.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research (by permission of the department)	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0

5. The General Biology Concentration

This concentration will allow maximum flexibility for students who want to develop their own unique plan of study. The concentration is designed for students who may not have one specific area of interest, but who are looking to be well-rounded in the biological sciences. Students pursuing careers in education, where a wider breadth of knowledge in biology is desirable, may choose to select this concentration.

General Biology Concentration Electives **24.0**

2 or 3 Cell/Molecular/Genetics/Biochemistry (CMGB) electives (see list below)

2 or 3 Organismal/Physiology electives (see list below)

2 or 3 Ecology/Evolution/Genomics electives (see list below)

Concentration Laboratory Courses

Two Laboratory electives (see list below) **4.0**

Total Credits **28.0**

Cell/Molecular/Genetics/Biochemistry (CMGB) electives

BIO 244	Genetics I	3.0
BIO 285	Forensic Biology	3.0
BIO 311	Biochemistry	4.0
BIO 314	Pharmacology	3.0
BIO 318	Biology of Cancer	3.0
BIO 331	Bioinformatics I	3.0
BIO 332	Bioinformatics II	3.0
BIO 346	Stem Cell Research	3.0
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 404	Structure and Function of Biomolecules	4.0
BIO 413	Genomics	3.0
BIO 415	Proteins	3.0
BIO 421	Biomembranes	3.0
BIO 430	Cell Biology of Disease	3.0
BIO 433	Advanced Cell Biology	3.0
BIO 444	Human Genetics	3.0
BIO 447	Advanced Genetics and Molecular Biology	3.0
BIO 451	Genetic Reg Development	3.0
BIO 453	Protein Dysfunction in Disease	3.0
BIO 462	Biology of Neuron Function	3.0
BIO 465	Neurobiology of Disease	3.0
ENVS 326	Molecular Ecology	3.0

Organismal/Physiology electives

BIO 201	Human Physiology I	4.0
BIO 203	Human Physiology II	4.0
BIO 221	Microbiology	3.0
BIO 256	Vertebrate Morphology and Physiology	3.0
BIO 264	Ethnobotany	3.0
BIO 284	Biology of Stress	3.0
BIO 286	Forensic Toxicology	3.0
BIO 320	Microbial Pathogenesis	3.0
BIO 323	Parasitology	3.0
BIO 349	Behavioral Neuroscience	3.0
BIO 368	Embryology	4.0
BIO 372	Histology	4.0
BIO 373	Developmental Biology	3.0
BIO 386	Gross Anatomy I	2.0
BIO 388	Gross Anatomy II	2.0
BIO 412	Biology of Aging	3.0
BIO 420	Virology	3.0
BIO 426	Immunology	3.0
BIO 435	Immunobiology of Disease	3.0
BIO 461	Neurobiology of Autism Disorders	3.0
BIO 466	Endocrinology	4.0
BIO 468	Pathophysiology	4.0
ENVS 254	Invertebrate Morphology and Physiology	3.0
ENVS 392	Ichthyology and Herpetology	3.0
ENVS 393	Entomology	3.0

Ecology/Evolution/Genomics electives

BIO 228	Evolutionary Biology & Human Health	3.0
BIO 331	Bioinformatics I	3.0
BIO 332	Bioinformatics II	3.0
BIO 413	Genomics	3.0
ENVS 230	General Ecology	3.0
ENVS 247	Native Plants and Sustainability	3.0
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
ENVS 315	Plant Animal Interactions	3.0
ENVS 322	Tropical Ecology	3.0

ENVS 323	Tropical Field Studies	3.0
ENVS 328	Conservation Biology	3.0
ENVS 330	Aquatic Ecology	3.0
ENVS 333	Wetland Ecology	3.0
ENVS 336	Terrestrial Ecology	5.0
ENVS 343	Equatorial Guinea: Field Methods	3.0
ENVS 352	Ornithology	3.0
ENVS 354	Ichthyology	3.0
ENVS 355	Biogeography	3.0
ENVS 360	Evolutionary Developmental Biology	3.0
ENVS 364	Animal Behavior	3.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 390	Marine Ecology	3.0
ENVS 391	Freshwater and Marine Algae	3.0
ENVS 410	Physiological Ecology	3.0
ENVS 412	Biophysical Ecology	3.0
ENVS 413	Advanced Population Ecology	3.0
ENVS 414	Advanced Community Ecology	3.0
ENVS 438	Biodiversity	3.0
ENVS 470	Advanced Topics in Evolution	3.0

Laboratory electives

BIO 202	Human Physiology Laboratory	2.0
BIO 213	Drosophila Neural Research	3.0
BIO 215	Techniques in Cell Biology	3.0
BIO 222	Microbiology Laboratory	2.0
BIO 232	Discovering Antibiotics	3.0
BIO 257	Vertebrate Morphology & Physiology Lab	2.0
BIO 306	Biochemistry Laboratory	2.0
BIO 329	Dictyostelium Research	3.0
BIO 333	Bioinformatics Laboratory	2.0
BIO 374	Developmental Biology Lab	2.0
BIO 387	Gross Anatomy I Laboratory	2.0
BIO 389	Gross Anatomy II Lab	2.0
BIO 427	Immunology Laboratory	2.0
BIO 497	Research (by permission of the department)	0.5-12.0
ENVS 255	Invertebrate Morphology and Physiology Lab	2.0
ENVS 327	Molecular Ecology Laboratory	2.0
ENVS 344	Equatorial Guinea: Field Research	6.0
ENVS 353	Field Ornithology Lab	2.0
ENVS 365	Animal Behavior Laboratory	2.0
ENVS 382	Field Botany of the New Jersey Pine Barrens	4.0
ENVS 383	Ecology of the New Jersey Pine Barrens	4.0
ENVS 388	Marine Field Methods	4.0
ENVS 394	Entomology Laboratory	2.0

Note about laboratory credits: ENVS 336, ENVS 382 and ENVS 388 have both a lecture and laboratory component.

Sample Plan of Study**5 years, 2 co-op**

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 131	4.0	BIO 132	4.0	BIO 133	4.0	VACATION	4.0
BIO 134	1.0	BIO 135	1.0	BIO 136	1.0		
CHEM 101	3.5	CHEM 102	4.5	CHEM 103	5.0		
ENGL 101	3.0	CIVC 101	1.0	COOP 101*	1.0		
MATH 101	4.0	ENGL 102	3.0	ENGL 103	3.0		
or 121							

UNIV S101	1.0 MATH 102 or 122	4.0 MATH 239 or 123	4.0	
	16.5	17.5	18	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 207	1.0 BIO 208	1.0 COOP EXPERIENCE	COOP EXPERIENCE	
BIO 209	4.0 BIO 211	4.0		
BIO 219	3.0 CHEM 242	4.0		
CHEM 241	4.0 PHYS 153	4.0		
PHYS 152	4.0 UNIV S201	1.0		
(UG) Humanities/ Social Science Elective	3.0 (UG) Bio Lab Requirement	2.0		
	(UG) Free Elective	3.0		
	19	19	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 311 or CHEM 243	4.0 BIO 224	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
ENVS 212	4.0 BIO 225	2.0 BIO 500	3.0 BIO 635	3.0
PHIL 251 or 321	3.0 COM 230	3.0		
PHYS 154	4.0 (UG) Sci, Tech, Hlth & Hum Affairs Elective	3.0		
(UG) BIO/ ENVS Elective	3.0 (UG) BIO/ ENVS Elective	3.0		
	(UG) Free Elective	3.0		
	18	18	3	3

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 471	2.0 BIO 472	2.0 BIO 473	2.0 Student classified as Graduate status	
MATH 410	3.0 COM 310 or 320	3.0 (UG) BIO/ ENVS Electives	6.0 BIO 632	3.0
(UG) BIO/ ENVS Elective	3.0 MATH 411	3.0 (UG) Free Electives	6.0 (GR) Graduate Elective	3.0
(UG) Biology Lab Requirement	2.0 (UG) Free electives	6.0 (UG) Humanities & Social Science Elective	3.0	
(UG) Free Electives	6.0 (UG) BIO/ ENVS Electives	6.0 (UG) BIO/ ENVS Elective	3.0	
(UG) Humanities/ Social Science Elective	3.0	Student graduates with BS degree		
	19	20	20	6

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
BIO 601 (or (GR) Graduate Elective)	3.0 BIO 540 (or (GR) Graduate Elective)	3.0 ENVS 506	3.0
(GR) Graduate Electives	9.0 RCRG 600 ⁺ (GR) Graduate Electives	0.0 (GR) Graduate Electives	6.0
	12	12	9

Total Credits 230

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** This course is for thesis students only.

5 years, 1 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 BIO 132	4.0 BIO 133	4.0 VACATION	
BIO 134	1.0 BIO 135	1.0 BIO 136	1.0	
CHEM 101	3.5 CHEM 102	4.5 CHEM 103	5.0	
ENGL 101	3.0 CIVC 101	1.0 COOP 101 [*]	1.0	
MATH 101 or 121	4.0 ENGL 102	3.0 ENGL 103	3.0	
UNIV S101	1.0 MATH 102 or 122	4.0 MATH 239 or 123	4.0	
	16.5	17.5	18	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 207	1.0 BIO 208	1.0 BIO 311	4.0 BIO 224	4.0
BIO 209	4.0 BIO 211	4.0 ENVS 212	4.0 BIO 225	2.0
BIO 219	3.0 CHEM 242	4.0 PHIL 251	3.0 (UG) BIO/ ENVS Elective	3.0
CHEM 241	4.0 PHYS 153	4.0 PHYS 154	4.0 (UG) Humanities/ Social Science Elective	3.0
PHYS 152	4.0 UNIV S201	1.0 (UG) Free elective	3.0 (UG) Sci/ Tech/ Human Affairs Elective	3.0
	(UG) Biology Lab Requirement	2.0		
	16	16	18	15

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 COM 310	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
MATH 410	3.0 MATH 411	3.0 (GR) Graduate Elective	3.0 (GR) Graduate Elective	3.0
(UG) BIO/ ENVS Elective	3.0 (UG) BIO/ ENVS Elective	3.0		

(UG) Free Electives	6.0 (UG) Biology Lab Requirement	2.0		
	(UG) Free Elective	3.0		
	15	14	3	3

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 471	2.0 BIO 472	2.0 BIO 473	2.0 Student Classified as Graduate	

(UG) BIO/ENVS Electives	6.0 (UG) BIO/ENVS Electives	6.0 (UG) BIO/ENVS Elective	3.0	
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(UG) Free Elective	3.0 (UG) Humanities/Social Science Elective	3.0 (UG) Free Electives	6.0	
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BIO 500	3.0 (UG) Free Elective	3.0 (UG) Humanities/Social Science Elective	3.0	
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BIO 540 (or (GR) Graduate Elective)	3.0 BIO 635	3.0 BIO 632	3.0	
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	RCRG 600**	0.0 Student graduates with BS Degree		
	17	17	17	0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
BIO 601 (or (GR) Graduate Elective)	3.0 (GR) Graduate Electives	9.0 ENVS 506	3.0

(GR) Graduate Electives	6.0	(GR) Graduate Electives	6.0
	9	9	9

Total Credits 230

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** This course is for thesis students only.

Communication BA / Communication MS

Major: Communication

Degree Awarded: Bachelor of Arts (BA) and Master of Science (MS)

Calendar Type: Quarter

Total Credit Hours: 225.0

Co-op Options: One Co-op (Five years); Two Co-op (Five years)

Classification of Instructional Programs (CIP) code: 09.0199

Standard Occupational Classification (SOC) code: 11-2011

About the Program

The ability to communicate effectively is one of the most sought-after skills by prospective employers industry wide. Drexel University is committed to building this strong foundation through the Accelerated Communication Degree, which enables academically qualified students to earn both a bachelor's and master's degree — graduating sooner than they would in traditional programs. Graduates of the accelerated degree enter the workforce one year sooner with the benefits of a master's degree in communication, using the year saved to gain full-time experience and earn a salary in the field.

The BA in Communication program requires 180.0 UG credits, and is committed to helping students become broadly educated and professionally competent communicators. Students are exposed to a variety of media and are guided in the development of their interpretive and expressive skills. Students may complete the BA in Communication with a concentration in Public Relations, Journalism or open Communication. Independent of their chosen concentration, all BA in Communication majors take a common core of courses that emphasize communication theory and methods, as well as a modern language.

Students in the Public Relations concentration take courses and pursue careers in public relations, event planning, media relations, social media, and corporate communication. Journalism students take courses and pursue careers as reporters, copywriters, editors, and media specialists. Students in the open Communication concentration have the flexibility of crafting their path through the major and thus have career possibilities in any of the areas listed here.

Drexel's MS in Communication program requires 45.0 graduate credits, and prepares students for careers in a wide range of professional activities. The program specializes in three areas:

- public communication
- technical communication
- science and health communication

Public Communication

Public Communication has much to offer those looking to work in journalism, public relations, and nonprofit organizations. Students can choose from courses such as Strategic Social Media Communication, Event Planning, Journalism and News Writing, Public Relations Writing and Campaign Planning, and Nonprofit Communication.

Technical Communication

Technical Communication provides skills in technical writing, editing, and computer documentation, and trains students for careers in a wide range of industries from social networking to publishing to health insurance. Students choose from courses such as Technical Writing, Digital Publishing, Technical & Science Editing, and Technical Documentation & Software.

Science and Health Communication

Science and Health Communication leads to careers in medical, science, and pharmaceutical communication. Students can choose from courses such as Science Writing, Medical Journalism, Campaigns in Health & Environment, and Communicating Health and Risk in a 'Fake News' World.

In addition, the program provides a strong foundation in ethics and 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.

The program emphasizes flexibility, encouraging each student, in consultation with an academic advisor, to craft a particular course of study. Throughout the curriculum, students may use electives to increase communication skills or to further develop areas of specialization. The Master's degree requires a total of 45.0 graduate credits.

Admission Requirements

Both incoming freshman and current Communication majors are eligible to apply for this program. Students who are already matriculated may apply after completing a minimum of 90.0 credits but no more than 120.0 credits. Applicants must have a minimum 3.0 GPA and maintain this GPA throughout the accelerated program.

In addition to formally applying and getting all the signatures required on the Accelerated Degree Program Admission form, applicants must provide:

- A 500-word statement of goals that explains why they want to enroll in the accelerated degree program.
- The name of a faculty reference who can speak to the applicant's academic qualifications and preparedness for graduate studies.

Degree Requirements

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSY 101	General Psychology I	3.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
COOP 101	Career Management and Professional Development	1.0
Two mathematics courses		6.0-8.0
Two science courses		6.0-8.0
Foreign language courses *		8.0-12.0
Humanities and fine arts		12.0
Social sciences		9.0
International studies		6.0
Studies in diversity		6.0

Communication Core Requirements

Theory Sequence

COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	

Methods Sequence

COM 220	Qualitative Research Methods	3.0
COM 221	Quantitative Research Methods in Communication	3.0
or COM 284	Public Relations Research, Measurement and Evaluation	

Additional Core Requirements

COM 222	Interpersonal Communication	3.0
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COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0

Required Concentration Courses

Select one of the following concentrations (Communication, Public Relations, or Journalism): 31.0-45.0

Communication

COM 160	Introduction to Journalism	
COM 181	Public Relations Principles and Theory	
COM 261	Advanced Journalism	
or COM 282	Public Relations Writing	
COM 310 [WI]	Technical Communication	
Two COM Electives at 300 level or higher		
Six COM Electives		

Public Relations

COM 181	Public Relations Principles and Theory	
COM 160	Introduction to Journalism	
COM 282 [WI]	Public Relations Writing	
COM 286	Public Relations Strategies and Tactics	
COM 335	Digital Publishing	
or COM 340	Modern Desktop Publishing	
COM 386	Public Relations Campaign Planning	
MKTG 201	Introduction to Marketing Management	
Three COM Electives		

Journalism

COM 160	Introduction to Journalism	
COM 181	Public Relations Principles and Theory	
COM 261	Advanced Journalism	
COM 266	Copy Editing for the Media	
COM 315	Investigative Journalism	
COM 365	Journalists, the Courts, and the Law	
TVPR 220	TV News Writing	
Six COM Electives		

Free Electives 38.0

MS Communication Requirements

Required Courses

COM 500	Reading & Research in Communication	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 698	Managing Communication Professional Identities in a Digital Age	3.0

Graduate Electives** 21.0

Required Concentration Courses 15.0

Students must select and complete one of the following concentration options:

Technical Communication

COM 612	Ethics for Technical, Science and Health Communication	
Choose four of the following:		
COM 510	Technical Writing	
COM 525	Document Design and Usability	
COM 535	Digital Publishing	
COM 567	Technical Documentation and Software	
COM 570	Technical, Science and Health Editing	
INFO 532	Software Development	
INFO 540	Perspectives on Information Systems	

Science and Health Communication

COM 612	Ethics for Technical, Science and Health Communication	
Choose four of the following:		
COM 516	Campaigns for Health and Environment	
COM 520	Science Writing	
COM 570	Technical, Science and Health Editing	

SAMPLE PLAN OF STUDY

4 Year, one Co-op (4COP) + 1

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer).

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 181 or 160	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
PSY 101	3.0 Math Course	3.0-4.0 Humanities Elective	3.0	
UNIV H101	1.0 Foreign Language Course*	4.0 Math Course	3.0-4.0	
Foreign Language Course*	4.0 Free Elective	3.0		
	17	17-18	15-16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221 or 284	3.0 COOP 101	1.0
COM 222	3.0 COM 247	3.0 COM Elective or Free Elective	3.0 PHIL 305	3.0
COM Concentration Course	3.0 LING 101 or 102	3.0 COM Concentration Course	3.0 COM Elective or Free Elective	3.0
Science Course	3.0-4.0 COM Concentration Course	3.0 International Elective	3.0 COM Concentration Course	3.0
Humanities Elective	3.0 Science Course	3.0-4.0 Social Science Elective	3.0 Free Elective	2.0
Free Elective	3.0 Free Elective	3.0 Free Elective	3.0 Diversity Elective	3.0
	18-19	18-19	18	15

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 610	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 500	3.0 Social Science Elective	3.0		
UNIV H201	1.0 International Elective	3.0		
COM Concentration Course	3.0 Free Electives	6.0		
Humanities Elective	3.0			

COM 670 Medical Writing
or COM 673 Medical Journalism

CHP 672 Theory and Practice in Health Communication

Public Communication

COM 613 Ethics for Professional Communication

Choose four of the following:

COM 533 Modern Desktop Publishing

COM 535 Digital Publishing

COM 536 Strategic Social Media Communication

COM 541 Foundations of Public Relations

COM 542 Public Relations Writing ***

COM 543 Public Relations Planning ***

COM 561 Fundamentals of Journalism & Newswriting

COM 563 Event Planning

COM 575 Grant Writing

COM 576 Nonprofit Communications

COM 650 Telecommunications Regulation and Policy

COM 660 Investigative Journalism †

Total Credits **225.0-247.0**

- * Students must complete at least 8 credits of a foreign language at Drexel and, at minimum, must complete the 103 level of the target language (or beyond if they place higher).
- ** 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 T580). Qualified students may also pursue independent study for elective credit in special cases.
- *** To enroll in this class you must first earn a grade of "B" or better in COM 541 *Foundations of Public Relations* or get permission from the MS COM advisor to waive this requirement.
- † To enroll in this class you must first earn a grade of "B" or better in COM 561 *Fundamentals of Journalism & Newswriting* or get permission from the MS COM advisor to waive this requirement.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

COM Elective or Free Elective	3.0			
	16	15	0	0
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 400	3.0 COM 491	3.0 COM 492	3.0 Students convert to Graduate	
Diversity Elective	3.0 COM Elective	3.0 COM Elective	3.0	
COM Elective Course	3.0 Humanities Elective	3.0 COM Elective or Free Elective	3.0	
COM Elective or Free Elective	3.0 Social Science Elective	3.0 Free Elective	4.0	
COM 613 or 612	3.0 Graduate Concentration Core	3.0 Graduate Concentration Core	3.0	
Grad Concentration Core	3.0 Graduate Elective	3.0 Graduate Elective	3.0	
	18	18	19	0
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 698	3.0 Graduate Electives	6.0 Graduate Electives	6.0	
Grad Concentration Core	3.0			
Graduate Elective	3.0			
	9	6	6	

Total Credits 225-229

5 Year, three Co-op (5COP) Co-terminal

Students take graduate courses while finishing their undergraduate requirements in the third, fourth, and fifth years. They receive both BA and MS at the end of the fifth year.

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer).

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 181 or 160	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101	1.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities Elective	3.0	
UNIV H101	1.0 Math Course	3.0-4.0 Math Course	3.0-4.0	
Foreign Language Course*	4.0 Foreign Language Course*	4.0 Social Science Elective	3.0	

	Free Elective	3.0		
	17	18-19	18-19	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
COM Concentration Course	3.0 LING 101 or 102	3.0		
Science Course	3.0-4.0 COM Concentration Course	3.0		
Humanities Elective	3.0 Science Course	3.0-4.0		
Free Elective	4.0 Free Elective	3.0		
	19-20	18-19	0	0
Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221 or 284	3.0 PHIL 305	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM Elective or Free Elective	3.0 COM Elective or Free Elective	3.0 Grad Concentration Core	3.0 Grad Concentration Core	3.0
COM Concentration Course	3.0 COM Concentration Course	3.0		
International Elective	3.0 Free Elective	3.0		
COM 500	3.0 Diversity Elective	3.0		
	COM 610	3.0		
	15	18	3	3
Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 Free Electives	6.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 Social Science Elective	3.0 Graduate Concentration Core	3.0 Graduate Elective	3.0
Humanities Elective	3.0 International Elective	3.0		
COM Elective or Free Elective	3.0 Graduate Concentration Core	3.0		
COM Concentration Course	3.0 Graduate Elective	3.0		
Free Elective	2.0			
COM 613 or 612	3.0			
	18	18	3	3
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 400	3.0 COM 491	3.0 COM 492	3.0	
Diversity Elective	3.0 COM Elective	3.0 COM Elective	3.0	
COM Elective	3.0 Humanities Elective	3.0 COM Elective or Free Elective	3.0	

COM Elective or Free Elective	3.0 Social Science Elective	3.0 Free Elective	3.0
COM 698	3.0 Graduate Electives	6.0 Graduate Electives	6.0
Graduate Elective	3.0		
	18	18	18

Total Credits 225-229

5 Year, two Co-op (5COP)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer).

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 181 or 160	3.0	
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 COM 230	3.0	
PSY 101	3.0 Math Course	3.0-4.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 Foreign Language Course*	4.0 Humanities Elective	3.0	
Foreign Language Course*	4.0 Free Elective	2.0 Math Course	3.0-4.0	
	17	16-17	16-17	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
COM Concentration Course	3.0 LING 101 or 102	3.0		
Science Course	3.0-4.0 COM Concentration Course	3.0		
Humanities Elective	3.0 Science Course	3.0-4.0		
Free Elective	4.0 Free Elective	4.0		
	19-20	19-20	0	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221 or 284	3.0 PHIL 305	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM Elective or Free Elective	3.0 COM Elective or Free Elective	3.0		
COM Concentration Course	3.0 COM Concentration Course	3.0		
International Elective	3.0 Free Electives	7.0		

Social Science Elective	3.0 Diversity Elective	3.0
Free Elective	4.0	
	19	19
	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 491	3.0 COM 492	3.0 COM Electives	6.0
UNIV H201	1.0 COM 400	3.0 Diversity Elective	3.0 Humanities Elective	3.0
Humanities Elective	3.0 Free Elective	3.0 COM Elective	3.0 Social Science Elective	3.0
COM Elective or Free Elective	3.0 Social Science Elective	3.0 COM Electives or Free Electives	6.0 Graduate Concentration Core	3.0
COM Concentration Course	3.0 International Elective	3.0 Graduate Concentration Core	3.0 Graduate Elective	3.0
COM 500	3.0 COM 610	3.0	Student converts to Graduate status	
COM 613 or 612	3.0			
	19	18	18	18

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 698	3.0 Graduate Concentration Core	3.0 Graduate Electives	9.0	
Graduate Concentration Core	3.0 Graduate Electives	6.0		
Graduate Elective	3.0			
	9	9	9	

Total Credits 225-229

* See degree requirements

Communication Faculty

Ronald Bishop, III, PhD (*Temple University*). Professor. Investigative reporting, sports journalism, journalism history, journalism sourcing patterns, textual narrative and ideological analysis, cultural history of fame.

Karen Cristiano, MS (*Temple University*) Assistant Department Head of *Communication*. Teaching Professor. Journalism, medical writing, feature writing, copy editing, mass media and society.

Richard Forney Assistant Teaching Professor. Broadcast journalism technology and the effects of new technologies on personal and corporate communication skills.

Ernest A. Hakanen, PhD (*Temple University*) Director, *Graduate Programs in Communication, Culture & Media*. Professor. Telecommunications policy, adolescent media use, communication theory and history, global media, and semiotics.

Barbara Hoekje, PhD (*University of Pennsylvania*). Associate Professor. Sociolinguistic theory, discourse analysis, applied linguistics (language teaching, learning, and testing).

Alexander Jenkins, PhD (*Drexel University*). Assistant Teaching Professor. Digital games, video games, emotion, morality, online fan communities, emerging media, convergence.

Hyunmin Lee, PhD (*University of Missouri*) *Director, Undergraduate Programs in Communication*. Associate Professor. Social media strategies for relationship and reputation management in public relations; media messages of public health issues and its psychological and behavioral effects on the public.

Susan Magee, MFA *Director Online Teaching*. Instructor. Digital Publishing, Content creation, Blogging, Strategic Social Media, Public Relations, Business and Technical Communication

Julia May, PhD (*Drexel University*) *Director, Strategic and Digital Communication MS Program*. Associate Teaching Professor. Political communication; international politics and its news coverage; public opinion; transatlantic relations; war, torture and human rights; debate in the public sphere.

Alexander Nikolaev, PhD (*Florida State University*). Associate Professor. Public relations, political communication, organizational communication, mass communication, international communications and negotiations, communications theory.

Rakhmiel Peltz, PhD (*University of Pennsylvania*). Professor. Judaic studies, Yiddish culture and linguistics, ethnography of communication, immigrant cultural studies.

Douglas V. Porpora, PhD (*Temple University*). Professor. War, genocide, torture, and human rights; macro-moral reasoning in public sphere debate; contemporary social theory moral and political communication; religion.

Rachel R. Reynolds, PhD (*University of Illinois*). Associate Professor. Sociolinguistics, ethnography of communication and discourse analysis; violence against women in mass media; political economy of migration; semiotics including the textual, the visual and multimodal.

Rosemary Rys, MA (*Rowan University*). Assistant Teaching Professor. Public relations and marketing.

Wesley Shumar, PhD (*University of Pennsylvania*). Professor. Digital media and learning; culture of higher education; entrepreneurship education; craft culture; semiotic of consumer culture.

Allan Stegeman, MA (*University of Houston*). Teaching Professor. Communication, technology and mass media, video.

Scott Tattar, BA (*York College of Pennsylvania*) *Faculty Advisor, Drexel PRSSA, Communication Department Recruitment Liaison*. Instructor. Public relations

Hilde Van den Bulck, PhD (*Katholieke Universiteit Leuven*) *Department Head of Communication*. Professor. Political economy of media structures; media policies for digitized media ecologies; stakeholders and coalitions in media policies; digitization; convergence and legacy media; public (service) media; celebrity culture and industry; fandom and anti-fandom.

Asta Zelenkauskaitė, PhD (*Indiana University*). Associate Professor. Social media; user-generated content; computer-mediated

communication; interactivity; active audience analysis; mobile communication; gender and online identity; prosumer culture; internet of things; quantitative/qualitative research.

Emeritus Faculty

Alexander Friedlander, PhD (*Carnegie Mellon University*). Associate Professor. Rhetorical theory and practice, document design, writing and technology.

Lawrence Souder, PhD (*Temple University*) *Director, Drexel Edits*. Teaching Professor. Science and technical writing, communication ethics, nonprofit communication.

Communication BS / Communication MS

Major: Communication

Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)

Calendar Type: Quarter

Total Credit Hours: 225.0

Co-op Options: One Co-op (Five years); Two Co-op (Five years)

Classification of Instructional Programs (CIP) code: 09.0199

Standard Occupational Classification (SOC) code: 11-2011

About the Program

The ability to communicate effectively is one of the most sought-after skills by prospective employers industry wide. Drexel University is committed to building this strong foundation through the Accelerated Communication Degree, which enables academically qualified students to earn both a bachelor's and master's degree — graduating sooner than they would in traditional programs. Graduates of the accelerated degree enter the workforce one year sooner with the benefits of a master's degree in communication, using the year saved to gain full-time experience and earn a salary in the field.

The BS in Communication program requires 180.0 UG credits, and offers three different concentrations to choose from. All students take a common core of courses that emphasize communication theory and methods, as well as a lab science sequence and a math analysis sequence.

Students in the Public Relations concentration take courses and pursue careers in public relations, event planning, media relations, social media, and corporate communication. Those who choose the Technical and Science Communication concentration go on to work in technical writing, science writing, publishing, and software and hardware documentation. Students in the open Communication concentration have the flexibility of crafting their path through the major and thus have career possibilities in any of the areas listed here.

Drexel's MS in Communication program requires 45.0 graduate credits, and prepares students for careers in a wide range of professional activities. The program specializes in three areas:

- public communication
- technical communication
- science and health communication

Public Communication

Public Communication has much to offer those looking to work in journalism, public relations, and nonprofit organizations. Students can

choose from courses such as Strategic Social Media Communication, Event Planning, Journalism and News Writing, Public Relations Writing and Campaign Planning, and Nonprofit Communication.

Technical Communication

Technical Communication provides skills in technical writing, editing, and computer documentation, and trains students for careers in a wide range of industries from social networking to publishing to health insurance. Students choose from courses such as Technical Writing, Digital Publishing, Technical & Science Editing, and Technical Documentation & Software.

Science and Health Communication

Science and Health Communication leads to careers in medical, science, and pharmaceutical communication. Students can choose from courses such as Science Writing, Medical Journalism, Campaigns in Health & Environment, and Communicating Health and Risk in a 'Fake News' World.

In addition, the program provides a strong foundation in ethics and 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.

The program emphasizes flexibility, encouraging each student, in consultation with an academic advisor, to craft a particular course of study. Throughout the curriculum, students may use electives to increase communication skills or to further develop areas of specialization. The Master's degree requires a total of 45.0 graduate credits.

Admission Requirements

Both incoming freshman and current Communication majors are eligible to apply for this program. Students who are already matriculated may apply after completing a minimum of 90.0 credits but no more than 120.0 credits. Applicants must have a minimum 3.0 GPA and maintain this GPA throughout the accelerated program.

In addition to formally applying and getting all the signatures required on the Accelerated Degree Program Admission form, applicants must provide:

- A 500-word statement of goals that explains why they want to enroll in the accelerated degree program.
- The name of a faculty reference who can speak to the applicant's academic qualifications and preparedness for graduate studies.

Degree Requirements

General Requirements

CIVC 101	Introduction to Civic Engagement *	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSY 101	General Psychology I	3.0
UNIV H101	The Drexel Experience *	1.0
UNIV H201	Looking Forward: Academics and Careers *	1.0

Humanities and fine arts	12.0
Social sciences	9.0
International studies	6.0
Studies in diversity	6.0

Select one of the following Science Sequences: 8.0

Biology Sequence	
BIO 107	Cells, Genetics & Physiology
BIO 108	Cells, Genetics and Physiology Laboratory
BIO 109	Biological Diversity, Ecology & Evolution
BIO 110	Biological Diversity, Ecology and Evolution Laboratory
Chemistry Sequence	
CHEM 111	General Chemistry I
CHEM 112	General Chemistry II
Physics Sequence	
PHYS 170	Electricity and Motion
PHYS 175	Light and Sound

Select one of the following Mathematics Sequences: 8.0

Analysis Sequence	
MATH 101	Introduction to Analysis I
MATH 102	Introduction to Analysis II
Calculus Sequence	
MATH 121	Calculus I
MATH 122	Calculus II

Communication Core Requirements

Theory Sequence

COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 210	Theory and Models of Communication	3.0
COM 400	Seminar in Communication	3.0
LING 101	Introduction to Linguistics	3.0
or LING 102	Language and Society	

Methods Sequence

COM 220	Qualitative Research Methods	3.0
COM 221	Quantitative Research Methods in Communication	3.0
or COM 284	Public Relations Research, Measurement and Evaluation	

Additional Core Requirements

COM 222	Interpersonal Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 247	Strategic Social Media in Communication	3.0
COM 491	Senior Project in Communication I	3.0
COM 492	Senior Project in Communication II	3.0
PHIL 305	Ethics and the Media	3.0

Required Concentration Courses

Select one of the following concentrations (Communication, Public Relations, or Technical and Science Communication) 30.0-36.0

Communication

COM 160	Introduction to Journalism
COM 181	Public Relations Principles and Theory
COM 261	Advanced Journalism
or COM 282	Public Relations Writing
COM 310 [WI]	Technical Communication
Two COM Electives at 300 level of higher	
Six COM Electives	

Public Relations

COM 160	Introduction to Journalism
COM 181	Public Relations Principles and Theory
COM 282 [WI]	Public Relations Writing
COM 286	Public Relations Strategies and Tactics
COM 386	Public Relations Campaign Planning
COM 335	Digital Publishing
or COM 340	Modern Desktop Publishing

MKTG 201	Introduction to Marketing Management	
Three COM Electives		
Technical & Science Communication		
COM 160	Introduction to Journalism	
COM 181	Public Relations Principles and Theory	
COM 310 [WI]	Technical Communication	
COM 320 [WI]	Science Writing	
COM 335	Digital Publishing	
COM 350 [WI]	Document Design and Evaluation	
COM 420	Technical, Science and Health Editing	
Three COM Electives		
Free electives		43.0
MS Communication Requirements		
Required Courses		
COM 500	Reading & Research in Communication	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 698	Managing Communication Professional Identities in a Digital Age	3.0
Electives **		21.0
Required Concentration Courses		15.0
Students must select and complete one of the following concentration options:		
Technical Communication		
COM 612	Ethics for Technical, Science and Health Communication	
Choose four of the following:		
COM 510	Technical Writing	
COM 525	Document Design and Usability	
COM 535	Digital Publishing	
COM 567	Technical Documentation and Software	
COM 570	Technical, Science and Health Editing	
INFO 532	Software Development	
INFO 540	Perspectives on Information Systems	
Science and Health Communication		
COM 612	Ethics for Technical, Science and Health Communication	
Choose four of the following:		
COM 516	Campaigns for Health and Environment	
COM 520	Science Writing	
COM 570	Technical, Science and Health Editing	
COM 670	Medical Writing	
or COM 673 Medical Journalism		
CHP 672	Theory and Practice in Health Communication	
Public Communication		
COM 613	Ethics for Professional Communication	
Choose four of the following:		
COM 533	Modern Desktop Publishing	
COM 535	Digital Publishing	
COM 536	Strategic Social Media Communication	
COM 541	Foundations of Public Relations	
COM 542	Public Relations Writing ***	
COM 543	Public Relations Planning ***	
COM 561	Fundamentals of Journalism & Newswriting	
COM 563	Event Planning	
COM 575	Grant Writing	
COM 576	Nonprofit Communications	
COM 650	Telecommunications Regulation and Policy	
COM 660	Investigative Journalism †	
Total Credits		225.0-231.0

* Students taking this program online are not required to take CIVC 101, UNIV H101, or UNIV H201. Instead, online students are required to take AS-I 101 *Strategies for Online Learning* for 3.0 credits.

** 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 T580). Qualified students may also pursue independent study for elective credit in special cases.

*** To enroll in this class you must first earn a grade of "B" or better in COM 541 *Foundations of Public Relations* or get permission from the MS COM advisor to waive this requirement.

† To enroll in this class you must first earn a grade of "B" or better in COM 561 *Fundamentals of Journalism & Newswriting* or get permission from the MS COM advisor to waive this requirement.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 Year, one Co-op (4COP) + 1

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101	1.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities Elective	3.0	
UNIV H101	1.0 Math Sequence Course 2	4.0 Free Elective	3.0	

Math Sequence Course 1	4.0 Social Science elective	3.0		
	17	15	15	0
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COM 221 or 284	3.0 PHIL 305	3.0
COM 222	3.0 COM 247	3.0 COM 310	3.0 COM Concentration Course	3.0
COM Concentration Course	3.0 LING 101 or 102	3.0 COM Concentration Course	3.0 COM Elective or Free Elective	3.0
Humanities Elective	3.0 COM Elective	3.0 COM Elective or Free Elective	3.0 Free Elective	3.0
Science Sequence Course 1	4.0 Science Sequence Course 2	4.0 Free Elective	3.0 International or Diversity Elective	3.0
Free Elective	2.0	International or Diversity Elective	3.0	
	18	16	18	15

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM Concentration Course	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 COM Elective	3.0		
COM Concentration Courses	3.0 Free Electives	6.0		
Humanities Elective	3.0 Social Science Elective	3.0		
Free Elective	2.0 COM 610	3.0		
COM 500	3.0			
COM 613 or 612	3.0			
	18	18	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 400	3.0 COM 491	3.0 COM 492	3.0 Student converts to Graduate status	
COM Elective or COM Concentration Course	3.0 COM Elective	3.0 COM Elective Course or COM Concentration Course	3.0	
International or Diversity Elective	3.0 Humanities Elective	3.0 COM Elective of Free Elective	3.0	
COM Elective or Free Elective	3.0 Social Science Elective	3.0 Free Elective	3.0	
Graduate Concentration Core	3.0 International or Diversity Elective	3.0 Graduate Concentration Core	3.0	

Graduate Elective	3.0 Graduate Concentration Core	3.0 Graduate Elective	3.0
	18	18	18
Fifth Year			
Fall	Credits Winter	Credits Spring	Credits
COM 698	3.0 Graduate Electives	6.0 Graduate Electives	6.0
Graduate Concentration Core	3.0		
Graduate Electives	3.0		
	9	6	6

Total Credits 225

5 Year, three Co-op (5COP) Co-terminal

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101	1.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 Humanities Elective	3.0	
UNIV H101	1.0 Math Sequence Course 2	4.0 Free Elective	3.0	
Math Sequence Course 1	4.0 Social Science Elective	3.0 COM Elective	3.0	
	Free Elective	3.0		
	17	18	18	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
COM Concentration Course	3.0 LING 101 or 102	3.0		
Science Sequence Course 1	4.0 COM Concentration Course	3.0		
Free Elective	2.0 Science Sequence Course 2	4.0		
Humanities Elective	3.0 Free Elective	3.0		
	18	19	0	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221 or 284	3.0 PHIL 301	3.0 COOP EXPERIENCE	COOP EXPERIENCE	

COM Concentration Courses	6.0 COM Concentration Course	3.0 Graduate Concentration Core	3.0 Graduate Elective	3.0
International or Diversity elective	3.0 COM Elective	3.0		
COM 500	3.0 Free Elective	3.0		
	International or Diversity Elective	3.0		
	COM 610	3.0		
15		18	3	3

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM Elective or COM Concentration Course	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
UNIV H201	1.0 Humanities Elective	3.0 Graduate Concentration Core	3.0 Graduate Elective	3.0
COM Concentration Course	3.0 International or Diversity Elective	3.0		
COM Elective or Free Elective	3.0 Social Science Elective	3.0		
Free Elective	2.0 Graduate Concentration Core	3.0		
COM 613 or 612	3.0 Graduate Elective	3.0		
Grad Concentration Core	3.0			
18		18	3	3

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
COM 400	3.0 COM 491	3.0 COM 492	3.0
COM Elective	3.0 COM Elective	3.0 COM Electives	6.0
International or Diversity Elective	3.0 Humanities Elective	3.0 Free Elective	3.0
COM Elective or Free Elective	3.0 Social Science Elective	3.0 Graduate Electives	6.0
COM 698	3.0 Free Elective	3.0	
Graduate Elective	3.0 Graduate Elective	3.0	
18		18	18

Total Credits 225

5 Year, two Co-op (5COP)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer).

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 101	3.0 CIVC 101	1.0 COM 160 or 181	3.0 VACATION	
COM 150	3.0 COM 181 or 160	3.0 COM 230	3.0	
ENGL 101 or 111	3.0 COOP 101	1.0 ENGL 103 or 113	3.0	
PSY 101	3.0 ENGL 102 or 112	3.0 COM Elective	3.0	
UNIV H101	1.0 Math Sequence Course 2	4.0 Humanities Elective	3.0	
Math Sequence Course 1	4.0 Social Science Elective	3.0 Free Elective	3.0	
	Free Elective	3.0		
17		18	18	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 210	3.0 COM 220	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM 222	3.0 COM 247	3.0		
COM Concentration Course	3.0 LING 101 or 102	3.0		
Science Sequence Course 1	4.0 COM Concentration Course	3.0		
Free Elective	2.0 Science Sequence Course 2	4.0		
Humanities Elective	3.0 Free Elective	3.0		
18		19	0	0

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 221 or 284	3.0 PHIL 301	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
COM Concentration Courses	6.0 COM Concentration Course	3.0		
COM Elective or Free Elective	3.0 COM Elective	3.0		
Free Elective	3.0 Free Elective	3.0		
International or Diversity elective	3.0 International or Diversity Elective	3.0		
	Social Science Elective	3.0		
18		18	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 240	3.0 COM 491	3.0 COM 492	3.0 COM Electives	6.0
UNIV H201	1.0 COM 400	3.0 COM Elective	3.0 Humanities Elective	3.0

COM Concentration Course	3.0 Free Elective	3.0 COM Electives of Free Electives	6.0 Social Science Elective	3.0
COM Elective or Free Elective	3.0 Humanities Elective	3.0 International or Diversity Elective	3.0 Graduate Concentration Core	3.0
Free Elective	2.0 International or Diversity Elective	3.0 Graduate Concentration Core	3.0 Graduate Elective	3.0
COM 500	3.0 COM 610	3.0		
COM 613 or 612	3.0			
	18	18	18	18
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 698	3.0 Graduate Concentration Core	3.0 Graduate Electives	9.0	
Graduate Concentration Core	3.0 Graduate Electives	6.0		
Graduate Elective	3.0			
	9	9	9	

Total Credits 225

Communication Faculty

Ronald Bishop, III, PhD (*Temple University*). Professor. Investigative reporting, sports journalism, journalism history, journalism sourcing patterns, textual narrative and ideological analysis, cultural history of fame.

Karen Cristiano, MS (*Temple University*) Assistant Department Head of *Communication*. Teaching Professor. Journalism, medical writing, feature writing, copy editing, mass media and society.

Richard Forney Assistant Teaching Professor. Broadcast journalism technology and the effects of new technologies on personal and corporate communication skills.

Ernest A. Hakanen, PhD (*Temple University*) Director, *Graduate Programs in Communication, Culture & Media*. Professor. Telecommunications policy, adolescent media use, communication theory and history, global media, and semiotics.

Barbara Hoekje, PhD (*University of Pennsylvania*). Associate Professor. Sociolinguistic theory, discourse analysis, applied linguistics (language teaching, learning, and testing).

Alexander Jenkins, PhD (*Drexel University*). Assistant Teaching Professor. Digital games, video games, emotion, morality, online fan communities, emerging media, convergence.

Hyunmin Lee, PhD (*University of Missouri*) Director, *Undergraduate Programs in Communication*. Associate Professor. Social media strategies for relationship and reputation management in public relations; media messages of public health issues and its psychological and behavioral effects on the public.

Susan Magee, MFA Director *Online Teaching*. Instructor. Digital Publishing, Content creation, Blogging, Strategic Social Media, Public Relations, Business and Technical Communication

Julia May, PhD (*Drexel University*) Director, *Strategic and Digital Communication MS Program*. Associate Teaching Professor. Political communication; international politics and its news coverage; public opinion; transatlantic relations; war, torture and human rights; debate in the public sphere.

Alexander Nikolaev, PhD (*Florida State University*). Associate Professor. Public relations, political communication, organizational communication, mass communication, international communications and negotiations, communications theory.

Rakhmiel Peltz, PhD (*University of Pennsylvania*). Professor. Judaic studies, Yiddish culture and linguistics, ethnography of communication, immigrant cultural studies.

Douglas V. Porpora, PhD (*Temple University*). Professor. War, genocide, torture, and human rights; macro-moral reasoning in public sphere debate; contemporary social theory moral and political communication; religion.

Rachel R. Reynolds, PhD (*University of Illinois*). Associate Professor. Sociolinguistics, ethnography of communication and discourse analysis; violence against women in mass media; political economy of migration; semiotics including the textual, the visual and multimodal.

Rosemary Rys, MA (*Rowan University*). Assistant Teaching Professor. Public relations and marketing.

Wesley Shumar, PhD (*University of Pennsylvania*). Professor. Digital media and learning; culture of higher education; entrepreneurship education; craft culture; semiotic of consumer culture.

Allan Stegeman, MA (*University of Houston*). Teaching Professor. Communication, technology and mass media, video.

Scott Tattar, BA (*York College of Pennsylvania*) Faculty Advisor, *Drexel PRSSA, Communication Department Recruitment Liaison*. Instructor. Public relations

Hilde Van den Bulck, PhD (*Katholieke Universiteit Leuven*) Department Head of *Communication*. Professor. Political economy of media structures; media policies for digitized media ecologies; stakeholders and coalitions in media policies; digitization; convergence and legacy media; public (service) media; celebrity culture and industry; fandom and anti-fandom.

Asta Zelenkauskaitė, PhD (*Indiana University*). Associate Professor. Social media; user-generated content; computer-mediated communication; interactivity; active audience analysis; mobile communication; gender and online identity; prosumer culture; internet of things; quantitative/qualitative research.

Emeritus Faculty

Alexander Friedlander, PhD (*Carnegie Mellon University*). Associate Professor. Rhetorical theory and practice, document design, writing and technology.

Lawrence Souder, PhD (*Temple University*) Director, *Drexel Edits*. Teaching Professor. Science and technical writing, communication ethics, nonprofit communication.

English BA / Communication MS

Major: *English and Communication*

Degree Awarded: Bachelor of Arts (BA) and Master of Science (MS)

Calendar Type: Quarter

Total Credit Hours: 226.0 - 228.0

Co-op Options: One Co-op (Five years); Two Co-op (Five years)

Classification of Instructional Programs (CIP) code: 09.0199

Standard Occupational Classification (SOC) code: 11-2011

About the Program

The ability to communicate effectively is one of the most sought-after skills by prospective employers industry wide. Drexel University is committed to building this strong foundation through the Accelerated Degree option, which enables academically qualified students to earn both a bachelor's and master's degree — graduating sooner than they would in traditional programs. Graduates of the accelerated degree enter the workforce one year sooner with the benefits of both a bachelor's degree in English and a master's degree in communication, using the year saved to gain full-time experience and earn a salary in the field.

The BA in English focuses on three areas:

- A rich **Academic Core** grounded in disciplinary expertise that promotes literary exploration, sophisticated textual literacy, excellent writing, and other transferable skills;
- **Applied Learning** opportunities using skills in research, interpretation, analysis, and writing to solve real-world problems;
- Opportunities for **Civic Engagement**, connecting with community partners to promote social justice and the common good.

Drexel's MS in Communication program requires 45.0 graduate credits, and prepares students for careers in a wide range of professional activities. The program specializes in three areas:

- public communication
- technical communication
- science and health communication

Public Communication

Public Communication has much to offer those looking to work in journalism, public relations, and nonprofit organizations. Students can choose from courses such as Strategic Social Media Communication, Event Planning, Journalism and News Writing, Public Relations Writing and Campaign Planning, and Nonprofit Communication.

Technical Communication

Technical Communication provides skills in technical writing, editing, and computer documentation, and trains students for careers in a wide range of industries from social networking to publishing to health insurance. Students choose from courses such as Technical Writing, Digital Publishing, Technical & Science Editing, and Technical Documentation & Software.

Science and Health Communication

Science and Health Communication leads to careers in medical, science, and pharmaceutical communication. Students can choose from courses such as Science Writing, Medical Journalism, Campaigns in Health & Environment, and Communicating Health and Risk in a 'Fake News' World.

In addition, the program provides a strong foundation in ethics and 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.

The program emphasizes flexibility, encouraging each student, in consultation with an academic advisor, to craft a particular course of study. Throughout the curriculum, students may use electives to increase communication skills or to further develop areas of specialization. The Master's degree requires a total of 45.0 graduate credits.

For additional information, visit the MS in Communication (<http://drexel.edu/coas/academics/graduate-programs/communication/>) web page. Contact Julia May, Director of the MS in Communication Program at julia.may@drexel.edu for more information.

Admission Requirements

Already matriculated English majors may apply after completing a minimum of 90.0 credits but no more than 120.0 credits. Applicants must have a minimum 3.0 GPA and maintain this GPA throughout the program.

In addition to formally applying and getting all the signatures required on the Accelerated Degree Program Admission form, applicants must provide:

- A 500-word statement of goals that explains why they want to enroll in the accelerated degree program.
- The name of a faculty reference who can speak to the applicant's academic qualifications and preparedness for graduate studies.

For more information contact Dr. Julia May, Director of the MS in Communication Program at julia.may@drexel.edu.

Degree Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
	or ENGL 111 English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
	or ENGL 112 English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
	or ENGL 113 English Composition III	
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
	Mathematics courses for a minimum of 6.0 credits	6.0
	Science courses for a minimum of 6.0 credits	6.0
	Social and Behavioral Science courses for a minimum of 12 credits	12.0
	Humanities courses (other than ENGL or WRIT) for a minimum of 6 credits	6.0
	Studies in Diversity courses for a minimum of 6 credits	6.0
	International Studies courses for a minimum of 6 credits	6.0
	Language requirement (2 consecutive courses, reaching at least 103)	8.0
	Core Courses, Required for either Concentrations	
ENGL 195	English Freshman Seminar	3.0
ENGL 207 [WI]	African American Literature	3.0
ENGL 301	English Major Colloquium	3.0
ENGL 315 [WI]	Shakespeare	3.0
ENGL 325	Topics in World Literature	3.0
ENGL 355 [WI]	Women and Literature	3.0
ENGL 495	Senior Project in Literature	3.0
WRIT 195	Threshold Concepts in Writing	3.0
WRIT 200	Language Puzzles and Word Games: Issues in Modern Grammar	3.0
WRIT 225 [WI]	Creative Writing	3.0

Concentrations (Choose 1) 36.0**A) Literary Studies Concentration (36 credits)**

Literature Surveys - Select 4 for a minimum of 12 credits

ENGL 200 [WI] Classical to Medieval Literature

ENGL 201 Renaissance to the Enlightenment

ENGL 202 [WI] Romanticism to Modernism

ENGL 203 [WI] Survey of World Literature

ENGL 204 Post-Colonial Literature

ENGL 205 [WI] American Literature I

ENGL 206 [WI] American Literature II

ENGL 211 [WI] British Literature I

ENGL 212 British Literature II

Authors and Periods - Select 1 for a minimum of 3 credits

ENGL 310 [WI] Period Studies

or ENGL 320 Major Authors

Literary Impacts - Select 1 for a minimum of 3 credits

ENGL 300 [WI] Literature & Science

or ENGL 323 Literature and Other Arts

or ENGL 360 Literature and Society

Literary Traditions - Select one for a minimum of 3 credits

ENGL 330 The Bible as Literature

or ENGL 335 Mythology

Literary Theory - 3 credits

ENGL 380 Literary Theory

Literature Seminars - Take both for a minimum of 6 credits

ENGL 490 Seminar in English and American Literature

ENGL 492 Seminar in World Literature

English Electives - minimum of 6 credits

Choose any additional 2 courses (300+) in ENGL or WRIT for a minimum of 6 credits

B) Writing Concentration

Foundations - Select 1 for a minimum of 3 credits

WRIT 210 [WI] The Peer Reader in Context

or WRIT 211 Advanced Composition

Rhetoric and Technique - Select 1 for a minimum of 3 credits

WRIT 212 Argument and Rhetoric

or WRIT 295 Forms Seminar

Audience Awareness - Select 1 for a minimum of 3 credits

WRIT 312 [WI] Writing for Target Audiences

or WRIT 315 Writing for Social Change

Writing Practices - Select 7 additional courses for a minimum of 21 credits (at least 5 must be WRIT or ENGL courses)

COM 160 Introduction to Journalism

COM 270 [WI] Business Communication

COM 310 [WI] Technical Communication

COM 375 [WI] Grant Writing

ENGL 312 Research Project Development

SCRIP 220 Playwriting I

SCRIP 270 Screenwriting I [WI]

WRIT 210 [WI] The Peer Reader in Context

WRIT 211 Advanced Composition

WRIT 212 Argument and Rhetoric

WRIT 215 [WI] Story Medicine

WRIT 220 [WI] Creative Nonfiction Writing

WRIT 226 Writing in Public Spaces

WRIT 250 "Mistakes Were Made": Truth, Writing, and Responsibility

WRIT 295 Forms Seminar

WRIT 301 [WI] Writing Poetry

WRIT 302 [WI] Writing Fiction

WRIT 303 Writing Humor and Comedy

WRIT 305 Life is Beautiful

WRIT 306 Writing About the Media

WRIT 310 Literary Editing & Publication

WRIT 311 Writing and Reading the Memoir

WRIT 312 [WI] Writing for Target Audiences

WRIT 315 Writing for Social Change

WRIT 400 [WI] Writing for -- and about -- the Web

WRIT 401 Advanced Poetry Workshop

WRIT 402 Advanced Fiction Workshop

WRIT 405 Internship in Publishing

WRIT T380 Special Topics in Writing

English Electives - minimum of 6 credits

Choose any additional 2 courses (300+) in WRIT or ENGL for a minimum of 6 credits

ELECTIVES 52.0-54.0**MS in Communication****Required Courses**

COM 500 Reading & Research in Communication 3.0

COM 610 Theories of Communication and Persuasion 3.0

COM 698 Managing Communication Professional Identities in a Digital Age 3.0

Electives ** 21.0

Required Concentration Courses 15.0

Students must select and complete one of the following concentration options:

Technical Communication

COM 612 Ethics for Technical, Science and Health Communication

Choose four of the following:

COM 510 Technical Writing

COM 525 Document Design and Usability

COM 535 Digital Publishing

COM 567 Technical Documentation and Software

COM 570 Technical, Science and Health Editing

INFO 532 Software Development

INFO 540 Perspectives on Information Systems

Science and Health Communication

COM 612 Ethics for Technical, Science and Health Communication

Choose four of the following:

COM 516 Campaigns for Health and Environment

COM 520 Science Writing

COM 570 Technical, Science and Health Editing

COM 670 Medical Writing

or COM 673 Medical Journalism

CHP 672 Theory and Practice in Health Communication

Public Communication

COM 613 Ethics for Professional Communication

Choose four of the following:

COM 533 Modern Desktop Publishing

COM 535 Digital Publishing

COM 536 Strategic Social Media Communication

COM 541 Foundations of Public Relations

COM 542 Public Relations Writing ***

COM 543 Public Relations Planning ***

COM 561 Fundamentals of Journalism & Newswriting

COM 563 Event Planning

COM 575 Grant Writing

COM 576 Nonprofit Communications

COM 650 Telecommunications Regulation and Policy

COM 660 Investigative Journalism

Total Credits 226.0-228.0

- * One credit course taken three times for a total of 3.0 credits.
- ** 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 T680). Qualified students may also pursue independent study for elective credit in special cases.
- *** To enroll in this class you must first earn a grade of "B" or better in COM 541 *Foundations of Public Relations* or get permission from the MS COM advisor to waive this requirement.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 Year, 1 Co-Op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101*	1.0 VACATION	
ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 WRIT 200	3.0 ENGL 207	3.0	
(UG) Foreign Language Course	4.0 (UG) Foreign Language Course (level 103+)	4.0 WRIT 195	3.0	
(UG) Math Elective	3.0 (UG) Math Elective	3.0 (UG) Social/ Behavioral Science Elective	3.0	
(UG) Social/ Behavioral Science Elective	3.0 (UG) Social/ Behavioral Science Elective	3.0 (UG) Science Elective	3.0	
	17	17	16	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 301	1.0 (UG) Literature Survey	3.0 ENGL 301	1.0 ENGL 325	3.0
WRIT 225	3.0 (UG) Authors & Periods	3.0 ENGL 315	3.0 (UG) Literature Survey	3.0
(UG) Science Elective	3.0 (UG) Diversity Studies	3.0 (UG) Literature Survey	3.0 (UG) Literary Impacts	3.0
(UG) Literature Survey	3.0 (UG) International Studies Elective	3.0 (UG) Diversity Studies	3.0 (UG) Free Electives	6.0
(UG) International Studies Elective	3.0 (UG) Humanities Elective	3.0 (UG) Humanities Elective	3.0	
(UG) Social/ Behavioral Science Elective	3.0	(UG) Free Elective	3.0	
	16	15	16	15

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 301	1.0 (UG) Free Electives	13.0 COOP EXPERIENCE	COOP EXPERIENCE	
ENGL 380	3.0 COM 610	3.0		
(UG) Free Electives	9.0			
COM 500	3.0			
	16	16	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 490	3.0 ENGL 355	3.0 ENGL 495	3.0 Student classified as Graduate	
UNIV H201	1.0 ENGL 492	3.0 (UG) Free Electives	9.0	
(UG) Literary Traditions	3.0 (UG) English Elective (ENGL or WRIT)	3.0 (GR) Concentration Core	3.0	
(UG) English Elective	3.0 (UG) Free Electives	6.0 (GR) Elective	3.0	
(UG) Free Electives	6.0 (GR) Concentration Core	3.0 Student graduates with BA degree		
COM 613 or 612	3.0			
	19	18	18	0

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
COM 698	3.0 (GR) Concentration Core	3.0 (GR) Graduate Electives	9.0	
(GR) Concentration Core	3.0 (GR) Graduate Electives	6.0		

(GR) Elective	3.0		
	9	9	9

Total Credits 226

* COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

** See degree requirements

5 Year, 3 Co-Op

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
ENGL 195	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV H101	1.0 WRIT 200	3.0 ENGL 207	3.0	
(UG) Foreign Language Course	4.0 (UG) Foreign Language Course (level 103+ or higher)	4.0 WRIT 195	3.0	
(UG) Math Elective	3.0 (UG) Math Elective	3.0 (UG) Social/ Behavioral Science	3.0	
(UG) Social/ Behavioral Sciences Elective	3.0 (UG) Social/ Behavioral Science Elective	3.0 (UG) Science Elective	3.0	
		(UG) Free Elective	3.0	
	17	17	19	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301	1.0 (UG) Literature Survey	3.0
		WRIT 225	3.0 (UG) Diversity Studies	3.0
		(UG) Science Elective	3.0 (UG) International Studies Elective	3.0
		(UG) Literature Survey	3.0 (UG) Humanities Elective	3.0
		(UG) International Studies Elective	3.0 (UG) Free Electives	6.0
		(UG) Social/ Behavioral Sciences	3.0	
		(UG) Free Elective	3.0	
	0	0	19	18

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	ENGL 301 (2nd of 3)	1.0 ENGL 325	3.0

(GR) Grad Concentration Core	3.0 ENGL 315	3.0 (UG) Literature Survey	3.0
	(UG) Literature Survey	3.0 (UG) Free Electives	9.0
	(UG) Authors and Periods	3.0 (GR) Concentration Core	3.0
	(UG) Diversity Studies	3.0	
	(UG) Humanities Elective	3.0	
	(GR) Concentration Core	3.0	
	0	3	19

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 301	1.0 (UG) Electives	12.0 COOP EXPERIENCE	COOP EXPERIENCE	
ENGL 355	3.0 COM 610	3.0 (GR) Graduate Elective	3.0 (GR) Graduate Elective	3.0
(UG) Literary Impacts	3.0 (GR) Grad Concentration Core	3.0		
(UG) Literary Traditions	3.0			
(UG) Free Elective	3.0			
COM 500	3.0			
COM 613 or 612	3.0			
	19	18	3	3

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
ENGL 380	3.0 ENGL 492	3.0 ENGL 495	3.0
ENGL 490	3.0 (UG) English Elective (ENGL or WRIT)	3.0 (UG) Free Electives	9.0
UNIV H201	1.0 (UG) Free Electives	6.0 (GR) Graduate Electives	6.0
(UG) English Elective (ENGL or WRIT)	3.0 (GR) Graduate Electives	6.0	
(UG) Free Elective	3.0		
COM 698	3.0		
(GR) Graduate Elective	3.0		
	19	18	18

Total Credits 228

Environmental Science BS / Environmental Policy MS

Major: Environmental Science and Environmental Policy
Degree Awarded: Bachelor of Science (BS) and Master of Science in Environmental Policy (MSEP)

Calendar Type: Quarter

Total Credit Hours: 225.0

Co-op Options: One Co-op (Five years); Two Co-op (Five years)

Classification of Instructional Programs (CIP) code: 03.0104

Standard Occupational Classification (SOC) code: 19-2041

About the Program

The BS/MS program in Environmental Science (BS) and Environmental Policy (MS) is designed to bring two distinct but mutually enhancing disciplines together in one program. It provides an opportunity for highly motivated and qualified undergraduates to begin pursuing a graduate degree prior to completion of their bachelor's degree in a 4+1 year format with either one or two co-ops.

Environmental policy pairs naturally with environmental science by helping students bridge the gap between their strength in science and their interest in making change through policy. Science without an effective avenue toward working with decision makers and supporting public policy runs short of its reach and potential benefit. The BS/MS in ENVS-ENVP prepares students both as scientists and professionals who can communicate science and translate environmental data into actionable environmental policy with tangible impact. Students can also conduct real-world research writing through a case study thesis, select elective courses tailored to their interests, or complete their degree with research experience.

The accelerated program is appropriate for Environmental Science majors interested in learning about public policy and who have a desire to work in environmental policy, such as in government, advocacy work, consulting, or the nonprofit sector.

This 4+1 program can be taken in either the 4-year undergraduate co-op program (4COP) or the 5-year undergraduate co-op program (5COP). The 4COP program provides students with the benefit of one co-op in spring/summer of their 3rd year while maintaining more flexibility in course loads per term. The 5COP program allows students to complete two coops in second and third year and puts more demand on students' schedules. Students applying to the 5COP format need early planning and an ability to handle heavier course loads beginning sophomore year. For both options, graduate coursework begins in year 4 (concurrent with the final year of the BS program) and the MS degree is completed at the end of year 5. Students officially convert to graduate status for year 5.

Admission Requirements

To be eligible for the BS/MS program, students must apply between 90.0-120.0 credits and have a minimum 3.25 cumulative GPA. Applicants should meet with their advisor to create a plan of study and email that plan of study and a one-page essay to the director of the ENVP program along with a short email of introduction including their current major and proposed ENVP track. After a review of the initial plan of study, the director and the student will have a 20-minute interview. If accepted, the student will receive an Accelerated Degree Program Application form and will use it to obtain permission from all approving parties listed on the form.

Degree Requirements

Degree Requirements

Humanities and Social Science		
CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COM 310 [WI]	Technical Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 340	Environmental Ethics	3.0
or PHIL 341	Environmental Philosophy	
UNIV S101	The Drexel Experience	1.0
Humanities/Social Science electives		6.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Mathematics, Statistics & Computing		21.0
Select one of the following sequences:		
Calculus sequence		
MATH 121	Calculus I	
MATH 122	Calculus II	
MATH 123	Calculus III	
Analysis sequence		
MATH 101	Introduction to Analysis I	
MATH 102	Introduction to Analysis II	
MATH 239	Mathematics for the Life Sciences	
Additional required math & computing courses:		
CS 171	Computer Programming I	
MATH 410	Scientific Data Analysis I	
MATH 411	Scientific Data Analysis II	
Physical Sciences		
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103	General Chemistry III	5.0
Choose two chemistry electives from:		
CHEM 241	Organic Chemistry I	
ENVS 302	Environmental Chemistry Laboratory	
ENVS 310	Introduction to Environmental Chemistry	
Physics sequence		
PHYS 152	Introductory Physics I	4.0
PHYS 153	Introductory Physics II	4.0
PHYS 154	Introductory Physics III	4.0
Biological Sciences		
BIO 131	Cells and Biomolecules	4.0
BIO 132	Genetics and Evolution	4.0
BIO 133	Physiology and Ecology	4.0
BIO 134	Cells and Biomolecules Lab	1.0
BIO 135	Genetics and Evolution Lab	1.0
BIO 136	Anatomy and Ecology Lab	1.0
Geoscience Requirements		
GEO 101	Physical Geology	4.0
GEO 103	Introduction to Field Methods in Earth Science	2.0
GEO 201 [WI]	Earth Systems Processes	3.0
Environmental Science Core Requirements		
ENVS 101	Introduction to Environmental Science	5.0
ENVS 102	Natural History, Research and Collections	2.0
ENVS 201	Practical Identification of Plants and Animals	2.0
ENVS 212	Evolution	4.0

ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
ENVS 308	GIS and Environmental Modeling	3.0
ENVS 441 [WI]	Issues in Global Change I: Seminar	2.0
ENVS 442	Issues in Global Change II: Research	2.0
ENVS 443	Issues in Global Change III: Synthesis	2.0
Choose one of the following:		3.0
ENSS 283	Introduction to Environmental Policy	
ENSS 326	Cities and Sustainability	
ENSS 348	Delaware River Issues and Policy	
PSCI 284	Environmental Politics	
Environmental Science Lab Requirements		2.0
Environmental Concentration Requirements		14.0
See list of concentration requirements below.		
Environmental Electives (plus 6crs shared with ENVP 522 and ENVS 528 or 538)		6.0
Free Electives		24.0
MS Environmental Policy		
Public Policy Core Graduate Courses		12.0
PLCY 503	Theory and Practice of Policy Analysis	
PLCY 504	Methods of Policy Analysis	
PLCY 506	Institutional Dynamics of the Policy Process	
PLCY 507	Nonprofit Organizations	
Environmental Core Graduate Courses		9.0
ENVP 522	Environmental Law	
ENVP 572	Environmental Policy	
ENVS 506	Biostatistics	
Environmental Science or Environmental and Occupational Health Track		6.0
Environmental Science Track (2 of the following courses):		
ENVS 501	Chemistry of the Environment	
ENVS 528	Conservation Biology	
ENVS 538	Biodiversity	
Environmental and Occupational Health Track (EOH 510 and one of the following 600-level EOH courses):		
EOH 510	Principles and Practice of Environmental and Occupational Health	
EOH 605	Evidence Evaluation for Identification of Environmental Hazards	
EOH 610	Environmental and Occupational Toxicology	
EOH 615	Environmental and Occupational Health Policy	
EOH 630	Environmental Health Risk and Impact Assessment	
EOH 665	Quantitative Risk Analysis for Environmental Health	
Economics Core		6.0
BUSN 502	Essentials of Economics	
or ECON 60 Managerial Economics		
ECON 616	Public Finance and Cost Benefit Analysis	
Research Experience and/or Approved Courses in Environmental Policy		12.0
Case Study Sequence (optional 9 credits)		
Approved Electives: The remaining 3-12 credits may be any graduate ENVP or PLCY courses. **		
Total Credits		225.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

** 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.

Environmental Science Concentrations

Ecology & Evolution Concentration 14.0-15.0

Choose 5 from below:

BIO 244	Genetics I
BIO 436	Population Genetics
ENVS 202	Tree of Life
ENVS 312	Systematic Biology
ENVS 328	Conservation Biology
ENVS 470	Advanced Topics in Evolution

Total Credits 14.0-15.0

Applied Environmental Science Concentration 14.0-15.0

Required Courses

ENVS 203	The Watershed Approach
ENVS 275	Global Climate Change
ENVS 372	Environmental Assessment

Choose 2 from below:

ENVS 376	Environmental and Ecological Remediation
ENVS 401	Chemistry of the Environment
GEO 306	Environmental Geology

Total Credits 14.0-15.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4+1 (4COP), 1 co-op

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	BIO 132	4.0	BIO 136	1.0	VACATION	
ENGL 101 or 111	3.0	BIO 135	1.0	BIO 133	4.0		
ENVS 101	5.0	CHEM 102	4.5	CHEM 103	5.0		
MATH 101 or 121	4.0	CIVC 101	1.0	COOP 101	1.0		
UNIV S101	1.0	ENGL 102 or 112	3.0	GEO 103	2.0		

MATH 102 or 122	4.0 MATH 239 or 123	4.0	
16.5	17.5	17	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CS 171	3.0 ENVS 212	4.0 COM 230	3.0
BIO 134	1.0 ENVS 286	3.0 GEO 101	4.0 PHYS 153	4.0
ENGL 103 or 113	3.0 GEO 201	3.0 PHYS 152	4.0 (UG) ENVS Lab elective	2.0
ENVS 102	2.0 UNIV S201	1.0 (UG) Free elective	3.0 (UG) Humanities/ Social Science elective	3.0
ENVS 201	2.0 (UG) ENVS Concentration course	2.0 (UG) Humanities/ Social Science elective	3.0 (UG) Free elective	3.0
ENVS 284	3.0 (UG) Free elective	3.0		
15	15	18	15	

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 410	3.0 ENSS 283 or PSCI 284	3.0-4.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHIL 340 or 341	3.0 ENVS 308	3.0		
PHYS 154	4.0 MATH 411	3.0		
(UG) CHEM elective	3.0 (UG) CHEM elective	2.0		
(UG) ENVS Concentration course	3.0 (UG) ENVS Concentration course	3.0		
16	14-15	0	0	

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 310	3.0 ENVS 442	2.0 ENVS 443	2.0 Student converted to Graduate status	
ENVS 441	2.0 (UG) ENVS Concentration course	3.0 (UG) ENVS electives	3.0	
(UG) ENVS Concentration course	3.0 (UG) ENVS elective	3.0 (UG) Free elective	7.0	
(UG) Free elective	4.0 (UG) Free elective	4.0 ENVS 506	3.0	
ENVP 522 (Shared UG/GR course)	3.0 ENVS 528 or 538 (Shared UG/GR Course)	3.0 PLCY 510 (or [GR] elective)	3.0	
ENVS 501 or EOH 510	3.0 ENVP 572	3.0		
18	18	18	0	

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
PLCY 506	3.0 BUSN 502	3.0 ECON 616	3.0

PLCY 516 (or [GR] elective)	3.0 PLCY 503	3.0 PLCY 504	3.0
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(GR) elective	3.0 PLCY 517 (or [GR] elective)	3.0 PLCY 507 (or [GR] elective)	3.0
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9	9	9	
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Total Credits 225-226

4+1 (5COP), 2 co-op

First Year

Fall	Credits Winter	Credits Spring	Credits
ENVS 101	5.0 BIO 132	4.0 BIO 133	4.0
ENGL 101	3.0 BIO 135	1.0 BIO 136	1.0
MATH 101 or 121	4.0 ENGL 102	3.0 GEO 103	2.0
CHEM 101	3.5 MATH 102 or 122	4.0 MATH 239 or 123	4.0
UNIV S101	1.0 CHEM 102 CIVC 101	4.5 CHEM 103 1.0 COOP 101	5.0 1.0
16.5	17.5	17	

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 131	4.0 CS 171	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
BIO 134	1.0 ENVS 286	3.0		
ENGL 103	3.0 GEO 201	3.0		
ENVS 102	2.0 UNIV S201	1.0		
ENVS 202	2.0 (UG) ENVS Concentration course	2.0		
ENVS 284	3.0 (UG) Humanities/ Social Science elective	3.0		
GEO 101	4.0 (UG) Free elective	3.0		
19	18	0	0	

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENVS 212	4.0 ENSS 283 or PSCI 284	3.0-4.0 COOP EXPERIENCE	COOP EXPERIENCE	
MATH 410	3.0 ENVS 308	3.0		
PHIL 340 or 341	3.0 MATH 411	3.0		
PHYS 152	4.0 PHYS 153	4.0		
(UG) ENVS Concentration course	3.0 (UG) CHEM elective	2.0		
(UG) Free elective	3.0 (UG) ENVS Concentration course	3.0		
20	18-19	0	0	

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENVS 441	2.0 ENVS 442	2.0 ENVS 443	2.0 COM 230	3.0
PHYS 154	4.0 (UG) ENVS Concentration course	3.0 (UG) ENVS elective	3.0 COM 310	3.0

(UG) ENVS Concentration course	3.0 (UG) ENVS elective	3.0 (UG) Free electives	7.0 (UG) ENVS Lab elective	2.0
(UG) CHEM elective	3.0 (UG) Free elective	4.0 ENVS 506	3.0 (UG) Humanities/ Social Science elective	3.0
ENVP 522 (Shared UG/GR course)	3.0 ENVP 572	3.0 PLCY 510	3.0 (UG) Free electives	7.0
ENVS 501 or EOH 510	3.0 ENVS 528 or 538 (Shared UG/GR course)	3.0	Graduate BS ENVS degree	
	18	18	18	18

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
PLCY 506	3.0 PLCY 503	3.0 PLCY 504	3.0
PLCY 516	3.0 BUSN 502	3.0 ECON 616	3.0
(GR) Elective	3.0 PLCY 517 (Or GR elective)	3.0 PLCY 507 (Or GR elective)	3.0
	9	9	9

Total Credits 225-226

Environmental Science BS / Environmental Science MS

*Major: Environmental Science**Degree Awarded: Bachelor of Science (BS) and Master of Science in Environmental Science (MSES)**Calendar Type: Quarter**Total Credit Hours: 225.0**Co-op Options: One Co-op (Five years); Two Co-op (Five years)**Classification of Instructional Programs (CIP) code: 03.0104**Standard Occupational Classification (SOC) code: 19-2041*

About the Program

The BS/MS program in Environmental Science is designed to provide an opportunity for highly motivated and qualified undergraduates to begin pursuing a graduate degree prior to completion of their bachelor's degree in a 4+1 year format with either one or two co-ops.

The MS in Environmental Science builds on the knowledge undergraduates gain in their Environmental Science program and allows students to advance into higher-level courses with greater depth. Students interested in a course-based program can choose to do the BS/MS as a non-thesis student, which has advantages when seeking positions in consulting, government, or nonprofit organizations. Students interested in research careers or future doctoral studies can opt to pursue the thesis option, which provides an opportunity to conduct independent research and gain valuable research experience. Students interested in the thesis option require early planning.

This 4+1 program can be taken in either the 4-year undergraduate co-op program (4COP) or the 5-year undergraduate co-op program (5COP). The 4COP program provides students with the benefit of one co-op in spring/summer of their third year while maintaining more flexibility in course loads per term. The 5COP program allows students to complete two coops in second and third year and puts more demand on students'

schedules. Students applying to the 5COP format need early planning and an ability to handle heavier course loads beginning sophomore year. For both options, graduate coursework begins in year 4 (concurrent with the final year of the BS program) and the MS degree is completed at the end of year 5. Students officially convert to graduate status for year 5.

Admission Requirements

To be eligible for the BS/MS program, students must apply between 90.0-120.0 credits and have a minimum 3.25 cumulative GPA overall and in their math and science courses. Applicants should meet with their advisor to create a plan of study and submit a one-page personal statement. After a review of the initial plan of study and personal statement, the applicant will meet with the undergraduate and graduate chairs for an interview. If accepted, the student will receive an Accelerated Degree Program Application form and will use it to obtain permission from all approving parties listed on the form.

Degree Requirements

Degree Requirements**Humanities and Social Science**

CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COM 310 [WI]	Technical Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PHIL 340	Environmental Ethics	3.0
or PHIL 341	Environmental Philosophy	
Humanities/Social Science electives		6.0
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0

Mathematics, Statistics & Computing**21.0**

CS 171	Computer Programming I	
MATH 101	Introduction to Analysis I	
or MATH 121	Calculus I	
MATH 102	Introduction to Analysis II	
or MATH 122	Calculus II	
MATH 239	Mathematics for the Life Sciences	
or MATH 123	Calculus III	
MATH 410	Scientific Data Analysis I	
MATH 411	Scientific Data Analysis II	

Physical Sciences

CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103	General Chemistry III	5.0
Choose two chemistry electives from:		5.0
CHEM 241	Organic Chemistry I	
ENVS 302	Environmental Chemistry Laboratory	
ENVS 310	Introduction to Environmental Chemistry	

Physics sequence

PHYS 152	Introductory Physics I	4.0
PHYS 153	Introductory Physics II	4.0
PHYS 154	Introductory Physics III	4.0

Biological Sciences

BIO 131	Cells and Biomolecules	4.0
BIO 132	Genetics and Evolution	4.0

BIO 133	Physiology and Ecology	4.0
BIO 134	Cells and Biomolecules Lab	1.0
BIO 135	Genetics and Evolution Lab	1.0
BIO 136	Anatomy and Ecology Lab	1.0
Geoscience Requirements		
GEO 101	Physical Geology	4.0
GEO 103	Introduction to Field Methods in Earth Science	2.0
GEO 201 [WI]	Earth Systems Processes	3.0
Environmental Science Core Requirements		
ENVS 101	Introduction to Environmental Science	5.0
ENVS 102	Natural History, Research and Collections	2.0
ENVS 201	Practical Identification of Plants and Animals	2.0
ENVS 212	Evolution	4.0
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
ENVS 308	GIS and Environmental Modeling	3.0
ENVS 441 [WI]	Issues in Global Change I: Seminar	2.0
ENVS 442	Issues in Global Change II: Research	2.0
ENVS 443	Issues in Global Change III: Synthesis	2.0
Choose one of the following:		3.0
ENSS 283	Introduction to Environmental Policy	
ENSS 326	Cities and Sustainability	
ENSS 348	Delaware River Issues and Policy	
PSCI 284	Environmental Politics	
Environmental Science Lab Requirements		2.0
Environmental Concentration Requirements		14.0
See list of concentration requirements below.		
Environmental Electives (plus 6crs GR shared ENVS 501 and ENVS 511)		6.0
Free Electives		24.0
Graduate Courses		
ENVS 501	Chemistry of the Environment	3.0
ENVS 511	Evolutionary Ecology	3.0
MS ENVS electives		39.0
Total Credits		225.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

Environmental Science Concentrations

Ecology & Evolution Concentration	14.0-15.0
Choose 5 from below:	
BIO 244	Genetics I
BIO 436	Population Genetics
ENVS 202	Tree of Life
ENVS 312	Systematic Biology
ENVS 328	Conservation Biology
ENVS 470	Advanced Topics in Evolution
Total Credits	14.0-15.0
Applied Environmental Science Concentration	14.0-15.0
Required Courses	
ENVS 203	The Watershed Approach
ENVS 275	Global Climate Change
ENVS 372	Environmental Assessment
Choose 2 from below:	
ENVS 376	Environmental and Ecological Remediation
ENVS 401	Chemistry of the Environment
GEO 306	Environmental Geology
Total Credits	14.0-15.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4+1 (4COP), 1 co-op

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	BIO 132	4.0	BIO 133	4.0	VACATION	
ENGL 101 or 111	3.0	BIO 135	1.0	BIO 136	1.0		
ENVS 101	5.0	CHEM 102	4.5	CHEM 103	5.0		
MATH 101 or 121	4.0	CIVC 101	1.0	COOP 101	1.0		
UNIV S101	1.0	ENGL 102 or 112	3.0	GEO 103	2.0		
		MATH 102 or 122	4.0	MATH 239 or 123	4.0		
		16.5	17.5	17	0		

Second Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 131	4.0	CS 171	3.0	ENVS 212	4.0	COM 230	3.0
BIO 134	1.0	ENVS 286	3.0	GEO 101	4.0	PHYS 153	4.0
ENGL 103 or 113	3.0	GEO 201	3.0	PHYS 152	4.0	(UG) ENVS Lab elective	2.0
ENVS 102	2.0	UNIV S201	1.0	(UG) Humanities/ Social Science elective	3.0	(UG) Humanities/ Social Science elective	3.0
ENVS 201	2.0	(UG) ENVS Concentration course	2.0	(UG) Free elective	3.0	(UG) Free elective	3.0
ENVS 284	3.0	(UG) Free elective	3.0				
		15	15	18	15		

Third Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
MATH 410	3.0	ENSS 283 or PSCI 284	3.0-4.0	COOP EXPERIENCE	COOP EXPERIENCE		

PHIL 340 or 341	3.0	ENVS 308	3.0	
PHYS 154	4.0	MATH 411	3.0	
(UG) ENVS Concentration course	3.0	(UG) ENVS Concentration course	3.0	
(UG) CHEM elective	3.0	(UG) CHEM elective	2.0	
16		14-15		0

Fourth Year				
Fall	Credits	Winter	Credits	Spring
ENVS 441	2.0	ENVS 442	2.0	ENVS 443
COM 310	3.0	(UG) ENVS Concentration course	3.0	(UG) ENVS Concentration course
(UG) ENVS Concentration course	3.0	(UG) ENVS elective	3.0	(UG) Free elective
(UG) Free elective	4.0	(UG) Free elective	4.0	ENVS 506
ENVS 501 (Shared UG/GR course)	3.0	ENVS 511 (Shared UG/GR course)	3.0	(GR) Electives
(GR) Elective	3.0	(GR) Elective	3.0	
18		18		18

Fifth Year				
Fall	Credits	Winter	Credits	Spring
(GR) Electives	9.0	(GR) Electives	9.0	(GR) Electives
9		9		9

Total Credits 225-226

4+1 (5COP), 2 co-op

First Year				
Fall	Credits	Winter	Credits	Spring
CHEM 101	3.5	BIO 132	4.0	BIO 133
ENGL 101	3.0	BIO 135	1.0	BIO 136
ENVS 101	5.0	CHEM 102	4.5	CHEM 103
MATH 101 or 121	4.0	CIVC 101	1.0	COOP 101
UNIV S101	1.0	ENGL 102	3.0	GEO 103
		MATH 102 or 122	4.0	MATH 239 or 123
16.5		17.5		17

Second Year				
Fall	Credits	Winter	Credits	Spring
BIO 131	4.0	CS 171	3.0	COOP EXPERIENCE
BIO 134	1.0	ENVS 286	3.0	
ENGL 103	3.0	GEO 201	3.0	
ENVS 102	2.0	UNIV S201	1.0	
ENVS 201	2.0	(UG) Humanities/Social Science elective	3.0	
ENVS 284	3.0	(UG) Free elective	3.0	

GEO 101	4.0	(UG) ENVS Concentration course	2.0	
19		18		0

Third Year				
Fall	Credits	Winter	Credits	Spring
ENVS 212	4.0	ENVS 283 or PSCI 284	3.0-4.0	COOP EXPERIENCE
MATH 410	3.0	ENVS 308	3.0	
PHIL 340 or 341	3.0	MATH 411	3.0	
PHYS 152	4.0	PHYS 153	4.0	
(UG) ENVS Concentration course	3.0	(UG) CHEM elective	2.0	
(UG) Free elective	3.0	(UG) ENVS Concentration course	3.0	
20		18-19		0

Fourth Year				
Fall	Credits	Winter	Credits	Spring
ENVS 441	2.0	ENVS 442	2.0	ENVS 443
PHYS 154	4.0	(UG) ENVS Concentration course	3.0	(UG) ENVS elective
(UG) CHEM elective	3.0	(UG) ENVS elective	3.0	(UG) Free electives
(UG) ENVS Concentration course	3.0	(UG) Free elective	4.0	ENVS 506
ENVS 501 (Shared UG/GR course)	3.0	ENVS 511 (Shared UG/GR course)	3.0	(GR) Elective
(GR) Elective	3.0	(GR) Elective	3.0	
18		18		18

Fifth Year				
Fall	Credits	Winter	Credits	Spring
(GR) Electives	9.0	(GR) Electives	9.0	(GR) Electives
9		9		9

Total Credits 225-226

Environmental Studies & Sustainability BA / Environmental Policy MSEP

Major: Environmental Studies / Environmental Policy

Degree Awarded: Bachelor of Arts (BA) and Master of Science in Environmental Policy (MSEP)

Calendar Type: Quarter

Total Credit Hours: 225.0

Co-op Options: One Co-op (Five years); Two Co-op (Five years)

Classification of Instructional Programs (CIP) code: 03.0104

Standard Occupational Classification (SOC) code: 19-2041

About the Program

The BAMS program in Environmental Studies and Sustainability (BA) and Environmental Policy (MS) is designed to provide an opportunity for highly motivated and qualified undergraduates to begin pursuing a graduate degree prior to completion of their bachelor's degree with either 1 or 2 coops. The MS in Environmental Policy builds on the knowledge that undergraduates gain in the Environmental Studies and Sustainability program and provides advanced training for careers in environmental law, research, advocacy, and more.

Creating public policy that supports environmental stewardship is a challenging and critical endeavor. The BAMS program prepares students to critically engage with complex environmental challenges; devise and communicate innovative policy solutions; and work with decision makers to effect policy change. Coursework spans the disciplines of law, political science, economics, engineering, business, and public health. Students have the opportunity to select elective courses tailored to their interests, gain hands-on research experience, and complete a case-based thesis with real-world impact.

The BAMS ENSS-ENVP program is appropriate for environmental studies and sustainability majors interested in advanced studies in public policy, and who have a desire to work in a range of environmental sectors.

The one co-op version of the program provides students with the benefit of one co-op in spring/summer of their 3rd year while maintaining more flexibility in course loads per term. The two co-op version of the program allows students to complete two coops in 2nd and 3rd year and puts more demand on students' schedules. Students applying to the two co-op format need early planning and an ability to handle heavier course loads beginning sophomore year. For both options, graduate coursework begins in year 4 (concurrent with the final year of the BS program) and the MS degree is completed at the end of year 5. Students officially convert to graduate student status for the 5th year.

Admission Requirements

To be eligible for the BAMS program, students must apply between 90-120 credits and have a minimum 3.25 cumulative GPA. Applicants should meet with their advisor to create a plan of study and email that plan of study and a 1-page essay to the Director of the ENVP Program along with a short email of introduction including their current major and proposed ENVP track. After a review of the initial plan of study, the director and the student will have a 20-minute interview. If accepted, the student will receive an Accelerated Degree Program Application form and will use it to obtain permission from all approving parties listed on the form.

Degree Requirements

General Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
MATH 101	Introduction to Analysis I	4.0

MATH 107	Probability and Statistics for Liberal Arts	3.0
UNIV S101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Social and Behavioral Sciences		
SOC 101	Introduction to Sociology	3.0
or ANTH 101	Introduction to Cultural Diversity	
PSY 101	General Psychology I	3.0
PSCI 110	American Government	4.0
Social Behavior elective		3.0
Physical and Natural Sciences		
BIO 109	Biological Diversity, Ecology & Evolution	3.0
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	1.0
ENVS 101	Introduction to Environmental Science	5.0
ENVS 230	General Ecology	3.0
ENSS 275	Global Climate Change	3.0
or ENVS 289	Global Warming, Biodiversity and Your Future	
GEO 201 [WI]	Earth Systems Processes	3.0
Humanities and Fine Arts		
Humanities & Fine Arts Electives		6.0
COM 317 [WI]	Environmental Communication	3.0
or COM 320	Science Writing	
PHIL 340	Environmental Ethics	3.0
or PHIL 341	Environmental Philosophy	
Diversity Electives		6.0
International Studies		6.0
Foreign Language		8.0
Students must complete at least 8 credits of a foreign language and, at minimum, must complete the 103 level of the target language (or beyond if they place higher).		
ENSS Core Requirements		
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENSS 120	Introduction to Environmental Studies	3.0
ENSS 244	Sociology of the Environment	4.0
ENSS 283	Introduction to Environmental Policy	3.0
ENSS 285	Introduction to Urban Planning	3.0
ENSS 326	Cities and Sustainability	3.0
ENSS 346	Environmental Justice	4.0
ENVS 260	Environmental Science and Society	3.0
PBHL 101	Public Health 101	3.0
PSCI 284	Environmental Politics	4.0
Modeling and Research		
ENVS 308	GIS and Environmental Modeling	3.0
SOC 241	Research Design: Qualitative Methods	4.0
SOC 242	Research Design: Quantitative Methods	4.0
ENSS Electives (plus 3crs shared GR course ENVP 522)		18.0
Senior Sequence		
ENVS 441 [WI]	Issues in Global Change I: Seminar	2.0
ENVS 442	Issues in Global Change II: Research	2.0
ENVS 443	Issues in Global Change III: Synthesis	2.0
Free Electives		24.0
MS Environmental Policy		
Public Policy Core Graduate Courses		
PLCY 503	Theory and Practice of Policy Analysis	
PLCY 504	Methods of Policy Analysis	
PLCY 506	Institutional Dynamics of the Policy Process	
PLCY 507	Nonprofit Organizations	
Environmental Core Graduate Courses		9.0
ENVP 522	Environmental Law	
ENVP 572	Environmental Policy	
ENVS 506	Biostatistics	
Environmental Science or Environmental and Occupational Health Track		6.0
Environmental Science Track (2 of the following courses):		

ENVS 501	Chemistry of the Environment	
ENVS 528	Conservation Biology	
ENVS 538	Biodiversity	
Environmental and Occupational Health Track (EOH 510 and one of the following 600-level EOH courses):		
EOH 510	Principles and Practice of Environmental and Occupational Health	
EOH 605	Evidence Evaluation for Identification of Environmental Hazards	
EOH 610	Environmental and Occupational Toxicology	
EOH 615	Environmental and Occupational Health Policy	
EOH 630	Environmental Health Risk and Impact Assessment	
EOH 665	Quantitative Risk Analysis for Environmental Health	
Economics Core		6.0
BUSN 502	Essentials of Economics	
or ECON 601	Managerial Economics	
ECON 616	Public Finance and Cost Benefit Analysis	
Research Experience and/or Approved Courses in Environmental Policy		12.0
Case Study Sequence (optional 9 credits)		
Approved Electives: The remaining 3-12 credits may be any graduate ENVP or PLCY 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.		
Total Credits		225.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

Sample Plan of Study

4+1 (4COP), 1 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENSS 120	3.0 BIO 109	3.0 COOP 101	1.0 VACATION	
ENVS 101	5.0 BIO 110	1.0 ENGL 103 or 113	3.0	
ENGL 101 or 111	3.0 CIVC 101	1.0 MATH 107	3.0	
MATH 101	4.0 ENGL 102 or 112	3.0 SOC 101 or ANTH 101	3.0	
UNIV S101	1.0 PSY 101	3.0 (UG) Foreign Language	4.0	
	(UG) Foreign Language	4.0 (UG) Free elective	3.0	
	16	15	17	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENSS 283	3.0 ENSS 244	4.0 ECON 201	4.0 ECON 202	4.0
ENVS 260	3.0 ENSS 275 or ENVS 289	3.0 ENVS 230	3.0 (UG) ENSS elective	3.0
PBHL 101	3.0 GEO 201	3.0 (UG) ENSS elective	3.0 (UG) Humanities/ Fine Arts elective	3.0
PSCI 110	4.0 (UG) ENSS elective	3.0 (UG) Internationa elective	3.0 (UG) Diversity elective	3.0
UNIV H201	1.0 (UG) Free elective	3.0 (UG) Diversity elective	3.0 (UG) Free elective	4.0
	14	16	16	17

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENSS 285	3.0 COM 317	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
PHIL 340 or 341	3.0 ENVS 308	3.0		
SOC 241 (UG) Humanities/ Fine Arts elective	4.0 PSCI 284 3.0 SOC 242	4.0		
(UG) Free elective	3.0 (UG) Free elective	3.0		
	16	17	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENSS 346	4.0 ENSS 326	3.0 ENVS 443	2.0 Student Classified as Graduate	
ENVS 441	2.0 ENVS 442	2.0 (UG) ENSS elective	3.0	
(UG) ENSS elective	3.0 (UG) ENSS elective	3.0 (UG) International elective	3.0	
(UG) Social/ Behavior Science elective	3.0 (UG) Free elective	4.0 (UG) Free elective	4.0	
ENVP 522 (Shared UG/GR course)	3.0 ENVP 572	3.0 ENVS 506	3.0	
ENVS 501 or EOH 510	3.0 ENVS 528 (or [GR] EOH elective)	3.0 PLCY 510 (or [GR] elective)	3.0	
	18	18	18	0

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
PLCY 506	3.0 BUSN 502	3.0 ECON 616	3.0	
PLCY 516 (or [GR] elective)	3.0 PLCY 503	3.0 PLCY 504	3.0	
(GR) elective	3.0 PLCY 517 (or [GR] elective)	3.0 PLCY 507 (or [GR] elective)	3.0	
	9	9	9	

Total Credits 225

4+1 (5COP), 2 co-op

First Year				
Fall	Credits Winter	Credits Spring	Credits	
ENSS 120	3.0 BIO 109	3.0 COOP 101	1.0	
ENVS 101	5.0 BIO 110	1.0 ENGL 103	3.0	
ENGL 101	3.0 CIVC 101	1.0 MATH 107	3.0	
MATH 101	4.0 ENGL 102	3.0 SOC 101 or ANTH 101	3.0	
UNIV S101	1.0 PSY 101	3.0 (UG) Foreign Language	4.0	

	(UG) Foreign Language	4.0 (UG) Free elective	3.0	
	16	15	17	
Second Year				
Fall	Credits	Winter	Credits	Spring
ENSS 283	3.0	ENSS 244	4.0	COOP EXPERIENCE
ENVS 260	3.0	ENVS 275 or 289	3.0	
PBHL 101	3.0	GEO 201	3.0	
PSCI 110	4.0	SOC 242	4.0	
UNIV H201	1.0	(UG) ENSS elective	3.0	
(UG) Diversity elective	3.0	(UG) Free elective	3.0	
	17	20	0	0
Third Year				
Fall	Credits	Winter	Credits	Spring
SOC 241	4.0	PSCI 284	4.0	COOP EXPERIENCE
ENSS 285	3.0	COM 317	3.0	
PHIL 340 or 341	3.0	ENSS elective	3.0	
ECON 201	4.0	ECON 202	4.0	
ENVS 230	3.0	ENVS 308	3.0	
Humanities/ Fine Arts elective	3.0	Free elective	3.0	
	20	20	0	0
Fourth Year				
Fall	Credits	Winter	Credits	Spring
ENSS 346	4.0	ENSS 326	3.0	ENVS 443
ENVS 441	2.0	ENVS 442	2.0	(UG) ENSS elective
(UG) ENSS elective	3.0	(UG) ENSS elective	3.0	(UG) International elective
(UG) Soc/ Behavior Science elective	3.0	(UG) Free elective	4.0	(UG) Free elective
ENVP 522 (Shared UG/GR course)	3.0	ENVP 572	3.0	ENVS 506
ENVS 501 or EOH 510	3.0	ENVS 528 or 538	3.0	PLCY 510
	18	18	18	19
Fifth Year				
Fall	Credits	Winter	Credits	Spring
PLCY 506	3.0	BUSN 502	3.0	ECON 616
PLCY 516	3.0	PLCY 503	3.0	PLCY 504
(GR) Elective	3.0	PLCY 517 (Or GR elective)	3.0	PLCY 507 (Or GR elective)
	9	9	9	
Total Credits 225				

Global Studies BA / Communication MS

Major: Global Studies and Communication

Degree Awarded: Bachelor of Art (BA) and Master of Science (MS)

Calendar Type: Quarter

Total Credit Hours: 225.0

Co-op Options: One Co-op (Five years)

Classification of Instructional Programs (CIP) code: 30.2001

Standard Occupational Classification (SOC) code: 19-3094

About the Program

The accelerated BA in Global Studies provides students with an interdisciplinary, intercultural, and interactive program with four concentrations: media, arts and cultures; justice and human rights; business, economics, and development; and health and sustainability. Global Studies students develop the critical skills to understand global political, social, and economic trends, while the MS addition will further deepen students' practical and professional experience in the communications field.

Drexel University is committed to building a strong foundation through the accelerated Global Studies/Communication degree, which enables academically qualified students to earn both a bachelor's and master's degree—graduating sooner than they would in traditional programs. Graduates of the accelerated degree enter the workforce one year sooner with the benefits of a master's degree in Communication, using the year saved to gain full-time experience and earn a salary in the field.

Drexel's Master of Science in Communication program prepares students for careers in a wide range of professional activities. The program specializes in three areas:

- Public communication
- Technical communication
- Science and health communication

Public Communication

Public Communication has much to offer those looking to work in journalism, public relations, and nonprofit organizations. Students can choose from courses such as Strategic Social Media Communication, Event Planning, Journalism and News Writing, Public Relations Writing and Campaign Planning, and Nonprofit Communication.

Technical Communication

Technical Communication provides skills in technical writing, editing, and computer documentation, and trains students for careers in a wide range of industries from social networking to publishing to health insurance. Students choose from courses such as Technical Writing, Digital Publishing, Technical & Science Editing, and Technical Documentation & Software.

Science and Health Communication

Science and Health Communication leads to careers in medical, science, and pharmaceutical communication. Students can choose from courses such as Science Writing, Medical Journalism, Campaigns in Health & Environment, and Communicating Health and Risk in a 'Fake News' World.

In addition, the program provides a strong foundation in ethics and 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.

The program emphasizes flexibility, encouraging each student, in consultation with an academic advisor, to craft a particular course of study. Throughout the curriculum, students may use electives to increase communication skills or to further develop areas of specialization. The Master's degree requires a total of 45 graduate credits.

Admission Requirements

Both incoming freshman and current GST students are eligible to apply for this program. Students who are already matriculated may apply after completing a minimum of 90.0 credits but no more than 120.0 credits. Applicants must have a minimum 3.0 GPA and maintain this GPA throughout the program.

In addition to formally applying and getting all the signatures required on the Accelerated Degree Program Admission form, applicants must provide:

- A 500-word statement of goals that explains why they want to enroll in the accelerated degree program.
- The name of a faculty reference who can speak to the applicant's academic qualifications and preparedness for graduate studies.

Degree Requirements

CIVC 101	Introduction to Civic Engagement	1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PSCI 150	International Politics	4.0
Two Math courses		6.0-8.0
Two Science courses		6.0-8.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
COOP 101	Career Management and Professional Development	1.0

Global Studies Core Courses

GST 101	Becoming Global: Language and Cultural Context	3.0
GST 102	Understanding Global: Markets and Governance	3.0
GST 103	Acting Global: Research Methods in Global Studies	3.0
Four 200+ level GST courses		12.0
GST 400	Senior Project in Global Studies	3.0

Language minor in French, Spanish or Japanese, or minor in Asian Studies, or Middle East and North Africa Studies

Students must complete at least 24.0 credits above the 103 language level to earn a language minor.

Global Health and Sustainability Concentration Requirements

ANTH 360	Culture and the Environment	3.0
PBHL 301	Epidemiology in Public Health	3.0
PBHL 303	Overview of Issues in Global Health	3.0
PSCI 334	Politics of Environment and Health	4.0
or SOC 346	Environmental Justice	

Choose one of the following ethics courses

PHIL 321	Biomedical Ethics	
PHIL 340	Environmental Ethics	
PBHL 309	Public Health Ethics	
Choose one of the following English courses		3.0
ENGL 300 [WI]	Literature & Science	
ENGL 302	Environmental Literature	
ENGL 370	Topics in Literature and Medicine	
Global Health and Sustainability Distribution Requirements		24.0
Students must complete 24.0 credits from the approved list:		
ANTH 210 [WI]	Worldview: Science, Religion and Magic	
ANTH 265	Health & Healing Practices in Cross-Cultural Perspective	
ANTH 310	Societies In Transition: The Impact of Modernization and the Third World	
ANTH 360	Culture and the Environment	
BIO 109	Biological Diversity, Ecology & Evolution	
BIO 264	Ethnobotany	
BIO 312	Genetically Modified Foods	
CJS 373	Environmental Crime	
COM 316	Campaigns for Health & Environment	
COM 317 [WI]	Environmental Communication	
COM 320 [WI]	Science Writing	
COM 375 [WI]	Grant Writing	
ECON 301	Microeconomics	
ECON 321	Macroeconomics	
ECON 351	Resource and Environmental Economics	
ENGL 300 [WI]	Literature & Science	
ENGL 302	Environmental Literature	
ENGL 370	Topics in Literature and Medicine	
ENSS 326	Cities and Sustainability	
ENSS 285	Introduction to Urban Planning	
ENTP 390	Energy Entrepreneurship	
ENVS 169	Environmental Science	
ENVS 247	Native Plants and Sustainability	
ENVS 275	Global Climate Change	
ENVS 289	Global Warming, Biodiversity and Your Future	
ENVS 328	Conservation Biology	
GST 221	Introduction to Global Capital and Development	
GST 231	Introduction to Identities and Communities	
GST 241	Introduction to Power and Resistance	
GST 251	Introduction to Global Media, Arts, and Cultures	
GST 261	Introduction to Global Health and Sustainability	
GST 321	Advanced Studies in Global Capital and Development	
GST 331	Advanced Studies in Identities and Communities	
GST 341	Advanced Studies in Power and Resistance	
GST 351	Advanced Studies in Global Media, Arts, and Cultures	
GST 361	Advanced Studies in Global Health and Sustainability	
GST T280	Special Topics in Global Studies	
GST T380	Special Topics in Global Studies	
GST 435	Model Organization of American States	
HIST 287	History of Science: Ancient to Medieval	
HIST 288	History of Science: Medieval to Enlightenment	
HIST 289	History of Science: Enlightenment to Modernity	
HIST 321	Themes in Global Environmental History	
HIST 322	Empire and Environment	
HIST 385	Transnational History of Science, Technology and Environment	
HSAD 312	Development of World Health Care	
HSAD 316	Health Care across Cultures	
NFS 345	Foods and Nutrition of World Cultures	
NFS 446	Perspectives in World Nutrition	
PBHL 302	Introduction to the History of Public Health	
PBHL 304	Introduction to Health & Human Rights	
PBHL 305	Women and Children: Health & Society	

PBHL 306	Introduction to Community Health	
PBHL 317	The World's Water	
PBHL 320	Exploring the HIV/AIDS Pandemic	
PBHL 321	Disease Outbreak Investigations	
PBHL 333	Health Inequality	
PHIL 321	Biomedical Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
PHIL 341	Environmental Philosophy	
PHIL 351	Philosophy of Technology	
PHIL 361	Philosophy of Science	
PSCI 305	Social Development: A Global Approach	
PSCI 334	Politics of Environment and Health	
PSCI 351	The United Nations in World Politics	
PSCI 352	Ethics and International Relations	
PSCI 353	International Human Rights	
PSY 352	Psychology of Sustainability	
SOC 315	HIV/AIDS and Africa	
SOC 330	Development and Underdevelopment in the Global South	
SOC 340	Globalization	
WGST 275	Women's Health and Human Rights	
WGST 240	Women and Society in a Global Context	
Free electives		52.0-48.0
MS Communication		
Required Courses		
COM 500	Reading & Research in Communication	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 698	Managing Communication Professional Identities in a Digital Age	3.0
Electives **		21.0
Required Concentration Courses 15.0		
Students must select and complete one of the following concentration options:		
Technical Communication		
COM 612	Ethics for Technical, Science and Health Communication	
Choose four of the following:		
COM 510	Technical Writing	
COM 525	Document Design and Usability	
COM 535	Digital Publishing	
COM 567	Technical Documentation and Software	
COM 570	Technical, Science and Health Editing	
INFO 532	Software Development	
INFO 540	Perspectives on Information Systems	
Science and Health Communication		
COM 612	Ethics for Technical, Science and Health Communication	
Choose four of the following:		
COM 516	Campaigns for Health and Environment	
COM 520	Science Writing	
COM 570	Technical, Science and Health Editing	
COM 670	Medical Writing	
or COM 673 Medical Journalism		
CHP 672	Theory and Practice in Health Communication	
Public Communication		
COM 613	Ethics for Professional Communication	
Choose four of the following:		
COM 533	Modern Desktop Publishing	
COM 535	Digital Publishing	
COM 536	Strategic Social Media Communication	
COM 541	Foundations of Public Relations	
COM 542	Public Relations Writing ***	
COM 543	Public Relations Planning ***	
COM 561	Fundamentals of Journalism & Newswriting	
COM 563	Event Planning	

COM 575	Grant Writing
COM 576	Nonprofit Communications
COM 650	Telecommunications Regulation and Policy
COM 660	Investigative Journalism

Total Credits 225.0

- * The Integrated Learning Experience is determined based on the type of MPH chosen.
- ** 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 T580). Qualified students may also pursue independent study for elective credit in special cases.
- *** To enroll in this class you must first earn a grade of "B" or better in COM 541 *Foundations of Public Relations* or get permission from the MS COM advisor to waive this requirement.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CIVC 101	1.0 VACATION	
GST 101	3.0 GST 102	3.0 ENGL 103 or 113	3.0	
MATH 101	4.0 MATH 102	4.0 GST 103	3.0	
UNIV H101	1.0 (UG) Language*	4.0 PSCI 150	4.0	
(UG) Language*	4.0	(UG) Language*	4.0	
15		14		15
0				
Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP 101**	1.0 (UG) GST Concentration Requirement	3.0 ECON 201	4.0 ECON 202	4.0
(UG) GST Concentration Requirement	3.0 (UG) GST Distribution Options	6.0 (UG) Language*	4.0 (UG) Language*	3.0

(UG) GST Distribution Option	3.0 (UG) Language*	4.0 (UG) GST 200+ Level Course	3.0 (UG) GST Concentration Requirement	3.0
(UG) Language*	4.0 (UG) Free Elective	3.0 (UG) GST Concentration Requirement	3.0 (UG) GST Distribution Option	3.0
(UG) Free Electives	6.0	(UG) Free Elective	3.0 (UG) Free Elective	3.0
	17	16	17	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
(UG) Language*	3.0 (UG) Language*	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
(UG) GST 200+ Level Course	3.0 (UG) GST 200+ Level Course	3.0		
(UG) GST Distribution Options	7.0 (UG) GST Concentration Requirement	4.0		
(UG) Free Elective	3.0 (UG) GST Distribution Option	3.0		
COM 500	3.0 (UG) Free Elective	3.0		
	COM 610	3.0		
	19	19	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
UNIV H201	1.0 GST 400	3.0 (UG) Free Electives	9.0 VACATION	
(UG) GST Concentration Requirement	4.0 (UG) Free Electives	9.0 (UG) GST Distribution Option	3.0	
(UG) GST 200+ Level Course	3.0 (GR) Concentration Core	3.0 (GR) Grad Concentration Core	3.0	
(UG) Free Electives	6.0 (GR) Graduate Elective	3.0 (GR) Graduate Elective	3.0	
COM 613 or 612	3.0			
(GR) Grad Concentration Core	3.0			
	20	18	18	0

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
COM 698	3.0 (GR) Graduate Electives	6.0 (GR) Graduate Electives	6.0
(GR) Grad Concentration Core	3.0		
(GR) Grad Elective	3.0		
	9	6	6

Total Credits 225

* Language minor in French, Spanish or Japanese, or minor in Asian Studies, or Middle East and North Africa Studies.

** Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Global Studies BA / Public Health MPH

Major: Global Studies and Public Health

Degrees Awarded: Bachelor of Arts (BA) and Master of Public Health (MPH)

Calendar Type: Quarter

Total Credit Hours: 237.0

Co-op Options: One Co-op (Five Years)

Classification of Instructional Programs (CIP) code: 30.2001

Standard Occupational Classification (SOC) code: 19-3094

About the Program

To further prepare students for careers in the international sphere, Drexel University now offers an accelerated degree that allows students to complete an accelerated Bachelor's Degree (BA) in Global Studies and a Master's in Public Health (MPH). Students apply in their third year to Drexel's Dornsife School of Public Health; those accepted begin working on their MPH as they complete their BA, getting their MPH a year earlier than if they had done the two degrees separately. They also have a chance to complete an undergraduate co-op and gain valuable work experience as they go.

The Drexel BA degree prepares students for exciting international careers or at home working with diverse international populations. It prepares them by giving them foreign language fluency and offers a wide variety of courses in the social sciences, humanities, philosophy, hard sciences, cultural studies, and many other fields. While working on their Global Studies degree, students also are encouraged to study abroad, adding to their global perspective as well as perfecting their foreign language skills. There are also many opportunities for doing co-op abroad: a chance to live overseas for six months while gaining valuable work experience and getting a chance to truly be part of the culture of the place where they are working. Study abroad opportunities exist in many countries in Europe, Africa, Latin America, and across Asia; co-op abroad employers can also be found in almost any part of the world.

Added to this is the chance to get an accelerated degree in Public Health, a much-in-demand professional degree with many uses. Students interested in global public health, for example, can gain skills that make them attractive to international development agencies like the US Agency for International Development, the UN, or many international charitable organization. Students who want to work domestically can use their language and cultural skills in a wide variety of settings here, working with the diverse population within the US. A degree in public health allows people to make a real impact on society, improving the lives of people around the world.

Drexel Global Studies students have won a wide variety of international fellowships including Fulbright, Boren, and other US government programs. They have studied abroad in countries as diverse as France, Senegal, Equatorial Guinea, Argentina, Costa Rica, China, Japan, and Korea. They have gone on to work with the US State Department and other government agencies, with large Silicon Valley tech firms, and with private corporations around the world. Adding an MPH will open even more doors for students interested in really making a difference at home and abroad.

Additional Information

For more information, contact:

Rogelio Miñana, PhD
 Department Head and Professor of Spanish
 Department of Global Studies and Modern Languages
 MacAlister Hall 3031
 rogelio.minana@drexel.edu
 Phone: 215.571.3194

Admission Requirements

Undergraduate admissions are determined by Enrollment Management/ Admissions (<http://drexel.edu/admissions/overview/>).

MPH requirements are set by the School of Public Health. Eligible students must:

- Be enrolled in the 4COP undergraduate program
- Maintain a minimum overall GPA of at least 3.25
- Be able to take undergraduate and graduate coursework during their senior year
- Complete the pre-requisite courses necessary for admission (determined by the School of Public Health) into the MPH program with no lower than a "C" grade
- Obtain one written recommendation from a faculty member and one from an advisor, supervisor or mentor
- Complete the online School of Public Health application to the MPH program at the Dornsife School of Public Health in their junior year
- Complete an interview with a Dornsife faculty member

Degree Requirements

BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
BIO 109	Biological Diversity, Ecology & Evolution	3.0
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	1.0
BIO 133	Physiology and Ecology	4.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101		1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
PBHL 101	Public Health 101	3.0
PSCI 150	International Politics	4.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0

Students must select one of the following math sequences: 12.0

MATH 101 & MATH 102 & MATH 239	Introduction to Analysis I and Introduction to Analysis II and Mathematics for the Life Sciences
MATH 121 & MATH 122 & MATH 123	Calculus I and Calculus II and Calculus III

Global Studies Core Courses

GST 101	Becoming Global: Language and Cultural Context	3.0
GST 102	Understanding Global: Markets and Governance	3.0
GST 103	Acting Global: Research Methods in Global Studies	3.0
Four 200+ level GST courses		12.0
GST 400	Senior Project in Global Studies	3.0

Language minor, or minor in Asian Studies, or Middle East and North African Studies 24.0

Students must complete at least 24.0 credits above the 103 language level to earn a language minor.

Global Health and Sustainability Concentration Requirements

ANTH 360	Culture and the Environment	3.0
PBHL 301	Epidemiology in Public Health	3.0
PBHL 303	Overview of Issues in Global Health	3.0
PSCI 334	Politics of Environment and Health	4.0
or SOC 346	Environmental Justice	

Choose one of the following ethics courses 3.0

PHIL 321	Biomedical Ethics
PHIL 340	Environmental Ethics
PBHL 309	Public Health Ethics

Choose one of the following English courses 3.0

ENGL 300 [WI]	Literature & Science
ENGL 302	Environmental Literature
ENGL 370	Topics in Literature and Medicine

Global Health and Sustainability Distribution Requirements 24.0

Students must complete 24.0 credits from the approved list:

ANTH 210 [WI]	Worldview: Science, Religion and Magic
ANTH 265	Health & Healing Practices in Cross-Cultural Perspective
ANTH 310	Societies In Transition: The Impact of Modernization and the Third World
ANTH 360	Culture and the Environment
BIO 109	Biological Diversity, Ecology & Evolution
BIO 264	Ethnobotany
BIO 312	Genetically Modified Foods
CJS 373	Environmental Crime
COM 316	Campaigns for Health & Environment
COM 317 [WI]	Environmental Communication
COM 320 [WI]	Science Writing
COM 375 [WI]	Grant Writing
ECON 301	Microeconomics
ECON 321	Macroeconomics
ECON 351	Resource and Environmental Economics
ENGL 300 [WI]	Literature & Science
ENGL 302	Environmental Literature
ENGL 370	Topics in Literature and Medicine
ENSS 326	Cities and Sustainability
ENSS 285	Introduction to Urban Planning
ENTP 390	Energy Entrepreneurship
ENVS 169	Environmental Science
ENVS 247	Native Plants and Sustainability
ENVS 275	Global Climate Change
ENVS 289	Global Warming, Biodiversity and Your Future
ENVS 328	Conservation Biology
GST 221	Introduction to Global Capital and Development
GST 231	Introduction to Identities and Communities
GST 241	Introduction to Power and Resistance
GST 251	Introduction to Global Media, Arts, and Cultures
GST 261	Introduction to Global Health and Sustainability
GST 321	Advanced Studies in Global Capital and Development
GST 331	Advanced Studies in Identities and Communities
GST 341	Advanced Studies in Power and Resistance
GST 351	Advanced Studies in Global Media, Arts, and Cultures
GST 361	Advanced Studies in Global Health and Sustainability
GST T280	Special Topics in Global Studies
GST T380	Special Topics in Global Studies
GST 435	Model Organization of American States
HIST 287	History of Science: Ancient to Medieval
HIST 288	History of Science: Medieval to Enlightenment

HIST 289	History of Science: Enlightenment to Modernity	
HIST 321	Themes in Global Environmental History	
HIST 322	Empire and Environment	
HIST 385	Transnational History of Science, Technology and Environment	
HSAD 312	Development of World Health Care	
HSAD 316	Health Care across Cultures	
NFS 345	Foods and Nutrition of World Cultures	
NFS 446	Perspectives in World Nutrition	
PBHL 302	Introduction to the History of Public Health	
PBHL 304	Introduction to Health & Human Rights	
PBHL 305	Women and Children: Health & Society	
PBHL 306	Introduction to Community Health	
PBHL 317	The World's Water	
PBHL 320	Exploring the HIV/AIDS Pandemic	
PBHL 321	Disease Outbreak Investigations	
PBHL 333	Health Inequality	
PHIL 321	Biomedical Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
PHIL 341	Environmental Philosophy	
PHIL 351	Philosophy of Technology	
PHIL 361	Philosophy of Science	
PSCI 305	Social Development: A Global Approach	
PSCI 334	Politics of Environment and Health	
PSCI 351	The United Nations in World Politics	
PSCI 352	Ethics and International Relations	
PSCI 353	International Human Rights	
PSY 352	Psychology of Sustainability	
SOC 315	HIV/AIDS and Africa	
SOC 330	Development and Underdevelopment in the Global South	
SOC 340	Globalization	
WGST 275	Women's Health and Human Rights	
WGST 240	Women and Society in a Global Context	
Free electives		38.0-36.0
Graduate Coursework		
BST 571	Introduction to Biostatistics	3.0
EPI 570	Introduction to Epidemiology	3.0
HMP 505	Qualitative Data and Mixed Methods Analysis	2.0
PBHL 500	Practical Experience for the Master of Public Health	0.0
PBHL 510	Public Health Foundations and Systems I	4.0
PBHL 511	Public Health Foundations and Systems II	4.0
MPH Discipline Specific Foundation Courses		15.0
MPH Integrative Learning Experience *		4.0-6.0
CHP 750 & CHP 751	Integrative Learning Experience in Community Health & Prevention I and Integrative Learning Experience in Community Health & Prevention II	
EOH 750 & EOH 751	Integrative Learning Experience: Environmental and Occupational Health I and Integrative Learning Experience: Environmental and Occupational Health II	
EPI 750 & EPI 751	Integrative Learning Experience in Epidemiology I and Integrative Learning Experience in Epidemiology II	
HMP 750 & HMP 751	Integrative Learning Experience and Integrative Learning Experience II	
MPH Electives/Graduate Minor courses		21.0
Total Credits		237.0

* The Integrated Learning Experience is determined based on the type of MPH chosen.

Sample Plan of Study

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 ENGL 102 or 112	3.0 CIVC 101	1.0 VACATION	
GST 101	3.0 GST 102	3.0 ENGL 103 or 113	3.0	
MATH 101	4.0 MATH 102	4.0 GST 103	3.0	
UNIV H101 (UG)	4.0 (UG)	3.0 MATH 239	4.0	
Language course	Language course	Language course		
		(UG) Free elective	3.0	
	15	17	18	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
BIO 107	3.0 BIO 109	3.0 BIO 133	4.0 ECON 202	4.0
BIO 108	1.0 BIO 110	1.0 ECON 201	4.0 (UG) GST Concentration requirement	3.0
COOP 101 **	1.0 (UG) GST Concentration requirement	3.0 (UG) GST Concentration requirement	3.0 (UG) GST Distribution option	3.0
PSCI 150	4.0 (UG) GST Distribution options	6.0 (UG) GST 200+ level course	3.0 (UG) Free elective	3.0
(UG) GST Concentration requirement	3.0 (UG) Language course	4.0 (UG) Language course	4.0 (UG) Language course	3.0
(UG) GST Distribution option	3.0			
(UG) Language course	4.0			
	19	17	18	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COOP EXPERIENCE	COOP EXPERIENCE	(UG) GST 200+ course	3.0 (UG) Free elective	3.0
EPI 570	3.0 EPI 571	3.0 (UG) GST Distribution option	3.0 (UG) GST 200+ course	3.0
		(UG) Free elective	3.0 (UG) GST Concentration requirement	3.0
		(UG) Language course	3.0 (UG) Language *	3.0
		HMP 505	2.0	
	3	3	14	12

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
UNIV H201	1.0 GST 400	3.0 (UG) Free electives	6.0 VACATION	
(UG) GST Distribution option	3.0 (UG) Distribution option	3.0 (UG) GST Distribution option	3.0 Student converts to Grad status	
(UG) Free electives	6.0 (UG) GST Concentration requirement	3.0 (UG) GST 200+ course	3.0	
(UG) Language *	3.0 (UG) Free elective	3.0 PBHL 500	0.0	

PBHL 510	4.0 PBHL 511	4.0 (GR) MPH Elective	3.0
		(GR) MPH Discipline specific course	4.0
17		16	
19		0	
Fifth Year			
Fall	Credits Winter	Credits Spring	Credits
(GR) MPH Discipline specific course	3.0 (GR) MPH Electives	6.0 (GR) MPH Discipline Specific courses	6.0
(GR) MPH Electives	6.0 (GR) MPH Discipline Specific course	3.0 (GR) MPH elective	3.0
(GR) Integrative Learning Experience I	3.0 (GR) Integrative Learning Experience II	3.0	
12		12	
9			
Total Credits 237			

- * Language minor in French, Spanish or Japanese, or minor in Asian Studies, or Middle East and North Africa Studies.
- ** Co-op cycle may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major. COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Mathematics BS / Mathematics MS

Major: Mathematics
Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)
Calendar Type: Quarter
Total Credit Hours: 226.0
Co-op Options: Two Co-ops (Five years)
Classification of Instructional Programs (CIP) code: 27.0101
Standard Occupational Classification (SOC) code: 15-2021

About the Program

The accelerated BSMS program in mathematics is an exciting opportunity for highly motivated math students to take full advantage of the academic resources that Drexel University, as a research university with a graduate program, has to offer. Graduates from this program have a more in-depth, richer understanding of the concepts introduced in the undergraduate courses, as well as, more complex topics introduced at an advanced level.

The combined degree offers our graduates a competitive advantage over students who have only obtained an undergraduate degree, allowing them to stand out when they start their professional careers. In addition, the program is highly recommended for students who intend to apply to doctoral programs in mathematics as well as related areas (such as statistics, biostatistics, public health, graduate actuarial studies, mathematical finance). Many of our BSMS students have been accepted in some of the country's most elite and competitive graduate mathematics programs.

Admission Requirements

Students may apply to the combined BS/MS Math program when they have attained between 90-130 credits. To gain entry into the Math dual degree BS/MS program, it is necessary, though not sufficient, to satisfy the following conditions:

Complete two of the following: MATH 331, MATH 332, MATH 401 and MATH 402, with an average GPA of at least 3.75 total in the two or more of these courses taken.

Have an overall GPA of at least 3.5

Have a GPA of at least 3.8 in the mathematics major

Applicant should meet with their adviser to determine eligibility and to create a plan of study to be reviewed by the graduate advisor. The graduate committee will make the final decision. If accepted, the student must fill out the Accelerated Degree Program Application Form to obtain permission from all necessary approving parties.

Students with multiple majors may apply to the Accelerated Math degree program as long as one of their undergraduate majors is Mathematics. However, they will need to obtain signatures of the mathematics department advisers for their BS/MS Accelerated degree paperwork, not advisers from their other major(s).

Degree Requirements

General Education Requirements		
CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
	or ENGL 111 English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
	or ENGL 112 English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
	or ENGL 113 English Composition III	
UNIV S101	The Drexel Experience	1.0
UNIV S201	Looking Forward: Academics and Careers	1.0
Computer Science sequence: 9.0		
CS 150	Computer Science Principles	
	or CS 164 Introduction to Computer Science	
CS 171	Computer Programming I	
CS 172	Computer Programming II	
Any Biology (BIO) course		3.0-4.0
Any Chemistry (CHEM) course		3.0-4.0
Any Physics (PHYS) course		3.0-4.0
Humanities electives		6.0
Social sciences electives		15.0
International studies or studies in diversity electives		6.0
Free electives		40.0
Mathematics Requirements		
MATH 121	Calculus I *	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0
MATH 210	Differential Equations	4.0
MATH 220 [WI]	Introduction to Mathematical Reasoning	3.0
MATH 331	Abstract Algebra I	4.0
MATH 332	Abstract Algebra II	3.0

MATH 401	Elements of Modern Analysis I	3.0
MATH 402	Elements of Modern Analysis II	3.0
Math Major Electives		40.0
Select a minimum of 40 credits from the following:		
MATH 222	Combinatorics [W]	
MATH 235	Math Competition Problem Solving Seminar	
MATH 250	Mathematics of Investment and Credit	
MATH 285	Differential Equations II	
MATH 300	Numerical Analysis I	
MATH 301	Numerical Analysis II	
MATH 305	Introduction to Optimization Theory	
MATH 311	Probability and Statistics I	
MATH 312	Probability and Statistics II	
MATH 313	Probability and Statistics III	
MATH 316	Mathematical Applications of Symbolic Software	
MATH 318	Mathematical Applications of Statistical Software [W]	
MATH 319	Techniques of Data Analysis	
MATH 320	Actuarial Mathematics	
MATH 321	Vector Calculus	
MATH 322	Complex Variables	
MATH 323	Partial Differential Equations	
MATH 387	Linear Algebra II	
MATH 422	Introduction to Topology	
MATH 449	Mathematical Finance	
MATH 450	Introduction to Graph Theory	
MATH 475	Cryptography	
MATH 483	Discrete Event Simulation	
MATH 489	Tensor Calculus	
MS required courses		
MATH 504	Linear Algebra & Matrix Analysis	3.0
MATH 505	Principles of Analysis I	3.0
MATH 506	Principles of Analysis II	3.0
MATH 533	Abstract Algebra I	3.0
MATH 630	Complex Variables I	3.0
MATH 633	Real Variables I	3.0
MS electives **		27.0
Select a minimum of 27 credits from the following:		
MATH 507	Applied Mathematics I	
MATH 508	Applied Mathematics II	
MATH 509	Applied Mathematics III	
MATH 510	Applied Probability and Statistics I	
MATH 511	Applied Probability and Statistics II	
MATH 512	Applied Probability and Statistics III	
MATH 520	Numerical Analysis I	
MATH 521	Numerical Analysis II	
MATH 522	Numerical Analysis III	
MATH 523	Computer Simulation I	
MATH 524	Computer Simulation II	
MATH 525	Topics in Computer Simulation	
MATH 526	Mathematics for Data Science	
MATH 530	Combinatorial Mathematics I	
MATH 531	Combinatorial Mathematics II	
MATH 532	Topics in Combinatorial Math	
MATH 534	Abstract Algebra II	
MATH 535	Topics in Abstract Algebra	
MATH 536	Topology I	
MATH 537	Topology II	
MATH 538	Manifolds	
MATH 540	Numerical Computing	
MATH 553	Sci Comp & Visualization I	

MATH 554	Sci Comp & Visualization II	
MATH 555	Topics in Sci Comp & Visualiz	
MATH 572	Financial Mathematics: Fixed Income Securities	
MATH 610	Probability Theory I	
MATH 611	Probability Theory II	
MATH 612	Topics in Probability Theory	
MATH 613	Stochastic Processes I	
MATH 614	Stochastic Processes II	
MATH 615	Topics in Stochastic Processes	
MATH 620	Partial Differential Equations I	
MATH 621	Partial Differential Equations II	
MATH 622	Partial Differential Equations III	
MATH 623	Ordinary Differential Equations I	
MATH 624	Ordinary Differential Equations II	
MATH 625	Ordinary Differential Equations III	
MATH 631	Complex Variables II	
MATH 632	Topics in Complex Variables	
MATH 634	Real Variables II	
MATH 635	Real Variables III	
MATH 640	Functional Analysis	
MATH 641	Harmonic Analysis	
MATH 642	Operator Theory	
MATH 643	Integral Equations I	
MATH 645	Transform Theory I	
MATH 646	Transform Theory II	
MATH 660	Lie Groups and Lie Algebras I	
MATH 661	Lie Groups and Lie Algebras II	
MATH 662	Lie Groups/Algebras III	
MATH 670	Methods of Optimization I	
MATH 671	Methods of Optimization II	
MATH 672	Methods of Optimization III	
MATH 673	Calculus of Variations	
MATH 701	Algebraic Combinatorics	
MATH 723	Mathematical Neuroscience	

Total Credits **226.0-229.0**

* Math majors must pass MATH 121 (<http://catalog.drexel.edu/search/?P=MATH%20121>) with a grade of B or higher.

** 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.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/>)

english-philosophy/university-writing-program/drexel-writing-center/) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

BS-MS 5COP/2 co-ops

First Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CS 150 or 164	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
ENGL 101 or 111	3.0 CS 171	3.0 CS 172	3.0	
MATH 121	4.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
UNIV S101	1.0 MATH 122	4.0 MATH 123	4.0	
(UG) Any Biology (BIO) course	3.0-4.0 (UG) Any Physics (PHYS) course	3.0-4.0 MATH 200	4.0	
	(UG) Social Science elective*	3.0 (UG) Any Chemistry (CHEM) course	3.0-4.0	
	14-15	17-18	18-19	0

Second Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
COM 230	3.0 MATH 210	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
MATH 201	4.0 (UG) Mathematic: (MATH) ** electives**	10.0		
MATH 220	3.0 (UG) Free elective	4.0		
(UG) Mathematic: (MATH) elective**	4.0			
(UG) Social Science Elective*	3.0			
(UG) Free elective	3.0			
	20	18	0	0

Third Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 331	4.0 MATH 332	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
(UG) Mathematic: (MATH) ** electives**	7.0 UNIV S201	1.0		
(UG) International Studies or Studies in Diversity elective	3.0 (UG) Mathematics (MATH) ** electives**	7.0		
(UG) Free elective	4.0 (UG) Free electives	7.0		
	18	18	0	0

Fourth Year				
Fall	Credits Winter	Credits Spring	Credits Summer	Credits
MATH 401	3.0 MATH 402	3.0 (UG) Mathematics (MATH) elective**	4.0 (UG) International Studies or Studies in Diversity elective	3.0
(UG) Mathematic: (MATH) ** electives**	8.0 (UG) Humanities elective*	3.0 (UG) Social Science electives	3.0 (UG) Social Science electives	6.0
(UG) Free elective	3.0 (UG) Free electives	7.0 (UG) Free electives	6.0 (UG) Free electives	6.0
MATH 504	3.0 MATH 533	3.0 (GR) Graduate Mathematic: (MATH) electives	6.0 (UG) Humanities elective	3.0
MATH 505	3.0 MATH 506	3.0		
	20	19	19	18

Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
Graduate Mathematics (MATH) electives	9.0 Graduate Mathematics (MATH) electives	9.0 MATH 630	3.0	
		MATH 633	3.0	
		Graduate Mathematics (MATH) elective	3.0	
	9	9	9	

Total Credits 226-229

* See degree requirements (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/mathematics/#degreerequirementsbatext>).

** Select from MATH 222 [WI] , MATH 235, MATH 250, MATH 285, MATH 300, MATH 301, MATH 305, MATH 311, MATH 312, MATH 316, MATH 318 [WI] , MATH 319, MATH 320, MATH 321, MATH 322, MATH 323, MATH 387, MATH 422, MATH 449, MATH 450, MATH 475, MATH 483, MATH 489. MATH special topics courses may be substituted for Mathematics Electives with departmental permission.

Mathematics Faculty

David M. Ambrose, PhD (*Duke University*) Associate Department Head, *Mathematics*. Professor. Applied analysis and computing for systems of nonlinear partial differential equations, especially free-surface problems in fluid dynamics.

Jason Aran, MS (*Drexel University*). Associate Teaching Professor.

Jonah D. Blasiak, PhD (*University of California at Berkeley*). Associate Professor. Algebraic combinatorics, representation theory, and complexity theory.

Yasmine Boolakee-Pant, MS (*University of Freiburg*). Instructor.

Robert P. Boyer, PhD (*University of Pennsylvania*). Professor. Functional analysis, C*-algebras and the theory of group.

Fernando Carreon, PhD (*University of Texas at Austin*). Teaching Professor.

Patrick Clarke, PhD (*University of Miami*). Associate Professor. Homological mirror symmetry, Landau-Ginzburg models, algebraic geometry, symplectic geometry.

Daryl Falco, MS (*Drexel University*). Associate Teaching Professor. Discrete mathematics and automata theory.

Raymond Favocci, MS (*Drexel University*). Associate Teaching Professor.

Darij Grinberg, PhD (*Massachusetts Institute of Technology*). Assistant Professor. Algebraic Combinatorics, Noncommutative Algebra, Symmetric Functions, Hopf Algebras, Enumerative Combinatorics, Invariant Theory

Pavel Grinfeld, PhD (*Massachusetts Institute of Technology*). Associate Professor. Intersection of physics, engineering, applied mathematics and computational science.

Anatolii Grinshpan, PhD (*University of California at Berkeley*). Associate Teaching Professor. Function theory and operator theory, harmonic analysis, matrix theory.

Yixin Guo, PhD (*University of Pittsburgh*). Associate Professor. Biomathematics, dynamical systems, ordinary and partial differential equations and math education.

R. Andrew Hicks, PhD (*University of Pennsylvania*). Professor. Geometry; optics; computer vision.

Pawel Hitczenko, PhD (*Warsaw University*). Professor. Probability theory and its applications to analysis, combinatorics, wavelets, and the analysis of algorithms.

Jeffrey LaComb, PhD (*Duke University*). Assistant Teaching Professor. Rare Event Simulation, Dynamical Systems, Numerical Analysis and Mathematical Biology

Georgi S. Medvedev, PhD (*Boston University*). Professor. Ordinary and partial differential equations, mathematical neuroscience.

Cecilia Mondaini, PhD (*Federal University of Rio de Janeiro*). Assistant Professor. Analysis of Partial Differential Equations, Fluid Dynamics, Stochastic Processes

Shari Moskow, PhD (*Rutgers University*) *Department Head*. Professor. Partial differential equations and numerical analysis, including homogenization theory, numerical methods for problems with rough coefficients, and inverse problems.

Oksana P. Odintsova, PhD (*Omsk State University*). Teaching Professor. Math education; geometrical modeling.

Dimitrios Papadopoulos, MS (*Drexel University*). Assistant Teaching Professor.

Joel Pereira, PhD (*University of North Carolina*). Assistant Teaching Professor. Commutative Algebra

Ronald K. Perline, PhD (*University of California at Berkeley*) *Undergraduate Adviser*. Associate Professor. Applied mathematics, numerical analysis, symbolic computation, differential geometry, mathematical physics.

Marci A. Perlstadt, PhD (*University of California at Berkeley*). Associate Professor. Applied mathematics, computed tomography, numerical analysis of function reconstruction, signal processing, combinatorics.

Adam C. Rickert, MS (*Drexel University*). Associate Teaching Professor.

Eric Schmutz, PhD (*University of Pennsylvania*). Professor. Probabilistic combinatorics, asymptotic enumeration.

Li Sheng, PhD (*Rutgers University*). Associate Professor. Discrete optimization, combinatorics, operations research, graph theory and its application in molecular biology, social sciences and communication networks, biostatistics.

Gideon Simpson, PhD (*Columbia University*). Associate Professor. Partial differential equations, scientific computing and applied mathematics.

Xiaoming Song, PhD (*University of Kansas*). Associate Professor. Stochastic Calculus, Large Deviation Theory, Theoretical Statistics, Data Network Modeling and Numerical Analysis.

Jeanne M. Steuber, MS (*Boston University*). Associate Teaching Professor.

Kenneth P. Swartz, PhD (*Harvard University*). Assistant Teaching Professor. Applied statistics, data analysis, calculus, discrete mathematics, biostatistics.

K. Shwetketu Virbhadra, PhD (*Physical Research Laboratory*). Instructor.

Richard D. White, MS (*Penn State University*). Assistant Teaching Professor.

Hugo J. Woerdeman, PhD (*Vrije Universiteit, Amsterdam*). Professor. Matrix and operator theory, systems theory, signal and image processing, and harmonic analysis.

J. Douglas Wright, PhD (*Boston University*) *Associate Department Head*. Professor. Partial differential equations, specifically nonlinear waves and their interactions.

Dennis G. Yang, PhD (*Cornell University*). Associate Teaching Professor. Dynamical systems, neurodynamics.

Thomas (Pok-Yin) Yu, PhD (*Stanford University*). Professor. Multiscale mathematics, wavelets, applied harmonic analysis, subdivision algorithms, nonlinear analysis, applied differential geometry and data analysis.

Matthew Ziemke, PhD (*University of South Carolina*). Assistant Teaching Professor. Functional Analysis, Operator Algebras, Semigroups, Mathematical Physics

Emeritus Faculty

Howard Anton, PhD (*Polytechnic Institute of Brooklyn*). Professor Emeritus.

Loren N. Argabright, PhD (*University of Washington*). Professor Emeritus. Functional analysis, wavelets, abstract harmonic analysis, the theory of group representations.

Robert C. Busby, PhD (*University of Pennsylvania*). Professor Emeritus. Functional analysis, C^* -algebras and group representations, computer science.

Ewaugh Finney Fields, EdD (*Temple University*) *Dean Emeritus*. Professor Emeritus. Mathematics education, curriculum and instruction, minority engineering education.

William M.Y. Goh, PhD (*Ohio State University*). Associate Professor Emeritus. Number theory, approximation theory and special functions, combinatorics, asymptotic analysis.

Patricia Henry Russell, MS (*Drexel University*). Teaching Professor Emerita.

Bernard Kolman, PhD (*University of Pennsylvania*). Professor Emeritus. Lie algebras; theory, applications, and computational techniques; operations research.

Charles J. Mode, PhD (*University of California at Davis*). Professor Emeritus. Probability and statistics, biostatistics, epidemiology, mathematical demography, data analysis, computer-intensive methods.

Chris Rorres, PhD (*Courant Institute, New York University*). Professor Emeritus. Applied mathematics, scattering theory, mathematical modeling in biological sciences, solar-collection systems.

Justin R. Smith, PhD (*Courant Institute, New York University*). Professor Emeritus. Homotopy theory, operad theory, quantum mechanics, quantum computing.

Jet Wimp, PhD (*University of Edinburgh*). Professor Emeritus. Applied mathematics, special factors, approximation theory, numerical techniques, asymptotic analysis.

Psychology BS / Psychology MS

Major: Psychology

Degree Awarded: Bachelor of Science (BS) & Master of Science (MS)

Calendar Type: Quarter

Total Credit Hours: 225.0

Co-op Options: One Co-op (Five years)

Classification of Instructional Programs (CIP) code: 42.2799

Standard Occupational Classification (SOC) code: 19-3031

About the Program

The Accelerated Master of Science in Psychology (BS/MS) program provides an opportunity for select undergraduate students to complete their undergraduate education and psychology MS curriculum classes in an accelerated fashion. Through this program, potential BS/MS students may be identified when first admitted as entering freshmen psychology majors. Students may also enter as transfers or up until the spring of their junior year.

During the course of their undergraduate study, students will need to seek out and establish a faculty member to serve as their mentor and program advisor, and with whom they wish to continue working during their graduate training and completion of their graduate thesis.

The Accelerated Master of Science in Psychology program allows accelerated entry into graduate level courses during the student's fourth undergraduate year with planned entry into graduate school upon completion of their BS degree at the end of year 4. Because students have received a "head start" by completing a structured curriculum in their senior year, their graduate coursework for the MS degree can be completed in one year post-BS. The BS/MS curriculum is designed to include a 4-year undergraduate or 4-year undergraduate co-op program. Students in the program cannot be enrolled in a 5-year co-op.

Admission Requirements

Prospective freshman criteria:

- Combined SAT score of 1300 (Quantitative and Verbal scores only)
- High school GPA of at least 3.5
- Top 10% of graduating class
- If these admission requirements are met, an additional application essay is requested via email and evaluated by the program director for final admission decisions.

Third year Psychology student criteria:

- Cumulative GPA of 3.5 or higher with no grade lower than a "C" in any class
- Enrollment in a 4-year, 1 co-op or 4-year, no co-op (some exceptions may apply)
- Completion of Graduate Record Examination (GRE) with a minimum score of 302 (Quantitative and Verbal scores)
- Identification of and commitment from Psychology faculty mentor to advise student's MS research

Degree Requirements

College Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management and Professional Development *	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
	or ENGL 111 English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
	or ENGL 112 English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
	or ENGL 113 English Composition III	
Select one of the following:		8.0
MATH 101	Introduction to Analysis I	
	& MATH 102 and Introduction to Analysis II	
MATH 121	Calculus I	
	& MATH 122 and Calculus II	
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Business elective		4.0
Fine Arts elective		3.0
Anthropology (ANTH) elective		3.0
English (ENGL) electives, 200-level or above		6.0
History (HIST) electives		8.0
Philosophy (PHIL) elective		3.0
Political Science (PSCI) elective		4.0
Sociology (SOC) elective		3.0-4.0
Select one of the following sequences:		8.0
Biology		
BIO 107	Cells, Genetics & Physiology	
BIO 108	Cells, Genetics and Physiology Laboratory	
BIO 109	Biological Diversity, Ecology & Evolution	
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	
Chemistry		
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
Physics		
PHYS 103	General Physics I	
PHYS 104	General Physics II	
Free electives		48.0
Departmental Requirements		
General Psychology Requirements		
PSY 111	Pre-Professional General Psychology I **	3.0
PSY 112	Pre-Professional General Psychology II **	3.0
100-Level Requirements		

Select two of the following: 6.0

PSY 120	Developmental Psychology	
PSY 140	Approaches to Personality	
PSY 150	Introduction to Social Psychology	

Required Psychology Courses

PSY 212	Physiological Psychology	3.0
PSY 240 [WI]	Abnormal Psychology	3.0
PSY 264	Computer-Assisted Data Analysis I	3.0
PSY 265	Computer-Assisted Data Analysis II	3.0
PSY 280	Psychological Research	3.0
PSY 290	History and Systems of Psychology	3.0
PSY 325	Psychology of Learning	3.0
PSY 330	Cognitive Psychology	3.0
PSY 360 [WI]	Experimental Psychology	3.0
PSY 380	Psychological Testing and Assessment	3.0

Advanced Psychology Electives

Any non-required PSY course at the 200-level or above.		24.0
PSY 610	Data Analysis in Psychology	3.0
PSY 512	Cognitive Psychology	3.0
PSY 510	Research Methods I	3.0
PSY 710	Data Analysis II	3.0
PSY 511	Research Methods II	3.0
PSY 898	Master's Thesis in Psychology	9.0
PSY 624	Behavior Analysis	3.0
Psychology Masters Level Elective		18.0

Total Credits 225.0-226.0

* Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101. Select students may be eligible to take COOP 001 in place of COOP 101.

** Students with AP psychology, or transfer students with PSY 101 credit, should check the AP Student Placement Exam Crosswalk (http://www.drexel.edu/provost/policies/pdf/supporting/ap_crosswalk.pdf) or check with their advisor.

*** Students who do not wish to complete the research seminar sequence are required to complete 12.0 credits of additional advanced Psychology electives instead.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

4 + 1 (5 years), 1 co-op*

First Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
ENGL 101 or 111	3.0 CIVC 101	1.0 COOP 101	1.0 VACATION	
PSY 111	3.0 ENGL 102 or 112	3.0 ENGL 103 or 113	3.0	
MATH 121 or 101	4.0 MATH 102 or 122	4.0 PSY 120, 140, or 150	3.0	
UNIV H101	1.0 PSY 112	3.0 PSY 240	3.0	
Select one of the following:	4.0 PSY 120, 140, or 150	3.0 UNIV H201	1.0	
CHEM 111	Select one of the following:	4.0 (UG) Anthropology (ANTH) Elective	3.0	
PHYS 103	BIO 109 & BIO 110	(UG) Fine Arts Elective	3.0	
BIO 107 & BIO 108	CHEM 112			
	PHYS 104			
	15	18	17	0

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
PSY 264	3.0 COM 230	3.0 PSY 212	3.0 PSY 325	3.0
PSY 290 (UG)	3.0 PSY 265	3.0 PSY 280	3.0 PSY 380	3.0
English (ENGL) elective, 200-level or above	3.0 PSY 330	3.0 PSY 360	3.0 (UG) Psychology Elective	3.0
(UG) Political Science (PSCI) elective	4.0 (UG) English (ENGL) elective, 200-level or above	3.0 (UG) Psychology Elective	3.0 (UG) History Elective	4.0
(UG) Sociology (SOC) elective	3.0-4.0 (UG) Philosophy (PHIL) elective	3.0 (UG) Business Elective	4.0 (UG) Free Elective	3.0
	16-17	15	16	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
(UG) Psychology Electives	6.0 (UG) Free electives	12.0 COOP EXPERIENCE	COOP EXPERIENCE	
(UG) History Elective	4.0 (UG) Psychology Elective	3.0		
(UG) Free Electives	6.0			
	16	15	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
(UG) Free Electives	9.0 (UG) Free Electives	9.0 (UG) Free Electives	9.0 Student Classified as Graduate Status	

(UG) Psychology Electives	3.0 (UG) Psychology Elective	3.0 (UG) Psychology Elective	3.0
PSY 515 ^{††}	3.0 PSY 510 ^{††}	3.0 PSY 511 ^{††}	3.0
PSY 610 ^{††}	3.0 PSY 710 ^{††}	3.0 (GR) Psychology Masters Level Elective ^{††}	3.0
	18	18	18
Fifth Year			0
Fall	Credits Winter	Credits Spring	Credits
PSY 898	3.0 PSY 624	3.0 PSY 898	3.0
(GR) Psychology Masters Level Electives	6.0 PSY 898	3.0 (GR) Psychology Masters Level Electives	6.0
	(GR) Psychology Masters Level Elective	3.0	
	9	9	9
Total Credits 225-226			

- **** Students are required to complete all undergraduate credit requirements by end of fourth year.
- * Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major. COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term.
- ** See degree requirements (p. 117).
- *** If a student selects a 4.0 credit SOC elective the Free electives in this term will be 11.0 credits.
- † Students are required to complete 24.0 credits total of additional advanced Psychology electives for undergraduate Psychology requirements.
- †† Graduate Level credits for masters program may not count toward any part of the bachelors degree requirements.

Psychology Faculty

Meghan Butryn, PhD (*Drexel University*). Associate Professor. Treatment and prevention of obesity and eating disorders, behavioral treatment, acceptance and commitment therapy.

Dorothy Charbonnier, PhD (*State University of New York at Stony Brook*). Associate Teaching Professor. The nature of the creative process and writing.

Evangelia Chryssikou, PhD (*Temple University*). Associate Professor. Cognitive neuroscience, neuropsychology, neural basis of language, memory, and executive functions, neurocognitive processes associated with problem solving and flexible thought

Brian Daly, PhD (*Loyola University, Chicago*) *Interim Department Head*. Associate Professor. Pediatric neuropsychology, intervention with at-risk youth.

David DeMatteo, PhD, JD (*MCP Hahnemann University; Villanova University School of Law*) *Director of the JD-PhD Program in Law and*

Psychology. Professor. Psychopathy, forensic mental health assessment, drug policy; offender diversion.

Evan M. Forman, PhD (*University of Rochester*) *Director WELL Center*. Professor. Clinical psychology: mechanisms and measurement of psychotherapy outcome, cognitive-behavioral and acceptance based psychotherapies, the development and evaluation of acceptance-based interventions for health behavior change (for problems of obesity and cardiac disease) as well as mood and anxiety disorders; neurocognition of eating.

Pamela Geller, PhD (*Kent State University*) *Director, Clinical Training*. Associate Professor. Stressful life events and physical and mental health outcomes, particularly in the area of women's reproductive health (e.g. pregnancy, pregnancy loss, infertility, medical education).

Maureen Gibney, PsyD (*Widener University*). Teaching Professor. Clinical psychopathology; neuropsychological evaluation and intervention with the elderly.

Naomi Goldstein, PhD (*University of Massachusetts*) *Co-Director of the JD-PhD Program; Stoneleigh Foundation Fellow*. Professor. Forensic psychology; juvenile justice; Miranda rights comprehension; false confessions; juvenile justice treatment outcome research; anger management intervention development; child and adolescent behavior problems.

Kirk Heilbrun, PhD (*University of Texas at Austin*). Professor. Forensic psychology, juvenile and adult criminality, violence risk assessment, forensic psychological assessment, treatment of mentally disordered offenders, academic-sports mentoring.

Adrienne Juarascio, PhD (*Drexel University*) *Director, Practicum Training*. Assistant Professor. Enhancing treatment outcomes for eating disorders and obesity; Acceptance-based behavioral treatments; Evaluating mechanisms of action in behavioral treatments

Marlin Killen, PhD (*Trident University International*). Teaching Professor. Authentic teaching methods in Psychology as well as student persistence behavior.

John Kounios, PhD (*University of Michigan*) *Director, PhD Program in Applied Cognitive and Brain Sciences*. Professor. Cognitive neuroscience, especially creativity, problem solving, and cognitive enhancement.

David Kutzik, PhD (*Temple University*). Professor. Social and cultural theory, political economy, gerontology, materialisms, activity theory, reflection theories, communities of practice and labor theories of culture.

Michael Lowe, PhD (*Boston College*). Professor. Prevention and treatment of eating disorders and obesity; effects of appetitive responsiveness and dietary restraint on eating regulation; psychobiology of obesity-proneness; empirical foundations of unconscious processes.

John Medaglia, PhD (*The Pennsylvania State University*). Assistant Professor. Applying models and methods developed in neuropsychology, cognitive neuroscience and graph theory to understand and treat brain dysfunction and enhance healthy functioning

Megan Meyer, PhD (*Temple University*). Assistant Teaching Professor. Influences on preferred body type; changes in body image, self-esteem, and self-efficacy in females as a function of strength training; Sensation and Perception

Danette Morrison, PhD (*University of Maryland - College Park*). Assistant Teaching Professor. Social and academic motivation within school context; Social relationships and identity development; Educational attainment of ethnic minorities

Arthur Nezu, PhD, DHLL, ABPP (*State University of New York at Stony Brook*). Distinguished University Professor of Psychology, Professor of Medicine, Professor of Community Health and Prevention. Behavioral medicine applications of problem-solving therapy and other cognitive-behavior therapies (e.g., to decrease emotional and psychosocial risk factors; improve adherence), particularly with regard to patients with cardiovascular disease; assessment.

Christine Maguth Nezu, PhD (*Fairleigh Dickinson University*). Professor of Psychology, Professor of Medicine. Cognitive-behavioral assessment and treatment for mood, anxiety, personality disorders, and coping with chronic illness; mind/body studies; stress and coping; developmental disabilities and comorbid behavioral and emotional disorders; spirituality and psychology.

Nancy Raitano Lee, PhD (*University of Denver*) *Director of MS and BS/MS Programs*. Associate Professor. Neuropsychological and neuroanatomic correlates of intellectual and developmental disabilities; Verbal memory and language difficulties in Down syndrome and other genetic disorders; Comorbid autism spectrum disorder symptoms in youth with genetic disorders; Neuroanatomic correlates of individual differences in typical and atypical cognition

Diana Robins, PhD (*University of Connecticut*) *Interim Director, AJ Drexel Autism Institute*. Professor. Autism screening, early detection of autism

Ludo Scheffer, PhD (*University of Pennsylvania*) *Director of Undergraduate Studies*. Teaching Professor. Meta-cognitive development, writing, and computers; Language and literacy development in the early years in the context of family and schooling; Youth-at-risk; School violence and bullying; Program/intervention effectiveness

Maria Schultheis, PhD (*Drexel University*) *Vice Provost of Research, Office of Research and Innovation*. Professor. Clinical Neuropsychology and rehabilitation following neurological compromise (brain injury, stroke, multiple sclerosis), application of technologies in psychology. Specialization in the use of virtual reality (VR) simulation, and evaluation of the demands of driving after disability.

Jennifer Schwartz, PhD (*Idaho State University*) *Director of Psychological Services Center*. Teaching Professor. Adult psychopathology; evidence-based clinical practice; competency-based training; competency-based clinical supervision.

Julia Sluzenski, PhD (*Temple University*). Assistant Teaching Professor. Spatial and episodic memory, memory loss across the lifespan, developmental psychology.

Fengqing (Zoe) Zhang, PhD (*Northwestern University*). Associate Professor. Neuroimaging data analysis; Data mining; Bayesian inference; High dimensional data analysis

Eric A Zillmer, PsyD (*Florida Institute of Technology*) *Carl R. Pacifico Professor of Neuropsychology and the Director of Athletics*. Professor. Psychological assessment (neuropsychological, cognitive, personality), psychiatric and neurological disorders, behavioral medicine, neurogerontology, mathematical modeling, sports psychology, psychology of genocide.

Emeritus Faculty

Donald Bersoff, JD, PhD (*Yale University, New York University*). Professor Emeritus. Law and psychology; mental health law.

James Calkins, PhD. Professor Emeritus.

Douglas L. Chute, PhD (*University of Missouri*) *Louis and Bessie Stein Fellow*. Professor Emeritus. Neuropsychology and rehabilitation; technological applications for the cognitively compromised and those with acquired brain injuries.

Myrna Shure, PhD (*Cornell University*). Professor Emeritus. Child development, problem-solving interventions with children, prevention programs.

Mary Spiers, PhD (*University of Alabama at Birmingham*). Professor Emeritus. Clinical neuropsychology and medical psychology; memory and practical applications for memory disorders in the elderly; cognitive health of women.

Sociology BA / Urban Strategy MS

Major: Sociology and Urban Strategy

Degree Awarded: Bachelor of Arts (BA) and Master of Science (MS)

Calendar Type: Quarter

Total Credit Hours: 229.0

Co-op Options: One Co-op (Five years)

Classification of Instructional Programs (CIP) code: 45.1101

Standard Occupational Classification (SOC) code: 19-3041

About the Program

The combined BA in Sociology with a concentration in urban sociology (181.0 credits) and MS in Urban Strategy (48.0 credits) is a combined BA/MS cross-disciplinary degree that focuses on the sociological analysis of cities, the communities that comprise them, and the social processes that organize and transform them. Students in the urban sociology concentration learn to apply sociological concepts and methods to analyze urban issues and problems including gentrification, revitalization, suburbanization, and urban decline; concepts of space, place, community and neighborhood; and urban challenges such as poverty, affordable housing, global warming, policing and incarceration.

The BA portion of the degree prepares students to be leaders in urban issues, populations and challenges, whether through careers in urban policy, planning, social work, community nonprofits, government, or industry. This leads directly into the MS in Urban Strategy, a program designed to prepare students to become 21st century urbanists equipped to collaboratively and creatively solve complex multifaceted urban challenges on all levels: locally, nationally, and globally. The program boasts a cross-disciplinary curriculum focused on strategy, problem solving, and collaboration in the domains of urban planning, design, health, engineering, policy, community and economic development, and sociology. Masters in Urban Strategy students will benefit from the strong grounding in theory and methods of urban sociology, while urban sociology undergraduate students will gain from extending their training into a highly marketable masters degree.

Admission Requirements

Students who meet the standard eligibility requirement for accelerated programs should consult with their advisor and work on an individual plan of study to submit with the Change of Curriculum form.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Three Humanities Courses		9.0
Two Mathematics Courses		8.0
Two Science Courses		8.0
Two Consecutive Foreign Language Courses		8.0
Three Social and Behavioral Science Electives		9.0
Two International Studies Courses		6.0
Two Studies in Diversity		6.0

Sociology Requirements

SOC 101	Introduction to Sociology	3.0
SOC 240	Urban Sociology	4.0
SOC 241	Research Design: Qualitative Methods	4.0
SOC 242	Research Design: Quantitative Methods	4.0
SOC 355 [WI]	Classical Social Theory	4.0
SOC 356 [WI]	Contemporary Social Theory	4.0
SOC 450	Capstone in Sociology	4.0

Required Sociology Electives

Select at least 9 of the following: (At least two must be at the 300 or 400 level).		36.0
SOC 115	Social Problems	
SOC 207	Medicine and Society	
SOC 210	Race, Ethnicity and Social Inequality	
SOC 215	Sociology of Work	
SOC 220	Wealth and Power	
SOC 221	Sociology of the Family	
SOC 222	Sex and Society	
SOC 230	Gender and Society	
SOC 235	Sociology of Health and Illness	
SOC 238	Sociology of Health Professions	
SOC 244	Sociology of the Environment	
SOC 268	Sociology of Sport	
SOC 271	Sociology of Aging	
SOC 276	Global Climate Change	
SOC 313	Sociology of Global Health	
SOC 315	HIV/AIDS and Africa	
SOC 318	Social Networks and Health	
SOC 320	Sociology of Deviance	
SOC 330	Development and Underdevelopment in the Global South	
SOC 335	Sociology of Education	
SOC 340	Globalization	
SOC 341	Global Environmental Movements	
SOC 346	Environmental Justice	
SOC 349	Sociology of Disasters	
SOC 370	Practicum in Applied and Community Sociology	

SOC 405	Medicine, Technology and Science
SOC 410	Imagining Multiple Democracies
SOC 420	Love, Rage & Debt: The Debt Society
SOC 430	Politics of Life
SOC 444	Social Movements
SOC T380	Special Topics in SOC

Urban Sociology Electives

Select two urban sociology electives.		8.0
SOC 261	Sex and The City	
SOC 406	Housing and Homelessness	
SOC T280	Special Topics in Sociology ((Gentrification and Neighborhood Change))	

Free Electives 43.0

MS Urban Strategy Requirements

ECON 616	Public Finance and Cost Benefit Analysis	3.0
URBS 510	History of Urban Space (Shared Course)	3.0
URBS 520	What is a City	3.0
URBS 530	Quantitative Methods & Reasoning for Urban Strategists	3.0
URBS 610	Civic Engagement & Participatory Methods	3.0
URBS 620	City of Systems	3.0
URBS 630	Spatial Reasoning for Urbanists, Architects & Designers	3.0
URBS 650	Urbanism, Health & the Built Environment	3.0
URBS 670	Thesis I: Research Inquiry & Design	3.0
URBS 675	Thesis Seminar I	1.5
URBS 680	Thesis II: Fieldwork	3.0
URBS 685	Thesis Seminar II	1.5
URBS 690	Thesis III: Documentation	3.0
Four Graduate Free Electives		12.0

Total Credits 229.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Sample Plan of Study

First Year				
Fall	Credits	Winter	Credits	Spring
ENGL 101	3.0	CIVC 101	1.0	COOP 101
or 111				1.0 VACATION
SOC 101	3.0	ENGL 102	3.0	ENGL 103
		or 112		or 113
UNIV H101	1.0	SOC 240	4.0	Sociology Elective
				4.0

Foreign Language 1	4.0 Foreign Language 2	4.0 Diversity Elective	3.0
Math Seq Course	4.0 Science Elective	4.0 SBS Elective	3.0
SBS Elective	3.0	Free Elective	3.0
	18	16	17

Second Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
SOC 241	4.0 SOC 355	4.0 SOC 242	4.0 UNIV H201	1.0
Math Seq Course	4.0 Sociology Elective	4.0 SBS Elective	3.0 Free Elective	3.0
Sociology Elective	4.0 Free Elective	3.0 Sociology Elective	4.0 Sociology Urban Elective	4.0
Sociology Elective	4.0 Science Elective	4.0 Free Elective	3.0 Sociology Elective 300-400	4.0
	Diversity Elective	3.0 Free Elective	3.0 Sociology Elective 300-400	4.0
	16	18	17	16

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
Soc Urban Elective	4.0 SOC 356	4.0 COOP EXPERIENCE	COOP EXPERIENCE	
UG Humanities Elective	3.0 URBS 610 (GR URBS)	3.0		
UG International Elective	3.0 UG Humanities Elective	3.0		
UG Free Elective	3.0 UG Free Electives	6.0		
URBS 510 (GR URBS)	3.0			
	16	16	0	0

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
URBS 530 (GR URBS)	3.0 SOC 450	4.0 ECON 616 (GR URBS)	3.0
URBS 520 (GR URBS)	3.0 URBS 620 (GR URBS)	3.0 URBS 650 (GR URBS)	3.0
UG Sociology Electives	8.0 URBS 630 (GR URBS)	3.0 UG Free Electives	12.0
UG Free Electives	4.0 UG International Elective	3.0 Note: BA Degree Awarded	
	UG Humanities Elective	3.0	
	UG Free Elective	3.0	
	18	19	18

Fifth Year

Fall	Credits Winter	Credits Spring	Credits
URBS 670 (GR URBS)	3.0 URBS 675 (GR URBS)	1.5 URBS 685 (GR URBS)	1.5
GR URBS Electives	6.0 URBS 680 (GR URBS)	3.0 URBS 690 (GR URBS)	3.0

GR URBS Elective	3.0 GR URBS Elective	3.0
9	7.5	7.5

Total Credits 229

Minor in Africana Studies

About the Minor

The minor in Africana studies was created to provide the opportunity for undergraduate students throughout the University to gain an understanding of and background in the history and cultures of peoples of African descent in North and South America, the Caribbean, and Africa.

This interdisciplinary minor includes courses in anthropology, history, literature, music, political science, and sociology, and provides an opportunity for directed study in areas of particular interest to the students. The Africana studies minor has intrinsic intellectual value and helps prepare individuals to become contributors to an increasingly pluralistic society. At the same time, this minor allows students interested in business, the sciences, engineering, government, and social services to present to prospective employers a unique academic background.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required Courses

AFAS 101	Introduction to Africana Studies	3.0
AFAS 201	Cross Currents in Africana Studies	3.0
Students must complete a minimum of 18 credits from the list provided: *		18.0

AFAS 210	Topics in Africana Arts	
AFAS 220	Topics in Africana Society	
AFAS 230	Topics in African History	
AFAS 240	Topics in Africana Current Events	
AFAS 255	Gender & Black Popular Culture	
AFAS 260	Race, Politics and Religion	
AFAS 301	Politics of Hip Hop	
AFAS 385	Rum, Rice and Revolution: Caribbean History	
AFAS 401	Urban Social Justice Practicum I	
AFAS 402	Urban Social Justice Practicum II	
AFAS I299	Independent Study in AFAS	
AFAS T280	Special Topics in Africana Studies	
AFAS T380	Special Topics in Africana Studies	
ANTH 101	Introduction to Cultural Diversity	
ANTH 310	Societies In Transition: The Impact of Modernization and the Third World	
ARTH 315	African-American Art	
ARTH 316	African Art	
DANC 109	African Dance Technique I	
ENGL 203 [WI]	Survey of World Literature (WI)	
ENGL 204	Post-Colonial Literature	
ENGL 207 [WI]	African American Literature	
ENGL 325	Topics in World Literature **	
ENGL 492	Seminar in World Literature	
HIST 215	American Slavery	
HIST 216	Freedom in America	
MUSC 107	Jazz Ensembles	
MUSC 331	World Musics	
MUSC 333	Afro-American Music USA	
MUSC 336	History of Jazz	
PSCI 372	City in United States Political Development	

SOC 210	Race, Ethnicity and Social Inequality	
SOC 240	Urban Sociology	
WGST 240	Women and Society in a Global Context	
WGST T280	Special Topics in Women's and Gender Studies ***	
Total Credits		24.0

* Students must check with the Program Director for approval prior to making substitutions.

** With a focus on the Caribbean, Latin America or the Diaspora.

*** With a focus on race or the Diaspora.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in Anthropology

About the Minor

In today's globalized marketplace, Anthropology, the study of human cultural and biological diversity, is more vital than ever. Fields as varied as medicine, law, government, and business, make use of the insights of anthropologists to reach and communicate with a broad audience. The anthropology minor provides students with a cross-cultural awareness and understanding that will give them an edge up no matter what field they go into. It challenges them to think beyond their own experience and imagine the perspectives of other people and other societies. Anthropology minors graduate as cosmopolitan and engaged global citizens, with in-demand skills in researching, and making sense of, diverse human behavior.

All prospective students should meet with an advisor from the College as soon as possible.

Required (Core) Courses

ANTH 101	Introduction to Cultural Diversity	3.0
ANTH 110	Human Past: Anthropology and Prehistoric Archeology	3.0

ANTH Electives *

Examples include:

ANTH 112	Language, Culture & Cognition	
ANTH 212 [WI]	Topics in World Ethnography	
ANTH 215	Anthropology of Gender	
ANTH 250	Anthropology of Immigration	
ANTH 265	Health & Healing Practices in Cross-Cultural Perspective	

ANTH 270	Comparative Religious Ethics	
ANTH 310	Societies In Transition: The Impact of Modernization and the Third World	
ANTH 345	Visual Anthropology	
Total Credits		24.0

* Students must complete six additional ANTH courses

Minor in Asian Studies

About the Minor

This minor offers an interdisciplinary look at the East, Southeast, and South Asia regions, which hold a critically important geopolitical position in terms of not only business and security, but also in terms of political, religious, cultural, and gender studies. Together with content courses in English offered through a variety of departments, this minor also includes 12.0 credits of instruction in one of our three Asian languages (Chinese, Korean, or Japanese).

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Students must complete 12 credits of language study in Chinese, Japanese, or Korean **12.0**

Students must complete a minimum of 12 credits of elective courses **12.0-14.0**

ANTH 363	Sacred Traditions of the East	
ARTH 301	Asian Art and Culture	
ARTH 302	Art of India	
ARTH 303	Art of China	
ARTH 304	Art of Japan	
ENGL 325	Topics in World Literature *	
FMST 293	Japanese Cinema: Kurosawa	
HIST 261	Making of Modern South Asia	
HIST 263	The World and China	
HIST 264	East Asia in Modern Times	
HIST 322	Empire and Environment	
PHIL 102	Introduction to Eastern Philosophy	

Total Credits **24.0-26.0**

* South Asian Literature

Study abroad, Global Studies (GST) courses at the 200 and 300 levels, and special topics courses focused on Asia will be considered for elective credit. Students must receive permission from the department.

Students who complete a minimum of 8 language credits in one language, including CHIN 202, KOR 202, or JAPN 202, are eligible to receive an intermediate language certificate.

Minor in Bioinformatics

About the Minor

The Bioinformatics minor examines the application of computer technology and programming to biological fields such as genomics or proteomics. This multidisciplinary program is designed for science, engineering, math, and computer and information science majors who have a deep interest in biological data science. The minor is divided among courses in biology, programming and computation, information science and computer technology, and statistics.

Program Requirements

- A grade of C or better must be earned for each course in this minor for it to be counted.
- Students should check all pre-requisites of all classes when selecting courses. It is the responsibility of the student to know the pre-requisites.
- Students must complete a minimum of 25-26 credits of coursework as follows:

Biology		
BIO 218	Principles of Molecular Biology	4.0
or BIO 211	Cell, Molecular & Developmental Biology II	
BIO 331	Bioinformatics I	3.0
BIO 413	Genomics	3.0
Programming and Computation		
CS 171	Computer Programming I	3.0
CS 172	Computer Programming II	3.0
Information Science and Computer Technology		
INFO 101	Introduction to Computing and Security Technology	3.0
INFO 210	Database Management Systems	3.0
Statistics (select 1 course)		3.0-4.0
MATH 310	Probability and Statistics	
MATH 311	Probability and Statistics I	
MATH 410	Scientific Data Analysis I	
Total Credits		25.0-26.0

Additional Information

Please contact Leanne Sweppenheiser (lmt38@drexel.edu) for more information.

Minor in Biological Sciences

About the Minor

The minor in Biological Sciences is designed for students who wish to become acquainted with the life sciences while pursuing a major in another area. This option should be particularly useful for students majoring in areas such as chemistry, engineering, physics, or psychology who are interested in admission to medical schools or graduate programs. Students interested in the minor should consult with an academic advisor in the department for help with course selections.

Program Requirements

Required Courses *		
BIO 131	Cells and Biomolecules **	4.0
BIO 134	Cells and Biomolecules Lab **	1.0
BIO 132	Genetics and Evolution	4.0
BIO 135	Genetics and Evolution Lab	1.0
BIO 133	Physiology and Ecology	4.0
BIO 136	Anatomy and Ecology Lab	1.0
BIO 218	Principles of Molecular Biology	4.0
or BIO 209	Cell, Molecular & Developmental Biology I	
BIO 224	Form, Function & Evolution of Vertebrates	4.0
or BIO 201	Human Physiology I	
BIO ELECTIVE OR ENVS 212 ***		3.0
Total Credits		26.0

* A grade of "C" or better must be earned for each course in this minor for the course to meet the requirement.

** BIO 131 and BIO 134 can be substituted with BIO 122.

*** The Biology Elective can be selected from any of the regularly offered Biology department lecture courses 200-level and above according to your specific interests. BIO 200, BIO 204, BIO 205, BIO 207, BIO 208, BIO 212 and BIO 226 will not count towards the Biology elective. Note that existing course prerequisites may affect which courses may be selected.

Minor in Biophysics

About the Minor

Biophysics is the study of the complexity of life using tools provided by physics. It attempts to construct mathematical frameworks that explain, among many other topics, how organisms obtain energy from the environment, how complex structures appear in the cell, and how these relate to function. In essence, biophysics looks for principles that describe observed patterns and propose predictions based on these principles.

Admission Requirements

Consultation and approval of the program director and completion of one of the prerequisite sequences. Students who have completed the PHYS 152 , PHYS 153 , and PHYS 154 sequence will also be accepted into the minor provided they have an A- average in those courses and have completed MATH 121 and MATH 122 .

Program Requirements

Required Pre-requisites

PHYS 113	Contemporary Physics I
PHYS 114	Contemporary Physics II
PHYS 115	Contemporary Physics III
OR	
PHYS 101	Fundamentals of Physics I
PHYS 102	Fundamentals of Physics II
PHYS 201	Fundamentals of Physics III

Core Requirements

PHYS 217	Thermodynamics	3.0-4.0
or CHEM 253	Thermodynamics and Kinetics	
or ENGR 210	Introduction to Thermodynamics	
PHYS 262	Introduction to Biophysics	3.0
PHYS 317	Statistical Mechanics	3.0
PHYS 321	Electromagnetic Fields I	4.0
PHYS 461	Biophysics	3.0
PHYS 462	Computational Biophysics	3.0
One course from the following:		4.5
BIO 122	Cells and Genetics	
BIO 141	Essential Biology	
One course from the following:		3.0-4.0
BIO 209	Cell, Molecular & Developmental Biology I	
BIO 214	Principles of Cell Biology	
BIO 218	Principles of Molecular Biology	
CHEM 371	Chemistry of Biomolecules	

Total Credits

26.5-28.5

Minor in Bioscience and Society

About the Minor

Designed for non-majors, the minor in Bioscience and Society is accessible to all students with an interest in biology. The minor includes

a list of topical courses from which students can choose freely depending upon interest.

Please contact Leanne Sweppenheiser at Imt38@drexel.edu for additional information.

Required Courses *

Select one of the following options:		3.0-4.0
BIO 100	Applied Cells, Genetics & Physiology	
or		
BIO 107 & BIO 108	Cells, Genetics & Physiology and Cells, Genetics and Physiology Laboratory	
Select one of the following options:		3.0-4.0
BIO 101	Applied Biological Diversity, Ecology & Evolution	
or		
BIO 109 & BIO 110	Biological Diversity, Ecology & Evolution and Biological Diversity, Ecology and Evolution Laboratory	
ENVS 212	Evolution	4.0
Select four of the following: **		14.0
BIO 112	Biotechnology for Society	
BIO 114	Climate Change and Human Health	
BIO 116	How Your Body Works-Or Not	
BIO 118	Basics of Cancer	
BIO 264	Ethnobotany	
BIO 284	Biology of Stress	
ENVS 260	Environmental Science and Society	

Total Credits 24.0-26.0

* A grade of "C" or better must be earned for each course in this minor for the course to meet the requirement.

** Other courses may be substituted depending on yearly course offerings after consultation with an academic advisor in the Department of Biology.

Minor in Chemistry

About the Minor

The academic minor program in Chemistry is designed to expose students to each of the major sub-disciplines of chemistry (analytical, inorganic, organic, and physical). In order to accomplish this, students take a total of at least 27.5 credits of chemistry past the freshman year (100-level courses).

As chemistry is an experimental science, at least two laboratory courses must be included in the group of courses taken for the minor. Students should note that their academic major may require certain chemistry courses that can also be used to fulfill the requirements for a minor in Chemistry.

Program Requirements

Required Courses

CHEM 241	Organic Chemistry I	4.0
CHEM 230	Quantitative Analysis	4.0
CHEM 253	Thermodynamics and Kinetics *	4.0
CHEM 421	Inorganic Chemistry I	3.0
CHEM 244	Organic Chemistry Laboratory I	3.0
Chemistry Electives **		9.5
Total Credits		27.5

* May substitute CHEC 352 Physical Chemistry and Applications II (4 credits) or CHEC 353 Physical Chemistry and Applications III (4 credits) for the CHEM 253 Thermodynamics and Kinetics requirement.

** The 9.5 credits of chemistry electives must include at least one additional laboratory course. These electives are selected from any of the regularly offered chemistry department lecture or laboratory courses 200-level and above according to your specific interests. Note that existing course pre-requisites may affect which courses may be selected. The variable credit courses CHEM 493 Senior Research Project or CHEM 497 Research (Undergraduate) may also be used to fulfill either the lecture or laboratory requirements for the minor.

Additional Information

For more information about the minor, contact:

Daniel King, PhD
Undergraduate Affairs Committee Chair
Department of Chemistry
Drexel University
dk68@drexel.edu

Minor in Communication

About the Minor

The minor in communication is a 24.0 credit curriculum designed to familiarize students with communication theory while providing training in print and digital communication. The minor can provide a strong complement for majors that emphasize presentations, interpersonal skills, publicity, and marketing. Students minoring in communication can focus on public relations, journalism, technical and science communication, environmental communication, or nonprofit communication.

All prospective students should meet with an advisor from the College as soon as possible.

Students complete 2 required courses, 2 courses in one of the areas listed below, and four additional electives from the COM course offerings that fit their interest.

Please note: No more than three courses that are required for a student's major can count towards fulfilling requirements for the minor.

Core Courses

COM 101	Human Communication	3.0
or COM 111	Principles of Communication	
COM 210	Theory and Models of Communication	3.0

Focus Areas 6.0

Select one of the following areas of focus (2 courses):

Journalism

COM 160	Introduction to Journalism	
COM 261	Advanced Journalism	

Public Relations

COM 181	Public Relations Principles and Theory	
COM 270 [WI]	Business Communication	
or COM 282	Public Relations Writing	
or COM 284	Public Relations Research, Measurement and Evaluation	

Technical and Science Communication

COM 310 [WI]	Technical Communication	
COM 320 [WI]	Science Writing	

or COM 375 Grant Writing	
Environmental Communication	
COM 316 Campaigns for Health & Environment	
or COM 318 Film, Celebrity and the Environmental Movement	
COM 317 [WI] Environmental Communication	
FOUR Additional Courses	
Four COM or LING electives	12.0
Total Credits	24.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in Computer Crime

About the Minor

The minor in computer crime grounds students in the fundamentals of crime, security and technology by focusing on the behavioral, legal, and societal factors associated with technology and deviance as they relate to both the private and public sectors. The curriculum exposes students to both the concepts and tools necessary to understand and ultimately address computer crime, such as financial fraud, identity theft and other digital crimes that cross national and international boundaries.

All prospective students should meet with an advisor from the College as soon as possible.

Required Courses		
CJS 101	Introduction to Criminal Justice	3.0
CJS 200	Criminology	3.0
CJS 276	Introduction to Computer Crime	3.0
CJS 274	Sex, Violence, & Crime on the Internet	3.0
CJS 365	Computer Investigations and the Law	3.0
CJS 377	Intellectual Property Theft in the Digital Age	3.0
Additional Elective Courses		
Select two of the following: 6.0		
CJS 265	Criminal Investigation	
CJS 266	Crime Prevention Planning	
CJS 267	Introduction to Security Studies	
CJS 273	Surveillance, Technology, and the Law	
CJS 362	Gender, Crime, and Justice	
CJS 375	Criminal Procedure	

CJS T380	Special Topics in Criminology and Justice Studies	
Total Credits		24.0

Minor in Criminal Justice

About the Minor

Students from any major who are interested in the law, legal issues and the forensic sciences may envision a future connection with the criminal justice system. These students could enhance their career possibilities by adding a minor in criminal justice to their major field of study.

The minor consists of four required courses and four criminal justice electives chosen from two categories, for a total of 24.0 credits.

All prospective students should meet with an advisor from the College as soon as possible.

Required Courses		
CJS 101	Introduction to Criminal Justice	3.0
CJS 200	Criminology	3.0
CJS 210	Race, Crime, and Justice	3.0
CJS 220	Crime and the City	3.0
Criminal Justice Elective Courses		
Select 12 credits from the following: 12.0		
CJS 260	Justice in Our Community	
CJS 261	Prison, Society and You	
CJS 265	Criminal Investigation	
CJS 266	Crime Prevention Planning	
CJS 267	Introduction to Security Studies	
CJS 273	Surveillance, Technology, and the Law	
CJS 274	Sex, Violence, & Crime on the Internet	
CJS 275	Issues in Domestic Violence	
CJS 276	Introduction to Computer Crime	
CJS 277	Introduction to Correctional Practices	
CJS 278	Introduction to Law Enforcement	
CJS 280	Communities and Crime	
CJS 289	Terrorism	
CJS 290	Crime and Public Policy	
CJS 295	International Field Experience	
CJS 302	Advanced Criminological Theorizing	
CJS 320	Comparative Justice Systems	
CJS 330	Crime Mapping I Using Geographic Information Systems	
CJS 360	Juvenile Justice	
CJS 362	Gender, Crime, and Justice	
CJS 364	Community Corrections	
CJS 365	Computer Investigations and the Law	
CJS 366	Technology and the Justice System	
CJS 369	Forensic Science Survey Course	
CJS 372	Death Penalty - An American Dilemma	
CJS 374	Restorative Justice	
CJS 375	Criminal Procedure	
CJS 376	Sentencing	
CJS 377	Intellectual Property Theft in the Digital Age	
CJS 378	Science of Forensic Science	
CJS 379	Forensic DNA Analysis	
CJS 401	Program Evaluation	
CJS T380	Special Topics in Criminology and Justice Studies	
CJS I399	Independent Study in CJS	
Total Credits		24.0

Minor in Ecology

About the Minor

The Minor in Ecology meets the needs of engineering, science, arts, applied arts, information, and business students interested in environmental science. Prior to taking ENVS 230 *General Ecology*, students are minimally expected to have had one term to a year of both general biology and general chemistry.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required Courses

ENVS 212	Evolution	4.0
ENVS 230	General Ecology	3.0
ENVS 260	Environmental Science and Society	3.0
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
ENVS 328	Conservation Biology	3.0
Environmental Science elective		3.0
Field Course		4.0
Choose one of:		
ENVS 382	Field Botany of the New Jersey Pine Barrens	
ENVS 383	Ecology of the New Jersey Pine Barrens	
ENVS 388	Marine Field Methods	

Total Credits **26.0**

Minor in English

About the Minor

The English minor provides students from other majors with a more intensive background in literature. Coursework in the minor exposes students to literature from a variety of periods, cultures and genres and also provides practice in critical thinking, literary analysis and writing. These courses enrich students' intellectual lives and provide them with skills that are valuable in a variety of professional situations.

Where a course required for the minor is already required for a student's major, the student is directed to choose another English elective. Other substitutions are permissible at the discretion of the Program Director.

Program Requirements

Requirements

Select a minimum of 9 credits of the following:		9.0
ENGL 200 [WI]	Classical to Medieval Literature	
ENGL 201	Renaissance to the Enlightenment	
ENGL 202 [WI]	Romanticism to Modernism	
ENGL 203 [WI]	Survey of World Literature	
ENGL 204	Post-Colonial Literature	
ENGL 205 [WI]	American Literature I	
ENGL 206 [WI]	American Literature II	
ENGL 207 [WI]	African American Literature	
ENGL 211 [WI]	British Literature I	
ENGL 212	British Literature II	
ENGL 214	Readings in Fiction	
ENGL 215 [WI]	Readings in Poetry	
ENGL 216 [WI]	Readings in Drama	
Select a minimum of 6 credits of the following:		6.0

WRIT 220 [WI] Creative Nonfiction Writing

WRIT 225 [WI] Creative Writing

WRIT 301 [WI] Writing Poetry

WRIT 302 [WI] Writing Fiction

WRIT 303 Writing Humor and Comedy

WRIT 306 Writing About the Media

WRIT 310 Literary Editing & Publication

WRIT 312 [WI] Writing for Target Audiences

WRIT T380 Special Topics in Writing

WRIT 400 [WI] Writing for -- and about -- the Web

WRIT 405 Internship in Publishing

Select a minimum of 9 credits of the following: 9.0

ENGL 300 [WI] Literature & Science

ENGL 302 Environmental Literature

ENGL 303 Science Fiction

ENGL 305 [WI] The Mystery Story

ENGL 306 Literature of Baseball

ENGL 307 Literature of Genocide

ENGL 310 [WI] Period Studies

ENGL 315 [WI] Shakespeare

ENGL 320 [WI] Major Authors

ENGL 325 Topics in World Literature

ENGL 330 The Bible as Literature

ENGL 335 Mythology

ENGL 345 American Ethnic Literature

ENGL 350 Jewish Literature and Civilization

ENGL 355 [WI] Women and Literature

ENGL 360 [WI] Literature and Society

ENGL 365 Topics in African American Literature

ENGL 370 Topics in Literature and Medicine

ENGL 380 Literary Theory

Total Credits **24.0**

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in Environmental Studies

About the Minor

The Environmental Studies minor is an interdisciplinary minor designed to give students specializing in other fields a background in contemporary

environmental issues and the ability to analyze such issues. For students majoring in fields such as business and engineering, the minor in Environmental Studies will provide them with the tools to make better decisions about products or projects related to environmental economics, politic pollutants, environmental policy, and environmental justice. For students who are liberal arts majors, the minor in Environmental Studies offers the opportunity to focus on the social- and natural-science aspects of the environment, and to be prepared for issues they may encounter in their careers.

All prospective students should meet with an advisor from the College as soon as possible.

Required Courses

ENSS 120	Introduction to Environmental Studies	3.0
ENSS 283	Introduction to Environmental Policy	3.0
ENVS 260	Environmental Science and Society	3.0
Select from the following: *		15.0
ANTH 360	Culture and the Environment	
CJS 373	Environmental Crime	
COM 316	Campaigns for Health & Environment	
COM 317 [WI]	Environmental Communication	
ECON 351	Resource and Environmental Economics	
ENGL 302	Environmental Literature	
ENSS 244	Sociology of the Environment	
ENSS 285	Introduction to Urban Planning	
ENSS 326	Cities and Sustainability	
ENSS 341	Environmental Movements in America	
ENSS 346	Environmental Justice	
ENSS 348	Delaware River Issues and Policy	
ENVS 230	General Ecology	
ENVS 275	Global Climate Change	
GEO 101	Physical Geology	
HIST 321	Themes in Global Environmental History	
HIST 322	Empire and Environment	
PHIL 340	Environmental Ethics	
PHIL 341	Environmental Philosophy	
PSCI 284	Environmental Politics	
PSCI 334	Politics of Environment and Health	
PSCI 369	The Politics of Food	
PSCI 373	Animal Politics	
SOC 444	Social Movements	
Total Credits		24.0

* Other courses may be taken as electives with Departmental approval.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/>)

academics/departments-centers/english-philosophy/university-writing-program/). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in French

About the Minor

In our globalized world, intercultural and multilingual communication is an indispensable asset for the 21st century citizen and worker. As part of the Department of Global Studies and Modern Languages, we offer language instruction rooted in communication and embedded in authentic cultural contexts. Language study opens a world of opportunities for our students, from co-ops and study abroad programs to engagement with global communities here in Philadelphia. Media and technology, as well as travel and commerce, make the study of languages more crucial than ever, for tackling global challenges such as climate change and inequality demand that our students communicate across languages and cultures.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

The French minor requires a minimum of 24 credits above French 103, including at least 12 credits above French 310, and at least one 400 level course. Students can choose from the following 300 and 400 level courses.

FREN 201	French IV
FREN 202	French V
FREN 310 [WI]	Advanced Writing and Speaking
FREN 320	Introduction to Language for the Professions
FREN 330	Introduction to Identities and Communities
FREN 340	Introduction to Power and Resistance
FREN 350	Introduction to Language, Media, and Society
FREN 410 [WI]	Advanced Grammar and Translation
FREN 420	Advanced Studies in Language for the Professions
FREN 430	Advanced Studies in Identities and Communities
FREN 440	Advanced Studies in Power and Resistance
FREN 450	Advanced Studies in Language, Media, and Society

Minor in Geoscience

About the Minor

Geosciences are at the core of numerous problems facing the world today and impact the lives of communities across the planet. Climate change, natural disasters, access to mineral resources and clean water, and availability of energy all shape government policies and corporate strategies and are a cause of concern for society at large.

The Geoscience minor is designed to give students specializing in other fields the skills to understand and analyze these issues. It is a natural fit for environmental science majors who wish to understand how the physical world can impact biodiversity, ecological processes, and environmental impacts. For students majoring in fields such as business and engineering, the minor in Geoscience will provide them with the tools to make better decisions about products or projects related to natural hazards and their impact, cost and availability of natural resources, energy policy, space exploration, land use, and environmental justice. For students who are liberal arts majors, the minor in Geoscience offers the

opportunity to explore earth science issues that shape the social, cultural, political and scientific debate, and to be prepared for issues they may encounter in their careers.

All prospective students should meet with an advisor from the College as soon as possible.

GEO 101	Physical Geology	4.0
GEO 102	History of the Earth	4.0
GEO Electives		16.0
GEO 103	Introduction to Field Methods in Earth Science	
GEO 201 [WI]	Earth Systems Processes	
GEO 205	Dinosaurs and Their World	
GEO 215	Mineralogy	
GEO 301	Advanced Field Methods in Earth Science	
GEO 306	Environmental Geology	
GEO 309	Geochemistry	
GEO 312	Sedimentology and Stratigraphy	
GEO 320	Invertebrate Paleobiology and Paleocology	
GEO 322	Vertebrate Paleontology	
GEO 325	Structural Geology	
GEO 340	Quaternary Geology	
GEO 342	Geomorphology	
GEO 346	Coastal Geology	
GEO 348	Oceanography	
GEO 350	Volcanology	
GEO 401	Igneous and Metamorphic Petrology	
GEO 412	Geology of Groundwater	
GEO 418	Geophysics	
Total Credits		24.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in Global Studies

About the Minor

Global Studies practices socially-responsible global citizenship through a unique combination of research-oriented and multilingual instruction,

professional experience, and meaningful engagement with communities both here in Philadelphia and abroad.

Students experience Global Studies by:

- Examining the movement of peoples, goods, and cultures across countries and regions
- Studying global issues in concrete socio-economic, cultural, and geographical contexts
- Tackling structural inequalities from a variety of perspectives and disciplines
- Developing intercultural and language skills through unique pedagogical models
- Working with employers and communities in Philadelphia and around the world through Drexel's Co-op opportunities

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Students must complete at least 201 of a language before earning the GST minor.

Core requirements		
Students are required to complete 5 GST courses		15.0
Globally focused electives - Examples include: *		9.0
ARTH 303	Art of China	
ECON 342	Economic Development	
ENGL 325	Topics in World Literature	
ENVS 275	Global Climate Change	
INTB 334	International Trade	
PBHL 303	Overview of Issues in Global Health	
PSCI 353	International Human Rights	
Total Credits		24.0

* Students must complete at least 9.0 credits of globally focused coursework. Courses can be from any discipline and must be approved by the department.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in History

About the Minor

The history minor allows students in other majors to explore the historical background of their discipline, to better understand the origins of the contemporary world, and to build the knowledge and skills needed to understand the development of human societies over time and to understand historical episodes into their proper contexts. The minor in history is highly flexible and allows students to choose those history courses which appeal to them and which will contribute to their broader education. To complete the minor, students must take a total of six history courses (24.0 credits), five of which must be at the 200-level or above.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

History Electives*

*Take any 6 HIST courses; 5 of 6 must be 200-level or higher 24.0

Total Credits 24.0

Minor in History of Capitalism

About the Minor

The Minor in History of Capitalism is dedicated to the study of capitalism and the emergence of the modern world economy from a historical perspective.

Admission Requirements

Open to all undergraduate students. All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required Course

HIST 315 History of Capitalism 4.0

Complete 3 of the following courses: 12.0

HIST 215	American Slavery	
HIST 222	History of Work & Workers in America	
HIST 247	Modern England, 1815 - present	
HIST 264	East Asia in Modern Times	
HIST 291	Global History of Engineering	
HIST 292	Technology in American Life	
HIST 303	The Study of Global History	
HIST 316	History of American Business	
HIST 322	Empire and Environment	
HIST 334	American Empire in the Nineteenth Century	
HIST 355	Venice and the Mediterranean from the Middle Ages to Napoleon	

Complete any 2 additional history courses at the 200 level or above 8.0

Total Credits 24.0

Minor in Italian Studies

About the Minor

Drexel University and Philadelphia have deep connections with the Italian and Italo-American communities, from which come many Drexel students.

Additionally, a significant number of faculty members across the university have research interests that connect with Italy.

The interdisciplinary minor in Italian Studies is designed to attract students interested in a variety of aspects related to Italian culture and to make use of the deep and diverse pool of resources on Drexel's campus, in the region, and abroad.

The minor in Italian Studies requires three courses (9-12 cr.) of language study. This allows students to achieve a basic level of language proficiency, with the option to continue further in the language. It also allows students whose interests lie beyond the language to pursue substantial Italy-related coursework in other disciplines. The elective side of the minor includes 12-15 credits of coursework in Italian society and culture, including a required seminar in contemporary Italy.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required courses:

Students select 9.0-12.0 credits ITAL courses.	9.0-12.0
ITAL 230 Italy and Italians Today	3.0
Italian Studies Electives:	12.0-13.0
ARTH 102 History of Art II	
ARTH 325 Ancient Greek and Roman Art	
ARTH 327 Italian Renaissance Art	
CULA 305 Fundamentals of Italian Cuisine	
FMST 345 Italian Neo Realism	
HIST 355 Venice and the Mediterranean from the Middle Ages to Napoleon	
SCL 419 Global Coaching Seminar	

Total Credits 24.0-28.0

Minor in Japanese

About the Minor

In our globalized world, intercultural and multilingual communication is an indispensable asset for the 21st century citizen and worker. As part of the Department of Global Studies and Modern Languages, we offer language instruction rooted in communication and embedded in authentic cultural contexts. Language study opens a world of opportunities for our students, from co-ops and study abroad programs to engagement with global communities here in Philadelphia. Media and technology, as well as travel and commerce, make the study of languages more crucial than ever, for tackling global challenges such as climate change and inequality demand that our students communicate across languages and cultures.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

The Japanese minor requires a minimum of 24 credits with a minimum of 12 credits above JAPN 310 24.0

JAPN 201	Japanese IV
JAPN 202	Japanese V
JAPN 310 [WI]	Advanced Writing and Speaking
JAPN 320	Introduction to Language for the Professions
JAPN 340	Introduction to Power and Resistance
JAPN 410 [WI]	Advanced Grammar and Translation
JAPN 420	Advanced Studies in Language for the Professions

JAPN 440	Advanced Studies in Power and Resistance
JAPN 450	Advanced Studies in Language, Media, and Society

Minor in Jewish Studies

About the Minor

The Louis Stein Minor in Jewish Studies, housed within the College of Arts and Sciences, is designed to give students the opportunity to explore and understand the history, culture, politics, and religion of the Jewish people. Through interdisciplinary coursework, students investigate the Jewish experience from both a contemporary and a historical perspective.

The Louis Stein Minor in Jewish Studies requires 24.0 credits: 6.0-7.0 from required courses; and 17.0-18.0 from electives. Students can apply a maximum of 6.0 credits toward the minor from field study under the supervision of a faculty member.

Program Requirements

Required Courses

JWST 101	Culture Ethnicity Religion	3.0
Select one:		3.0
JWST 201	Jewish Literature and Civilization **	
JWST 202	Jewish Life and Culture in the Middle Ages ***	
JWST 203	Modern Jewish History †	
Minor electives		18.0
Total Credits		24.0

- * If JWST 201 (3 credits) is selected, then 18 credits of electives are needed to fulfill the minor requirements.
If JWST 202 or JWST 203 (4 credits each) is selected, then 17 credits of electives are needed to fulfill the minor requirements.
- ** Offered concurrently with ENGL 350 Jewish Literature and Civilization.
- *** Offered concurrently with HIST 253 Jewish Life and Culture in the Middle Ages.
- † Offered concurrently with HIST 249 Modern Jewish History.

Please see the Program Director for approval of courses not on the list of suggested electives.
Suggested Electives:

- Any JWST (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/jewishstudiesminor/nextcatalog.drexel.edu/coursedescriptions/quarter/undergrad/jwst/>) course
- Any HBRW (<http://catalog.drexel.edu/coursedescriptions/quarter/undergrad/hbrw/>) course*
- ANTH 117 Introduction to World Religions
- ANTH 217 Anthropology of Interfaith Relations
- ANTH 270 Comparative Religious Ethics
- ENGL 350 Jewish Literature and Civilization
- HIST 249 Modern Jewish History
- HIST 253 Jewish Life and Culture in the Middle Ages
- HIST 260 Coexistence and Conflict: Jews, Christians, and Muslims in the Early Mediterranean
- PHIL 291 Judaism and Christianity: Two Religions or One
- PHIL 391 Philosophy of Religion
- WGST 260 Gender and Judaism

* Only 2 HBRW courses may be count as electives.

Minor in Justice Studies

About the Minor

The Justice Studies minor is designed for students who wish to connect their major fields of study with a justice-focused curriculum. The minor explores mostly place-based social, economic, health, and environmental risk factors in ways that extend beyond the traditional criminal justice system. With emphases on engaged learning, co-curricular opportunities, and data-driven problem-solving, the Justice Studies minor both educates and gives students the tools needed to practice “justice” across a wide spectrum of broader fields of study.

Program Requirements

CJS Requirements

CJS 260	Justice in Our Community	4.0
CJS 330	Crime Mapping I Using Geographic Information Systems	4.0
CJS 303	Applications of Justice	3.0
CJS 262	Places of Justice	3.0
CJS 263	Crime, Violence, and Climate Change	3.0

Justice Studies Minor Program Electives

Students must take 9 credits of Justice Studies Minor program electives, selecting any combination of courses from the following list:

ANTH 110	Human Past: Anthropology and Prehistoric Archeology	
ANTH 112	Language, Culture & Cognition	
ANTH 117	Introduction to World Religions	
ANTH 212 [WI]	Topics in World Ethnography	
ANTH 215	Anthropology of Gender	
ARTH 311	Twentieth Century American Art	
ARTH 314	Contemporary Art	
ARTH 315	African-American Art	
COM 181	Public Relations Principles and Theory	
COM 210	Theory and Models of Communication	
COM 377	Communication for Civic Engagement	
ECON 201	Principles of Microeconomics	
ECON 365	Behavioral Economics	
ENSS 120	Introduction to Environmental Studies	
ENSS 244	Sociology of the Environment	
ENSS 283	Introduction to Environmental Policy	
ENSS 285	Introduction to Urban Planning	
ENSS 326	Cities and Sustainability	
ENSS 346	Environmental Justice	
ENVS 275	Global Climate Change	
ENTP 210 [WI]	Leading Start-Ups	
ENTP 215	Building Entrepreneurial Teams	
ENTP 225 [WI]	Mindfulness & Wellbeing	
ENTP 250	Ideation	
ENTP 270	Social Entrepreneurship	
ENTP 275	Diversity Entrepreneurship	
ENTP 285	Organizational Development and Change for Corporate Entrepreneurs	
ENTP 290	An Entrepreneur's Introduction to Land: Its Essence, Ethics, and Opportunity	
GST 221	Introduction to Global Capital and Development	
GST 231	Introduction to Identities and Communities	
GST 241	Introduction to Power and Resistance	
GST 251	Introduction to Global Media, Arts, and Cultures	
GST 261	Introduction to Global Health and Sustainability	
PSY 150	Introduction to Social Psychology	
PSY 252	Death and Dying	

PSY 254	Psychology of Sexual Behavior
PSY 270	Psychology of Hate
SOC 210	Race, Ethnicity and Social Inequality
SOC 220	Wealth and Power
SOC 221	Sociology of the Family
SOC 235	Sociology of Health and Illness
SOC 240	Urban Sociology
SOC 244	Sociology of the Environment
SOC 318	Social Networks and Health
SOC 406	Housing and Homelessness
WGST 101	Introduction to Women's and Gender Studies
WGST 201	Introduction to Feminisms
WGST 225	Women & Human Rights Worldwide
WGST 240	Women and Society in a Global Context
WGST 275	Women's Health and Human Rights
Total Credits	26.0

* Other courses are feasible upon approval from the Program Director.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in Mathematics

About the Minor

The minor in Mathematics requires core courses in calculus and linear algebra, as well as a selection of electives from a range of other areas. The minor complements programs in physics, computer science, finance, or engineering, demonstrating further expertise and preparing students to excel after graduation.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

The minor in Mathematics consists of five required courses and elective courses from the specified group of courses listed below resulting in a minimum of 38.0 credits.

Required Courses

MATH 121	Calculus I	4.0
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MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra *	3.0-4.0
or MATH 261	Linear Algebra	

Mathematics Minor Electives **

Select from the following: 18.0-19.0

MATH 210	Differential Equations *	
or MATH 262	Differential Equations	
MATH 220	Introduction to Mathematical Reasoning [WI]	
MATH 221	Discrete Mathematics	
MATH 222	Combinatorics [WI]	
MATH 235	Math Competition Problem Solving Seminar	
MATH 250	Mathematics of Investment and Credit	
MATH 285	Differential Equations II	
MATH 291	Complex and Vector Analysis for Engineers ***	
MATH 300	Numerical Analysis I	
MATH 301	Numerical Analysis II	
MATH 305	Introduction to Optimization Theory	
MATH 311	Probability and Statistics I	
MATH 312	Probability and Statistics II	
MATH 316	Mathematical Applications of Symbolic Software	
MATH 318	Mathematical Applications of Statistical Software [WI]	
MATH 319	Techniques of Data Analysis	
MATH 320	Actuarial Mathematics	
MATH 321	Vector Calculus	
MATH 322	Complex Variables	
MATH 323	Partial Differential Equations	
MATH 331	Abstract Algebra I	
MATH 332	Abstract Algebra II	
MATH 387	Linear Algebra II	
MATH 401	Elements of Modern Analysis I	
MATH 402	Elements of Modern Analysis II	
MATH 410	Scientific Data Analysis I	
MATH 411	Scientific Data Analysis II	
MATH 422	Introduction to Topology	
MATH 449	Mathematical Finance	
MATH 450	Introduction to Graph Theory	
MATH 475	Cryptography	
MATH 483	Discrete Event Simulation	
MATH 489	Tensor Calculus	
Total Credits		37.0-39.0

* Students count only one of these two courses for their minor.

** A request form is available for any other mathematics courses upon the written approval prior to the beginning of the quarter in which the course is to be offered. Students should contact the Mathematics undergraduate academic advisor.

*** Students who take MATH 291 cannot also count MATH 321 or MATH 322 toward their minor.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic

advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in Medical Sociology

About the Minor

The minor in medical sociology is designed to give students a broader understanding of the social dimensions of contemporary medical practice. Investigating health and illness from a national and global perspective, the minor helps students understand the relations between inequalities, health care and social justice; trends in health professions; and the importance of organizations to health care. For students majoring in such fields as health sciences, nursing, or biology, the minor in medical sociology complements their scientific training with a social science focus on humans, policy, and power in healthcare.

Admission Requirements

Open to all undergraduate Drexel students. All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required Courses *		
SOC 235	Sociology of Health and Illness	4.0
Select three courses from the following:		12.0
SOC 238	Sociology of Health Professions	
SOC 271	Sociology of Aging	
SOC 313	Sociology of Global Health	
SOC 318	Social Networks and Health	
SOC 370	Practicum in Applied and Community Sociology	
SOC 405	Medicine, Technology and Science	
SOC 430	Politics of Life	
Select two of the following:		8.0
SOC 210	Race, Ethnicity and Social Inequality	
SOC 220	Wealth and Power	
SOC 240	Urban Sociology	
SOC 241	Research Design: Qualitative Methods	
SOC 242	Research Design: Quantitative Methods	
SOC 355 [WI]	Classical Social Theory	
SOC 356 [WI]	Contemporary Social Theory	
Total Credits		24.0

* No more than three courses that are required for a student's major may count towards fulfilling requirements for the minor.

Minor in Middle East and North Africa Studies

About the Minor

This minor offers an interdisciplinary look at the Middle East and North Africa region, which holds a critically important geopolitical position in terms of not only security and energy, but also in terms of political, religious, cultural, and gender studies. Together with content courses in English offered through a variety of departments, this minor also includes 12.0 credits of Arabic language instruction.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Core Requirements		
Students must complete 12 credits of Arabic language coursework		12.0
MENA 101	The Middle East and North Africa Today: Culture and Democracy	3.0
Students must complete a minimum of 9 credits of elective courses		9.0-10.0
GST 241	Introduction to Power and Resistance (Gender Politics in the Middle East)	
GST 341	Advanced Studies in Power and Resistance (Revolution and Counter Revolution in the Arab World)	
HIST 206	Race and Islam in Africa and the Middle East	
JWST 223	Coexistence and Conflict: Jews, Christians, and Muslims in the Early Mediterranean	
	or HIST 260 Coexistence and Conflict: Jews, Christians, and Muslims in the Early Mediterranean	
Total Credits		24.0-25.0

Study abroad, special topics, and GST courses focused on the Middle East or North Africa will be considered for elective credit. Students must receive permission from the department.

Students who complete a minimum of 8.0 Arabic credits, including ARBC 202, are eligible to receive an intermediate language certificate.

Minor in Neuroscience

About the Minor

The Neuroscience minor allows students from a vast array of disciplines the opportunity for formalized study in neuroscience. This interdisciplinary minor integrates content from cellular, molecular, and systems neurobiology with neuropsychology, providing students with a strong foundation in basic principles of neurobiology and neuropsychology. This minor is a collaborative effort between Biology and Psychology, but is open to students in any major with an interest in gaining a deeper understanding of the biological and cognitive principles underlying brain function.

Please contact Leanne Sweppenheiser at lm38@drexel.edu for additional information.

Required Courses		
BIO 348	Neuroscience: From Cells to Circuits	3.0
BIO 349	Behavioral Neuroscience	3.0
PSY 312	Cognitive Neuroscience	3.0
PSY 410	Neuropsychology	3.0
Biology and Psychology Electives *		
Select 2 BIO courses		6.0

BIO 414	Behavioral Genetics	
BIO 461	Neurobiology of Autism Disorders	
BIO 462	Biology of Neuron Function	
BIO 463	Molecular Mechanisms of Neurodegeneration	
BIO 465	Neurobiology of Disease	
Select 2 PSY courses		6.0
PSY 212	Physiological Psychology	
PSY 213	Sensation and Perception	
PSY 310	Drugs & Human Behavior	
PSY 325	Psychology of Learning	
PSY 330	Cognitive Psychology	
PSY 336	Psychology of Language	
Total Credits		24.0

A grade of "C" or better must be earned for each course in this minor to meet the requirements.

* 3 credits of research in neuroscience as BIO 497 or PSY 499 can be substituted for 1 elective in either of the categories

Minor in Nonprofit Communication

About the Minor

The minor in Nonprofit Communication is a 24.0 credit curriculum designed to familiarize students with general communication theory and practice while providing training in print and electronic communication skills peculiar to the nonprofit sector. In addition to conventional coursework, this minor will include a practicum in the form of a 3.0 credit independent study (COM I399) for one term in which students will provide service and consultation for an area nonprofit organization as selected and coordinated by the student and approved by the undergraduate program director.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Core Courses

COM 181	Public Relations Principles and Theory	3.0
COM 375 [WI]	Grant Writing	3.0
COM 376	Nonprofit Communication	3.0
COM 377	Communication for Civic Engagement	3.0
COM 378	Public Service Campaigns	3.0
COM I399	Independent Study in COM	3.0
Choose at least 2 courses:		6.0

COM 160	Introduction to Journalism	
COM 222	Interpersonal Communication	
COM 247	Strategic Social Media in Communication	
COM 265	Audio Journalism	
COM 270 [WI]	Business Communication	
COM 282 [WI]	Public Relations Writing	
COM 330	Professional Presentations	
COM 363	Event Planning	
Total Credits		24.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are

advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Minor in Philosophy

About the Minor

A philosophy minor adds great depth and breadth to your studies and value to any degree. Philosophy classes train you to be a more effective thinker and a more critical, reflective person. They assist you in developing better reading, writing, and speaking skills by engaging you in the work of constructing and criticizing arguments. More than almost any other, a philosophy minor will broaden and enhance your education and help you develop skills you will use in your career and in everyday life. The minor has been carefully designed to provide a comprehensive structure within which each student has a range of choices. It includes one introductory course, one logic course, three "foundations" courses, one "area elective," an applied ethics course, and one 400-level philosophy seminar. We also can customize the minor further to reflect students' particular interests and goals.

Students who have completed 30.0 credits may apply for the minor through their academic advisors.

Program Requirements

Required Courses

PHIL 101	Introduction to Western Philosophy	3.0
or PHIL 102	Introduction to Eastern Philosophy	
PHIL 105	Critical Reasoning	3.0
or PHIL 111	Symbolic Logic I	

Select three Philosophy Foundations Electives: 9.0

PHIL 121	Symbolic Logic II	
PHIL 211	Metaphysics: Philosophy of Reality	
PHIL 212	Ancient Philosophy	
PHIL 214	Modern Philosophy	
PHIL 215	Contemporary Philosophy	
PHIL 221	Epistemology: Philosophy of Knowledge	
PHIL 231	Aesthetics: Philosophy of Art	
PHIL 241	Social & Political Philosophy	
PHIL 251	Ethics	

Select one Philosophy Area Elective: 3.0

PHIL 210	Philosophy of Sport	
PHIL 216	Philosophy of Time	
PHIL 218	Philosophy of Mathematics	
PHIL 255	Philosophy of Sex & Love	
PHIL 341	Environmental Philosophy	

PHIL 351	Philosophy of Technology	
PHIL 355	Philosophy of Medicine	
PHIL 361	Philosophy of Science	
PHIL 381 [WI]	Philosophy in Literature	
PHIL 385	Philosophy of Law	
PHIL 391	Philosophy of Religion	
Select one Applied Ethics Elective:		3.0
PHIL 301	Business Ethics	
PHIL 305	Ethics and the Media	
PHIL 311	Ethics and Information Technology	
PHIL 315	Engineering Ethics	
PHIL 317	Ethics and Design Professions	
PHIL 321	Biomedical Ethics	
PHIL 323	Organizational Ethics	
PHIL 325	Ethics in Sports Management	
PHIL 330	Criminal Justice Ethics	
PHIL 335	Global Ethical Issues	
PHIL 340	Environmental Ethics	
Select one Philosophy Seminar Elective:		3.0
PHIL 481 [WI]	Seminar in a Philosophical School	
PHIL 485 [WI]	Seminar in a Major Philosopher	
Total Credits		24.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

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Minor in Physics

About the Minor

Physics is a science that studies the natural phenomena at all scales from that of the universe to elementary particles. This minor exposes the students to some of the basic principles of physics and would easily complement any other discipline from engineering to other sciences.

The minor in Physics requires a total of 10.0 credits from the elective list in addition to the prerequisite and core courses.

Because of the overlap in requirements between the Astrophysics minor (<http://catalog.drexel.edu/undergraduate/collegeofartsandsciences/astrophysicsminor/>) and the Physics minor, students cannot minor in both.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required Prerequisite Courses *

PHYS 113	Contemporary Physics I
PHYS 114	Contemporary Physics II
PHYS 115	Contemporary Physics III

Required Courses

PHYS 311	Classical Mechanics I	4.0
PHYS 321	Electromagnetic Fields I	4.0
PHYS 217	Thermodynamics	4.0
PHYS 326	Quantum Mechanics I	4.0

Electives

Select at least 10.0 credits from PHYS courses at the 300 level or above 10.0

Total Credits **26.0**

* PHYS 101, PHYS 102 and PHYS 201 will also satisfy the prerequisite requirements.

Minor in Politics

About the Minor

A minor in Politics enriches almost every major. With a minor in Politics, you can hone your analytical and critical thinking skills and take your understanding of political science and research methodology to your field of study.

Political science pairs well with economics, criminal justice, psychology, public health, history, anthropology, communications, or education.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required Courses

Select three of the following: 12.0

PSCI 100	Introduction to Political Science
PSCI 110	American Government
PSCI 120	History of Political Thought
PSCI 130	Research Design for Political Science
PSCI 140	Comparative Politics I
PSCI 150	International Politics

Political Science Electives

12.0 credits of any additional 200-level or higher PSCI courses. 12.0

Total Credits **24.0**

Minor in Psychology

About the Minor

The minor in psychology is intended to meet the needs of students who recognize that an understanding and analysis of individual psychological processes is a key component of their education. Students in the minor learn how to ask and answer important questions regarding human behavior, cognition and emotion to complement their major. The minor may also be of interest to students who have an interest in a double major but are unable to satisfy all of the requirements in two major fields.

Entry into the minor requires that PSY 101 *General Psychology* (or an equivalent introductory course) be taken as a prerequisite. Students who

have completed and who are interested in a minor in Psychology are expected to meet with the Psychology Department Academic Adviser to discuss the selection of courses appropriate to their major and their own personal interests. No more than three courses that are required for a student's major can count towards fulfilling requirements for the minor.

Required Prerequisite

PSY 101	General Psychology I (or equivalent)
Required PSY Courses	
Select any EIGHT additional PSY electives *	24.0
Total Credits	24.0

* Suggestion options include PSY 120, PSY 240 [WI], PSY 280, PSY 360 [WI] and PSY 342. Students are not permitted to take PSY 111 or PSY 112. All other courses are available as electives.

A grade of "C" or better must be earned in each course to meet the requirements for this minor.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

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Minor in Religious Studies

About the Minor

This minor provides an interdisciplinary approach to the study of religion with much flexibility to accommodate individual student interest. Students will gain a global comparative perspective on world religions.

Admission Requirements

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Students must complete three courses from this list		9.0-10.0
ANTH 117	Introduction to World Religions	
ANTH 210 [WI]	Worldview: Science, Religion and Magic	
ANTH 363	Sacred Traditions of the East	
ENGL 330	The Bible as Literature	
HIST 260	Coexistence and Conflict: Jews, Christians, and Muslims in the Early Mediterranean	

PHIL 391	Philosophy of Religion	
Students must complete at least 15 credits of additional elective courses, including a minimum of two different course rubrics:		15.0-17.0
ANTH 117	Introduction to World Religions	
ANTH 210 [WI]	Worldview: Science, Religion and Magic	
ANTH 217	Anthropology of Interfaith Relations	
ANTH 270	Comparative Religious Ethics	
ANTH 363	Sacred Traditions of the East	
ENGL 330	The Bible as Literature	
ENGL 335	Mythology	
ENGL 350	Jewish Literature and Civilization or JWST 20 Jewish Literature and Civilization	
HIST 155	The Historical Jesus	
HIST 181	Religion, Science, and Medicine in History	
HIST 249	Modern Jewish History or JWST 20 Modern Jewish History	
HIST 253	Jewish Life and Culture in the Middle Ages or JWST 20 Jewish Life and Culture in the Middle Ages	
HIST 257	The Reformation Age	
HIST 260	Coexistence and Conflict: Jews, Christians, and Muslims in the Early Mediterranean	
HIST 358	Witches, Demons, and Witch-hunters in European History	
JWST 212	Contemporary Jewish Life	
JWST 216	Yiddish Literature & Culture	
PHIL 102	Introduction to Eastern Philosophy	
PHIL 291	Judaism and Christianity: Two Religions or One?	
PHIL 391	Philosophy of Religion	
RELS T280	Special Topics in Religious Studies *	
RELS T380	Special Topics in Religious Studies *	
Total Credits		24.0-27.0

* Special Topics courses focused on religious studies will be considered for elective credit. Students must receive permission from the department.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

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Minor in Science, Technology and Society

About the Minor

The minor in Science, Technology and Society (STS) allows students to explore the cultural, ethical, historical, political, and institutional dimensions of science, medicine, and technology. By taking courses in different disciplines, students develop an interdisciplinary approach that empowers them to critically analyze the social dimensions of science, medicine, and technology. STS programs, also called science and technology studies, are growing in the US and worldwide. The ability to critically identify the values and incentives built into scientific knowledge and technology design and use is highly valued in settings such as health care organizations, government agencies, public policy realms, tech industries, and more.

For more information about this program, visit Drexel's Center for Science, Technology and Society (<http://drexel.edu/coas/academics/departments-centers/science-technology-society/>) page. All prospective students should meet with an advisor from the College as soon as possible.

Select 6 - 8 classes from the list below, with a minimum of 24 credits. 24.0
One class must be SCTS 101. At least 2 different subject areas must be represented among these classes.

ANTH 330	Media Anthropology
ANTH 345	Visual Anthropology
ANTH 355	Digital Culture
ANTH 360	Culture and the Environment
ARCH 315	Sustainable Built Environment I
BIO 112	Biotechnology for Society
BIO 114	Climate Change and Human Health
BIO 212	Biotechnology
COM 240	New Technologies In Communication
COM 247	Strategic Social Media in Communication
COM 351	Computer Mediated Communication
CJS 210	Race, Crime, and Justice
CJS 220	Crime and the City
CJS 273	Surveillance, Technology, and the Law
CJS 274	Sex, Violence, & Crime on the Internet
CJS 366	Technology and the Justice System
ENGL 300 [WI]	Literature & Science
ENGL 302	Environmental Literature
ENGL 303	Science Fiction
ENGL 370	Topics in Literature and Medicine
INTR 310	Sustainability: History, Theory and Critic
HIST 283	Technology and Identity
HIST 285	Technology in Historical Perspective
HIST 287	History of Science: Ancient to Medieval
HIST 288	History of Science: Medieval to Enlightenment
HIST 289	History of Science: Enlightenment to Modernity
HIST 290	Technology and the World Community
HIST 291	Global History of Engineering
HIST 292	Technology in American Life
HIST 320	Disaster in Global History
HIST 321	Themes in Global Environmental History
HIST 340	History of Bodies in Science, Technology, and Medicine
HIST 341	Disabilities in History
HIST 385	Transnational History of Science, Technology and Environment
PBHL 302	Introduction to the History of Public Health
PHIL 111	Symbolic Logic I

PHIL 121	Symbolic Logic II
PHIL 311	Ethics and Information Technology
PHIL 321	Biomedical Ethics
PHIL 340	Environmental Ethics
PHIL 341	Environmental Philosophy
PHIL 351	Philosophy of Technology
PHIL 355	Philosophy of Medicine
PHIL 361	Philosophy of Science
PSCI 284	Environmental Politics
PSCI 289	Technology and Politics
PSCI 334	Politics of Environment and Health
PSCI 369	The Politics of Food
PSCI 371	Science, Technology, & Public Policy
PSY 290	History and Systems of Psychology
SCTS 101	Introduction to Science, Technology, and Society
SCTS 200	Addiction & Society
SCTS 202	Innovation and Social Justice
SCTS 205	Artificial Intelligence and Society
SCTS 207	Medicine and Society
SOC 235	Sociology of Health and Illness
SOC 276	Global Climate Change
SOC 241	Research Design: Qualitative Methods
SOC 244	Sociology of the Environment
SOC 341	Global Environmental Movements
SOC 346	Environmental Justice
SOC 349	Sociology of Disasters
SOC 430	Politics of Life
WGST 225	Women & Human Rights Worldwide

Total Credits 24.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

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Minor in Sociology

About the Minor

The sociology minor is designed to give students specializing in other fields a broader knowledge of contemporary social issues and the ability to analyze them in a reasoned fashion. For students majoring in such fields as business and engineering, the minor helps develop skills in critical thinking that go beyond the acquisition of specialized, professional

techniques. For students majoring in another area of the liberal arts, the minor offers the opportunity to place the issues raised in the major discipline within a larger social context.

All prospective students should meet with an advisor from the College as soon as possible.

Please note: No more than three courses that are required for a student's major can count towards fulfilling requirements for the minor.

Required Courses *

SOC 355 [WI]	Classical Social Theory	4.0
or SOC 356	Contemporary Social Theory	
Select five of the following: **		20.0
SOC 115	Social Problems	
SOC 210	Race, Ethnicity and Social Inequality	
SOC 215	Sociology of Work	
SOC 220	Wealth and Power	
SOC 221	Sociology of the Family	
SOC 222	Sex and Society	
SOC 230	Gender and Society	
SOC 235	Sociology of Health and Illness	
SOC 238	Sociology of Health Professions	
SOC 240	Urban Sociology	
SOC 241	Research Design: Qualitative Methods	
SOC 242	Research Design: Quantitative Methods	
SOC 268	Sociology of Sport	
SOC 271	Sociology of Aging	
SOC 276	Global Climate Change	
SOC 313	Sociology of Global Health	
SOC 315	HIV/AIDS and Africa	
SOC 318	Social Networks and Health	
SOC 320	Sociology of Deviance	
SOC 330	Development and Underdevelopment in the Global South	
SOC 340	Globalization	
SOC 341	Global Environmental Movements	
SOC 346	Environmental Justice	
SOC 349	Sociology of Disasters	
SOC 405	Medicine, Technology and Science	
SOC 406	Housing and Homelessness	
SOC 410	Imagining Multiple Democracies	
SOC 420	Love, Rage & Debt: The Debt Society	
SOC 430	Politics of Life	
SOC 444	Social Movements	
SOC T380	Special Topics in SOC	
SOC 450	Capstone in Sociology	
SOC T480	Special Topics in Sociology	
SOC I499	Independent Study in SOC	
Total Credits		24.0

* No more than three courses that are required for a student's major can count towards fulfilling requirements for the minor.

** Students must take at least three elective courses at the 300 or 400 level.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic

advisor to review the number of writing-intensive courses required to graduate.

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Minor in Spanish

About the Minor

In our globalized world, intercultural and multilingual communication is an indispensable asset for the 21st century citizen and worker. As part of the Department of Global Studies and Modern Languages, we offer language instruction rooted in communication and embedded in authentic cultural contexts. Language study opens a world of opportunities for our students, from co-ops and study abroad programs to engagement with global communities here in Philadelphia. Media and technology, as well as travel and commerce, make the study of languages more crucial than ever, for tackling global challenges such as climate change and inequality demand that our students communicate across languages and cultures.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

The Spanish minor requires a minimum of 24 credits above SPAN 103, including at least 12 credits above SPAN 310. Students can choose from the following 300 and 400 level courses. **24.0**

SPAN 201	Spanish IV
SPAN 202	Spanish V
SPAN 211	Spanish for Healthcare Professionals II
SPAN 212	Spanish for Healthcare Professionals III
SPAN 310 [WI]	Advanced Writing and Speaking
SPAN 320	Introduction to Language for the Professions
SPAN 330	Introduction to Identities and Communities
SPAN 340	Introduction to Power and Resistance
SPAN 350	Introduction to Language, Media, and Society
SPAN 410 [WI]	Advanced Grammar and Translation
SPAN 420	Advanced Studies in Language for the Professions
SPAN 430	Advanced Studies in Identities and Communities
SPAN 440	Advanced Studies in Power and Resistance
SPAN 450	Advanced Studies in Language, Media, and Society

Minor in War and Society

About the Minor

This history minor concentrates on the history of wars, military and related institutions, and their broader historical and political contexts.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Complete 16 credits in the following courses: *		16.0
HIST 230	United States Military History I (before 1900)	
HIST 231	US Military History II (since 1900)	
HIST 234	The United States Civil War	
HIST 235	The Great War, 1914-1918	
HIST 236	World War II	
HIST 239	The Pacific War	
HIST 248	History of the Holocaust or JWST 22 History of the Holocaust	
HIST 331	The American Revolution	
HIST 333	U.S.-Mexican War	
HIST 338	The Vietnam War	
HIST 341	Disabilities in History	
HIST 370	Conquest of Mexico	
JWST 215	Reconstructing History After Genocide	
PSCI 150	International Politics	
PSCI 250	American Foreign Policy	
PSCI 310	Civilians in Armed Conflict	
PSCI 352	Ethics and International Relations	
PSCI 353	International Human Rights	
PSCI 360	International Law	
Complete any 2 additional history courses		8.0
Total Credits		24.0

* At least 8 credits must be HIST courses.

Minor in Women's and Gender Studies

About the Minor

The Women's and Gender Studies (WGST) Minor gives students a broad, interdisciplinary and global understanding of how gender intersects with race, age, class, sexual orientation, and other identities that shape human consciousness and experience. The WGST minor equips women, men and people who are gender variant with tools for making sense of societal structures within which they must operate as students, professionals and citizens. Through comparative study of gender across cultures, both within the United States and globally, students who minor in WGST gain a critical lens on the complexities of gender as it is constructed and understood in diverse contexts. Through WGST courses, students develop skills to be attuned to how gender impacts all aspects of human interaction, from the family, to the workplace, to the voting booth.

As an academic program Women's and Gender Studies provides a sharp focus on assumptions about the way the world can and does work. It offers a conceptual framework to analyze experiences of inequality and discrimination, and asks students to become active, engaged, thoughtful participants in their educational experiences and in their lives. Women's and Gender Studies prioritizes learning that helps students understand their "real life" experiences, at the same time that it asks students to reflect on and ask difficult, provocative and meaningful questions about those experiences.

Women's and Gender Studies works with many programs and departments at Drexel to emphasize how gender and sexuality intersect with other identities, as well as history, culture and geography to produce different beliefs, experiences and practices in peoples' lives and in larger social structures.

Because businesses working across many industries, including those in the nonprofit sector, are increasingly sensitive to issues such as gender discrimination, sexual harassment, equal pay for comparable work, support for LGBTQ-identified employees, parental leave, and day care, students with a Minor in Women's and Gender Studies gain a definite edge over other applicants for managerial and policy-making positions.

All prospective students should meet with an advisor from the College as soon as possible.

Required Courses

WGST 101	Introduction to Women's and Gender Studies	3.0
WGST 201	Introduction to Feminisms	3.0

Choose one of the following three theory courses 3.0

WGST 301	Sex, Gender, Feminism: A Seminar in Feminist Theories	
WGST 308	Queer Theory	
WGST 320	Masculinities	

Students must complete at least 15 credits of elective courses: 15.0

AFAS 255	Gender & Black Popular Culture	
ANTH 215	Anthropology of Gender	
ANTH 365	Family and Kinship	
ARTH 340	Women in Art	
COM 246	Media and Identity	
CJS 274	Sex, Violence, & Crime on the Internet	
CJS 275	Issues in Domestic Violence	
CJS 362	Gender, Crime, and Justice	
ENGL 355 [WI]	Women and Literature	
HIST 208	Women in American History	
HIST 283	Technology and Identity	
PBHL 305	Women and Children: Health & Society	
PHIL 255	Philosophy of Sex & Love	
PSY 356	Women's Health Psychology	
SMT 254	Women & Minority Opportunities in Sport	
SMT 255	Legal Foundations of Title IX	
SOC 222	Sex and Society	
SOC 230	Gender and Society	
WGST 220	Writing on the Body	
WGST 225	Women & Human Rights Worldwide	
WGST 230	Arab Women Writers	
WGST 235	African Francophone Women Writers: Displacement. From One Continent To Another	
WGST 240	Women and Society in a Global Context	
WGST 255	Gender and Black Popular Culture	
WGST 260	Gender and Judaism	
WGST 270	Cigarettes and High Heels	
WGST 275	Women's Health and Human Rights	
WGST T280	Special Topics in Women's and Gender Studies	
WGST I299	Independent Study in Women's and Gender Studies	
WGST 301	Sex, Gender, Feminism: A Seminar in Feminist Theories	
WGST 308	Queer Theory	
WGST 320	Masculinities	
WGST 324	Retail Intersections: Social & Cultural Issues	
WGST T380	Special Topics in Women's and Gender Studies	
WGST T480	Special Topics in Women's and Gender Studies	

Total Credits 24.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end

of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

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Minor in Writing

About the Minor

The Minor in Writing invites students from all disciplines to develop their writing skills and further their abilities to think critically and creatively by encouraging them to make connections beyond the scope of their discipline.

Students who complete the Minor in Writing will:

- be better positioned to succeed as writers in their future professional and personal endeavors;
- obtain a strong background in theoretical perspectives and practices of writing and rhetoric, as well as reading;
- achieve a better understanding of writing within their major fields of study;
- gain significant practice and experience in writing in many genres and rhetorical modes.

All prospective students should meet with an advisor from the College as soon as possible.

Program Requirements

Required Courses

COM 210	Theory and Models of Communication	3.0
or ANTH 350	Anthropology of Language	
or PHIL 305	Ethics and the Media	
or WRIT 200	Language Puzzles and Word Games: Issues in Modern Grammar	
ENGL 340 [WI]	Classical Rhetoric	3.0
or WRIT 210	The Peer Reader in Context	
or WRIT 400	Writing for -- and about -- the Web	
or WRIT 212	Argument and Rhetoric	
WRIT 225 [WI]	Creative Writing	3.0
WRIT 312 [WI]	Writing for Target Audiences	3.0
or WRIT 315	Writing for Social Change	

Reading Courses

Select one of the following:		3.0
ENGL 200 [WI]	Classical to Medieval Literature	
ENGL 201	Renaissance to the Enlightenment	
ENGL 202 [WI]	Romanticism to Modernism	
ENGL 203 [WI]	Survey of World Literature	
ENGL 204	Post-Colonial Literature	
ENGL 205 [WI]	American Literature I	
ENGL 206 [WI]	American Literature II	

ENGL 207 [WI] African American Literature

ENGL 211 [WI] British Literature I

ENGL 212 British Literature II

ENGL 214 Readings in Fiction

ENGL 215 [WI] Readings in Poetry

ENGL 216 [WI] Readings in Drama

PHIL 105 Critical Reasoning

PSCI 330 Public Opinion & Propaganda

WRIT 295 Forms Seminar

Theoretical Perspectives on Writing Courses

Select one of the following: 3.0

ANTH 330 Media Anthropology

ANTH 350 Anthropology of Language *

CJS 377 Intellectual Property Theft in the Digital Age

COM 220 Qualitative Research Methods

COM 355 Ethnography of Communication

EDUC 236 Early Literacy I

EDUC 326 Language Arts Processes [WI]

ENGL 340 [WI] Classical Rhetoric *

PHIL 305 Ethics and the Media *

PSCI 335 Political Communication

PSY 336 Psychology of Language

WRIT 200 Language Puzzles and Word Games: Issues in Modern Grammar

WRIT 210 [WI] The Peer Reader in Context *

WRIT 211 Advanced Composition

WRIT 212 Argument and Rhetoric

WRIT 250 "Mistakes Were Made": Truth, Writing, and Responsibility

Writing in Practice Courses

Select two of the following: 6.0

COM 160 Introduction to Journalism

COM 270 [WI] Business Communication

COM 310 [WI] Technical Communication

COM 320 [WI] Science Writing

COM 335 Digital Publishing

CULA 412 Food Writing

DSMR 233 Branding and Retail Strategies [WI]

FASH 467 Style and the Media

SCRP 220 Playwriting I

SCRP 225 Playwriting II

SCRP 270 Screenwriting I [WI]

SCRP 275 Screenwriting II [WI]

SCRP 350 TV Comedy Practicum

SCRP 353 TV Drama Practicum

TVPR 220 TV News Writing

WRIT 215 [WI] Story Medicine

WRIT 220 [WI] Creative Nonfiction Writing

WRIT 226 Writing in Public Spaces

WRIT 280 The Writers Room Lab Credit

WRIT 290 Writers Room Experience

WRIT 301 [WI] Writing Poetry

WRIT 302 [WI] Writing Fiction

WRIT 303 Writing Humor and Comedy

WRIT 305 Life is Beautiful

WRIT 306 Writing About the Media

WRIT 310 Literary Editing & Publication

WRIT 311 Writing and Reading the Memoir

WRIT 315 Writing for Social Change

WRIT 320 Publishing Veterans' Memoirs for the Library of Congress

WRIT 400 [WI]	Writing for -- and about -- the Web *
WRIT 401	Advanced Poetry Workshop
WRIT 402	Advanced Fiction Workshop
WRIT 405	Internship in Publishing
WRIT T280	Special Topics in Writing
WRIT T380	Special Topics in Writing
WRIT T480	Special Topics in Writing
Total Credits	24.0

* Courses marked with an asterisk are also listed as options for the 4th required course for the minor. A student who elects to take one of these courses may not count it twice (once as a required course and once as an elective). For example, a student who chooses to take ANTH 350, "Anthropology of Language," as a required course may not take it again as one of the electives; however, this student could take PHIL 305, "Ethics and the Media," as an elective.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Certificate in Ethical Theory and Practice

Only available to currently enrolled Drexel students.

The certificate in Ethical Theory and Practice helps you develop your awareness and understanding of ethical questions and problems. Ethics is a crucial aspect of all personal, familial, institutional, civic, business, scientific, and professional relationships. In ethics classes, you will reflect upon how and why these kinds of problems arise, the nuances and repercussions of tackling them in different ways, and some of the various ways people have thought about how to resolve them in practice. This kind of study adds depth to your understanding of the practical dimensions of all areas of life and prepares you for dealing with the complex moral and ethical issues that arise in life.

Admission Requirements

Open to Drexel students in all schools and colleges in all majors who have completed 15.0 credits.

Program Requirements

Required Courses	
PHIL 101	Introduction to Western Philosophy 3.0
or PHIL 102	Introduction to Eastern Philosophy
PHIL 105	Critical Reasoning 3.0
PHIL 241	Social & Political Philosophy 3.0
PHIL 251	Ethics 3.0
Select two of the following:	6.0
PHIL 301	Business Ethics
PHIL 305	Ethics and the Media
PHIL 311	Ethics and Information Technology
PHIL 315	Engineering Ethics
PHIL 317	Ethics and Design Professions
PHIL 321	Biomedical Ethics
PHIL 323	Organizational Ethics
PHIL 325	Ethics in Sports Management
PHIL 330	Criminal Justice Ethics
PHIL 335	Global Ethical Issues
PHIL 340	Environmental Ethics
PHIL 385	Philosophy of Law
Total Credits	18.0

Certificate in Interfaith and Religious Studies

About the Program

Only available to currently enrolled Drexel students.

The certificate in Interfaith and Religious Studies represents Drexel University's commitment to the study of spirituality and the contribution of the world's organized religions to the psychological and social well-being of individuals, groups, and societies. Through the study of the interrelationship of religions and the efforts of interfaith initiatives, students will better understand group commonalities and differences and attempts for social improvement and the resolution of conflict.

The Jewish Studies program, an interdepartmental and interdisciplinary program in the College of Arts and Sciences, has for many years taught about the centrality of religion in cultural life. In its core courses, the evolution of Judaism alongside the rise of Christianity and Islam has been studied. As the coordinating body for the certificate in Interfaith and Religious Studies, the Jewish Studies program continues its tradition of exposing Drexel students to the leaders, thinkers, and institutions of the larger, outside community.

Program Requirements

Students must complete at least 15 credits from the list below:	15.0
JWST 117	Introduction to World Religions
or ANTH 117	Introduction to World Religions
JWST 221	Anthropology of Interfaith Relations
or ANTH 217	Anthropology of Interfaith Relations
JWST 222	Comparative Religious Ethics
or ANTH 27	Comparative Religious Ethics
JWST 223	Coexistence and Conflict: Jews, Christians, and Muslims in the Early Mediterranean
or HIST 260	Coexistence and Conflict: Jews, Christians, and Muslims in the Early Mediterranean
JWST 224	Judaism and Christianity: Two Religions or One?
or PHIL 291	Judaism and Christianity: Two Religions or One?
JWST 225	Philosophy of Religion

or PHIL 391 Philosophy of Religion

Total Credits **15.0**

Any travel-add-on component to these courses can be counted towards the Certificate.

Health and Medical Humanities Certificate

Only available to currently enrolled Drexel students.

About the Program

The certificate program in Health and Medical Humanities is designed for students majoring in any of the biological sciences, health professions including biomedical engineering, nursing and public health, the humanities, and the social sciences, with the aim of promoting dialogue and mutual appreciation for various approaches to health-related issues.

The wide range of applicable courses within designated disciplines fosters an interdisciplinary context for investigating the many challenges within medicine and caregiving. This format, in turn, encourages students to explore illness, disability, dying, and healing as human experiences and to evaluate some of the limitations of an exclusively scientific perspective on medical practice and research.

The program director will help students choose courses best suited for their personal and professional interests. Note that most courses applicable to the program also fulfill humanities electives for other majors and that courses may change as departments offer more options. Students will receive periodic updates notifying them of additional course offerings.

Opportunities

Those students who successfully complete the program will receive a certificate in Health and Medical Humanities. This certificate highlights the student's proficiency in an interdisciplinary approach to health-related issues not easily attainable through isolated courses.

Program Requirements

Required Courses

ENGL 370	Topics in Literature and Medicine	3.0
ENGL 470	Capstone Seminar in Medical Humanities	3.0
PHIL 355	Philosophy of Medicine	3.0
Select one of the following ethics courses:		3.0
BMES 338	Biomedical Ethics and Law	
HSAD 210	Health-Care Ethics I	
HSAD 309	Advanced Health-Care Ethics	
HSAD 324	Health Technology and Ethical Responsibility	
HSAD 352	Ethics in Health Care Research	
PBHL 309	Public Health Ethics	
PHIL 251	Ethics	
PHIL 321	Biomedical Ethics	
Select two courses from the following:		6.0
ANTH 210 [WI]	Worldview: Science, Religion and Magic	
ARTH 320	Art in the Age of Technology	
BIO 212	Biotechnology	
ENGL 300 [WI]	Literature & Science	
HIST 278	Medicine Before Germs	
HIST 285	Technology in Historical Perspective	
HIST 385	Transnational History of Science, Technology and Environment	

HSAD 313	Evolution of Health Care in the United States
HSAD 316	Health Care across Cultures
HSAD 318	Health and Vulnerable Populations
HSAD 319	Women and the Health Professions
HSAD 322	Health-Care Law
HSAD 333	Health, Illness, and the Arts
HSAD 343	Health and Illness in Film
PBHL 101	Public Health 101
PBHL 303	Overview of Issues in Global Health
PBHL 304	Introduction to Health & Human Rights
PBHL 333	Health Inequality
PHIL 255	Philosophy of Sex & Love
PHIL 361	Philosophy of Science
PSY 244	Culture and Personality
PSY 252	Death and Dying
PSY 355	Health Psychology
PSY 356	Women's Health Psychology
SCTS 101	Introduction to Science, Technology, and Society
SOC 222	Sex and Society
SOC 235	Sociology of Health and Illness
SOC 271	Sociology of Aging
SOC 313	Sociology of Global Health
SOC 318	Social Networks and Health
WRIT 215 [WI]	Story Medicine
WRIT 305	Life is Beautiful

Total Credits

18.0

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Additional Information

For more information, contact the program director:

Stacey Ake, PhD (Biology), PhD (Philosophy)
Department of English and Philosophy
sea29@drexel.edu

Philosophy, Arts, and Humanities Certificate

Only available to currently enrolled Drexel students.

The certificate in Philosophy, Arts, and Humanities provides an excellent opportunity for undergraduate students in all majors to deepen and broaden their educational experience through engagement with questions and ideas related to the arts and the humanities. What is the nature of art and how is it related to ideas about "beauty?" What does art say about the experience of being human or a particular human? How do interpretations contribute to our thinking about what is true and what is right? How can competing interpretations of our duties and obligations in society and the state be assessed and evaluated? How should we understand the ways people have thought about humanity's place in the cosmos over time? These and many other related issues will be explored.

Contact your academic advisor in order to add this certificate to your program.

Program Requirements

Required Courses

PHIL 101	Introduction to Western Philosophy	3.0
or PHIL 102	Introduction to Eastern Philosophy	
PHIL 105	Critical Reasoning	3.0
PHIL 231	Aesthetics: Philosophy of Art	3.0
Select three of the following:		9.0
PHIL 212	Ancient Philosophy	
or PHIL 214	Modern Philosophy	
or PHIL 215	Contemporary Philosophy	
PHIL 381 [WI]	Philosophy in Literature	
PHIL 385	Philosophy of Law	
PHIL 391	Philosophy of Religion	

Total Credits **18.0**

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Philosophy, Science, and Technology Certificate

Only available to currently enrolled Drexel students.

The certificate in Philosophy, Science, and Technology provides an excellent opportunity for undergraduate students in all majors to deepen and broaden their educational experience by exploring issues related to science and technology. What is the nature and scope of natural science? What should count as "knowledge" as opposed to "opinion"? How do the sciences produce knowledge? How do philosophers think about the reality of space, time, and mathematics? What is the role played by their technical apparatus in the ways scientists think about the things they study? Is technology a neutral factor in human life and history? What is our responsibility to the environment? These and many other questions will be explored.

Contact your academic advisor in order to add this certificate to your program.

Program Requirements

Required Courses

PHIL 101	Introduction to Western Philosophy	3.0
PHIL 111	Symbolic Logic I	3.0
Select one of the following:		3.0
PHIL 121	Symbolic Logic II	
PHIL 216	Philosophy of Time	
PHIL 218	Philosophy of Mathematics	
PHIL 221	Epistemology: Philosophy of Knowledge	
Select three of the following:		9.0
PHIL 341	Environmental Philosophy	
PHIL 351	Philosophy of Technology	
PHIL 355	Philosophy of Medicine	
PHIL 361	Philosophy of Science	

Total Credits **18.0**

Spanish for Health Professionals Certificate

Only available to currently enrolled Drexel students.

The Spanish for Health Professionals certificate prepares students to engage Spanish-speaking populations in the field of healthcare. It offers a critical advantage to health professions students (College of Nursing and Health Professions, Public Health, Pre-Med) who will be much better positioned in the job market if they can certify their ability to use Spanish in the workplace and engage with patients in culturally sensitive ways.

Program Requirements

Category 1: Spanish language coursework * 4.0-12.0

SPAN 113	Spanish for Healthcare Professionals I
SPAN 211	Spanish for Healthcare Professionals II
SPAN 212	Spanish for Healthcare Professionals III

Category 2: Latin American/Latinx Health coursework 14.0-6.0

Students must complete between 6—14 credits of Latin American/Latinx Health coursework, and are encouraged to complete some of those credits through community-based and/or study abroad courses. **

BACS 255	Multicultural Counseling
HSAD 316	Health Care across Cultures
HSCI 315	Current Issues in Health Sciences

NURS 312	Leadership in Action and Community Health
NURS 460	Population Health: Local & Global
PBHL 101	Public Health 101
PBHL 303	Overview of Issues in Global Health
PBHL 304	Introduction to Health & Human Rights
PBHL 309	Public Health Ethics
SPAN 320	Introduction to Language for the Professions (When focused on health professions, taught in Spanish)
Total Credits	18.0

* Students are required to complete a minimum of 4 credits (SPAN 212 is required), and a maximum of 12 credits of language coursework. Students who take 4 credits of language courses must complete 14 credits of Latin American/Latinx Health coursework.

** In addition to the course options above in Category 2, approved community-based/study abroad courses include: GST 231 Introduction to Identities and Communities (Disaster & Resilience in Puerto Rico: Community-Based Learning Course); LANG T180 Special Topics in Languages (Intensive Spanish for Medical Professional: Costa Rica study abroad course); HSAD 366 Global Aging Intensive Course Abroad; HSAD T480 Special Topics in Health Services Administration (Health Care Systems in Latin America: Costa Rica study abroad course) CHP 691 Public Health Practice in and with Latino Communities; CHP 692 Migration and Health; and relevant special topics and study abroad courses will be considered with department permission.

Certificate in Writing and Publishing

About the Program

The certificate in Writing and Publishing (CWP) offers currently enrolled Drexel University students the opportunity for both professional and personal development through a combination of available courses in professional writing, creative writing, and publishing. The certificate enhances employment opportunities, opening a broad range of professional choices in cooperative employment and in the post-degree job market as skills are acquired. The CWP improves on-the-job performance as the student develops writing skills and associated professional knowledge.

The program develops core competencies through the synergy of writing and publishing courses. The courses develop the student's skills in writing and publishing both through theory and practical application.

General requirements

The certificate in Writing and Publishing allows students to achieve certification in one or more of the following tracks:

- Professional writing and publishing (technical, business, and journalism)
- Creative writing and publishing
- Entertainment writing and publishing
- Comprehensive writing and publishing (**This track is no longer accepting new students.**)

Each track requires the completion of a minimum of six courses (18.0 credits). Tracks can be designed to meet the professional needs and personal interests of the individual student.

Working with the program director, students will choose not only the track but the courses within the track to develop an individually tailored program. Students can choose courses that will meet the general requirements of the program while also satisfying their own professional and personal requirements.

Those students who have successfully completed this program will receive a certificate in Writing and Publishing. The transcript will indicate the completion of the CWP. This certification will indicate proficiency in written communication and familiarity with techniques in publishing in a variety of venues. The certificate program in Writing and Publishing highlights the student's acquisition of skills more than they would be in a list of courses on a transcript.

The completion of the certificate demonstrates the student's commitment to writing and publishing skills. It highlights writing skills of students majoring in business and technical areas; similarly, for students in the humanities and social sciences, it certifies writing and publishing skills either in creative writing or professional writing.

Students meet with the program director to determine their track:

Harriet Levin Millan
Director, Certificate in Writing and Publishing
millanhl@drexel.edu

Track Requirements

Note: Many majors already require one or more of the courses leading to the certificate in Writing and Publishing or list these courses as recommended electives.

The Creative Writing and Publishing track is useful to all students as it encourages personal and professional development through creative writing and a knowledge of publishing.

Professional Writing and Publishing Track

18.0 quarter credits

The Professional Writing and Publishing track is useful for business majors or students in technical or science areas who want to highlight their acquisition of writing skills. For students majoring in the humanities, it provides an opportunity to develop areas of writing and publishing competencies in the professional arena.

This track offers three focus options:

- Business Communication and Publishing: for students interested in a career in business.
- Technical Communication and Publishing: for students interested in engineering, science, information science, and technology and careers in higher education.
- Journalism: for students interested in global journalism, communication, and international affairs.

Business Communication and Publishing

Required Courses		
COM 270 [WI]	Business Communication	3.0
COM 350 [WI]	Document Design and Evaluation	3.0
	or COM 375 Grant Writing	
	or WRIT 312 Writing for Target Audiences	
Select one of the following:		3.0
COM 320 [WI]	Science Writing	
COM 420	Technical, Science and Health Editing	

COM T380	Special Topics in Communication Theory	
VSCM 480 [WI]	Graphic Design Seminar: Design Perceptions	
Select one of the following:		3.0
COM 335	Digital Publishing	
COM 340	Modern Desktop Publishing	
VSCM 479	Graphic Design Seminar: Advanced Media (Bookmaking)	
WRIT 310	Literary Editing & Publication	
WRIT 400 [WI]	Writing for -- and about -- the Web	
Select two of the following:		6.0
COM 160	Introduction to Journalism	
COM 315	Investigative Journalism	
COM 390 [WI]	Global Journalism	
CULA 412	Food Writing	
HNRS 301	Colloquium II *	
WRIT 210 [WI]	The Peer Reader in Context	
WRIT 220 [WI]	Creative Nonfiction Writing	
WRIT 225 [WI]	Creative Writing	
WRIT 301 [WI]	Writing Poetry	
WRIT 302 [WI]	Writing Fiction	
WRIT 303	Writing Humor and Comedy	
WRIT 306	Writing About the Media	
WRIT 312 [WI]	Writing for Target Audiences	
WRIT T380	Special Topics in Writing	
Total Credits		18.0

* By Director's permission only.

Technical Communication and Publishing

Required Courses		
COM 310 [WI]	Technical Communication	3.0
COM 375 [WI]	Grant Writing	3.0
or WRIT 312 Writing for Target Audiences		
Select one of the following:		3.0
COM 320 [WI]	Science Writing	
COM 350 [WI]	Document Design and Evaluation	
COM 420	Technical, Science and Health Editing	
COM T380	Special Topics in Communication Theory	
VSCM 480 [WI]	Graphic Design Seminar: Design Perceptions	
Select one of the following:		3.0
COM 335	Digital Publishing	
COM 340	Modern Desktop Publishing	
VSCM 479	Graphic Design Seminar: Advanced Media (Bookmaking)	
WRIT 310	Literary Editing & Publication	
WRIT 400 [WI]	Writing for -- and about -- the Web	
Select any two additional Certificate in Writing and Publishing courses, including but not limited to the following:		6.0
COM 160	Introduction to Journalism	
COM 315	Investigative Journalism	
COM 390 [WI]	Global Journalism	
CULA 412	Food Writing	
HNRS 301	Colloquium II *	
WRIT 210 [WI]	The Peer Reader in Context	
WRIT 220 [WI]	Creative Nonfiction Writing	
WRIT 301 [WI]	Writing Poetry	
WRIT 302 [WI]	Writing Fiction	
WRIT 303	Writing Humor and Comedy	
WRIT 306	Writing About the Media	
WRIT 312 [WI]	Writing for Target Audiences	

WRIT T380	Special Topics in Writing	
Total Credits		18.0

* By Director's permission only.

Journalism

Required Courses		
COM 160	Introduction to Journalism	3.0
Select two of the following:		6.0
COM 261	Advanced Journalism	
COM 315	Investigative Journalism	
COM 390 [WI]	Global Journalism	
Select one of the following:		3.0
COM 335	Digital Publishing	
COM 340	Modern Desktop Publishing	
WRIT 310	Literary Editing & Publication	
WRIT 400 [WI]	Writing for -- and about -- the Web	
Select any two additional Certificate in Writing and Publishing courses, including but not limited to the following:		6.0
COM 270 [WI]	Business Communication	
or COM 310 Technical Communication		
COM 320 [WI]	Science Writing	
COM 375 [WI]	Grant Writing	
COM 420	Technical, Science and Health Editing	
CULA 412	Food Writing	
HNRS 301	Colloquium II *	
VSCM 479	Graphic Design Seminar: Advanced Media (Bookmaking)	
VSCM 480 [WI]	Graphic Design Seminar: Design Perceptions	
WRIT 210 [WI]	The Peer Reader in Context	
WRIT 220 [WI]	Creative Nonfiction Writing	
WRIT 225 [WI]	Creative Writing	
WRIT 301 [WI]	Writing Poetry	
WRIT 302 [WI]	Writing Fiction	
WRIT 303	Writing Humor and Comedy	
WRIT 306	Writing About the Media	
WRIT 312 [WI]	Writing for Target Audiences	
WRIT T380	Special Topics in Writing	
Total Credits		18.0

* By Director's permission only.

Creative Writing and Publishing track

18.0 quarter credits

This track is designed for students who want to develop their creative writing skills either for personal development and expression, or because they recognize that creative writing develops imagination; sharpens clarity of expression; and enhances sensitivity to other people. Creative writing is a good pre-professional concentration for pre-law, pre-med, and the social sciences. The importance of creative writing has been recognized for engineering and for business.

Select three of the following (one of which must be a 200-level course):		9.0
WRIT 220 [WI]	Creative Nonfiction Writing	
WRIT 225 [WI]	Creative Writing	
WRIT 301 [WI]	Writing Poetry	
WRIT 302 [WI]	Writing Fiction	
WRIT 303	Writing Humor and Comedy	
WRIT 306	Writing About the Media	
WRIT T380	Special Topics in Writing	
Select one of the following:		3.0

COM 335	Digital Publishing	
COM 340	Modern Desktop Publishing	
COM 350 [WI]	Document Design and Evaluation	
VSCM 479	Graphic Design Seminar: Advanced Media (Bookmaking)	
WRIT 310	Literary Editing & Publication	
WRIT 400 [WI]	Writing for -- and about -- the Web	
WRIT 405	Internship in Publishing *	
Select any two additional Certificate in Writing and Publishing courses, including but not limited to the following:		6.0
COM 160	Introduction to Journalism	
COM 261	Advanced Journalism	
COM 270 [WI]	Business Communication	
COM 310 [WI]	Technical Communication	
COM 315	Investigative Journalism	
COM 320 [WI]	Science Writing	
COM 350 [WI]	Document Design and Evaluation	
COM 375 [WI]	Grant Writing	
COM 390 [WI]	Global Journalism	
COM 420	Technical, Science and Health Editing	
CULA 412	Food Writing	
HNRS 301	Colloquium II **	
VSCM 480 [WI]	Graphic Design Seminar: Design Perceptions [WI]	
WRIT 210 [WI]	The Peer Reader in Context	
WRIT 312 [WI]	Writing for Target Audiences	
Total Credits		18.0

* WRIT 405 must be taken twice if no other publishing course is taken.

** By Director's permission only.

Entertainment Writing and Publishing Track

18.0 quarter credits

Entertainment Writing and Publishing is designed for students in any major who want to highlight their acquisition of writing skills. For students majoring in any entertainment field it provides an opportunity to develop areas of writing and publishing competencies in the professional entertainment field.

The track is designed for students who want to pursue writing either for personal development and expression as a personal or creative pursuit or profession. The Entertainment Writing and Publishing track will give students a strong multidisciplinary introduction to writing for a variety of entertainment professions including screenwriting, sports journalism, food writing, game writing, grant writing, and more. This track is designed for both students already studying any of the entertainment fields (such as Entertainment and Arts Management), as well as other students who are interested in exploring the field.

General Requirements

WRIT 306	Writing About the Media	3.0
or WRIT 226	Writing in Public Spaces	
WRIT 312 [WI]	Writing for Target Audiences	3.0
or COM 375	Grant Writing	
Select two of the following		6.0
COM 265	Audio Journalism	
COM 305	Sports Journalism	
CULA 412	Food Writing	
DSMR 315 [WI]	Media Merchandising I [WI]	
ENGL 323	Literature and Other Arts	
HNRS 301	Colloquium II **	

SCRIP 270	Screenwriting I [WI]	
SCRIP 241	Writing TV Comedy	
SCRIP 242	Writing TV Drama	
SCRIP 260	Writing Comics	
SCRIP 280	Writing the Short Film [WI]	
SCRIP 290	Game: Universe & Story	
WRIT 303	Writing Humor and Comedy	
Select One of the Following		3.0
COM 335	Digital Publishing	
COM 340	Modern Desktop Publishing	
VSCM 479	Graphic Design Seminar: Advanced Media ((Bookmaking))	
WRIT 310	Literary Editing & Publication	
WRIT 400 [WI]	Writing for -- and about -- the Web	
WRIT 405	Internship in Publishing *	
Select one of the following		3.0
COM 160	Introduction to Journalism	
COM 270 [WI]	Business Communication	
COM 420	Technical, Science and Health Editing	
WRIT 210 [WI]	The Peer Reader in Context	
WRIT 220 [WI]	Creative Nonfiction Writing	
WRIT 225 [WI]	Creative Writing	
WRIT 301 [WI]	Writing Poetry	
WRIT 302 [WI]	Writing Fiction	
COM 320 [WI]	Science Writing	
VSCM 480 [WI]	Graphic Design Seminar: Design Perceptions [WI]	
WRIT T380	Special Topics in Writing	
Total Credits		18.0

* WRIT 405 must be taken twice if no other publishing course is taken.

** By Director's permission only.

Comprehensive Certificate track

18.0 quarter credits

The Comprehensive Track is designed for students whose majors and minors include writing courses (either as electives or required courses) and whose schedules allow for the additional credits to obtain certification.

Select two of the following:		6.0
COM 335	Digital Publishing	
COM 340	Modern Desktop Publishing	
VSCM 479	Graphic Design Seminar: Advanced Media	
WRIT 310	Literary Editing & Publication	
WRIT 400 [WI]	Writing for -- and about -- the Web	
WRIT 405	Internship in Publishing *	
Select two of the following: **		12.0
Creative Writing		
Track A		
WRIT 220 [WI]	Creative Nonfiction Writing	
Any 300-level writing (WRIT) course		
Track B		
WRIT 225 [WI]	Creative Writing	
Any 300-level writing (WRIT) course		
Professional Writing		
Track A		
COM 310 [WI]	Technical Communication	
COM 420	Technical, Science and Health Editing	
or COM 375	Grant Writing	
or VSCM 480	Graphic Design Seminar: Design Perceptions	

Track B	
COM 270 [WI] Business Communication	
COM 375 [WI] Grant Writing	
or COM 350 Document Design and Evaluation	
or VSCM 480 Graphic Design Seminar: Design Perceptions	
Journalism	
COM 160 Introduction to Journalism	3.0
Select one of the following:	
COM 315 Investigative Journalism	
COM 390 [WI] Global Journalism	
CULA 412 Food Writing	
WRIT 210 [WI] The Peer Reader in Context ***	
Total Credits	21.0

- * WRIT 405 Must be taken twice.
- ** Students select two of the following course sequences from at least two different categories
- *** By Director's permission only.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/writing-intensive-courses/>) at the University Writing Program (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/>). (<http://drexel.edu/coas/academics/departments-centers/english-philosophy/university-writing-program/drexel-writing-center/>) Students scheduling their courses can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Intermediate Arabic Proficiency Certificate

The Intermediate Arabic Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

Please note that this certificate is available only to currently matriculated Drexel students.

Program Requirements

The Intermediate Arabic Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.**

The Intermediate Arabic Certificate requires a minimum of 8.0 credits* including the successful completion of the required course, ARBC 202.**

Students can choose from the following courses:

ARBC 101	Arabic I
ARBC 102	Arabic II
ARBC 103	Arabic III
ARBC 201	Arabic IV
ARBC 202	Arabic V
ARBC 310	Advanced Writing and Speaking
Total Credits	8.0-20.0

- * Only students who place at or below the ARBC 202 level are eligible for the Intermediate Arabic Proficiency Certificate.
- ** The proficiency certificate is based on standardized outcomes set by the American Council on the Teaching of Foreign Languages (ACTFL, [actfl.org](https://www.actfl.org/) (<https://www.actfl.org/>)).
- *** Demonstrated proficiency through Drexel's placement test in ARBC 101, ARBC 102, ARBC 103, and/or ARBC 201 may reduce the number of required credits to a minimum of 8.0. (Note that completion of placement test[s] do not count toward academic credit.) The required credits for the certificate is determined by placement level:
 *For students who place into:
 101 – 20 credits
 102 – 16 credits
 103 – 12 credits
 201 – 8 credits
 202 – 8 credits (student has to take 310 as well)

Intermediate Chinese Proficiency Certificate

The Intermediate Chinese Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

Please note that this certificate is available only to currently matriculated Drexel students.

Program Requirements

The Intermediate Chinese Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.**

The Intermediate Chinese Certificate requires a minimum of 8 credits* including the successful completion of the required course, CHIN 202.**

Students can choose from the following courses:

CHIN 101	Chinese I
CHIN 102	Chinese II
CHIN 103	Chinese III
CHIN 201	Chinese IV
CHIN 202	Chinese V
CHIN 310	Advanced Writing and Speaking
Total Credits	8.0-20.0

- * Only students who place at or below CHIN 202 level are eligible for the Intermediate Chinese Proficiency Certificate.

- ** The proficiency certificate is based on standardized outcomes set by the American Council on the Teaching of Foreign Languages (ACTFL, [actfl.org](https://www.actfl.org/) (<https://www.actfl.org/>)).
- *** Demonstrated proficiency through Drexel's placement test in CHIN 101, CHIN 102, CHIN 103, and/or CHIN 201 may reduce the number of required credits to a minimum of 8.0. (Note that completion of placement test[s] do not count toward academic credit.)
The required credits for the certificate is determined by placement level:
*For students who place into:
101 – 20 credits
102 – 16 credits
103 – 12 credits
201 – 8 credits
202 – 8 credits (student has to take 310 as well)

- *** Demonstrated proficiency through Drexel's placement test in FREN 101, FREN 102, FREN 103, and/or FREN 201 may reduce the number of required credits to a minimum of 8.0. (Note that completion of placement test[s] do not count toward academic credit.)
The required credits for the certificate is determined by placement level:
*For students who place into:
101 – 20 credits
102 – 16 credits
103 – 12 credits
201 – 8 credits
202 – 8 credits (student has to take 310 as well)
**Students who place above 202 are encouraged to pursue a language minor.

Intermediate French Proficiency Certificate

The Intermediate French Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

Please note that this certificate is available only to currently matriculated Drexel students.

Program Requirements

The Intermediate French Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

The Intermediate French Certificate requires a minimum of 8-20 credits*** including the successful completion of the required course, FREN 202.

Students can choose from the following courses:

FREN 101	French I
FREN 102	French II
FREN 103	French III
FREN 201	French IV
FREN 202	French V
FREN 310 [WI]	Advanced Writing and Speaking

Total Credits 8.0-20.0

- * Only students who place at or below the FREN 202 level are eligible for the Intermediate French Proficiency Certificate.
- ** The proficiency certificate is based on standardized outcomes set by the American Council on the Teaching of Foreign Languages (ACTFL, [actfl.org](https://www.actfl.org/) (<https://www.actfl.org/>)).

Intermediate German Proficiency Certificate

The Intermediate German Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

Please note that this certificate is available only to currently matriculated Drexel students.

Program Requirements

The Intermediate German Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

The Intermediate German Certificate requires a minimum of 8-20 credits*** including the successful completion of the required course, GER 202.

Students can choose from the following courses:

GER 101	German I
GER 102	German II
GER 103	German III
GER 201	German IV
GER 202	German V
GER 310 [WI]	Advanced Writing and Speaking

Total Credits 8.0-20.0

- * Only students who place at or below the GER 202 level are eligible for the Intermediate German Proficiency Certificate.
- ** The proficiency certificate is based on standardized outcomes set by the American Council on the Teaching of Foreign Languages (ACTFL, [actfl.org](https://www.actfl.org/) (<https://www.actfl.org/>)).

*** Demonstrated proficiency through Drexel's placement test in GER 101, GER 102, GER 103, and/or GER 201 may reduce the number of required credits to a minimum of 8.0. (Note that completion of placement test[s] do not count toward academic credit.) The required credits for the certificate is determined by placement level:
 *For students who place into:
 101 – 20 credits
 102 – 16 credits
 103 – 12 credits
 201 – 8 credits
 202 – 8 credits (student has to take 310 as well)

Intermediate Japanese Proficiency Certificate

The Intermediate Japanese Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

Please note that this certificate is available only to currently matriculated Drexel students.

Program Requirements

The Intermediate Japanese Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

The Intermediate Japanese Certificate requires a minimum of 8–20 credits*** 8.0-20.0 including the successful completion of the required course, JAPN 202.

Students can choose from the following courses:

JAPN 101	Japanese I
JAPN 102	Japanese II
JAPN 103	Japanese III
JAPN 201	Japanese IV
JAPN 202	Japanese V
JAPN 310 [WI]	Advanced Writing and Speaking

Total Credits 8.0-20.0

* Only students who place at or below the JAPN 202 level are eligible for the Intermediate Japanese Proficiency Certificate.

** The proficiency certificate is based on standardized outcomes set by the American Council on the Teaching of Foreign Languages (ACTFL, actfl.org (<https://www.actfl.org/>)).

*** Demonstrated proficiency through Drexel's placement test in JAPN 101, JAPN 102, JAPN 103, and/or JAPN 201 may reduce the number of required credits to a minimum of 8.0. (Note that completion of placement test[s] do not count toward academic credit.) The required credits for the certificate is determined by placement level:
 *For students who place into:
 101 – 20 credits
 102 – 16 credits
 103 – 12 credits
 201 – 8 credits
 202 – 8 credits (student has to take 310 as well)
 **Students who place above 202 are encouraged to pursue a language minor.

Intermediate Korean Proficiency Certificate

The Intermediate Korean Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

Please note that this certificate is available only to currently matriculated Drexel students.

Program Requirements

The Intermediate Korean Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

The Intermediate Korean Certificate requires a minimum of 8-20 credits*** 8.0-20.0 including the successful completion of the required course, KOR 202.

Students can choose from the following courses:

KOR 101	Korean I
KOR 102	Korean II
KOR 103	Korean III
KOR 201	Korean IV
KOR 202	Korean V
KOR 310	Advanced Writing & Speaking

Total Credits 8.0-20.0

* Only students who place at or below the KOR 202 level are eligible for the Intermediate Korean Proficiency Certificate.

** The proficiency certificate is based on standardized outcomes set by the American Council on the Teaching of Foreign Languages (ACTFL, actfl.org (<https://www.actfl.org/>)).

*** Demonstrated proficiency through Drexel's placement test in KOR 101, KOR 102, KOR 103, and/or KOR 201 may reduce the number of required credits to a minimum of 8.0. (Note that completion of placement test[s] do not count toward academic credit.)

The required credits for the certificate is determined by placement level:

*For students who place into:

101 – 20 credits

102 – 16 credits

103 – 12 credits

201 – 8 credits

202 – 8 credits (student has to take 310 as well)

*** Demonstrated proficiency through Drexel's placement test in SPAN 101, SPAN 102, SPAN 103, and/or SPAN 201 may reduce the number of required credits to a minimum of 8.0. (Note that completion of placement test[s] do not count toward academic credit.)

The required credits for the certificate is determined by placement level:

*For students who place into:

101 – 20 credits

102 – 16 credits

103 – 12 credits

201 – 8 credits

202 – 8 credits (student has to take 310 as well)

**Students who place above 202 are encouraged to pursue a language minor.

Intermediate Spanish Proficiency Certificate

The Intermediate Spanish Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient** to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.

Please note that this certificate is available only to currently matriculated Drexel students.

Program Requirements

The Intermediate Spanish Proficiency Certificate* offers students a language certificate at the intermediate level as proof that they are sufficiently proficient to interact with native speakers in a basic everyday context and within standard cultural norms, whether abroad or in the United States.**

The Intermediate Spanish Certificate requires a minimum of 8-20 credits*** 8.0-20.0 including the successful completion of the required course, SPAN 202.

Students can choose from the following courses:

SPAN 101	Spanish I
SPAN 102	Spanish II
SPAN 103	Spanish III
SPAN 201	Spanish IV
SPAN 202	Spanish V
SPAN 310 [WI]	Advanced Writing and Speaking

Total Credits 8.0-20.0

* Only students who place at or below the SPAN 202 level are eligible for the Intermediate Spanish Proficiency Certificate.

** The proficiency certificate is based on standardized outcomes set by the American Council on the Teaching of Foreign Languages (ACTFL, [actfl.org](https://www.actfl.org) (<https://www.actfl.org>)).

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