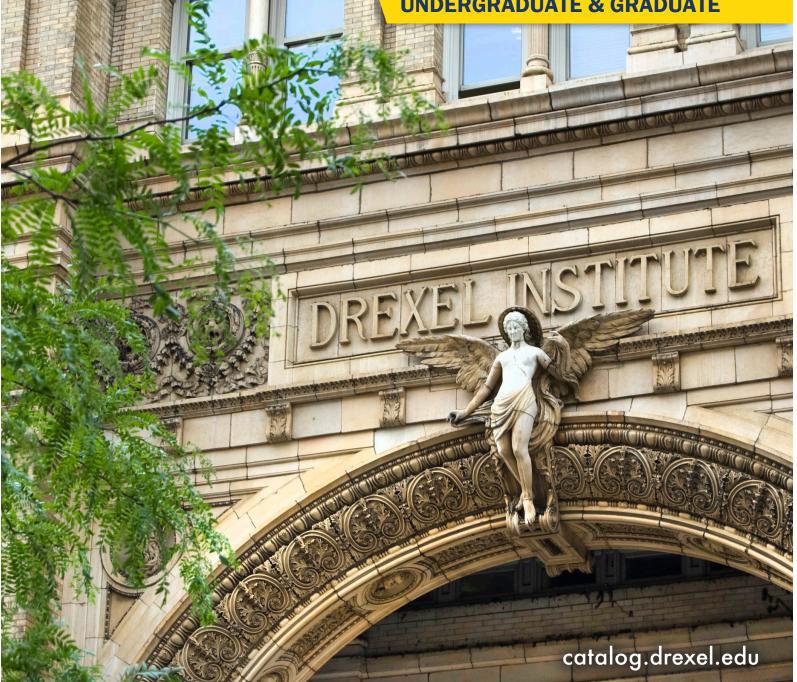


# CATALOG SUPPLEMENT 2020-2021

**UNDERGRADUATE & GRADUATE** 



# **Catalog Supplement**

# This catalog supplement is provided to give a brief overview of the new programs and courses that have been approved since the 2020-2021 catalog was published in August 2020.

(updated July 27, 2021)

#### **New Undergraduate Programs**

Program	College	Description	Requirements	Effective Term
Architectural Studies BS		This program prepares students for entry-level employment in architecture and in fields related to architecture; however this program is not NAAB accredited and does not directly prepare for architectural licensure and registration. It is the ideal foundation for specialization in other related disciplines such as design research, urban strategies, interior architecture and design, construction management, real estate development, digital media and animation.	PDF	Fall 2021
Actuarial Science Minor	College of Arts and Sciences	The minor in actuarial science is designed to provide students with the quantitative and analytical skills required to obtain an entry level position in the actuarial sciences profession. The coursework will help prepare students for the first two actuarial exams (probability and financial mathematics) and can be applied towards VEE (Validation by Education Experience) credit requirements from professional actuarial societies in the areas of Mathematical Statistics, Accounting and Finance, and Economics.	PDF	Fall 2021
Behavioral Economics, Business, and Organizations BS	LeBow College of Business: School of Economics	Integrates economic modelling with insights from behavioral sciences to analyze and predict human behavior in economic contexts and organizations. The program combines interdisciplinary coursework in economics, psychology, consumer behavior and organizational behavior with comprehensive training in quantitative and research methods. Students will learn how to model behavior, collect and analyze choice data, conduct experiments, and design interventions to shape individual decisions and organizational outcomes.	PDF	Fall 2021
Climate Change Minor	College of Arts and Sciences	Provides an overview of the Earth's climate system and the science of climate change, as well as how to understand, mitigate, and adapt to its potential impacts from varied disciplinary perspectives.	PDF	Fall 2021
DragonsTeach Certification Minor	School of Education	This minor can be coupled with a variety of STEM majors. It will provide an opportunity to explore STEM education and to develop core knowledge and practices in secondary STEM education. Successful STEM Education minor candidates may build upon the minor's coursework which leads to recommendation for PA teaching certification as a secondary teacher (grades 7-12) in one or more STEM content areas. This minor includes coursework that meets the requirements to be recommended for teacher certification in PA.	PDF	Fall 2021
DragonsTeach Math Certification Minor	School of Education	This minor can be coupled with a variety of STEM majors. It will provide an opportunity to explore STEM education and to develop core knowledge and practices in secondary STEM education. Successful STEM Education minor candidates may build upon the minor's coursework which leads to recommendation for PA teaching certification as a secondary teacher (grades 7-12) in one or more STEM content areas. This minor includes coursework that meets the requirements to be recommended for teacher certification in PA.	PDF	Fall 2021

DragonsTeach Middle Years Certification Minor	School of Education	This minor can be coupled with a variety of majors. It will provide an opportunity to explore middle level education and to develop core knowledge and practices in education. Successful DTMY Education minor candidates may build upon the minor's coursework to complete the requirements for recommendation for PA teaching certification as a middle level teacher (grades 4-8) in one or more content areas.	PDF	
DragonsTeach Middle Years Minor	School of Education	This minor can be coupled with a variety of majors. It will provide an opportunity to explore middle level education and to develop core knowledge and practices in education. Successful DTMY Education minor candidates may choose to build upon the requirements of this minor to further their education and complete PA teacher certification in grades 4-8 through the School of Education's other minor, DragonsTeach Middle Years Certification Minor.	PDF	
Economics and Business BS	LeBow College of Business: School of Economics	The combined major in economics and business provides the student with the foundational skills of data analysis in economics and the functional fields of business, with a range of elective courses in both fields and overall flexibility that allow the student to build on those skills in the direction of their own interests.	PDF	Fall 2021
Economics and Data Science BSECDS	Interdisciplinary - LeBow College of Business & College of Computing and Informatics	Economics and Data Science is an interdisciplinary major that prepares students to work in an economy that has been transformed by the emergence of digital commerce and massive amounts of data. Coursework in data science teaches students how to manage, manipulate, and parse data to extract knowledge and insight.	PDF	Fall 2021
Economics and Mathematics BS	LeBow College of Business: School of Economics	The combined major in economics and mathematics is intended for students with a strong intellectual interest in economics, applied mathematics, and econometrics. Emphasizes economics courses with more formal mathematical analysis and contains a high math course requirement, thereby allowing students to understand and conduct more advanced research in economics and quantitative analysis.	PDF	Fall 2021
Economics and Public Health BS	LeBow College of Business: School of Economics	Through the study of both economics and public health, students in this major gain a unique understanding of the factors underlying our health and well- being. The curriculum is interdisciplinary drawing from the physical sciences, economics, and the four areas of public health: epidemiology, community health and prevention, environmental and occupational health, and health management and policy.	PDF	Fall 2021
Law Minor	Kline School of Law	The undergraduate minor in Law provides foundational knowledge of the American legal system and how law interacts with every aspect of society, including policy, technology, and multiple career fields. The choice of electives allows students the opportunity for a more in-depth exploration of how the law applies to their major area of interest or study.	PDF	Fall 2021
Linguistics Minor	College of Arts and Sciences	Linguists study language form, meaning and context, especially by observing and analyzing human communication in its many spoken and written varieties. A knowledge of linguistics is the basis for studies in language diversity and communicative competence, the psychology of language, educational aspects of language that affect learners and classrooms, the formal logic and languages of philosophy and computer science, and the biological science of speech pathology.	PDF	Fall 2021
Special Education PK-12 BS	School of Education	Offers students the opportunity to develop professional knowledge and skills to assist these learners in a full or part time option.	PDF	Fall 2021

Teacher Education	School of Education	This is a recently created certification area within the Pennsylvania	PDF	Fall 2021
BS: Computer		Department of Education to develop well-prepared computer science teachers		
Science		for the state of Pennsylvania.		

### **New Graduate Programs**

Program	College	Description	Requirements	Effective Term
Applied Artificial Intelligence/Machine Learning for Data Science Post-Bacc Certificate	College of Computing & Informatics	Provides the quantitative foundations, data analysis and interpretation, machine learning, artificial intelligence, deep learning, and other related electives.	PDF	Fall 2021
Arts in Public Health Graduate Minor	Dornsife School of Public Health	Builds on Philadelphia's renowned commitment to the arts and community, and strengthens the CHP Department's and the Dornsife School of Public Health's focus on neighborhoods, resilience, social determinants of health, and addressing disparities. It also builds on the growing evidence base linking the built environment, creative arts and health (i.e. creative placemaking) as well as the global "Arts and Health" movement focused on social change.	PDF	Fall 2021
Big Data Analytics Post-Bacc Certificate	College of Computing & Informatics	Provides big data analytics skills including cloud computing, distributed computing, natural language processing as well as the opportunity of practicing their skills in the capstone projects.	PDF	Fall 2021
Business Information Technology MS	Interdisciplinary - LeBow College of Business & College of Computing and Informatics	Prepares students for work related to applying information technology in organizations. Students completing the program will understand how information technology is managed in an organizational environment, how it helps to solve organizational problems, and how it can be used to transform an organization.	PDF	Fall 2021
Change Leadership Strategy Post-Bacc Certificate	0	Students will learn applicable skills that cover both strategic management such as strategic thinking, managing innovation, and forecasting technological change as well as organizational behavior such as vision, communication, and motivation.		Fall 2021
Change Leadership Strategy Graduate Minor	LeBow College of Business	This minor will enable students to develop knowledge and skills in order to drive change in a variety of organizational and team based settings. The minor builds from courses to enable an understanding of both change generation as well as change execution. Students will learn applicable skills that cover both strategic management such as strategic thinking, managing innovation, and forecasting technological change as well as organizational behavior such as vision, communication, and motivation.	PDF	Fall 2021

Computing Systems Security and Privacy Post-Bacc Certificate	College of Computing & Informatics	This certificate provides broad technical expertise in software security, network security, and computer privacy. It includes introductory courses in security engineering and computer privacy that cover the technical fundamentals. Electives provide additional in-depth expertise in operating systems, computer networks, and cryptography, which are essential bodies of knowledge to be able to do technical work in modern computer systems security.	PDF	Fall 2021
Creative Education and Entrepreneurship MS	School of Education	This degree program will allow students to develop the skills associated with creativity and entrepreneurial mindsets along with the tools necessary to lead organizations that foster a culture of innovation. Students will experience both foundational and applied aspects of the creative process and entrepreneurial thinking as they engage in project-based learning experiences which will allow them to immediately apply their coursework on issues relevant to their work experiences and environments.	PDF	Fall 2021
Creativity Tools and Techniques for the Classroom and Workplace Post- Bacc Certificate	School of Education	The 9-credit certificate can be completed in either 6 or 9 months with the student simultaneously continuously applying the course content to issues relevant to the their work experiences and environments. In addition to learning the skills and techniques of creativity and innovation, the program details the 'why' behind what 'makes' the tools and techniques work which may be customized and individualize to fit the employees' and organization's unique needs.	PDF	Fall 2021
Digital Transformation Post-Bacc Certificate	Interdisciplinary - LeBow College of Business & College of Computing and Informatics	Prepares students to understand and work with technologies that are reshaping the way contemporary businesses operate and compete. Courses provide fundamental knowledge of the technological landscape, business applications, management, and strategic considerations.	PDF	Fall 2021
Disability and Health Equity Policy Post- Bacc Certificate	n Dornsife School of Public Health	Prepares students for leadership roles in supporting effective and equitable policy development, implementation, and evaluation	PDF	Fall 2021
Finance MS	LeBow College of Business	Designed to develop skills to make important strategic financial decisions using data-driven insights. The program offers the option of pursuing a specialization in Strategic Finance and Risk, Corporate Finance, Investments, or FinTech.	PDF	Fall 2021
Hardware Systems Engineering Post- Bacc Certificate	College of Engineering	This graduate certificate will enhance the skills of engineers who work in areas of product design and development related to a variety of industries, but mostly Department of Defense (DoD).	PDF	Spring 2021
Healthcare Simulation MS	College of Nursing and Health Professions	Prepares nurses, healthcare professionals, and simulation technicians to meet future challenges in both academic and professional spaces. Specialized training in simulation-based education, partnered with advanced education in patient safety, prepares students to be leaders in their fields.	PDF	Fall 2021
Higher Education Leadership Post- Bacc Certificate	School of Education	This certificate provides an overview of career paths in colleges and universities, as well as national and international organizations, foundations, associations, and corporations that make up the broader higher education landscape. Opportunities for future practitioners in administrative and leadership positions in higher education settings are explored.	PDF	Fall 2021

Information Systems Development Post- Bacc Certificate		Provides broad knowledge on analyzing, designing and deploying information systems. The program is designed for students who have either a technical or business bachelor's degree from an accredited university with relevant work experience. Courses provide both practical technical and business knowledge.	PDF (	Fall 2021
Information Technology and Management Post- Bacc Certificate	Lebow College of Business / College of Computing & Informatics	Provides fundamental knowledge, business application, management, and administration of information technology.	PDF	Fall 2021
Information Technology Strategy & Execution Post- Bacc Certificate	Lebow College of Business / College of Computing & Informatics	Provides broad knowledge on software economics, project management, and information technology planning, strategy and execution.	PDF	Fall 2021
Introduction to Data Science Post-Bacc Certificate	College of Computing & Informatics	Provides the basic skills in Python programing, exploratory data analytics using R, and other relevant electives.	PDF	Fall 2021
Instructional Design for e-Learning Post- Bacc Certificate	School of Education	Prepares students to apply the principles, theories, models, tools, and techniques of systematic instructional design in diverse e-Learning settings. This program focuses on the knowledge and skills necessary for aspiring learning design professionals for PK-20 education, adult education, and workplace training who want to add formal instructional design credentials to their portfolio of preparation. It specifically addresses the needs of the millennial learner and collaborative, networked communities seeking to design e-learning experiences.	PDF	Fall 2021
Learning Analytics Post-Bacc Certificate	School of Education	Designed to increase the ability of education practitioners to understand and improve instructional processes, understand the role of data in organizational change, and lead change in educational systems based on multiple data and information sources. The program prepares students to make data- driven decisions about education improvement using a broad range of data collection, analytical, and visualization methods.	PDF	Fall 2021
Middle Level (grades 4-8) Certification: English Language Arts Concentration Post- Bacc Certificate		This program addresses the complexities of adolescent development, through discussion of theories. It explores the middle school environment, developmentally appropriate middle school programs, strategies for supporting students through the transition to middle school, and the impact of peer pressure on the middle school child. Includes courses devoted to teaching age-appropriate reading skills, and how to teach and assess writing effectively.	PDF	Fall 2021
Middle Level (grades 4-8) Certification: General Science Concentration Post- Bacc Certificate	School of Education	This program addresses the complexities of adolescent development, through discussion of theories. It explores the middle school environment, developmentally appropriate middle school programs, strategies for supporting students through the transition to middle school, and the impact of peer pressure on the middle school child.	PDF	Fall 2021

Middle Level (grades 4-8) Certification: Mathematics Concentration Post- Bacc Certificate		This program addresses the complexities of adolescent development, through discussion of theories. It explores the middle school environment, developmentally appropriate middle school programs, strategies for supporting students through the transition to middle school, and the impact of peer pressure on the middle school child. Provides training in how to effectively deliver standards-based academic math content based on age-appropriate understanding, and individual and group needs.	PDF	Fall 2021
Middle Level (grades 4-8) Certification: Social Studies Concentration Post- Bacc Certificate	School of Education	This program addresses the complexities of adolescent development, through discussion of theories. It explores the middle school environment, developmentally appropriate middle school programs, strategies for supporting students through the transition to middle school, and the impact of peer pressure on the middle school child.	PDF	Fall 2021
Nursing: Healthcare Simulation MSN	College of Nursing and Health Professions	Specialized training in simulation-based education, partnered with advanced education in patient safety, prepares students to be leaders in their fields. The skills attained in this interdisciplinary simulation-based graduate program are transferable to the clinical environment, clinical teaching, and the classroom. Graduates of the program will have the skills to lead a simulation program in an academic or hospital environment. Graduates will also be prepared to sit for the Certified Healthcare Simulation Educator (CHSE) certification, as soon as they meet the practice requirements.	PDF	Fall 2021
Online Teaching and Learning Post- Bacc Certificate	School of Education	This certificate is designed to address the unique instructional knowledge and skills required to effectively design and deliver instruction online. Courses in this program focus specifically on developing practices using technology and emerging methods for quality teaching and online learning in PK-20 settings, for adult learners, and in corporate settings.	PDF	Fall 2021
Organization and Talent Development Post- Bacc Certificate	School of Education	The Certificate in Organization and Talent Development is post-baccalaureate professional development and micro-credential designed to equip emerging leaders with the competencies and capabilities to design and implement talent development and management, coaching and mentoring, and organization development and change initiatives in any organizational setting regardless of sector and industry.	PDF	Fall 2021
Organizational Security Post-Bacc Certificate	College of Computing & Informatics	This certificate provides broad knowledge on securing the business information infrastructure, cloud security, security policy, assurance and forensics. Courses provide both practical technical and business knowledge.	PDF	Fall 2021
Quantum Technology and Quantum Information Post- Bacc Certificate	College of Arts and Sciences	This certificate accepts applicants who hold bachelor's degrees in Physics, Chemistry, Materials Science and Engineering, and Electrical and Computer Engineering, and offers them opportunities to learn the fundamentals of quantum technology and quantum information. The aim is to provide a strong foundation in this emerging area, with a focus on quantum mechanical foundations, technological advances on quantum level, and real-world applications. The certificate program may also serve as an onramp to a Masters of Science in Physics and Masters of Materials Science and Engineering, if completed with predetermined grade requirements.	PDF	Fall 2021
Software Architecture Post- Bacc Certificate	College of Computing & Informatics	This certificate equips software professionals with state-of-the-art practices for designing, analyzing, documenting, and implementing software architectures.	PDF	Fall 2021

Software Management Post- Bacc Certificate	College of Computing & Informatics	This certificate is designed for software engineers preparing for or already in a management role. The certificate advances capabilities including requirements engineering, communicating with stakeholders, and managing time, budget, and personnel for software engineering projects.	PDF	Fall 2021
Sport Leadership Post-Bacc Certificate	School of Education	This certificate aims to help students grow their ability to be a leader and communicate effectively with athletes and program stakeholders. The purpose of this program is to help coaches become more of a valued asset to the athletic communities.	PDF	Fall 2021
Strategic and Digital Communication MS	College of Arts and Sciences	Prepares students for careers in a wide range of professional activities relating to communication in media environments and communication contexts that are characterized by advanced digitization.		Fall 2021
Undergraduate STEM Education MS	School of Education	This program will prepare STEM graduate students to implement evidence- based pedagogies that have been demonstrated to be effective for teaching undergraduate STEM courses. This interdisciplinary program provides a mechanism to allow doctoral students from a STEM discipline to learn about pedagogical approaches appropriate for teaching STEM undergraduates, and research, assessment and evaluation of STEM programs. Such skills, experiences and competencies both diversify the career prospects of these graduate students as well as position them to participate more fully in programs with STEM Education and/or outreach as their "broader impact."	PDF	Fall 2021
U.S. Education Policy Post-Bacc Certificate	School of Education	Examines the concept of policy as it relates to the education system, and its institutions and their governance and practices, within the United States. This nine-credit certificate is designed for students who are seeking to develop a more sophisticated understanding of the U.S. education system in order to perform more effectively as an education professional.	PDF	Fall 2021

### **New Accelerated Programs**

Program	College	Description	Requirements	s Effective Term
Communication BS / Strategic & Digital Communication MS	College of Arts and Sciences	Both incoming freshmen 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.	PDF	Fall 2021
Communication BA / Strategic & Digital Communication Ms	College of Arts and Sciences	Both incoming freshmen 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.	PDF	Fall 2021

Computer Engineering BSCE / Cybersecurity MS	College of Engineering	The computer engineering undergraduate degree program is designed to provide our students with breadth in engineering, the sciences, mathematics, and the humanities, as well as depth in both software and hardware disciplines appropriate for a computer engineer. Motivated through discussions with the National Security Agency (NSA), Drexel University's MS in Cybersecurity program prepares students with both academic and practical training to be competitive in today's rapidly changing technical landscape.	PDF	Fall 2021
Computer Engineering BSCE / Electrical Engineering MSEE	College of Engineering	The computer engineering undergraduate degree program is designed to provide our students with breadth in engineering, the sciences, mathematics, and the humanities, as well as depth in both software and hardware disciplines appropriate for a computer engineer. The MS program in electrical engineering prepares students for careers in research and development, and aims to endow graduates with the ability to identify, analyze and address new technical and scientific challenges.	PDF	Fall 2021
Computer Engineering BSCE / Machine Learning Engineering MSMLE		The computer engineering undergraduate degree program is designed to provide our students with breadth in engineering, the sciences, mathematics, and the humanities, as well as depth in both software and hardware disciplines appropriate for a computer engineer. The MS in Machine Learning is designed to provide students with a strong academic background in machine learning and prepare them for a career as a machine learning engineer or similar position. Using a curriculum based on core machine learning topics, aligned mathematical theory, and signal processing, this graduate program provides a solid mathematical and theoretical understanding of how machine learning algorithms are designed, implemented, and applied to practical problems.	PDF	Fall 2021
Computer Engineering BSCE / Robotics & Autonomy MSRA	College of Engineering	The computer engineering undergraduate degree program is designed to provide our students with breadth in engineering, the sciences, mathematics, and the humanities, as well as depth in both software and hardware disciplines appropriate for a computer engineer. The graduate program in Robotics and Autonomy will educate professionals who are prepared to lead and conduct research, development, and design in robotic systems and technologies.	PDF	Fall 2021
Computer Engineering BSCE / Telecommunications Engineering MSEET	5	The computer engineering undergraduate degree program is designed to provide our students with breadth in engineering, the sciences, mathematics, and the humanities, as well as depth in both software and hardware disciplines appropriate for a computer engineer. The MS in Electrical and Telecommunications Engineering combines the expertise of its faculty in electrical and computer engineering, business, information systems, and humanities.	PDF	Fall 2021
Economics BS / Business Administration MBA	LeBow College of Business	Drexel LeBow's BS/MBA program provides academically qualified undergraduate students with the opportunity to earn both a bachelor's degree and an MBA within five years of study. Graduating with an MBA and an undergraduate degree provides students with a competitive edge when entering the job market without having the time constraints of typical degree pursuits. This program is offered to all students pursuing a bachelor of science in economics as well as students from select undergraduate programs across the university.	PDF	Fall 2021
Economics BA / Business Administration MBA	LeBow College of Business	Drexel LeBow's BA/MBA program provides academically qualified undergraduate students with the opportunity to earn both a bachelor's degree and an MBA within five years of study. Graduating with an MBA and an undergraduate degree provides students with a competitive edge when entering the job market without having the time constraints of typical degree pursuits. This program is offered to all students pursuing a bachelor of arts in economics as well as students from select undergraduate programs across the university.	PDF	

Electrical Engineering BSEE / Computer Engineering MSCPE	College of Engineering	The electrical engineering undergraduate major emphasizes the fundamentals of electrical engineering, hands-on learning, and flexibility in course selection to satisfy diverse career goals. The graduate computer engineering curriculum is designed to: (1) address the needs of students with a variety of different backgrounds; (2) ensure that graduates will have adequate knowledge and skills in at least one area of specialization; (3) meet the immediate needs of working students as well as to adequately prepare full-time students for a real-world technological environment; and (4) equip students with tools to grasp and develop new technologies and trends.	PDF	Fall 2021
Electrical Engineering BSEE / Cybersecurity MS	College of Engineering	The electrical engineering undergraduate major emphasizes the fundamentals of electrical engineering, hands-on learning, and flexibility in course selection to satisfy diverse career goals. The graduate program in Cybersecurity is interdisciplinary in nature and includes courses from Drexel University's College of Computing & Informatics. Topics covered include computer networking, probability concepts, techniques for analyzing algorithms, dependable software design, reverse software engineering, intrusion detection, ethics, privacy, confidentiality, authenticity, and social networking.	PDF	Fall 2021
Electrical Engineering BSEE / Machine Learning Engineering MSMLE	0 0	Electrical engineers contribute to industry and research in diverse areas such as electronic circuits, lasers and photonics, semiconductor devices, computer and communication networks, wireless networks, biomedical engineering, bioinformatics, machine learning, automation and control, and power and energy systems. The undergraduate electrical engineering major emphasizes the fundamentals of electrical engineering, hands-on learning, and flexibility in course selection to satisfy diverse career goals. The MS in Machine Learning is designed to provide students with a strong academic background in machine learning and prepare them for a career as a machine learning engineer or similar position. Using a curriculum based on core machine learning topics, aligned mathematical theory, and signal processing, this graduate program provides a solid mathematical and theoretical understanding of how machine learning algorithms are designed, implemented, and applied to practical problems.		Fall 2021
Electrical Engineering BSEE / Robotics & Autonomy MSRA	College of Engineering	Electrical engineers contribute to industry and research in diverse areas such as electronic circuits, lasers and photonics, semiconductor devices, computer and communication networks, wireless networks, biomedical engineering, bioinformatics, machine learning, automation and control, and power and energy systems. The undergraduate electrical engineering major emphasizes the fundamentals of electrical engineering, hands-on learning, and flexibility in course selection to satisfy diverse career goals. The graduate program in Robotics and Autonomy will educate professionals who are prepared to lead and conduct research, development, and design in robotic systems and technologies. This MS degree is built upon four foundational concepts in robotics: perception, cognition, control, and action.	PDF	Fall 2021
Electrical Engineering BSEE / Telecommunications Engineering MSEET	5	The undergraduate electrical engineering major emphasizes the fundamentals of electrical engineering, hands-on learning, and flexibility in course selection to satisfy diverse career goals. The graduate program in Electrical Engineering / Telecommunications Engineering prepares students to contribute to advances in the rapidly changing field of telecommunications by providing advanced studies. The MS in Electrical and Telecommunications Engineering combines the expertise of its faculty in electrical and computer engineering, business, information systems, and humanities.	PDF	Fall 2021
Elementary Education (PK and Special Education) BS / MS in Teaching, Learning and Curriculum (Advanced Track) MS	School of Education	Offers a flexible, innovative curriculum with a unique emphasis on creative problem solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Elementary/PK-4) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching Learning and Curriculum (Advanced Track).	PDF	Fall 2021

Elementary Education PK4 BS / Creativity & Innovation MS	School of Education	This BS/MS Education and Creativity & Innovation program attracts pre- service teachers who envision preparing their students for the new economy(s) and jobs, as well as for the challenges and adventures that will continue to unfold throughout the 21st Century.	PDF	Fall 2021
English BA / Law JD	College of Arts and Sciences / Kline School of Law	This accelerated degree program combines the BA in ENGL in CoAS and the JD offered by the Kline School of Law. It is a "3+3" program, allowing qualified students to earn both their BA in English and their JD in 6 years. The study of the English language and literature provides a strong foundation for success in law school.		Fall 2021
English BA / Strategic & Digital Communication MS	College of Arts and Sciences	The ability to communicate effectively is one of the most sought-after skills by prospective employers industry wide. 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 Strategic and Digital Communication, using the year saved to gain full-time experience and earn a salary in the field.	PDF	Fall 2021
Entertainment Arts Management BS / Business Administration MBA	Media Arts & Design & LeBow College of	This highly attractive program option combines study in the management of the arts and entertainment industries along with the MBA degree. The program is designed to allow students to complete both the bachelor's degree and the MBA in five years.	PDF	Fall 2021

Environmental Engineering BSENE / Peace Engineering MS	College of Engineering	This program integrates peacebuilding into standard engineering curricula, expanding the role that engineers may play in addressing complex technical and sociopolitical challenges. It allows environmental engineering students to incorporate conflict sensitivity into their curriculum and gain skills and contextual knowledge necessary to consider the systems-level effects of environmental engineering projects on peace, social justice and equity.	PDF	Fall 2021
Global Studies BA / Business Administration MBA	College of Arts & Sciences / LeBow College of Business	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 an MBA. Students apply in their third year to Drexel's LeBow College of Business; those accepted begin working on their MBA as they complete their BA, getting their MBA 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.	PDF	Fall 2021
Global Studies BA / Strategic & Digital Communications MS	College of Arts and Sciences	The accelerated BA in Global Studies and MS in Strategic and Digital Communications 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.	PDF	Fall 2021
History BA / Law JD	College of Arts and Sciences / Kline School of Law	This accelerated degree program combines the BA in HIST in CoAS and the JD offered by the Kline School of Law. It is a "3+3" program, allowing qualified students to earn both their BA in HIST and their JD in 6 years. The study of history provides a strong foundation for success in law school.	PDF	Fall 2021
Law JD / Business Administration MBA		The JD/MBA Program prepares students for leadership roles as business executives, investors, transactional attorneys or litigators. Students take courses at the law school and Drexel's LeBow College of Business and earn degrees from both.	PDF	Fall 2021

Marketing BSBA / Strategic & Digital Communication MS	LeBow College of Business / College of Arts & Sciences	Marketing is one of the most dynamic areas of business because it focuses on satisfying the ever-changing wants and needs of people. Professional marketers research and identify target audiences, develop products and services, formulate pricing strategies, develop advertising and promotional campaigns, and implement methods of distribution so that customers receive products and services where and when they want them. The ability to communicate effectively is one of the most sought-after skills by prospective employers industry wide. Graduates of the accelerated degree enter the workforce one year sooner with the benefits of a master's degree in strategic and digital communication, using the year saved to gain full-time experience and earn a salary in the field.	PDF	Fall 2021
Mechanical Engineering BSME / Materials Science Engineering MSME	College of / Engineering	Drexel's Department of Mechanical Engineering and Mechanics (MEM) prides itself on providing its undergraduate students with a comprehensive program of courses, laboratories, design projects, and co-op experiences. The curriculum is designed to balance technical breadth (provided by a set of fundamental required core courses) with technical depth (provided by optional concentrations that emphasize particular fields within the profession). The graduate program in Materials Science & Engineering aims to provide an education which encompasses the most recent knowledge base in the materials science and engineering fields in a format suitable for individuals seeking careers in academia and/or industry.	PDF	Fall 2021
Mechanical Engineering BSME / Peace Engineering MS	College of / Engineering	This program integrates peacebuilding into standard engineering curricula, expanding the role that engineers may play in addressing complex technical and sociopolitical challenges. It allows mechanical engineering undergraduate students to incorporate conflict sensitivity into their curriculum and gain skills and contextual knowledge necessary to consider the systems-level effects of mechanical engineering projects and designs on peace, social justice and equity.	PDF	Fall 2021
Nursing Leadership in Health Systems Management MSN / Business Administration MBA	Health Professions	The Drexel Online dual MSN in Nursing Leadership in Health Systems Management/ Master's Degree in Business Administration (MBA) program prepares nurses for a senior leadership role in a fast-changing, increasingly demanding healthcare environment. Designed for part-time attendance by working nurses, this program teaches graduates to solve problems, make decisions, resolve conflict, address legal/ethical issues, and operationalize the mission and goals of the health care delivery organization.	PDF	Fall 2021
Political Science BA / Law JD	College of Arts and Sciences / Kline School of Law	This accelerated degree program combines the BA in PSCI in CoAS and the JD offered by the Kline School of Law. It is a "3+3" program, allowing qualified students to earn both their BA in PSCI and their JD in 6 years. The study of government and politics provides a strong foundation for success in law school.	PDF	Fall 2021
Psychology BS / Law JD	College of Arts and Sciences / Kline School of Law	This accelerated degree program combines the BS in Psychology within COAS with the JD in Law within Thomas Kline School of Law. Through this program, potential BS/JD students may be identified when first admitted as entering freshmen psychology majors. Finally, this is a "3 + 3" program allowing qualified students to earn their BS and JD in 6 years.	PDF	Fall 2021
Sociology BA / Law JD	College of Arts and Sciences / Kline School of Law	This accelerated degree program combines the BA in SOC in CoAS and the JD offered by the Kline School of Law. It is a "3+3" program, allowing qualified students to earn both their BA in SOC and their JD in 6 years. The study of sociology provides a strong foundation for success in law school.	PDF	Fall 2021
Teacher Education BS: English / Teaching, Learning & Curriculum (Advanced Track) MS	School of Education	Offers a flexible, innovative curriculum with a unique emphasis on creative problem solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Elementary/PK-4) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching Learning and Curriculum (Advanced Track).	PDF	Fall 2021

Teacher Education BS: Secondary Mathematics / Teaching, Learning & Curriculum (Advanced Track) MS	School of Education	Offers a flexible, innovative curriculum with a unique emphasis on creative problem solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Elementary/PK-4) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching Learning and Curriculum (Advanced Track). The BS/MS in Elementary Teacher Education and Teaching Learning and Curriculum Advanced track prepares students academically and practically for careers in PK–12 teaching or other educational settings.	PDF	Fall 2021
Teacher Education BS: Secondary Social Studies / Teaching, Learning & Curriculum (Advanced Track) MS	School of Education	The BS/MS in Teacher Education with Secondary Education and MS in Teaching Learning and Curriculum offers a flexible, innovative curriculum with a unique emphasis on creative problem solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Secondary/Social Studies) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching Learning and Curriculum (Advanced Track).	PDF	Fall 2021

### New Undergraduate Courses

Course No.	Title	Description	Effective Term
ACCT 200	Emerging Issues in Accounting & Tax	This course focuses on emerging issues facing businesses with an accounting and tax lens. Using an experiential approach, the class will feature robust class discussions, research, and guest speakers in and outside the accounting profession to study select issues.	Fall 2021
ACCT 327	Financial Statement Analysis	In this course you will develop a deeper understanding of how to interpret and analyze a firm's financial statements to evaluate a firm's strategy, valuation, and sustainability. You will use traditional analysis and valuation tools including ratio analysis, trend analysis, and common sizing, as well evaluation of qualitative information. Additionally, you will learn and apply data analytics and visualization to convey financial information more effectively.	Fall 2021
ACCT 350	Accounting Information Systems	The rapid evolution of information technology (IT) is changing how accounting professionals work today. In this course you will gain a conceptual overview and hands-on experience with relevant topics including: Semantic modeling and event driven accounting information systems (AIS); development, documentation, internal control, and audit of AIS, with reference to the COBIT framework; XBRL and its role in financial reporting; the use of database management software and accounting software in developing modern AIS including the concept of enterprise resource planning/ enterprise system (ERP/ES).	Fall 2021
ACCT 420	Emerging Industry Analysis: Accounting Perspective	Examine and critically evaluate a select emerging industry from an accounting perspective. The course takes an experiential approach to accounting analysis using case studies, robust class discussions, and in-depth research. Students will apply their cross-disciplinary knowledge and skills to study the industry from historical, economic, social, and legal viewpoints as well as considering the value proposition to diverse stakeholders.	Fall 2021
AE 440	Responsive Urban Environments	This is a real-time Global Classroom that meets simultaneously in Philadelphia and Milan, Italy. The Responsive Urban Environment (RUE)looks at the city through the lens of ecosystem management. RUE considers the city as a complex network of interrelated systems that rely on each other to maintain system balance. RUE helps students understand the close relationship between the engineering design choices that take place at the scale of the building and neighborhood to the environmental impacts that occur at the wider scale of the urban level.	

AE 441	Bio-inspired Design	This course introduces bio-informed sciences into engineering design to help students develop engineering strategies for the built environment to promote human health and wellbeing. Topics covered include neuroscience, photobiology, biomimicry, biophilia, and chronobiology.	Fall 2021
ARCH 466	The Architectural Detail	This seminar will explore architectural detail as a key to understanding of the craft and intrinsic nature of time, technology and cultural importance of the building.	Fall 2021
ARCH 490	Capstone Project I	This course is the first part of a two-term capstone project consistent with the student's curricular concentration, and relevant to their professional and academic goals. This course is devoted to the research and writing of a capstone research paper on architectural theory, technology and/or design that will lead to the capstone project in the second term.	Fall 2021
ARCH 492	Capstone Project II	This course is the second part of a two-term capstone project consistent with the student's curricular concentration, and relevant to their professional and academic goals. This course is devoted to the continued research in architectural theory, technology and/or design and the completion and presentation of a capstone project.	Fall 2021
ARTH 331	Global Material Culture	Understanding "global" geographically and as a method of material culture analysis, this class examines how artifacts accrue new meanings, forms, and agencies as they circulate across cultures, and the social, political, and aesthetic implications of these processes.	
BLAW 320	and the Law	As technological advances continue to evolve, companies are often left to wonder what obligations they have to protect privacy. With the additional threats to privacy, legislatures and the courts are increasingly looking to protect personal data. This course will examine aspects of the evolving world of privacy and the law, including issues surrounding personal data of all forms (consumer, financial and biometric data; employment, health, education, social media and government records). Foundational privacy concepts and principles will be discussed, comparing the approaches to privacy domestically and abroad. At the end of the course, students will understand the core components of privacy, the cultural and legal variations in privacy law, and operational protections companies should give to privacy issues.	Fall 2021
BMES 455		The Medical Technology (MedTech) Innovation series of courses aim to take students on an international innovation journey from 'concept to commercialization' starting from R&D bench all the way to the healthcare trench. Undergraduates enrolled in MedTech I are introduced to fundamental concepts and established practices that underlie medical technology innovation in general, and technology assessment and due diligence in particular. This course is offered as part of the Global Innovation Partnership (GIP) curriculum.	Fall 2021
BMES 490	Senior Thesis: Capstone Design Experience	This course is for BS / MS seniors in biomedical engineering who are completing a thesis as their capstone design experience.	Fall 2021
BUSN 105		This course is an introductory course in using spreadsheets as a tool to solve business problems. Through a series of hands-on exercises, the student will create, edit, and format worksheets while addressing problems in each of the functional areas including: marketing, accounting, finance, sports management. Topics include: creating, saving, retrieving, formatting, editing, printing, creating formulas, using functions, naming cells and ranges, creating tables, creating charts, defining range names, validating data, sorting and filtering data, maintaining file organization, and using templates. Each week, students will apply their knowledge of spreadsheets to explore business frameworks and approaches which will aid them in their co-op's and higher-level coursework.	

BUSN 350	Thinking (A)Broad - An Intensive Course Abroad in Business	This course will provide students with a one-week global experience as an intensive course abroad (ICA). It will be combined with a pre- term or post-term program instruction during the term offered. Course themes will vary depending upon the location and topic of focus, as well as with any partnering institutions, universities or companies. Faculty approval is required and students must apply through the Drexel Education Abroad website. There will be a program fee for the travel portion of the course. This course can be taken as an Honors option with departmental approval. Examples include Global Projects and Teams in Germany, Global Sustainable Leadership in the UK, and Global Project Leadership in The Netherlands.	Fall 2021
CATX T280	Special Topics in Creative Arts Therapies	This course focuses on topics of current interest to faculty and students; specific topics for each term will be announced prior to registration. May be repeated for credit if topics vary.	Fall 2021
CATX T480	Special Topics in Creative Arts Therapies	This course focuses on topics of current interest to faculty and students; specific topics for each term will be announced prior to registration. May be repeated for credit if topics vary.	Fall 2021
CHE 381	Solutions to Climate Change	Climate change will likely be the most important challenge of our time. Drawdown is the theoretical point in the future when greenhouse gas concentrations in the atmosphere peak and then begin to decline, reversing the trend of global warming. Can we get there? How? We will examine the potential impacts of dozens of top solutions to understand where our actions have the most leverage. Solutions range from technical (green energy, buildings, and transportation) to non-technical (food choices and education). The best solutions not only mitigate global warming but also lead to economic benefits and a more just and equitable society.	Fall 2021
COM 250	Diversity in Media	Students are invited to examine how ideas about diversity and diverse peoples in America and other places are created and experienced through media. The class will center around questions such as who creates and controls major images and ideas of diversity, and who consumes those ideas and why? How are social and ethnic groups recognized and how does that recognition change historically through various media? How do micro- and macro- politics of diversity play out in media and how do producers and consumers of media affect mainstream and non-mainstream ideas of diversity?	Fall 2021
CS 429	Software Defined Radio Laboratory	This laboratory course takes a Software-Defined Radio (SDR) implementation approach to learn about modern analog and digital communication systems. Software defined radio uses general purpose radio hardware that can be programmed in software to implement different communication standards. We will begin by discussing the basic principles of wireless radio frequency transmissions and leverage this knowledge to build analog and digital communication systems. Knowledge of these techniques and systems will provide a platform that can be used in the class project for further exploration of wireless networking topics such as cybersecurity, cognitive radio, smart cities, and the Internet of Things.	Fall 2021
EAM 215	Writing for Arts Managers	This course provides instruction and practice in a variety of written formats used in arts and entertainment. The course also covers writing for a variety of stakeholders.	Fall 2021
EAM 220	Law for Entertainment and Arts Management Managers	Examines the relationship between the arts and law, including intellectual property (copyrights and contracts), license fees, labor-management and representation agreements, liability, first amendment issues, business entities and fundraising	Fall 2021

EAM 221	Copyrights and	This law course for EAM students discusses topics relating to copyrights,	Fall 2021
	Trademarks	intellectual property rights, and royalties. The course will review the basic principal tenets of copyright and trademark law and the practical aspects as applied to entertainment and arts-related issues. This course will provide you with a working knowledge of trademarks and copyrights and how these rights impact business issues in the arena of entertainment and art such as how copyright and trademark rights are created and protected, "work for hire" and related ownership issues, and how and when copyright and trademark rights are infringed.	
EAM 225	Financial Management for Entertainment & Arts Managers	This course explores the major elements of financial accounting in cultural institutions. Students will learn to perform accounting tasks, read and analyze financial statements, implement an effective financial control system in the specific context of arts & cultural organizations. Student will learn how to use financial information as part of a data-informed decision-making process.	Fall 2021
EAM 288	eSport Entertainment Management	As one of the fastest growing market sectors in electronic media, eSport has become an important field where entertainment management students can apply their skills. This 3-credit course explores the creation, monetization and management of eSport events.	Fall 2021
EAM 295	Streaming Entertainment Management	Streaming is transforming the electronic media landscape and providing unique opportunities for managers. This course explores the creative genres succeeding in streaming and how streaming content is conceived, sold, produced, exhibited, and distributed worldwide.	Fall 2021
EAM 308	Entertainment Promotion and Branding	This writing intensive course will provide students in-depth information about the essential area of publicity and promotion for the entertainment and arts industries. Through the art of public relations (PR), students will learn to maximize the potential for news coverage in print, electronic (radio, TV) and online sources. Focus will be placed on the process of writing for public relations and promotion in both style and content. By writing multiple drafts of biographies, press releases, pitch letters, students will hone skills to creatively present your message to media outlets, from local to international.	Fall 2021
EAM 338	Entertainment Enterprise	This course challenges students to learn how to conceive, plan, build and evaluate an entertainment/media business. Expanding upon information about business ideation and formulation, this course provides students with a learning lab where they can apply theory to practice in entertainment, arts and media enterprises.	
EAM 420	Arts, Culture and Society	Arts, Culture & Society examines the role of art's impact on society, exploring key cultural and public policy issues including community standards and censorship, and different approaches to public support and funding. Readings, videos, discussions and projects will explore questions as to the social functions of the arts, the use of art for advocacy and patronage over the world, and the impact of art on society and economic development. The geographic focus of this course is global and will compare art, including commercial entertainment and the media, and cultural practices and impacts from various cultures around the world.	Fall 2021
EAM 422	Human Resources in the Creative Industries	This course is designed to give students an overview of the human resources field and to share the many ways that the creative industries conform to and diverge from human resources norms that stem from other fields. In addition to equipping students with a general understanding of how to engage with and manage staff, this course will help students become better stewards of their own careers within the industry.	Fall 2021
ECE 304	Remote Sensing and Control	This course will teach students the various steps involved in the construct a fundamental remote monitoring and control system over a local area network and Bluetooth/Bluetooth Low Energy, from the ground up. The course will use hardware and software to accomplish this goal to enhance the student learning experience.	Fall 2021

ECE 310	Machine Learning Engineering Practicum	This course emphasizes how to gather data then train, test, and deploy practical machine learning systems using modern software libraries, with an emphasis on scikit-learn, Keras on TensorFlow, and TensorFlow Agents. After garnering working familiarity with learning architectures including linear regression, support vector machines, decision trees, and deep neural networks, students will shift to practicing techniques that leverage state of the art published models via transfer learning. This is a hands-on project-focused course integrating coding activities into lectures. To provide the broadest applicability, datasets will range from rich text, to financial time series, to sound, images, and video, as well as data garnered through game play.	Fall 2021
ECE 430	Software Defined Radio Laboratory	This laboratory course takes a Software-Defined Radio (SDR) implementation approach to learn about modern analog and digital communication systems. Software defined radio uses general purpose radio hardware that can be programmed in software to implement different communication standards. The course covers basic principles of wireless radio frequency transmissions and leverage this knowledge to build analog and digital communication systems. Knowledge of these techniques and systems will provide a platform that can be used in the class project for further exploration of wireless networking topics such as cybersecurity, cognitive radio, smart cities, and the Internet of Things.	Fall 2021
ECE 431	Modern Transistors	This course discusses the physics of the operation of modern transistors. It covers the operational principles of Bipolar Junction Transistors (BJTs), Heterojunction Bipolar Transistors (HBTs), Field Effect Transistors, (FETs), starting with MOSFETs. High Electron Mobility Transistors (HEMT) will also be discussed. Students will perform independent individual research on an (opto)electronic device of their choice, which they present to class through written and oral reports.	Fall 2021
ECE 432	Modern Photonics	This course will teach students the principles that underline the interaction of light and matter, leading to the understanding of the basis of operation of photonic devices such as lasers, LEDs, solar cells, and photodetectors. The course starts with how understanding of light spectrum that is generated due to heat started the development of the field of quantum mechanics by Max Planck. This is then to include a quantum theory of light, on which basis absorption, stimulated and spontaneous emission are explained. Interaction of light with semiconductors is analyzed and shows how lasers, LEDs and photodetectors work, and how modern photonics is able to solve great challenges of humanity, such as lighting or optical data communication.	Fall 2021
ECE 471	Introduction to VLSI Design	This is an introductory course where systematic understanding, design and analysis of digital VLSI integrated circuits will be covered. The course will begin with a review of CMOS transistor operation and semiconductor processes. Logic design with CMOS transistor and circuit families will be described. Specifically, layout, design rules, and circuit simulation will be addressed. Performance metrics will be analyzed in design and simulation.	Fall 2021
ECE 472	Custom VLSI Design & Analysis I	This is the first of two courses offered on Custom Very Large Scale Integration (VLSI) circuit and systems design and analysis. An understanding of VLSI integrated circuits is achieved through circuit design and analysis. This course focuses exclusively on high performance digital CMOS VLSI circuit and systems design, although some topics on mixed- signal circuits are also addressed.	Fall 2021

ECE 473	Custom VLSI Design & Analysis II	This is the second of two courses offered on Custom VLSI circuit and systems design and analysis. An understanding of VLSI integrated circuits is achieved through circuit design and analysis. This course focuses exclusively on high performance digital CMOS VLSI circuit and systems design, although some topics on mixed-signal circuits are also addressed. The primary focus is on-chip power management. Power generation techniques are discussed and different power converters are analyzed. Power distribution networks are presented with a focus on the different distribution architectures and output impedance characteristics. Techniques to reduce power supply noise are also provided. A secondary focus examines substrate noise in mixed-signal systems and techniques to reduce substrate noise.	Fall 2021
ECE 481	RF Passive Networks	This course will teach students the concepts of reflection and transmission on distributed transmission lines of TEM, quasi-TEM, and TE/TM from electromagnetic fields and related to phenomenological scalar V/I in frequency and time domains, while the graphical technique using Smith Chart is employed for design of narrowband and broadband distributed/ lumped impedance matching techniques. Multi-port network concepts of S/Z/Y matrices and utility of ABCD and T matrices are introduced from network perspective. Design, analysis, and synthesis of power dividers, dual directional couplers, and variety of filter design using insertion loss technique and their distributed realization at RF frequencies.	Fall 2021
ECE 482	RF Transceiver Electronics	This course will teach students the concepts of RF transceivers using active microwave circuits and discuss their interactions with radiating systems. The course covers linear RF electronic circuits of switches, phase shifters (dispersive and non-dispersive), limiters, amplifiers, oscillators (fixed and variable frequency), Mixer (single and balanced), and multipliers (resistive and reactive) realized using semiconductor devices (diodes/transistors). CAD simulations are a practical learning component and is designed to prepare students for various industrial design and telecommunication applications.	Fall 2021
ECE 483	Radiation and Lightwave Engineering	This course will teach students the concepts of antennas and photonics using electromagnetics and discuss their utility in design of telecommunications and remote sensing. Antennas are introduced in terms of E&M fields (radiation pattern, polarization), circuits (radiation impedance/admittance, efficiency, bandwidth), and system concepts (directive gain). Examples of line antenna (short electric/magnetic dipoles, arbitrary length dipoles, small loops, travelling and standing wave), array antennas (linear and planar), and aperture radiators (slot, patch, and reflectors). Lightwave propagation in optical fibers (step index, graded index, polarization maintaining) and dielectric structures (slabs, ridge waveguide, buried waveguides) are discussed.	Fall 2021
ECES 461	Medical Robotics	This course reviews the emerging multidisciplinary field of Medical Robotics. The course, which runs as a seminar, will review the technological, clinical, ethical and market perspectives of this rapidly evolving area of robotics and automation. A large variety of recent, clinically proven, therapeutic, and diagnostic medical automation systems and tools will be introduced, demonstrated, and analyzed. A brief review of introductory robotics concepts, terminology and background will be provided during the first few weeks of this seminar/course.	Fall 2021
EDUC 104	Supporting Learners through Classroom Partnerships	This 1-credit course works in partnership with local teachers to support Drexel students to work one-on-one and in small groups with K -12 students on particular learning goals. This course is repeatable for credit and requires background checks and clearances to work in schools.	Fall 2021
EDUC 106	First Year Seminar: A Case of Schools and Cities	In this course, students will examine the relationship between city school district and cities and the role of politics, race and poverty in school closings in a major US city.	Fall 2021

EDUC 107	First Year Seminar: Exploring Pedagogies	In this course, students will discuss the education landscape within and outside of the US focusing on the role of class, race and gender in perpetuating a range of structures and systems and the ways that many of those may not be designed to support all learners.	Fall 2021
EDUC 108	First Year Seminar: Designing Learning Spaces	In this course, students will examine how researchers design and implement learning activities and explore learning spaces as a way to foster engagement and youth empowerment.	Fall 2021
ESL 082	Reading and Vocabulary 8	<sup>8</sup> Reading and Vocabulary level 8 is an advanced English as a second language course (CEFR Level C1), which is designed to prepare students to read academic texts for undergraduate and graduate study. This is the final course in an eight-course sequence on developing academic reading skills. Students have to complete level seven or take a placement exam before taking this course. Successful completion of this course will result in completion of IEP reading and vocabulary.	Fall 2021
FIN 420	Emerging Industry Analysis: Finance Perspective	This course will be a seminar in analyzing a selected emerging industry from a finance perspective. It will require students to apply cross- disciplinary knowledge and skills to study the industry from historical, economic, social, and legal viewpoints. The course will use an experiential approach and apply financial analysis to analyze this industry through case studies, robust class discussions, and in-depth research.	Fall 2021
FYI 211	FYES Peer Leadership Practicum	The goal of this course is to prepare students for being leaders by serving as mentors to first-year students to help them succeed as part of the First-Year Exploratory Studies (FYES) Program and support the program outcomes of FYES. This course covers the fundamental skills students will need to be supportive resources to first year students. This seminar will focus on developing the necessary leadership and communication skills that will be useful in their mentoring role as well as in other settings.	Fall 2021
GST T180	Special Topics in Global Studies	Topics decided upon by faculty will vary within the area of study.	Fall 2021
HNRS 210	Mentorship I	Students will receive an overview of what it means to be a leader and how to support the first year student experience including: preparing for Honors Student Orientation, mentor programming and best practices.	Fall 2021
HNRS 220	Mentorship II	Students will survey leadership models and explore topics including group dynamics, maintaining successful interpersonal relationships and conflict resolution.	Fall 2021
HNRS 410	Mentorship Practicum I	Students will participate in the Honors Mentor Program and complete mentorship programming requirements that will support first year students through academic and social initiatives.	Fall 2021
HNRS 420	Mentorship Practicum II	Students will participate in the Honors Super Mentor Program and complete mentorship programming requirements that will support first year students through academic and social initiatives as well as initiatives to oversee other upperclassmen mentors.	Fall 2021
HNRS 430	Community Engagement	Students will explore community based initiatives and will unpack what community means to them in the context of Drexel, Philadelphia and the world around them.	Fall 2021
HRM 410	Current Topics in Hospitality	The course provides an opportunity for students to engage with members of all segments of the hospitality industry to discuss their careers and the current state of each industry segment from a professional perspective.	Fall 2021
HSAD 314	Aging in a Global Context	This course explores essential aspects of aging and provides a multidisciplinary perspective on global aging. It provides an important context for understanding the global patterns of aging around the world, including the demographic and epidemiological patterns. The course emphasizes how these changes have affected the support and services for those over 60 around the world. International efforts to address the emerging global opportunities and challenges related to population aging will also be discussed. The course will cover specific programs and patterns in specific countries.	Fall 2021

HSCI 380	Strength and Conditioning	This course addresses the selection and implementation of strength, power, speed, agility, endurance, and hypertrophy training methods with an emphasis on periodization programs. Components of the course include discussion of physiological principles and strength assessment as they relate to resistance exercise training.	Fall 2021
HSCI 381	Exercise for Clinical Populations	This course builds upon the foundational principles of exercise testing and prescription in clinical populations living with various forms of cardiovascular, metabolic, and inflammatory chronic diseases and health conditions. The impacts of exercise on each condition are examined, along with the special considerations required when prescribing exercise for people in the discussed conditions.	Fall 2021
LAW 101	Law & Society	This course analyzes "law in action": how law works in the everyday lives of individuals and institutions by exploring the complex place of law and legal institutions in the United States. We will examine official legal institutions (such as courts and legislatures) and actors (including police, lawyers, judges) as well as the individuals whose lives are affected by law — those of us who come in contact with law as plaintiffs, witnesses, victims, or defendants. We will address the role that law plays in organizing contemporary life, including its influences on social and political interactions, how law constructs and responds to differences, and mediates, remedies, and reinforces unequal access to power.	Fall 2021
LAW 102	Law Lab	This course provides opportunities for students to see how law operates in a variety of settings, from prisons to boutique law firms. Class meetings will include trips to museums, courtrooms, and legislatures, guest lectures by legal professionals, and other hands-on, experiential learning activities.	Fall 2021
LAW 110	American Legal Systems	This course provides a comprehensive introduction to the American legal system and exposes students to the multiple forms of lawmaking and sources of legal and regulatory power present in America today. Students will learn to differentiate between common law created by judges, statutes and laws created by the legislature, and regulations promulgated by executive agencies. The class will explore the relationship between federal and state law, the role of federalism and the legal underpinnings of the checks and balances system that aims to keep equilibrium between the judicial, legislative, and executive branches. The course will also examine the American system of litigation and the structure of the court system, the jurisdiction of federal and state courts, and the litigation process.	Fall 2021
LAW 201		This class introduces students to the concept of common-law lawmaking, with focus on the areas of contract, tort (personal injury) and property. It will also address the history of how the common law developed from English law and provide a brief comparison to civil law systems used in other countries.	Fall 2021
LAW 210	Public Law: Legislation and Regulation	This course is intended to introduce the student to lawmaking through statutes and agency regulation in the modern regulatory state. The course will analyze how statutes are created and passed and provide students with an introduction to statutory interpretation. It will also introduce students to the administrative state, describing the relationship between administrative agencies and other branches of government and discussing the creation and enforcement of regulation.	Fall 2021
LAW 211	Public Law II	This course introduces students to foundational concepts in public law, such as the types of conflicts courts can adjudicate, how individuals and groups gain access to courts, identifying state actors, and the role of due process in legal proceedings.	Fall 2021

LAW 215	Law & Religion in America Today	Despite the official separation of church and state, religious questions often arise and need to be adjudicated in secular courts. This course explores which rights are protected by the Constitution's free exercise clause and examines the boundaries of religion and religious protections in a secular context. Specifically, the course examines the ways in which secular American courts handle issues that arise in communities that follow religious law but also use the civil courts to settle their disputes. Students will study the ways in which secular courts must decide questions from marriage and divorce to raising children and custody issues in a wide variety of faith communities and how those courts incorporate or distance themselves from the religious frameworks in which those disputes arise.	Fall 2021
LAW 301	Legal Reasoning	This class introduces students to the study of legal reasoning, including topics such as: the basic forms of argument, reasoning and inference typically found in legal materials; the nature of precedent and the relationship of normative arguments in law to conceptions of justice.	Fall 2021
LAW 304	Comparative Legal Institutions	This course complements students' study of US law by expanding their understanding of international legal systems, institutions, and individual and group rights. Students will learn about judicial institutions in various nations and examine how similar issues are handled in countries with different legal structures and guarantees.	
LAW 305	Mediation, Arbitration, and the Law of Alternate Dispute Resolution	This course explores the theory, practice and law of mediation and arbitration, with an emphasis on the roles that both non-lawyers and lawyers play in these processes. The course will include simulated mediations and arbitrations to foster a deeper understanding of the material and to develop skills in resolving disputes without litigation.	Fall 2021
LAW 310	Environmental Law	This course focuses on how legal institutions have been used to respond to environmental problems. It provides a basic introduction to federal environmental laws relevant to air and water pollution, hazardous and solid waste and endangered species.	Fall 2021
LAW 312	Immigration Law	This course examines how the U.S. immigration system makes legal determinations about who is permitted to enter the United States, and who is forced to leave. Readings focus on statutes, court cases, and administrative regulations to understand how immigration law functions in theory and in practice.	Fall 2021
LAW 340	Regulating the Commons	This course focuses on the notion of the commons and how commonly owned resources should be regulated. It focuses on environmental regulation as the paradigm of commons regulation before turning to the notion of regulating the "cybercommons".	Fall 2021
MEM 321	Fluid Mechanics II	Covers differential analysis of fluid flow, including the Euler's equations, potential flows, and the Navier-Stokes equations; angular momentum and its application to turbomachinery; external flow and boundary layers, and an introduction to compressible flow.	Fall 2021
MENA T280	Special Topics in Middle Eastern and North Africa Studies	Topics decided upon by faculty will vary within the area of study.	Fall 2021
PBHL 422	Health and Human Rights Research Methods	This seminar focuses on the application of human rights norms and tools to public health and particular challenges within public health. Building upon human rights frameworks, we will discuss current debates about the usefulness of a "human rights approach" to health, the methods and ethics of health-related human rights research, and case studies of human rights investigations and advocacy. The case studies are intended to examine how human rights abuses, including violations of economic and social rights and civil and political rights, can be understood as determinants of health.	Fall 2021

PENG 445	Introduction to Peace Engineering	Developed in partnership with professional peacebuilders from the PeaceTech Lab and USIP's Academy for International Conflict Management and Peacebuilding in Washington, DC, this course introduces engineering students to the concepts and skills practiced in the field of international peacebuilding and conflict transformation. This course provides students with first-hand accounts of peacebuilders describing challenges and opportunities in their work, short presentations outlining key theories and concepts that guide that work, and opportunities to think about how this knowledge, skills, and attitudes can be applied to real-life peacebuilding dilemmas.	Fall 2021
PENG 450	Conflict Management for Engineers	As the pace of science and technology innovation increases, so too does the role of engineers in solving some of the world's toughest challenges. The prevention of violent conflict and the pursuit of a sustainable peace is just such a challenge. Developed in partnership with professional peacebuilders from the PeaceTech Lab and the US Institute of Peace's Academy for International Conflict Management and Peacebuilding in Washington, DC, this course introduces engineering students to the concept and skills they will need in order to use technology expertise in service of conflict-affected communities.This course provides students with an introduction to the theory and practice of conflict analysis, strategic peacebuilding and negotiation.	Fall 2021
PROD 240	Smart Product Design	To explore ideas around tangible interaction, this course will introduce the smart product development process and combine basic microcontroller programming with digital application development to conceptualize responsive products, environments, and/or materials. Students will design and prototype functional devices that operate using embedded technologies that enhance user experience.	Fall 2021
PROD 265	Introduction to CAD Product Design	Introduces the creation and manipulation of three-dimensional digital models and the resultant two-dimensional drawings using computer techniques.	Fall 2021
PRST 331	Workforce Diversity and Inclusion	In this course, students will begin with a foundational look at diversity and inclusion in the workforce, examine their own perceptions, and examine companies with varying degrees of success in fostering D&I- and consumer trust-in order to learn from successes and failures. This course will take a practical approach, asking students to analyze scenarios drawn from real life to identify best practices and skills needed to demonstrate teamwork capabilities in today's workforce.	Fall 2021
PSCI 338	Cities and Climate Change	In this course we will survey the known and emerging impacts of climate change on cities. We will learn key concepts and paradigms that are used by urban climate change experts. We will examine case studies that highlight the interdisciplinary and cross-sectoral approaches used to address urban climate change. These include local and regional policies, nongovernmental and governmental research, and experiments at the intersection of health, ecology, and infrastructure.	Fall 2021
PSY 427	Behavioral Neuroeconomics	This course examines the convergence of neuroscience, psychology, sociology, and economics and how it is used to investigate and explain the effects of psychological factors on decisions and their deviations from the rational. This course will draw heavily on recent evidence from brain- imaging techniques, especially as they explain and expand on the models of early behavior economists.	Fall 2021
REMD 340	Urban Finance and Environmental Planning	This course has a quantitative focus and covers topics at the intersection of urban finance, city planning, and urban environmental policy. Students interested in careers as developers, planners, elected officials, regulators, and members of nonprofit advocacy groups will learn how to design and evaluate policies that affect the real estate sector of urban economies.	Fall 2021

SOC 281 Gentrification Neighborho		This course examines the rise, fall, and change of urban neighborhoods. Students will be introduced to key debates surrounding processes such as neighborhood disinvestment/decline, urban renewal, and gentrification. Course content will focus on the consequences of neighborhood change for urban communities. Students will learn to weigh the positive and negative,	Fall 2021
		and the real and perceived consequences of gentrification, as well as evaluate urban policies for managing neighborhood change.	
TAX 411 Tax Resear	rch	In this course you will develop the skills of tomorrow's tax consultant to maintain your edge in providing value to the client in an efficient and effective manner. That value is to professionally resolve a tax issue by means of thinking creatively, conducting basic research using primary tax authority sources, communicating findings in a concise manner, and maintaining ethical standards.	Fall 2021
TAX 425 Tax & Busir	ness Strategy	The adage is that there are only two things that are guaranteed: Death and Taxes. Since taxes influence each of us daily, it is important to have an appreciation for the tax law and how it influences a person or a business. Students will apply their cross-disciplinary knowledge and skills to study the intersection of strategy and taxes. This course does not attempt to make a person a tax accountant but rather a businessperson with the savvy to ask the rights questions.	

#### **New Graduate Courses**

Course No.	Title	Description	Effective Term
ABA 780	Capstone in ABA I	This course is the first of a two-part capstone sequence for students in the Master's in ABA program. In this course students will conceptualize and design a research project using single subject design methods. By the end of this course, students will have secured a site for data collection, conducted a literature review, and designed a methodology for their proposal.	Fall 2021
ABA 781	Capstone in ABA I	This course is the first of a two-part capstone sequence for students in the Master's in ABA program. In this course students will conceptualize and design a research project using single subject design methods. By the end of this course, students will have secured a site for data collection, conducted a literature review, and designed a methodology for their proposal.	Fall 2021
AE 540	Responsive Urban Environments	This is a real-time Global Classroom that meets simultaneously in Philadelphia and Milan, Italy. The Responsive Urban Environment (RUE) looks at the city through the lens of ecosystem management. RUE considers the city as a complex network of interrelated systems that rely on each other to maintain system balance. RUE helps students understand the close relationship between the engineering design choices that take place at the scale of the building and neighborhood to the environmental impacts that occur at the wider scale of the urban level.	
AE 541	Bio-inspired Design	This course introduces bio-informed sciences into engineering design to help students develop engineering strategies for the built environment to promote human health and wellbeing. Topics covered include neuroscience, photobiology, biomimicry, biophilia, and chronobiology.	Fall 2021
AE 555	Data Acquisition and Analytics in Built Environment	Introduces concepts on data acquisition, data storage and data analytics in the context of built environment. Students will be learning sensor technology and database design and operation in buildings, as well as novel concepts of leveraging data science for engineering challenges.	Fall 2021
BACS 542	Addictions Practicum Supervision II	This course facilitates student development of foundational skills necessary for the practice of an advanced addictions counselor. Students are expected to spend two hours weekly in group supervision (with an approved supervisor) and 10 hours of addictions counseling practice.	Fall 2021

BACS 543	Addictions Practicum Supervision III	This course facilitates student development of foundational skills necessary for the practice of an advanced addictions counselor. Students are expected to spend two hours weekly in group supervision (with an approved supervisor) and 10 hours of addictions counseling practice.	Fall 2021
BACS 573	Group Dynamics and Techniques	This course prepares students to develop advanced skills necessary for group facilitation. Students engage in readings, didactic learning, and experiential activities to develop their group facilitations skills.	Fall 2021
BACS T580	Special Topics in Behavioral & Addictions Counseling	This course focuses on topics of current interest to faculty and student in the fields of behavioral and addictions counseling; specific topics for each term will be announced prior to registration. May be repeated for credit if topics vary.	Fall 2021
BIO 701	Bioscience Grant Writing	This writing-intensive course provides the fundamentals to write effective research grant proposals for graduate students with research thesis projects in life and environmental sciences. The course focuses on grantsmanship skills and mechanics, and trains students in articulating well-reasoned hypotheses and clear rationales, as well as organizing and discussing experimental approaches, caveats, outcomes and interpretations. Through peer-partner work, mock review panels and fosters the critical self-awareness that is necessary for successful grant applications. The course will equip students with skills for competitive fellowship applications, and careers that involve research project design and presentation.	Fall 2021
BIO 740	Readings and Critical Thinking in Biology	A course for first year graduate students emphasizing communication skill sets necessary to excel in Biology and related Graduate Programs. Students will become skilled in critically reading and presenting primary literature, presenting their own research to a scientific audience and generating proposals for interdisciplinary studies.	Fall 2021
BMES 555	Biomedical Additive Manufacturing	Additive manufacturing, also known as 3D printing, is currently revolutionizing the way things are created and used in biomedical engineering, especially in the context of the regulated medical device industry. In this introductory course, we will focus on the materials and printing technologies used for additive manufacturing of medical devices as well as bioprinting, including developing skills needed for hands-on assembly and operation of extrusion-based 3D printing of low temperature polymers. The goal of this course is to provide students with basic hands- on skills and an overview of additive manufacturing in a biomedical engineering context, and to prepare students for independent research and investigation of more advanced topics in 3D printing of medical devices and implants.	Fall 2021
BMES 585	Medical Technology Innovation I: Devices	This course helps students gain exposure to medtech innovation culture and community by interfacing with innovators, prototype engineers, industrial designers, product and business developers, entrepreneurs, intellectual property, regulatory and legal professionals, and economic development experts and investors. Students are expected to study ecosystems that engender medical innovation and conduct due diligence on actual companies in terms of technology, management, and commercialization viability. Through this course, the medtech innovation journey comes alive; as a bonus, students expand their medtech networks and outreach to innovation industry.	Fall 2021
BMES 870	Graduate Research Talks	This course provides a structured forum for graduate students to present their ongoing research and provide feedback and critiques to their peers.	Fall 2021

BST 675	Statistical Consulting Lab	The objective of this course is to introduce biostatistics graduate students to the practical aspects of statistical consulting and to provide practical statistical consultant experiences. These experiences will facilitate student's understanding of the roles and responsibilities of biostatisticians in the context of collaborating or serving as statistical consultants with scientists from other disciplines. Through peer consulting experiences with students from around campus, students in this class will gain valuable experience including practicing oral and written communication skills, developing statistical analysis plans and evaluating analytic methods and data summaries.	Fall 2021
BST 875	Statistical Consulting Lab	The objective of this course is to introduce biostatistics graduate students to the practical aspects of statistical consulting and to provide practical statistical consultant experiences. These experiences will facilitate student's understanding of the roles and responsibilities of biostatisticans in the context of collaborating or serving as statistical consultants with scientists from other disciplines. Through peer consulting experiences with students from around campus, students in this class will gain valuable experience including practicing oral and written communication skills, developing statistical analysis plans and evaluating analytic methods and data summaries.	Fall 2021
CATX 528	Family Systems and Adult and Older Adult Assessment and Treatment Planning	This course examines the interactions between family systems theory and current assessment and treatment practices in art therapy and counseling with adults and older adults. The principles and application of artistic and psychological development for clients, informal and formal art therapy assessments, interdisciplinary counseling assessments, applications of art media properties and methods to clientele needs, and how to build rapport in the therapeutic relationship are all studied and applied experientially. The impact and intersectionality of lived experiences, culture-bound views and values, and wellness and resilience will all be considered as well. Students will be introduced to treatment planning conceptualization methods and goals via practicing and applying clinical documentation experientially.	Fall 2021
CATX 529	Family Systems and Children and Adolescent Assessment and Treatment Planning	This course examines the interactions between systems theory and current assessment and treatment practices in art therapy and counseling with children, adolescents, and their families and/or caregivers. The principles and application of artistic and psychological development for clients, informal and formal art therapy assessments, interdisciplinary counseling assessments, applications of art media properties and methods to clientele needs, and how to build rapport in the therapeutic relationship are all studied and applied experientially. The impact and intersectionality of lived experiences, culture-bound views and values, and wellness and resilience of clients and their family systems will all be considered as well.	Fall 2021
CATX 703	Interdisciplinary Seminar I	This course is one in a series of three seminars in which students study the inter-relatedness between collective interdisciplinary bodies of knowledge and the CATs. The seminar is also to be viewed as a venue for identifying knowledge gaps in the CATs and generating original research topics. This seminar addresses the study of the interface between aesthetics, creativity and narrative and related implications for the CATs.	Fall 2021
CATX 704	Interdisciplinary Seminar I	This course is one in a series of three seminars in which students study the inter-relatedness between collective interdisciplinary bodies of knowledge and the creative arts therapies (CAT). This seminar addresses the intersection between psychology, biology, and neuroscience and the CATs. The implications of study in these bodies of knowledge are considered for development of epistemology, theory and practice in the CATs.	
CATX 705	Interdisciplinary Seminar III	This course is one in a series of three seminars in which students study the inter-relatedness between collective interdisciplinary bodies of knowledge and the creative arts therapies (CAT). This seminar addresses the study of the interface between the tenets of anthropology, sociology, cultural diversity, and, the CATs. The study of how embedded cultural thought, semiotics, and healing practices, relate to theory, practice and research in the arts therapies will be the focus of the seminar.	Fall 2021

CATX 712	Research	This course is the first in the doctoral research sequence. It introduces the student to the philosophical, socio-cultural, and theoretical contexts for social science research and methods. The course introduces students to the ontology, epistemology, and axiology of various perspectives of research. The role of these research worldviews in creative arts therapies research is examined.	Fall 2021
CATX 715	Research Methodologies	This course introduces current trends in research approaches for the Creative Arts Therapies and related fields. The philosophies and methods for mixed methods research, program evaluation, and other emergent approaches are discussed. Students also explore innovative approaches to design, data collection and data analysis based on their own research interests.	Fall 2021
CATX 716	Inquiry	This course introduces methods of self-directed learning through creative processes. The course consists of three parts: 1) creative exploration; 2) personal and group reflection, notation, and sharing; and 3) emotional, cognitive, sensory-motor, artistic, and interpersonal small group experiences. Appropriate readings will be collaboratively sought and shared by all participants to parallel the emergent scholarship and information-seeking practices of the students and a final, arts-based synthesis will be presented to peers and the instructor.	Fall 2021
CATX 717		This course introduces arts-based research for application in the Creative Arts Therapies as well as other healthcare and education disciplines. This course includes a critical review of arts-based research literature and aligning arts-based research methods appropriately with student research questions.	Fall 2021
CATX 804		This course focuses upon choosing a research topic for the dissertation. The topic will be chosen with ongoing faculty advisement. Once the topic is chosen the student prepares a dissertation proposal outline that includes the identification of the problem to be studied, the purpose of the study, the rationale, the methodology and the research question. The proposal outline must be approved by the program faculty. Following approval by the faculty the student begins writing their dissertation proposal.	
CATX 805		In this course, with faculty advisement, the student writes the dissertation proposal. In addition, the student finalizes their dissertation committee during this term. The proposal is submitted to the dissertation proposal committee and the oral defense of the proposal takes place. The student must pass the oral proposal defense in order to register for CATX 806.	Fall 2021
CATX 806		In this course the student revises the dissertation proposal based upon the results of the Dissertation Proposal Defense and the dissertation format selected. The student prepares materials for IRB submission and approval. Once the dissertation is approved by the IRB, and with the advisement of the Supervising Professor, the student establishes a data management system and begins data collection.	Fall 2021
CATX 807		This course includes the final stages of the dissertation during which the data collection is completed, the data is analyzed, the manuscripts, results and discussion chapters are written and the final dissertation is defended in an oral examination.	Fall 2021
CATX 808		The practicum provides the practical application component of the doctoral program. The aim of the practicum courses is to transform the knowledge learned to this point in the doctoral program into practical application and research experiences in the Creative Arts Therapies fields.	Fall 2021
CATX 809		This practicum course is a continuation of CATX 808 Practicum I and provides the practical application component of the doctoral program. The aim of the practicum courses is to transform the knowledge learned to this point in the doctoral program into practical application and research experiences in the Creative Arts Therapies fields.	Fall 2021

CATX 812	Teaching Practicum	The teaching practicum provides the opportunity for students to develop aptitudes and skills related to teaching in higher education including teaching philosophy, curriculum development, course construction and prep, in-class teaching experiences, pedagogical approaches, advisement, mentoring, supervision, and evaluation. The goal of the practicum is to prepare students for positions of leadership in academia in the Creative Arts Therapies fields.	Fall 2021
CFTP 710	Advanced Legal and Ethical Implications in Couple and Family Therapy	This course builds on foundational knowledge of couple and family therapy professional ethics through an in-depth examination of: 1) the AAMFT Code of Ethics and related state and federal laws, 2) ethical reasoning and decision-making, and 3) key current ethical and legal issues relevant to advanced clinical practice, clinical administration and supervision, and clinical education.	Fall 2021
CFTP 740	Systemic Approaches to Addiction	This course will provide an in-depth exploration of the effects and consequences of addiction across multiple systems including family, community, and society. Its purpose in the program of study is to support the application and advancement of family therapy theory and practice in the prevention, treatment and recovery support for families impacted by substance use and addiction.	Fall 2021
CFTP 743	Trauma Theory and Models with Vulnerable Populations	This course reviews models of trauma and the various ways that trauma may intersects with various aspects of social location and identity, as well therapeutic models for the provision of trauma-informed and socially just mental healthcare services.	Fall 2021
CFTP 750	Professional Development and Leadership	This course prepares doctoral students for leadership roles in the field of couple and family therapy, with a focus on administrative skills and roles. Course content areas include leadership styles and theories, navigating the job application process, licensure and certification, and key skills for leadership and administration in clinical organizations.	Fall 2021
CFTP 765	Grant Writing for Program Development	This project-based course is designed to teach students about the importance of grant-writing in their role as a professional and leader in the field of the couple and family therapy. Students will gain the essential knowledge and skills to write and submit a competitive grant proposal for the purpose of program development to a foundation or government agency. This will include identification or creation of a fundable project in their content area, research and assessment of funding sources, collaboration with other professionals, writing a proposal that includes a budget, and completing a proposal package that is submitted to the funder of their choice.	Fall 2021
CFTP 800	Portfolio Planning and Development	The Portfolio Planning and Development course is intended to prepare students for Capstone I,II,II and ensure the student has support in 1) developing a feasible plan meet capstone portfolio requirements and 2) making progress on portfolio tasks that require long-term development across the first two years of the program and 3) tailoring their capstone portfolio to represent their professional goals. The capstone portfolio will represent professional development across four professional domains: 1) Scholarship, 2) Teaching, 3) Clinical Practice, and 4) Citizenship, Leadership, and Service.	Fall 2021
CFTP 810	Capstone Portfolio I	The Capstone Portfolio course requires each student to create an electronic professional portfolio to synthesize and demonstrate key knowledge and professional accomplishments in the domains of 1) Scholarship, 2) Teaching, 3) Clinical Practice, and 4) Citizenship, Leadership, and Service. In this first of three Capstone Portfolio Courses, the student chooses two of the four portfolio professional development domains to focus on and will work on completing the tasks/subsections within each. The student will work closely with a faculty advisor throughout this process.	Fall 2021

CFTP 811 (		The Capstone Portfolio course requires each student to create an electronic professional portfolio to synthesize and demonstrate key knowledge and professional accomplishments in the domains of 1) Scholarship, 2) Teaching, 3) Clinical Practice, and 4) Citizenship, Leadership, and Service. In this second of three Capstone Portfolio Courses, the student completes the two remaining portfolio professional development domains including the tasks/subsections within each. The student will work closely with a faculty advisor throughout this process.	Fall 2021
CFTP 812 (		The Capstone Portfolio course requires each student to create an electronic professional portfolio to synthesize and demonstrate key knowledge and professional accomplishments in the domains of 1) Scholarship, 2) Teaching, 3) Clinical Practice, and 4) Citizenship, Leadership, and Service. In this third of the Capstone Portfolio Courses, the student will finalize their capstone portfolio, submit it for faculty review, and give a presentation on their portfolio accomplishments and experience. The student will work closely with a faculty advisor throughout this process.	
		Climate change will likely be the most important challenge of our time. Drawdown is the theoretical point in the future when greenhouse gas concentrations in the atmosphere peak and then begin to decline, reversing the trend of global warming. Can we get there? How? We will examine the potential impacts of dozens of top solutions to understand where our actions have the most leverage. Solutions range from technical (green energy, buildings, and transportation) to non-technical (food choices and education). The best solutions not only mitigate global warming but also lead to economic benefits and a more just and equitable society.	Fall 2021
	Research Methods	This seminar focuses on the application of human rights norms and tools to public health and particular challenges within public health. Building upon human rights frameworks, we will discuss current debates about the usefulness of a "human rights approach" to health, the methods and ethics of health-related human rights research, and case studies of human rights investigations and advocacy. The case studies are intended to examine how human rights abuses, including violations of economic and social rights and civil and political rights, can be understood as determinants of health.	Fall 2021
	Sexual Orientations And Health	This course is intended as a first survey course that covers various health concerns and disparities associated with sexual orientations (focusing on the concerns of sexual minorities), ranging from mental health to HIV/ AIDS to intimate partner violence. The paradigm that we will adopt as the foundation for our weekly discussions will emphasize how behaviors and outcomes are related to stress and stigma and other social determinants that sexual minorities experience as marginalized communities.	Fall 2021
	Health	This course is intended as a first survey course that covers various health concerns and disparities associated with sexes and genders (focusing on the concerns of gender minorities), ranging from violence to substance abuse to access to care. The paradigm that we will adopt as the foundation for our weekly discussions will emphasize how behaviors and outcomes are related to stress and stigma and other social determinants that gender minorities experience as marginalized communities.	Fall 2021
CIVE 512		Covers properties, species and grades of wood; definitions and general principles of wood and timber design including light wood frame construction and mass timber (CLT) construction; analysis and design of simple joists/beams and girders for flexure, shear, deflections, and bearing; analysis and design of compression and tension members, and beam-columns; shear walls and horizontal diaphragms; sustainability of mass timber construction; simple connections. The focus will be on the ASD method with a few examples using the LRFD method.	Fall 2021

CIVE 708	Fundamentals of Structural Dynamics	Covers formulation of equations of motion, free vibration response, undamped and damped systems, harmonic analysis, resonance and vibration isolation, response to periodic loading, impulsive loading, response to general dynamic loading, shock and response spectra. Introduces multi-degree-of-freedom systems.	Fall 2021
COM 574	Organizational Communication in Project Management	Organizational communication is relevant for all types of sectors and institutions be it governmental, healthcare, for-profit or not-for-profit. In this context, project management is a required skill to accomplish team goals. Whether you are the leader of the team or a contributor - effective organizational communication is the number one skill needed by all team members. In this course, we will explore how to properly communicate with leaders, team members, stakeholders and more while exploring best practices for various types of project communication - including daily briefings, email updates, demos, executive summaries and more.	Fall 2021
COM 614	Social Media Concepts that Matter	Social media is volatile. This course examines the concepts that reflect "logics" through which the current media ecosystems work. This course, drawing on theoretical concepts, discusses how these fundamental logics play out or "matter" differently for media producers and users, consumers, readers, or audiences, and a potential tension between constituents that are involved in the media production and consumption. These logics are encapsulated in theory-based broad platform-specific affordances mapped onto practices in which users and media organizations operate in social media. Media organizational practices in their social and technical contexts are juxtaposed to the user or audience practices, that are currently mediated through automated and algorithmic means prevalent in social media.	Fall 2021
COM 615	Media Environments in a Digital World	This course examines theories of media environments and the application of those theories to our experiences living in a densely mediated world. We will examine media as media ecologists, focusing on how human thought and action are shaped through interactions with our media environments. We will define media in the broadest possible definition, including but not limited to communication, technology, literacy, the arts, and education.	Fall 2021
COM 651		Understanding the foundations of the policies, laws and regulations that govern media and communication has become a necessity in the everyday lives of consumers and citizens and crucial knowledge for communication professionals. Issues like 'Net neutrality', 'breaking up big tech', 'algorithmic privacy breaches' and 'trust in (public) media' reflect the increasingly complex communications patterns and industries. This course offers an overview of media and communication policy, law and regulation from a critical perspective. We interrogate the regulatory and judicial systems that administer and interpret media policies, and the public policy apparatus those relationships create. Drawing on academic research and case studies, we assess American media law and policy in light of 'the public interest'.	Fall 2021
CRTV 505	Creative Interdisciplinary Team Research: Principles and Practice	Course provides fluency with the foundational principles and processes that demonstrably enhance creative practice and problem-solving skills in interdisciplinary research teams. Students learn to identify and develop new, useful and high-quality ideas and products while practicing those skills and working as a member of an interdisciplinary team. A strong focus on theoretical principles of group dynamics provides the framework for participants to understand and experience best practices characteristic of highly productive collaborative research endeavors. Students with complementary interests work in teams to design an interdisciplinary project with STEM and social/educational components and apply learned concepts.	Fall 2021

CRTV 506	Enhancing the Creativity of a Research Project	Course facilitates the development of a research idea. Participants learn proven creative practices to enhance their independent, problem-solving creative ability as practiced through developing a research project such as the selection of a thesis topic, an original research proposal, or the writing of a grant proposal. Students are required to formulate at least one potential research topic to iterate upon, develop, and hone.	Fall 2021
CS 523	Cryptography	Covers the underlying algorithms behind symmetric key and public key cryptography. Students will learn the underlying mathematics behind the algorithms and the necessary issues involved when implementing these algorithms. A variety of cryptosystems and methods of attack will be implemented and analyzed. Assumes knowledge of linear algebra and discrete math.	Fall 2021
CS 629	Software Defined Radio Laboratory	This laboratory course takes a Software-Defined Radio (SDR) implementation approach to learn about modern analog and digital communication systems. Software defined radio uses general purpose radio hardware that can be programmed in software to implement different communication standards. We will begin by discussing the basic principles of wireless radio frequency transmissions and leverage this knowledge to build analog and digital communication systems. Knowledge of these techniques and systems will provide a platform that can be used in the class project for further exploration of wireless networking topics such as cybersecurity, cognitive radio, smart cities, and the Internet of Things.	Fall 2021
CT 500	Introduction to the Digital Environment	Examines the digital environment and the technology within it. Topics include: Digitization, cognitive technologies, software, agile management processes, leading in the digital environment, and digital innovation.	Fall 2021
CT 600	Cloud Technology	Covers the many technologies all part of cloud computing. Topics include: virtual machines, application development, storage, databases, security, monitoring, analytics, solution design and case studies about businesses leveraging cloud technologies.	Fall 2021
CT 605	Cloud Security and Virtual Environments	Covers the elements that form cloud computing and virtualization technologies used in digital environments. Offers ways to determine which cloud computing and virtualization technologies to use given business and organizational needs. Provides methodologies to evaluate threats and vulnerabilities on these technologies. Provides methods to select and evaluate protections to secure cloud computing and virtualization technologies while ensuring business needs are met.	Fall 2021
CT 610	Disaster Recovery, Continuity Planning and Digital Risk Assessment	This course addresses Disaster Recovery & Continuity Planning specific to Emergency Recovery Procedures by incorporating digital risk assessment based on assets valuation, vulnerability and threats. Techniques for development of disaster recovery plans, procedures and testing methods. Strategies used by businesses to assure that sensitive data will not be lost in the event of a disaster. Risk migration methods that security professional use to protect valuable digital assets will also be studies. Issues, designed to foster critical thinking, are explored, as well as the standardized approaches to digital risk management.	Fall 2021
CT 620	Security, Policy and Governance	Covers the many techniques and practices for leading security governance of digital assets and for leading the policies that protect digital assets. Provides an understanding of the need for security governance and security policies for ensuring the protection of availability, confidentiality and integrity in the digital environment.	Fall 2021
CT 630	Application Software Construction and Operation	Presents a management perspective on current issues and trends affecting development and production operation of software systems. Explores implications of composing software systems from existing parts and only writing new code where necessary. Examines the automation of the software development, release packaging, and operation workflow. Current topics include: composition of software systems, software reuse, open source software, software as a service, DevOps and automated operations. VMs and containers.	

CTCN 540	Approaches to Addictions and Recovery	This course will provide a basic foundation of the etiology, assessment, diagnosis, and the recovery and treatment of substance abuse and process addictions through bio-psycho-social models of theory and practice. Emphasis will be given to the transtheoretical approach of Motivational Interviewing and recovery models such the stages of change and mind- body approaches including the personal, social, and cultural attitudes and stereotypes that are often associated with chemical abuse and addictive behaviors and disorders.	Fall 2021
CTCN 560	Theory and Practice of Dance/Movement Therapy: Special Populations	This course will present a theoretical and experiential exploration of a variety of population specific foci in dance/movement therapy intervention examining how each area is interrelated and interdependent. Attention will be given to how dance/movement therapy theories are applied to practice in relationship to the following: (a) needs of specific populations, (b) socio-cultural and developmental considerations, (c) public policies, and (d) systems of health care.	Fall 2021
CTCN 651	Medical Dance/Movement Therapy	This course examines dance/movement therapy as a complementary approach for people with primary medical conditions. Using readings, experiential exercises, lecture, discussion and video formats, the course includes relevant theory from health psychology and mind/body perspectives, in order to motivate programming and research in this sub- specialty.	Fall 2021
CTCN 654	Crisis, Trauma, and the Body	This course will present the theory and practice of dance/movement therapy and counseling for crisis intervention and trauma. The roles, responsibilities, and techniques in providing trauma-informed interventions with individuals, groups, and community- based strategies will be highlighted. Prevention models utilizing approaches rooted in developmental affective neuroscience relevant to the mind-body impact of trauma will be of particular emphasis.	Fall 2021
ECE 531	Modern Transistors	This course teaches the underlying physics of the operation of modern bipolar and unipolar transistors which are used in modern electronics. This background is helpful for a) courses related to digital microelectronics, logical gates, memories, and sub circuits, and VLSI circuits; b) courses in analog electronics; and c) courses in microwave electronic systems.	Fall 2021
ECE 532	Modern Photonics	This course will teach students the principles that underline the interaction of light and matter, leading to the understanding of the basis of operation of photonic devices such as lasers, LEDs, solar cells, and photodetectors. The course starts with how understanding of light spectrum that is generated due to heat started the development of the field of quantum mechanics by Max Planck. This is then expanded by Einstein to include a quantum theory of light, on which basis absorption, stimulated and spontaneous emission are explained. Building on that work, we analyze light interaction with semiconductors and show how lasers, LEDs and photodetectors work, and how modern photonics is able to solve great challenges of humanity.	Fall 2021
ECE 603	Computing and Control	This course focuses on the practical aspects of implementing Computer Control using microcontrollers in such applications as: Automated Equipment, Robotics, Motor Control, Process Control and Aerospace. The course is essentially divided into two parts: (1) the computer in the loop and (2) addressing noisy measurements.	Fall 2021
ECE 613	Neuromorphic Computing	This course will cover the principles of neuromorphic computing. Topics will cover 1) fundamentals of spiking neural network (SNN), which mimics the computation in mammalian brain; 2) supervised and unsupervised learning algorithms for SNN; 3) novel applications of SNN, including in vision and time series processing; 4) architectures for implementing SNN in hardware, aka neuromorphic hardware; 5) introduction to non-volatile memory technologies to implement synaptic processing in neuromorphic hardware; 6) software stacks for neuromorphic computing; and 7) design challenges in dependable neuromorphic computing.	Fall 2021

EDEX 534         Foundations of Inclusive Education         This course provides an overview of the essentials of special education and hearing profiles. The course will cover the purposes and uses of behavioral profiles. The ecurse will cover the purposes and uses of the eligibility profiles. The course will cover the purposes and uses of behavioral profiles. The ecurse will cover the purposes and uses of the eligibility profiles. The ecurse will cover the purposes and uses of the eligibility profiles. The course will cover the purposes and uses of the eligibility provides of specific diabilities will also be highlyhed. Curricular, environmental and minimuction and performs address beam of providence of specific diabilities will also be highlyhed. Curricular, environmental and minimuction and elever models and universal design for learning ways individuals, counters of profiles and experiments of providence of specific diabilities will also be highlyhed. Curricular, environmentals, organizations, fluxinesses, and educational institutions are responding to the complex intersaction of the local and providence of specific diabilities and substantiability and deviden the exame specific profile of the example in an examinabile devidence of substantiability and disciplication and provides to good and instantiability and deviden the education on complantia global citates change and responses relating to citates change and mass pouldant cannon, in the education and specification of the education and responses relating to citates change and mass pouldant cannon impariation.         Fall 2021           EDGI 522         Measuring the World.         This course crucical yeaxines the role of ducation as a primary garet to escoleration to find and specific durate sharps and environs in the first part of the course, we familiarize ourselves with development measures of well-being and development measuresprotent through the explorati				
Clitzenship, Sustainabili, and Social JusticeIn the role that education plays in sustainabile development and examines the ways individuals, communities, organizations, businesses, and educational institutions are responding to the complex intersection of the local and global in the 21st Century. Students critically explore and evaluate educational approaches to global citizenship in the areas of sustainability and social justice. Students examine educational policies and responses relating to citizenship and sustainability, and develop the capacity to conceptualize global issues through global citizenship. policy, and teacher education in response to global citizenship, policy, and teacher education in response to global citizenship. policy and teacher education in response to global citizenship. and teacher education in response to global citizenship. policy and teacher education and teacher education and hational the socio-economic, cutitural and technological advancement of nations. In the first part of the course, we familiarize ourselves with development more broadly, and in doing so conceptualize various measures of development progress and review theoretical perspectives often utilized in this work. Next, we consider the linkages between education and national development.Fall 2021 the social development.EDGI 552Gender, Education, and International OrganizationsGender, Education, and protectively the relative play in global policy diadouses on shape policy, program planning, financing, implementation, and m	EDEX 534		and how to manage instruction for students with diverse learning and behavioral profiles. The course will cover the purposes and uses of various forms of assessment in special education with an emphasis on legal and ethical considerations in assessment as part of the eligibility process for students with disabilities. The etiology, characteristics and prevalence of specific disabilities will also be highlighted. Curricular, environmental and instructional intervention adaptations to address learning and behavioral needs in the inclusive classroom will be reviewed. Research on inclusive education approaches of collaboration, co-teaching, differentiated instructional delivery models and universal design for learning	
Education and National Developmentthe socio-economic, cultural and technological advancement of nations. In the first part of the course, we familiarize ourselves with development more broadly, and in doing so conceptualize various measures of development progress and review theoretical perspectives often utilized in this work. Next, we consider the linkages between education and national development. The course concludes by considering the ways in which investments in health, alternative measures of well-being and development cooperation both promote national development and shape the relationship between education and development.EDGI 552Gender, Education, and International OrganizationsThis course focuses on international organizations, foreign assistance, and practice. We focus our analysis on organizations working at the intersection of gender equality and inclusive education, and particularly the role they play in global policy dialogues to develop a critical perspective of their work. Students examine how various multilateral, bilateral, financial, and civil society organizations work to shape policy, program planning, financing, implementation, and monitoring and evaluation of gender equality and education ogals that are part of the Sustainable Development agenda locally and globally.Fall 2021EDGI 604Quantitative Literacy: Interpreting and Reporting Data for Educational Policy and Research Policy and Research Policy and Research Policy and Research Policy and Research Policy and Research 	EDGI 522	Citizenship, Sustainability,	the role that education plays in sustainable development and examines the ways individuals, communities, organizations, businesses, and educational institutions are responding to the complex intersection of the local and global in the 21st Century. Students critically explore and evaluate educational approaches to global citizenship in the areas of sustainability and social justice. Students examine educational policies and responses relating to citizenship and sustainability, and develop the capacity to conceptualize global issues through global citizenship. In the end, students investigate the interplay of global citizenship, policy, and teacher education	Fall 2021
and International Organizationstheir influence on educational policy and practice. We focus our analysis on organizations working at the intersection of gender equality and inclusive education, and particularly the role they play in global policy dialogues to develop a critical perspective of their work. Students examine how various multilateral, bilateral, financial, and civil society organizations work to shape policy, program planning, financing, implementation, and monitoring and evaluation of gender equality and education goals that are part of the Sustainable Development Goals (SDGs). Using a critical perspective, students discover how gender and education activists work to shape their institutions and the development agenda locally and globally.Fall 2021EDGI 604Quantitative Literacy: Interpreting and Reporting Data for Educational Policy and ResearchThe course will focus on both the art and science of quantitative analyses. Students with a focus on 1) understanding the results from quantitative analysis with a focus on 1) understanding the analytic approach, 2) interpreting the quantitative results, 3) best practices for visually displaying findings in figures and tables, and 4) using quantitative data to tell a compelling narrative. The course addresses the types of questions that can be addressed through quantitative methods, the importance of samples & describing a sample; summary data, patterns, and trends; the comparison of groups; the results from multiple regressionFall 2021	EDGI 524	Education and National	the socio-economic, cultural and technological advancement of nations. In the first part of the course, we familiarize ourselves with development more broadly, and in doing so conceptualize various measures of development progress and review theoretical perspectives often utilized in this work. Next, we consider the linkages between education and national development through the exploration of two country case studies of national development. The course concludes by considering the ways in which investments in health, alternative measures of well-being and development cooperation both promote national development and shape the relationship	
Interpreting and Reporting Data for Educational Policy and Research End to the results from quantitative analysis with a focus on 1) understanding the analytic approach, 2) interpreting the quantitative results, 3) best practices for visually displaying findings in figures and tables, and 4) using quantitative data to tell a compelling narrative. The course addresses the types of questions that can be addressed through quantitative methods, the importance of samples & describing a sample; summary data, patterns, and trends; the comparison of groups; the results from multiple regression	EDGI 552	and International	their influence on educational policy and practice. We focus our analysis on organizations working at the intersection of gender equality and inclusive education, and particularly the role they play in global policy dialogues to develop a critical perspective of their work. Students examine how various multilateral, bilateral, financial, and civil society organizations work to shape policy, program planning, financing, implementation, and monitoring and evaluation of gender equality and education goals that are part of the Sustainable Development Goals (SDGs). Using a critical perspective, students discover how gender and education activists work to shape their	
	EDGI 604	Interpreting and Reporting Data for Educational	The course will focus on both the art and science of quantitative methods by identifying how to draw careful insights from quantitative analyses. Students will read & discuss existing educational studies as well as review the results from quantitative analysis with a focus on 1) understanding the analytic approach, 2) interpreting the quantitative results, 3) best practices for visually displaying findings in figures and tables, and 4) using quantitative data to tell a compelling narrative. The course addresses the types of questions that can be addressed through quantitative methods, the importance of samples & describing a sample; summary data, patterns, and trends; the comparison of groups; the results from multiple regression	Fall 2021

EDLT 591	Learning Analytics: Lenses on Students, Teaching, and Curriculum Enactment	This course will prepare students to use data collected from classrooms and online programs to understand and help guide instructional practice. Using a range of information (ex: assessments, game/simulation telemetry, engagement with learning management systems, collaboration/ communication data, and administrative/demographic information) students will develop skills in developing dashboards, evaluating grading, and developing authentic datasets about practice. This course is targeted to course designers/developers, teachers, lead teachers/professional learning community coordinators, and media center specialists.	Fall 2021
EDLT 592	Information Enabled Change in Educational Organizations	This course will prepare students to frame systems issues with information and to lead organizational change in educational systems using data. Using a range of information (test scores across courses, learning goals and exemplars, surveys, and administrative data) students will develop a plan to lead teams and groups through a change process, including developing a project plan and success metrics. Students will gain experience in describing stakeholders, developing boundary objects for monitoring. This course is targeted to course designers, teachers, professional learning communities, and media specialists.	
EDSP 700	School Psychology Internship	This course is a required internship for all school psychology students. It is to be taken each academic quarter the students are on internship. During internship, students are required to be engaged in assessment, intervention and/or consultative activities, related to the field of school psychology. The practicum may take place in school settings, behavioral health settings, clinics and hospital settings.	
EDUC 751	Educational History and Foundations	This course provides a foundation for understanding how the educational systems in America function. Students will learn about various institutional- internal and external environments and systems that comprise the PK-20 education system. Students will be continuously asked to analyze how examined environments and systems influence changes in the education system.	Fall 2021
EDUC 752	Education, Learning, and Technology	This course provides a foundation for understanding some of the ways that learning, and technology takes place in education settings. Students will learn about scientific based research in education, design based research, and other related research topics on education, learning, and technology. Students will have a better understanding of how learning perspectives in research, educational technology, and examine different forms of research.	Fall 2021
EDUC 753	Educational Critical Theories and Practice	This course provides a foundation for understanding critical theories and practice in education research. Students will learn about the origins of critical theory, a wide variety of critical theories, and the ways that they are utilized in practice. Students will be continuously asked to reflect on how critical theories are implemented into each step of the research process.	Fall 2021
EDUC 754	Educational Change, Equity, and Social Action	This course is designed to move from students through the foundations of social justice, educational equity, and critical educational theory to application and action within the PK-20 system through a review of literature, experience sharing, reflection and dialogue. This course will push students to engage with foundational literature, pedagogy, and epistemology while contextualizing the experiences of others in education.	Fall 2021
EDUC 857	Advance Research in Mixed Methods and Survey Research	This course focuses on two commonly used research approaches in the social sciences: mixed methods research (MMR) and survey research. Fundamentals of designing and implementing both research approaches are covered with applied research skills developed in each area.	Fall 2021

EDUC 858	Conceptualizing PK-20+ Education	This course will examine issues faced by schools and postsecondary education leaders associated with the preparation of students for educational advancement in a democratic society. This course was developed in response to growing educational concerns across the PK-16+ pipeline. The course is developed around three assumptions: 1) student academic progress is critical in optimizing individual talent in an increasingly knowledge-based society; 2) an important goal of the 21st century educational reform is to facilitate student preparedness for future academic and occupational success; and, 3) a more intentional alignment of the goals and emphases of K-12 education with postsecondary education should be considered a possible solution for educational reform.	Fall 2021
EDUC 859	Power and Politics in Education	This course provides an overview of the theoretical approaches to the connection between power and politics as applied to k-16 education at both the macro and micro levels. Through readings and discussions, we will explore the ways in which power, politics, and policy influence key issues in the k-12 and higher education contexts at the federal, state, and local levels. Course Purpose: A major purpose of this course will be the intersection of race, class and gender with power and politics in educational leadership, teaching, and scholarship. In addition, the course will examine policies in PK-16+ education, the elements of the policy-making process, and strategies for policy analysis.	Fall 2021
EDUC 860	Educational Policy and Advanced Critical Theories	This course is designed as an intensive introduction to PK-20 educational policy (formal and informal at all federal, state, local, and institutional levels) through a critical lens. This course is designed to move students through the foundations of and variations of policy making in educational systems in the United States. Additionally, will examine critical theories and their application in policy analysis, policy formation, and policy implementation.	Fall 2021
EPI 804	Causal Inference in Epidemiology: Application	This course is designed to provide a theoretical foundation and the practical tools necessary for addressing challenges to causal inference in epidemiological research.	Fall 2021
FIN 605	Business Valuation	This course provides a framework to understand value creation and maximization. The primary focus is on the valuation of equity in a public corporation, but the methods also apply to the valuation of private companies and small businesses. Topics include the analysis and projection of financial performance and the application of discounted cash flow and price-multiple valuation models.	Fall 2021
FIN 615	Environmental and Social Issues in Finance	This course focuses on how policies related to environmental and social (ES) issues affect firm performance. Using a mix of case studies, readings, discussions, and assignments, this class critically assesses ES issues affecting corporations today. Specific topics include activist and regulatory pressure, motivation for ES policies, greenwashing, and consequences for corporations that do and do not address these issues.	Fall 2021
FIN 639	FinTech	This course focuses on the growing area of fintech, defined as the set of new technologies and innovations that strive to compete with traditional financial methods in the delivery of financial services. Specific topics include cryptocurrencies, peer-to-peer lending, crowdfunding, initial coin offerings, the technology-based alternatives to personal advising / trading, and regulatory issues. For each, we will consider both the benefits of these 'fintech' innovations, as well as their limitations.	Fall 2021
FIN 645	Behavioral Finance	This course provides an introduction to the topic of behavioral finance. Much of traditional economics and finance is based on market participants and managers behaving rationally. However, financial decisions in the laboratory and in the field systematically deviate from rational benchmarks, despite large monetary incentives to get it right. Behavioral finance examines these deviations and their implications for investor welfare and asset prices.	Fall 2021

GEO 644	Plate Tectonics	Plate tectonics is one of the Earth Sciences' foundational theories, underlying much of our understanding on the origin and distribution of volcanoes, earthquakes, ocean basins, and mountain chains. This course discusses vector analysis approaches as they apply to plate tectonics theory, plate rotation poles, analysis of triple-junction stability, mantle flow, plate motion reconstructions, and the driving forces of plate tectonics.	Fall 2021
HMP 519	Maternal & Child Health Policy	This course provides an introduction and overview of Maternal and Child Health (MCH)policy at the local, state, federal, and global level, with attention to grassroots community-centered/-led pro-grams and advocacy, all within a framework of identifying and defining the structural root causes that perpetuate inequities. Students learn about the principles of MCH policy and the impact of policy on maternal and child health. The course examines structural racism, in particular, its role as a root cause in creating and reproducing MCH inequities. Students will have the opportunity to analyze MCH policy issues and to engage with local organizations to learn more about current policy efforts within their chosen area.	Fall 2021
HMP 557	Public Health and the Complexity of Mental Health Policy: Exploring Past, Present, and Future	This course examines the past, present, and future of American mental health policy. It is impossible to understand mental health policy as it exists in the present or work on policies applicable to the future without an understanding of how we have ended up where we are today. The polarizing splits in discourse take many forms, all of which determine policy and are examined in this course thorough the questions of Who, What, When, Where, Why, and How.	Fall 2021
HMP 661	Disability and Measurement	Understanding the range of definitions and methods of measuring disability is essential to formulating effective policies and programs to support individuals with disabilities, their families and caregivers, and service providers. This course is grounded in the diverse methods for measuring the concept of disability and the presentation of disability across individuals and populations. Since the measurement of disability is a fundamental building block for the creation of policy, the linkage to policy processes and content will be a backdrop for discussion and course activities. The measurement of disability has a long history and is rapidly changing in the current policy environment. Historical and present-day approaches to disability measurement will be presented and discussed.	Fall 2021
HMP 662	Medicaid and Disability Policy	People who qualify for Medicaid based on a disability include adults and children with disabilities that they have had since birth and others who have disabling conditions acquired through illness, injury, or trauma. Medicaid beneficiaries enrolled through disability pathways include those with physical conditions; intellectual or developmental disabilities; and serious behavioral disorders or mental illness. As such, Medicaid is the essential public program providing life-sustaining benefits to the disabled in the U.S. This course examines the public policy components of the Medicaid program related to eligibility, coverage, financing, and administration. The course also examines the history of the program to provide the context for understanding its present and future challenges.	Fall 2021
HMP 817	Public Health Workforce: Pedagogy and Development	This course introduces doctoral students to key concepts in Public Health workforce development and training needs assessment. It will prepare students to assess training needs for their community, develop presentations, and design and teach learning modules for public health work-force development and undergraduate/graduate level courses.	Fall 2021
HSAD 501	Managerial Epidemiology	The focus of the course is on the role and use of epidemiologic tools in the field of health care administration. Epidemiologic techniques are applied to specific areas of health administration including needs assessment, planning, quality assurance, financing and economic analysis for the delivery of healthcare services to various populations.	Fall 2021

HSAD 527         Inite to Long Term Care & This course covers organization, administrative of long-term care services and stabulation of the centrum of care and post- acute care involves a description of the centrum of care and post- acute care involves a description integration across the continuum of care and post- acute care involves a description of the centrum of care and post- acute care involves a description integration across the continuum of care and post- acute care involves a description integration across the continuum in the brade diverse and the range of services and informating and the developy into the basic molecular A cellular biology that underlines a number of diseases and therapeutic practice. The involve of the indumental indocular and cell biology compacts, and continue with a series of units, each focusing on the indicare and indicates in protein-based, and send group approaches. Students with a series of units, each focusing on the indicare and indicates in protein-faced, and send group approaches. Students with a series of units, each focusing on the indicare in the indicates in protein-faced, and send group approaches. Students with a series of units, each focusing on the indicate in continue with a series of units, each focusing on the indicates in the indicates indicates in the indicates indicates in the indicates in the indicates indicates in the indicates indicates in the indicates indicates in the indicates indicates indicates in the indicates indindicates indicates indindinticates in the indicate				
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Sensesprovide graduate students with a strong foundation in the broad discipline of neuroscience. It is the first in a three-curse sequence that will introduce several key themes, such as the structure and function of the nervous system, neuro- and synaptic physiology, the major neurotransmitter systems, sensorp physiology, motor systems, drugs and their actions, and neuropharmacology of neural systems.Fall 2021INFO 800Science of ScienceThis course provides an overview and a guided practice of Science of Science, which studies the structure and dynamics of a research field as a unit of analysis. The word science is broadly defined, including social sciences and humanities as well as natural sciences.Fall 2021INFO 800Advanced Ethical Decision The course aims to combine relevant theories and guided inset. The course introduces multiple perspectives of research and research communities. The course aims to combine relevant theories and guided interview.Fall 2021IPS 502Advanced Ethical Decision Making in Health Care 	IHS 520S		biology that underlies a number of diseases and therapeutic practice. The course will begin with a brief overview of fundamental molecular and cell biology concepts, and continue with a series of units, each focusing on the molecular and cell biological underpinnings of diseases or medical practices. The course will utilize exclusively online sources, including texts. Instructional modes will include live online, problem-based, and small group approaches. Students will be assessed via regular quizzes, group work, exams, and written presentations on specific applications of molecular and cell biology to biomedicine. Knowledge of college-level biology and	
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	IPS 619	•	education. This course will build on foundational concepts of debriefing and engage the learner is a self-reflective process as a debriefing. Challenging debriefing situations, peer feedback and the skills to develop a peer faculty	Fall 2021

IPS 620	Simulation Center Leadership	This course explores models of leadership for simulation Centers or Programs. The Learners will evaluate current policies and procedures using the benchmark of accreditation models for the Society of Simulation in Healthcare. Individual "frames" around feedback and negotiation will be explored through experiential learning and expert feedback.	Fall 2021
IPS 621	Evaluation in Simulation- Based Education	This course will explore the evidence-based tools for assessing outcomes in simulation-based education. Outcome evaluations will be approached from the learner, process and debriefer perspective.	Fall 2021
IPS 622	Simulation Capstone	This is the final course in the plan of study for the MS/MSN: Healthcare Simulation. The topic of the implementation project will be learner driven and decided in collaboration with your assigned mentor. This course is the integration of simulation-based education, patient safety and educational principles culminating in an implementation capstone.	Fall 2021
IPS 860	Interprofessional Research Experience	This course involves students from various health professions who learn about the history and goals of the Interprofessional Education and Research (IPER) movement. Students work in pairs or larger groups to immerse themselves in an IPER experience with an emphasis on one or several of the stages of the research process. Students engage in projects such as designing a pilot study, conducting a descriptive study, or conducting a program evaluation. Emphasis is placed on research projects that help to realize the goals and objectives of IPER generally or to advance how one health profession can realize an objective(s) of IPER in pre-professional formation or continuing professional education.	Fall 2021
ISTM 511	Foundations in Evidence- Based STEM Pedagogy	A graduate level introduction to evidence-based approaches to teaching STEM undergraduates. Evidence-based pedagogies have been demonstrated to be successful in promoting student learning and success. Students in this course will discuss, research, and practice a number of evidence-based pedagogical approaches and think about implementation strategies for the classroom. Through classroom activities we will engage with a survey of evidence-based teaching approaches so that students can make informed implementation decisions after the course is over. There will be an emphasis on understanding why changes to STEM teaching are important for promoting retention and diversity in STEM fields.	Fall 2021
ISTM 512	Advanced Undergraduate STEM Pedagogical Techniques	Students in this course will discuss, research, and practice a number of evidence-based pedagogical approaches and think about implementation strategies for the classroom. Through classroom activities we will engage with the vocabulary of evidence-based teaching so that students can continue to learn about these topics after the course is over. There will be an emphasis on understanding why changes to STEM teaching are important for promoting retention and diversity in STEM fields. In this course, students will address approaches to utilizing technology tools to support implementation of active-learning, confront how learning involves more than content and includes metacognition, epistemology, and affective features.	Fall 2021
ISTM 515	Seminar in UG STEM Education	This course provides graduate students in Undergraduate STEM Education with an anchor for their capstone experiences (rotations or projects). The course will expose students enrolled in the 1.0 credit section to literature on undergraduate STEM education, organized around the broad course themes of Scholarship of Teaching and Learning, Instructional Innovation, Curriculum Development, Assessment and Evaluation and provides them an opportunity to engage with these ideas against the background of their specific STEM disciplines.	Fall 2021
LAW 657S	Contemplative Lawyering	Contemplative Lawyering is course about ethics and wellbeing, both personal and professional. Through readings, podcasts, journaling, and in- class discussion, you will learn how ethics and well-being are inextricably related. You will also learn mindfulness practices, both "sitting" and "portable," that help support the cultivation of ethics and well-being. At the end of the course you will have a new set of tools to help you move forward into your life as a practicing lawyer in a healthier, more ethical, more easeful way.	Fall 2021

LAW 741S	Estate Planning	This class will introduce students to the fundamental principles and objectives of estate planning. With these fundamentals, the course will then examine the basic tools and techniques used in planning an estate to meet the needs of an individual or married couple, such as wills, various types of trusts, and lifetime gift giving. Probate of an estate, durable power of attorneys, guardianships, and planning for other life situations will also be explored.	Fall 2021
LAW 803S	Beginning Spanish for Lawyers	This course is an introduction to the Spanish language for law students and is intended for students with limited experience with the language. It is designed to help students develop basic communication skills in Spanish by engaging them in a variety of interactive tasks. As a skills course, it is student-centered in order to maximize students' active participation at the individual, small group and whole group levels.	Fall 2021
LAW 804S	Intermediate Spanish for Lawyers	This course is intended for law students who possess some experience with the Spanish language or have taken LAW 803S. It is designed to help students develop formal, professional communication skills in Spanish by engaging them in a variety of interactive tasks that mimic those found at an entry level lawyer/paralegal position. It is a skills course, which is student-centered, interactive and conversation-based. In class activities are designed in order to maximize students' active participation at the individual, small group and whole group levels.	Fall 2021
LAW 887S	Advanced Legal Analysis and Bar Skills	This course will prepare students for the written essays, performance tests and multiple-choice questions of the bar exam. Students will develop their exam-writing skills by taking practice questions under exam conditions and receiving critiques of their answers. Students will also review several areas of substantive law commonly tested on bar exams. NOTE: This course is not a substitute for a commercial bar review course.	Fall 2021
LAW 897S	Technology for Law Practice	This course teaches the basic technological and software skills needed for a daily law practice. Topics will include legal document management, drafting, and collaboration; spreadsheets; timekeeping; billing; e-discovery; case and practice management; cybersecurity; technology ethics and professional responsibility; and PDF creation and manipulation. Students will complete a legal technology audit that they can use as a blueprint for their future practice. After successful completion of the course, students will receive a certificate from the National Society for Legal Technology noting that they have achieved competency in the use of legal practice technology.	Fall 2021
MATE 603	Advanced Polymer Characterization	This class covers advanced polymer characterization methods that are related to the structure and properties of polymeric materials. Focus will be devoted to scattering and microscopy techniques. X-ray/Neutron scattering and diffraction will be discussed to understand polymer crystalline and nanostructure. Various polymer microscopy techniques such as electron microscopy, scanning probe microscopy and polarized light microscopy will be discussed. Advanced polymer thermal analysis such as modulated differential scanning calorimetry and chip calorimetry will be covered to understand metastability of polymeric materials. The class will discuss how to use this suite of characterization tools to design experiments for targeted applications.	Fall 2021
MGMT 604	Strategic Change Management	Corporations are continuously adapting to changes and new opportunities in their environments to maintain a competitive advantage. However, if not planned and implemented properly, change not only runs the risk of undermining a firm's value proposition and customer base but might be difficult to manage. This course approaches the management of change from a strategic perspective. As such, we will consider how internal structures and external factors jointly facilitate (or hinder) change and innovation, covering topics such as organizational resistance to change, agility, strategic repositioning, and various sources of change.	Fall 2021

MIS 615	Aligning Information Technologies and Operations	Information Technology (IT) infrastructure must be aligned with an organization's strategy and operations to ensure optimal benefits. This class uses the principles of DevOps to examine operational alignment for IT infrastructure. Students learn how different IT infrastructures are matched to different operational profiles to maximize effectiveness. Students will also be exposed to cross-domain alignment: the ways in which top-level IT and business strategies affect operations. This includes how IT strategy affects business operations and how business strategy guides IT operations and infrastructure. Finally, students learn how new modes of system delivery meet the needs of business operations in hypercompetitive environments.	Fall 2021
MIS 625	Management of Information Technology Operations	Contemporary Information Technology (IT) ecosystems include multiple infrastructure components, applications, and performance monitoring tools, which may be located within or external to an organization. In this course, students learn how a firm's IT assets are procured, deployed, integrated, and managed. This includes licensing and service level agreements (SLAs), cost center (shared services) and profit center approaches for IT infrastructure, approaches for identifying and remediating problems with IT operations, and best practices for securing IT assets. Machine learning for IT operations management is also covered.	Fall 2021
MIS 643	Digital Platform Management	Digital platforms exist in various forms, such as electronic markets where participants exchange products and services, or core IT products that bring communities of businesses and consumers together. Incumbents as well as start-ups can build digital platforms to enter new markets or launch digital innovations. This course introduces students to the various types of digital platforms and the opportunities they offer. By studying the dynamics in this arena, students learn about the various forms of coordination and competition that exist in digital ecosystems, and what strategies firms have employed to succeed there. Additionally, students gain understanding of the changes that take place in markets and industries when digital platforms emerge.	Fall 2021
NFS 520	Pediatric Nutrition	This course provides the learner with skills to perform pediatric nutrition assessment and medical nutrition therapy for the prevention and treatment of common medical conditions of newborns through adolescents.	Fall 2021
NFS 636	Maternal and Child Health Nutrition	This course will provide the learner with an understanding of the nutrient needs of women and children, with a focus on the periods of the first 1,000 days, pregnancy, breastfeeding, infancy, toddler and preschool -age, and children with special health care needs. Issues of adequacy of the diet and access to food will be investigated, as well as resulting health outcomes. Public health resources addressing these issues in the US and globally will be explored.	Fall 2021
NHP 769	Population Health: An Interprofessional Approach	The course integrates several components of both health care and public health systems such as access, health promotion, disease prevention, screening, and chronic care management by analyzing data to identify the nature and extent of health problems and determine effective and efficient systems of care. Emphasis is placed on the social determinants of health and innovate systems and policies that advance beyond care to overall wellness. Additionally, the nature and extent of health disparities—deficits or health enhancing—are reviewed.	Fall 2021
NPM 610	Fostering Diversity and Inclusion in the Workplace	Diversity in the workplace has moved beyond calculating a broad range of employee demographics. Employers, especially nonprofits, are focusing on including and elevating diverse voices and diverse perspectives and building teams that represent the populations they serve and for-profits to create and deliver more innovative services and products and gain a competitive edge. Evidence demonstrates diverse teams are more creative and productive. But, inclusion cannot happen in a vacuum. Leadership must foster and support diversity and inclusion and create an environment where all employees are empowered to be productive and innovative.	Fall 2021

NPM 615	Program Evaluation	The course is designed to have students apply qualitative and quantitative methods to frame and implement an evaluation capable of being implemented in a broad range of nonprofit (and for-profit) organizational settings, including those found in education, health care, government and private sector organizations. Students will study the purposes and models of program evaluation, roles of the evaluator and stakeholders, and address ethical issues associated with an evaluation. To gain practical experience with "continuous program improvement," students will conduct an evaluation of an existing program.	Fall 2021
NPM 680	Leading Nonprofit Organizations	Students will explore the different roles within the senior leadership team of nonprofit organizations to determine how those roles intersect to achieve the mission. Students will delve into leadership skills such as communication, motivating others, managing conflict, building partnerships and financial acumen to understand the necessity of those skills in developing a strategic vision, managing an effective team, and growing the organization to meet the needs of the community. The notion of servant leadership, ethics, and mission will be threaded throughout the course. Students will consider their own leadership skills to determine what skills they need to develop/enhance to be an effective nonprofit leader. This course is ideal for students already working in a nonprofit seeking a more senior role.	Fall 2021
PENG 600	Peace Engineering Experiential Learning	Peace Engineering Experiential learning will give students direct experience working and conducting field-based research in peacebuilding. Students will work with faculty advisors during the spring term to arrange opportunities with external partners involved in peacebuilding and community engagement. Students will then work and conduct research with these partners throughout the summer term. Students may elect to work locally, nationally, or internationally as long as the location is approved by Drexel's International Studies office and the organization approved by Peace Engineering faculty advisors. Opportunities exist with program partners, USIP and Peace Tech Lab, and can be sought with other federal agencies, NGOs, and community service organizations.	Fall 2021
PHYS 554	Quantum Technology	The course provides an applied physics/engineering treatise of the fundamental building blocks of quantum computers. The topics include the physics of quantum computing, different quantum bit (qubit) technologies (ion trap/ superconducting/ semiconductor spin qubits), full hardware and system level aspects, the state-of-the-art, challenges, and near future outlook of the paradigm.	Fall 2021
PHYS 558	Quantum Information	Introduction to the principles of quantum information and quantum information processing. Covers the basic postulates of quantum physics (e.g. superposition, entanglement, measurement) necessary for quantum computing and examines the way in which quantum information is stored and processed (e.g. quantum bits, quantum gates, quantum algorithms).	Fall 2021
PTRS 663	Pediatric Physical Therapy	This is the first of two required courses that emphasize the physical therapy management of infants, children and adolescents with disabilities and health conditions across various body systems, and different delivery settings. Didactic material for various system pathologies will be presented. Clinical reasoning applied and best evidence will guide students to choose appropriate examination tools, write meaningful goals and develop a physical therapy plan of care. Child development with an emphasis on functional movement, from the pre-natal period through adolescence will be discussed in the context of physical therapy management of infants, children, and adolescents.	Fall 2021

PSY 675	Mindfulness and Acceptance-based Treatments	This course is designed to provide an introduction to third generation acceptance-based behavior theory and therapies (ABBTs), broadly writ. The goal is to enhance students' theoretical, empirical, and practical understanding of ABBTs as it relates to the etiology, maintenance, assessment, and treatment of various forms of psychopathology, and to lay the foundation for the development of basic competencies in various ABBT technologies. Readings and lectures will address a variety of topics, including basic learning, behavioral, cognitive, and biological processes and mechanisms, as well as various assessment and intervention strategies developed within or associated with the applied behavioral tradition.	Fall 2021
PTRS 680	Geriatric Physical Therapy	This is a required course for all entry-level Doctor of Physical Therapy students. This course addresses the physical, cognitive, emotional, and social-cultural aspects of aging, and the changes that occur throughout adulthood. Course content will provide foundational knowledge for concurrent and subsequent courses for physical therapy examination and intervention.	Fall 2021
PTRS 665	Pediatric Physical Therapy II	This is the second of two required courses that emphasize the physical therapy management of infants, children and adolescents with disabilities and health conditions across various body systems, and different delivery settings. Didactic material for various system pathologies will be presented. Clinical reasoning applied and best evidence will guide students to choose appropriate examination tools, write meaningful goals and develop a physical therapy plan of care. Child development with an emphasis on functional movement, from the pre-natal period through adolescence will be discussed in the context of physical therapy management of infants, children, and adolescents.	Fall 2021
PTRS 791	Clinical Experience I	This course is the first of three required full-time supervised clinical education experiences. This course is the student's opportunity to begin to apply classroom knowledge and laboratory skills with patients and clients. The student also begins to develop as a professional through role modeling by the clinical instructor.	Fall 2021
PTRS 792	Terminal Clinical Experience II	This course is the second of three required full-time supervised clinical education experiences. The student continues to apply classroom knowledge and laboratory skills and will be involved in all aspects of patient-client management (examination, evaluation, diagnosis, prognosis, intervention, discharge, and outcomes management).	Fall 2021
PTRS 793	Terminal Clinical Experience III	This course is a final, full-time, supervised clinical education experience. The student attains mastery of knowledge, skills, and attitudes to effectively and safely practice in today's healthcare environment. The student will experience the multiple roles of the physical therapist, such as those related to administration and health promotion.	Fall 2021

## **Architectural Studies BS**

#### **Program Requirements**

General Educatio		
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 102	Introduction to Analysis II	4.0
PHYS 182	Applied Physics I	3.0
PHIL 317	Ethics and Design Professions	3.0
UNIV A101	The Drexel Experience	2.0
	es - students elect a minimum of 12 credits	12.0
	students elect a minimum of 3 credits	3.0
	tudents elect a minimum of 9 credits	9.0
Free Electives		24.0
Architecture Req		
	taken in sequence)	10
ARCH 181	Architecture Studio 1A	4.0
ARCH 182	Architecture Studio 1B	4.0
ARCH 183	Architecture Studio 1C	4.0
ARCH 281	Architecture Studio 2A	4.0
ARCH 282	Architecture Studio 2B	4.0
ARCH 283 Required Profess	Architecture Studio 2C	4.0
ARCH 141	Architecture and Society I	3.0
ARCH 141 ARCH 142	Architecture and Society I	3.0
ARCH 142 ARCH 143	Architecture and Society III	3.0
ARCH 143	Architecture and Society IV	3.0
ARCH 211	Architectural Representation I	2.0
ARCH 212	Architectural Representation II	2.0
ARCH 213	Architectural Representation III	2.0
ARCH 221	Materials & Methods I	1.5
ARCH 222	Materials & Methods I	1.5
ARCH 223	Materials & Methods III	1.5
ARCH 224	Architectural Representation IV	2.0
ARCH 225	Architectural Representation V	2.0
ARCH 226	Architectural Representation VI	2.0
ARCH 251	Structural Systems I	1.5
ARCH 252	Structural Systems II	1.5
ARCH 253	Structural Systems III	1.5
Senior Project Se		
ARCH 490	Capstone Project I	4.0
ARCH 492	Capstone Project II	4.0
Architecture Elec	tives	23.0
ARCH 315	Sustainable Built Environment I	
ARCH 320	Sustainable Built Environment II	
ARCH 341 [WI]	Theories of Architecture I	
ARCH 342 [WI]	Theories of Architecture II	
ARCH 343	Theories of Architecture III	
ARCH 346	History of Philadelphia Architecture	
[WI]		

ARCH 347	Intensive Architectural Studies	
[WI] ARCH 348	Studies in Vernacular Architecture	
[WI] ARCH 350	Contemporary Architecture	
ARCH 421	Environmental Psychology and Design Theory	
[VVI]		
ARCH 432	The Development Process	
ARCH 441	Urban Design Seminar	
ARCH 451	Advanced Drawing	
ARCH 463	Emerging Architectural Technology	
Interdisciplinary F		3.0
Animation & Visual ANIM 140		
ANIM 140 ANIM 141	Computer Graphics Imagery I	
	Computer Graphics Imagery II	
Art History ARTH 150	Puilding Skills in Object Analysis	
	Building Skills in Object Analysis	
	History of Modern Design Art of India	
ARTH 302 ARTH 303	Art of China	
ARTH 303 ARTH 304	Art of Japan	
ARTH 304 ARTH 314	•	
	Contemporary Art African Art	
ARTH 316		
ARTH 318	Latin American Art	
ARTH 321	Material Matters in Contemporary Art	
Construction Mana CMGT 263	-	
	Understanding Construction Drawings	
CMGT 355 CMGT 361	Introduction to Sustainability in Construction	
CMGT 361	Contracts And Specifications I Contracts and Specifications II	
CMGT 362		
CMGT 363 CMGT 467	Estimating I Techniques of Project Control	
Fine Arts and Visua		
VSST 102	Design II	
VSST 102	Design III	
VSST 114	Tablet Drawing	
VSST 202	Multimedia: Space	
VSST 202	Multimedia: Materials	
VSST 304	Materials Exploration	
Game Design & Pr		
CS 171	Computer Programming I	
DIGM 105	Overview of Digital Media	
	Digital Storytelling	
GMAP 102	Game Design Lab II	
GMAP 211	Game User Interface Design	
GMAP 231	Scripting for Game Design	
GMAP 260	Overview of Computer Gaming	
GMAP 341	Serious Games	
GMAP 342	Experimental Games	
Graphic Design		
VSCM 200	Computer Imaging II	
VSCM 230	Visual Communication I	
VSCM 231	Visual Communication II	
VSCM 232	Visual Communication III	
VSCM 240	Typography I	
VSCM 242	Typography II	
VSCM 350 [WI]	Graphic Design: 20th Century and Beyond	
Interior Design		
INTR 200	History of Modern Architecture and Interiors	
INTR 211	Textiles for Interiors	
INTR 250	Interior Materials	

	Viewel Outburg Interior		In the set of the set of the			~		-	0	
	Visual Culture: Interiors		Interdisciplir Pathway		3.0 Elective	3	3.0 Elective	3	.0	
	Visual Culture: Furniture		Elective							
INTR 441	Furniture Design		2100010				Natural	3	.0	
Photography							Science	0	.0	
PHTO 110	Photography						Elective			
PHTO 141	Digital Photographic Post Production		-		15		15	1	17	13
PHTO 210	Intermediate Photography		Third Year							
PHTO 275 [WI]	History of Photography I		Fall	Credits		Credits	Spring	Credits	Summer	Credits
PHTO 276 [WI]	History of Photography II		Architecture Elective		3.0 Architecture Elective		EXPERIEN	CE	COOP EXPERIEI	NCE
Product Design			Arts and Humanities		3.0 Arts & Humanities		5.0			
PROD 101	History and Analysis of Product Design		Elective		Elective					
PROD 205	Applied Making I		Interdisciplir	nary	3.0 Interdiscipli	inary 3	5.0			
PROD 210	Introduction to Product Design		Pathway		Pathway					
PROD 215	Design Thinking in Product Design		Elective		Elective					
PROD 235	Applied Design Visualization		Social		3.0 Social	3	8.0			
PROD 240	Smart Product Design		Science Elective		Science Elective					
PROD 340	Interdisciplinary Product Design Studio		Elective		3.0 Elective	3	3.0			
Virtual Reality & In	nmersive Media		Liective		15		15		0	0
VRIM 100	Digital Tools for VR/AR Media		Fourth Yea	-	15		15		0	U
VRIM 110	Digital Imaging for VR/AR Media		Fourth fea	r Credits	Winter	Credits	Casina	Credits		
VRIM 120	VR/AR Production Lab I				6.0 ARCH 490		Spring		0	
Total Credits		181.0	Architecture Elective		6.0 ARCH 490	4	.0 ARCH 492	4	.0	
	participating in co-op will take one additional H Elective instead of COOP 101		Arts & Humanities Elective		3.0 Architecture Elective	e 3	8.0 PHIL 317	3	.0	
			Interdisciplin	nary	3.0 Interdiscipli	inary 3	0.0 Interdiscipli	nary		

#### Sample Plan of Study 4 YR., 1 COOP

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ARCH 141	3.0	ARCH 142	3.0	ARCH 143	3.0	VACATION	
ARCH 181	4.0	ARCH 182	4.0	ARCH 183	4.0	)	
ARCH 211	2.0	ARCH 212	2.0	ARCH 213	2.0	)	
ENGL 101 or 111	3.0	ENGL 102 or 112	3.0	CIVC 101	1.0	)	
MATH 101	4.0	MATH 102	4.0	ENGL 103 or 113	3.0	)	
UNIV A101	1.0	UNIV A101	1.0	PHYS 182	3.0	)	
	17		17		10	3	0
Second Ye	ar						
Second Ye Fall	ar Credits	Winter	Credits	Spring	Credits	Summer	Credits
	Credits	Winter ARCH 144		Spring ARCH 223		Summer 5 COOP 101 <sup>*</sup>	Credits 1.0
Fall	Credits 1.5		3.0		1.5		1.0
Fall ARCH 221	Credits 1.5 2.0	ARCH 144	3.0 1.5	ARCH 223	1.5 2.0	5 COOP 101 <sup>*</sup> ) Architecture	1.0
Fall ARCH 221 ARCH 224	Credits 1.5 2.0 1.5	ARCH 144 ARCH 222	3.0 1.5 2.0	ARCH 223 ARCH 226	1.5 2.0 1.5	5 COOP 101 <sup>*</sup> Architecture Elective 5 Arts & Humanities	1.0 e 6.0

\* 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.

Pathway

Elective

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.

#### 4 YR., No COOP

Interdisciplinary Pathway

Elective

Pathway

Elective

First Year								
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
ARCH 141	3.0	ARCH 142	3.0	ARCH 143	3.0	VACATION		
ARCH 181	4.0	ARCH 182	4.0	ARCH 183	4.0			
ARCH 211	2.0	ARCH 212	2.0	ARCH 213	2.0			
ENGL 101 or 111	3.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0			
MATH 101	4.0	MATH 102	4.0	PHYS 182	3.0			
UNIV A101	1.0	UNIV A101	1.0	CIVC 101	1.0			
	17		17		16			0
Second Ye	ar							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
ARCH 221	1.5	ARCH 144	3.0	ARCH 223	1.5	VACATION		
ARCH 224	2.0	ARCH 222	1.5	ARCH 226	2.0			
ARCH 251	1.5	ARCH 225	2.0	ARCH 253	1.5			
ARCH 281	4.0	ARCH 252	1.5	ARCH 283	4.0			

Arts & Humanities Elective	3.0 ARCI	H 282	4.0 Archi Elect		3.0	
Elective	3.0 Arts a Huma Elect	anites	3.0 Natu Scier Elect	nce	3.0	
	15	·	15		15	0
Third Year						
Fall Cre	dits Wint	er Credi	ts Sprin	ng Credits	Summer	Credits
Architecture Elective	3.0 Archi Elect		6.0 PHIL	317	3.0 VACATION	
Arts & Humanites Elective	3.0 Arts a Huma Elect	anities	3.0 Archi Elect		3.0	
Interdisciplinary Pathway Elective	3.0 Intero Pathy Elect		3.0 Intere Path Elect	way	3.0	
Social Science Elective	3.0 Elect	ive	3.0 Socia Scier Elect	nce	3.0	
Elective	3.0		Elect	ive	3.0	
	15		15		15	0
Fourth Year						
Fall Cre	dits Wint	er Credi	ts Sprii	ng Credits		
Architecture Elective	6.0 ARC	⊣ 490	4.0 ARC	H 492	4.0	
Interdisciplir Pathway Elective	3.0 Archi Elect		3.0 Intere Pathy Elect	way	3.0	
Social Science Elective	3.0 Intero Pathy Elect	5	3.0 Elect	ive	6.0	
Elective	3.0 Elect	ive	3.0			
	15		13		13	

**Total Credits 181** 

## Minor in Actuarial Science

#### About the Minor

The minor in actuarial science is designed to provide students with the quantitative and analytical skills required to obtain an entry level position in the actuarial sciences profession. The coursework will help prepare students for the first two actuarial exams (probability and financial mathematics) and can be applied towards VEE (Validation by Education Experience) credit requirements from professional actuarial societies in the areas of Mathematical Statistics, Accounting and Finance, and Economics. Additional elective coursework will introduce students to appropriate statistical software or more advanced topics relevant to the actuarial sciences profession.

No more than 9.0 credits required by a student's major may be counted towards this minor.

A grade of "C" (2.0) or better must be earned for each course in this minor for it to be counted.

Students should check the prerequisites of all classes when selecting electives. It is the responsibility of the student to know pre-requisites.

#### **Program Requirements**

Required Cours	es	11.0
MATH 250	Mathematics of Investment and Credit	
MATH 311	Probability and Statistics I	
MATH 312	Probability and Statistics II	
MATH 313	Probability and Statistics III	
Choose one trac	sk	8.0
Accounting and F	inance Track	
ACCT 110	Accounting for Professionals	
FIN 301	Introduction to Finance **	
OR		
Economics Track	۲	
ECON 201	Principles of Microeconomics	
ECON 202	Principles of Macroeconomics	
Actuarial Science	ce Electives	
Select 2 of the fo	llowing	6.0
FIN 321	Investment Securities & Markets **	
MATH 318 [WI]	Mathematical Applications of Statistical Software	
MATH 320	Actuarial Mathematics	
MATH 449	Mathematical Finance	
Total Credits		25.0

\* Students may apply any course(s) from the unused track towards the electives requirement.

\*\* Students may substitute MATH 311 and MATH 312 for the STAT 201 and STAT 202 pre-requisite requirements for these courses.

Negotiations and Conflict Desclution

## Behavioral Economics, Business, and Organizations

#### **Degree Requirements**

ORGB 370

**ORGB 400** 

Dynamic Team Consulting

Team Development and Leadership

#### University Requirements 4.0 **CIVC 101** Introduction to Civic Engagement 1.0 Career Management and Professional Development COOP 101 1.0 UNIV B101 The Drexel Experience 1.0 UNIV B201 [WI] Career Management 1.0 General Education Requirements 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 Composition and Rhetoric II: Advanced Research and **ENGL 102** 3.0 Evidence-Based Writing or ENGL 112 English Composition II ENGL 103 Composition and Rhetoric III: Themes and Genres 3.0 or ENGL 113 English Composition III Mathematics and Statistics Requirements ECON 350 [WI] Applied Econometrics 4.0 ECON 370 Experiments and Causality in Economics 4.0 **MATH 121** Calculus I 4.0 **MATH 122** Calculus II 4.0 STAT 201 Introduction to Business Statistics 4.0 **Economics Requirements** ECON 201 Principles of Microeconomics 4.0 **ECON 202** Principles of Macroeconomics 4.0 **ECON 250** Game Theory and Applications 4.0 ECON 301 Microeconomics 4.0 ECON 322 [WI] Economics Seminar 4.0 **Behavioral Economics Requirements** Behavioral Economics ECON 365 4.0 Topics in Behavioral Economics **ECON 366** 4.0 **Behavioral Science and Business Requirements MKTG 201** Introduction to Marketing Management 4.0 **MKTG 356** Consumer Behavior 4.0 ORGB 300 [WI] Organizational Behavior 4.0 PSY 101 General Psychology I 3.0 or PSY 111 Pre-Professional General Psychology I Behavioral Economics Electives Choose 2 courses from the following 8.0 ECON 330 Managerial Economics ECON 334 Public Finance ECON 336 Labor Economics ECON 361 Health Economics **FIN 150** Financial Literacy FIN 350 Personal Finance Behavioral Science and Business Electives A total of 5 courses must be chosen. 16.0 Choose at least 3 courses from the following MKTG 326 Marketing Insights MKTG 367 Data-Driven Digital Marketing MGMT 301 Designing Innovative Organizations **ORGB 320** Leadership: Theory and Practice

ORGB 420	Negotiations and Conflict Resolution	
PSY 312	Cognitive Neuroscience	
PSY 330	Cognitive Psychology	
You can choose up	to 2 courses from the following	
ENTP 225 [WI]	Mindfulness & Wellbeing	
ENTP 270	Social Entrepreneurship	
SOC 318	Social Networks and Health	
WGST 324	Retail Intersections: Social & Cultural Issues	
Empirical/Resear	ch Methods Elective	
Choose 1 course fi	rom the following:	3.0
ECON 270	Using Big Data to Solve Economic and Social Problems	
INFO 371	Data Mining Applications	
MKTG 366	Customer Analytics	
STAT 331	Introduction to Data Mining for Business	
STAT 335	Introduction to Experimental Design	
Economics Electi	ves	
A total of 4 courses	s must be chosen. Any ECON course from the above categories	16.0
can be chosen if it	is not used to fulfill the corresponding category requirements.	
ECON 203 [WI]	Survey of Economic Policy	
ECON 260	Economics of Small Business	
ECON 321	Macroeconomics	
ECON 326 [WI]	Economic Ideas	
ECON 330	Managerial Economics	
ECON 331	International Macroeconomics	
ECON 334	Public Finance	
ECON 336	Labor Economics	
ECON 338	Industrial Organization	
ECON 342	Economic Development	
ECON 344	Comparative Economic Systems	
ECON 348	Mathematical Economics	
ECON 351	Resource and Environmental Economics	
ECON 354	Money and Banking	
ECON 360	Time Series Econometrics	
ECON 361	Health Economics	
ECON T480	Special Topics in ECON	
INTB 332	Multinational Corporations	
INTB 334	International Trade	
INTB 336	International Money and Finance	
INTB 338	Regional Studies in Economic Policies and International Business	
INTB 440	Seminar in International Business	
SMT 320	Sport Economics	
Free Electives		54.0
Total Credits		180.0

Students not participating in co-op will not take COOP 101; 1 credit of Free electives will be added in place of COOP 101. 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 who elect higher credit courses will have fewer free electives

#### Sample Plan of Study 5 Year 3 Coop

Jits       Winter         1.0 ECON 24         1.0 ECON 27         (or Free elective)         3.0 ENGL 10         4.0 MATH 12         3.0         1.0 <th>70 4. 02 3. 22 4. 22 4. 50 4. 50 4. 50 4. 55 4. 55 4. 56 4. 1 Credits</th> <th>0 COM 230 0 COOP 101 0 ECON 203 (or Free elective) 0 ENGL 103 or 113 Free elective 5 Spring 0 COOP EXPERIEN 0 0</th> <th>3.0 1.0 4.0 3.0 3.0 14 Credits</th> <th>Summer COOP EXPERIENC</th> <th>Credits</th>	70 4. 02 3. 22 4. 22 4. 50 4. 50 4. 50 4. 55 4. 55 4. 56 4. 1 Credits	0 COM 230 0 COOP 101 0 ECON 203 (or Free elective) 0 ENGL 103 or 113 Free elective 5 Spring 0 COOP EXPERIEN 0 0	3.0 1.0 4.0 3.0 3.0 14 Credits	Summer COOP EXPERIENC	Credits
1.0 ECON 20 (or Free elective) 3.0 ENGL 10 or 112 4.0 MATH 12 3.0 1.0 16 4.0 ECON 30 3.0 ECON 30 3.0 ECON 30 4.0 ECON 30 4.0 ECON 30 15	02 4. 70 4. 02 3. 22 4. 22 4. 50 4. 50 4. 55 4. 55 4. 56 4. 56 4.	0 COM 230 0 COOP 101 0 ECON 203 (or Free elective) 0 ENGL 103 or 113 Free elective 5 Spring 0 COOP EXPERIEN 0 0 0 6	3.0 1.0 4.0 3.0 3.0 14 Credits ICE	VACATION Summer COOP EXPERIENC	Credits
4.0 ECON 2 (or Free elective) 3.0 ENGL 10 or 112 4.0 MATH 12 3.0 16 dits Winter 4.0 ECON 3 3.0 ECON 3 3.0 ECON 3 4.0 ECON 3 3.0 ECON 3 5	70 4. 02 3. 22 4. 22 4. 50 4. 50 4. 50 4. 55 4. 55 4. 56 4. 1 Credits	0 COOP 101 0 ECON 203 (or Free elective) 0 ENGL 103 or 113 Free elective 5 Spring 0 COOP EXPERIEN 0 0 0 6	. 1.0 1.0 4.0 3.0 3.0 14 Credits ICE	Summer COOP EXPERIENC	Credits
(or Free elective) 3.0 ENGL 10 or 112 4.0 MATH 12 3.0 1.0 16 4.0 ECON 38 3.0 ECON 38 3.0 ECON 38 4.0 ECON 38 4.0 ECON 38 3.0 ECON 38	02 3. 22 4. 22 4. 50 4.	0 ECON 203 (or Free elective) 0 ENGL 103 or 113 Free elective 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	4.0 3.0 14 Credits ICE	Summer COOP EXPERIENC	Credits
or 112 4.0 MATH 12 3.0 1.0 16 4.0 ECON 33 3.0 ECON 34 3.0 ECON 34 4.0 MKTG 33 15	22 4. 1 Credits 50 4. 50 5. 50 5	(or Free elective) 0 ENGL 103 or 113 Free elective 5 5 5 5 5 7 8 9 0 COOP EXPERIEN 0 0 0	3.0 3.0 14 Credits ICE	Summer COOP EXPERIENC	Credits
3.0 1.0 16 dits Winter 4.0 ECON 32 4.0 ECON 32 3.0 ECON 32 4.0 ECON 32 4.0 MKTG 33 15	Credits           50         4.           50         4.           50         4.           55         4.           56         4.           7         1           Credits         1	or 113 Free elective 5 Spring 0 COOP EXPERIEN 0 0 6	3.0 14 Credits ICE 0	Summer COOP EXPERIENC	Credits
1.0 16 4.0 ECON 24 4.0 ECON 34 3.0 ECON 34 4.0 MKTG 34 15	Credits           50         4.           50         4.           65         4.           56         4.           7         1           Credits         1	elective 5 Spring 0 COOP EXPERIEN 0 0 0 6	14 Credits ICE	Summer COOP EXPERIENC	Credits
16           dits         Winter           4.0 ECON 33         3.0 ECON 34           3.0 ECON 34         3.0 ECON 34           4.0 MKTG 33         3.0 ECON 34	Credits           50         4.           50         4.           65         4.           56         4.           7         1           Credits         1	Spring 0 COOP EXPERIEN 0 0 0 6	Credits ICE	Summer COOP EXPERIENC	Credits
dits Winter 4.0 ECON 24 4.0 ECON 34 3.0 ECON 34 4.0 MKTG 34 15	Credits           50         4.           50         4.           65         4.           56         4.           7         1           Credits         1	Spring 0 COOP EXPERIEN 0 0 0 6	Credits ICE	Summer COOP EXPERIENC	Credits
4.0 ECON 23 4.0 ECON 34 3.0 ECON 34 4.0 MKTG 33 15	50 4. 50 4. 65 4. 56 4. 1 Credits	0 COOP EXPERIEN 0 0 6	ICE 0	COOP	E
4.0 ECON 23 4.0 ECON 34 3.0 ECON 34 4.0 MKTG 33 15	50 4. 50 4. 65 4. 56 4. 1 Credits	0 COOP EXPERIEN 0 0 6	ICE 0	COOP	E
4.0 ECON 33 3.0 ECON 36 4.0 MKTG 33 15	50 4. 65 4. 56 4. 1 Credits	0 COOP EXPERIEN 0 0 6	0	EXPERIENC	
3.0 ECON 30 4.0 MKTG 33 15	65 4. 56 4. 1 Credits	0 0 0 6	0	1	
4.0 MKTG 33	56 4. 1 Credits	0 6			
15	1 Credits	6			
	Credits				1
lits Winter		Spring	Cradita	Summer	
dits Winter		Spring	Cradita	Summer	
			Credits	Samule	Credits
4.0 Behavior Science and Business electives	6	0 COOP EXPERIEN	ICE	COOP EXPERIENC	Έ
4.0 Empirica Researcl elective/ Free elective	h	0			
4.0 Free elective	3.	0			
3.0					
15	1	5	0		
dits Winter	Credits	Sprina	Credits	Summer	Credits
			ICE	EXPERIENC	E
4.0 Behavior Science and		0			
		0			
Business	4.				
ł	its Winter 4.0 Behavior Economi elective 4.0 Behavior Science and Business	WinterCredits4.0Behavioral Economics4electiveelective44.0Behavioral Science and Business elective44.0ECON4	WinterCreditsSpring4.0Behavioral Economics4.0COOP EVPERIEN4.0Behavioral elective4.0Science and Business4.04.0ECON elective4.0COOP EVPERIEN4.0ECON4.0COOP EVPERIEN	WinterCreditsSpringCredits4.0Behavioral Economic4.0COOP EXPERIENCE4.0Behavioral elective4.0COOP EXPERIENCE4.0Behavioral Science and Business elective4.0COOP EXPERIENCE4.0ECON elective4.0Science Elective5.03.0Free3.05.05.0	WinterCreditsSpringCreditsSummer4.0Behavioral Economics elective4.0COOP EXPERIENCECOOP EXPERIENCE4.0Behavioral Science and Business elective4.0Science electiveScience elective4.0Behavioral Business elective4.0Science electiveScience electiveScience elective4.0Behavioral Business elective4.0Science electiveScience electiveScience elective4.0ECON elective4.0Science electiveScience electiveScience elective

Fifth Year							
Fall	Credits	Winter	Credits		Spring	Credits	
UNIV B201	1.0	ECON 322		4.0	Free electives	13.	0
ECON elective	4.0	ECON elective/ Free elective		4.0			
Free electives	10.0	Free electives		8.0			
-	15			16		1	3

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.

#### 4 Year 1 Coop

First Year

First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
CIVC 101		1.0	ECON 202		4.0	COM 230		3.0	VACATION		
ECON 201		4.0	ECON 270 (or Free elective)		4.0	COOP 101		1.0			
ENGL 101 or 111			ENGL 102 or 112		3.0	ECON 203 (or Free elective)		4.0			
MATH 121		4.0	MATH 122		4.0	ENGL 103 or 113		3.0			
PSY 101		3.0				Free elective		3.0			
UNIV B101		1.0									
		16			15			14			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECON 301		4.0	ECON 250		4.0	Behavioral Science and Business electives		8.0	Behavioral Economics elective		4.0
MKTG 201		4.0	ECON 350		4.0	Empirical- Research elective/ Free elective			Behavioral Science and Business elective		4.0
PSY 330 (or Behavioral Science and Business elective)		3.0	ECON 365		4.0	Free elective			ECON elective		4.0
STAT 201		4.0	MKTG 356		4.0				Free		3.0
									elective		
		15			16			15			15
Third Year											
				Credits		Spring	Credits		Summer	Credits	
ECON 366		4.0	Behavioral Economics elective		4.0	COOP EXPERIEN	CE		COOP	CE	
ECON 370		4.0	Behavioral Science and Business elective		4.0						
ORGB 300		4.0	ECON elective		4.0						

Free elective	3.0	Free elective		3.0				
	15			15			0	0
Fourth Yea	r							
Fall	Credits	Winter	Credits		Spring	Credit	S	
UNIV B201	1.0	ECON 322			Free electives		13.0	
ECON elective	4.0	ECON elective/ Free elective		4.0				
Free electives	10.0	Free electives		8.0				
	15			16			13	

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.

#### 4 Year No Coop

	-	-									
First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
CIVC 101		1.0	ECON 202		4.0	COM 230		3.0	VACATION		
ECON 201		4.0	ECON 270 (or Free elective)		4.0	ENGL 103 or 113		3.0			
ENGL 101 or 111	:	3.0	ENGL 102 or 112		3.0	ECON 203 (or Free elective)		4.0			
MATH 121		4.0	MATH 122		4.0	Free Elective		4.0			
PSY 101	;	3.0									
UNIV B101		1.0									
		16			15			14			(
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECON 301		4.0	ECON 250		4.0	Behavioral Science and Business elective		4.0	VACATION		
STAT 201		4.0	ECON 350		4.0	Behavioral Science and Business elective		4.0			
PSY 330 (or Behavioral Science and Business elective)	:	3.0	ECON 365		4.0	Empirical- Research elective/ Free elective		4.0			
MKTG 201		4.0	MKTG 356		4.0	Free		3.0			
						elective					
		15			16			15			0
Third Year											
Fall	Credits			Credits			Credits		Summer	Credits	
ECON 366		4.0	Behavioral Economics elective		4.0	Behavioral Economics elective		4.0	VACATION		
ECON 370		4.0	Behavioral Science and Business elective		4.0	Behavioral Science and Business elective		4.0			

	15			16	13	
Free electives	10.0	Free electives	8	3.0		
ECON elective		ECON elective/ Free elective		1.0		
UNIV B201	1.0	ECON 322	4	I.0 Free electives	13.0	
Fourth Yea Fall	r Credits	Winter	Credits	Spring	Credits	
	15			15	15	0
Free elective	3.0	Free elective	3	3.0 Free elective	3.0	
ORGB 300		ECON elective		I.0 ECON elective	4.0	

Total Credits 180

## Minor in Climate Change

#### **Program Requirements**

Core Course (one	of the following three courses is required)	3.0
GEO 201 [WI]	Earth Systems Processes	
ENVS 275	Global Climate Change	
PHEV 145	Weather I: Climate and Global Change	
Social Science an	d Humanities Courses (at least 3 courses are required)	12.
ECON 351	Resource and Environmental Economics	
ENSS 326	Cities and Sustainability	
ENSS 346	Environmental Justice	
GST 231	Introduction to Identities and Communities	
HIST 320	Disaster in Global History	
HIST 323	The History of Climate Change	
OPM 342	Sustainable Supply Chain Management and Logistics	
PHIL 340	Environmental Ethics	
PHIL 341	Environmental Philosophy	
PSCI 284	Environmental Politics	
PSCI 336	Political Economy of Climate Change	
PSCI 337	International Environmental Politics	
PSCI 338	Cities and Climate Change	
PSCI 371	Science, Technology, & Public Policy	
SOC 244	Sociology of the Environment	
SOC 346	Environmental Justice	
SOC 349	Sociology of Disasters	
SPAN 340	Introduction to Power and Resistance	
Natural Science, I	Engineering and Design Courses (at least 3 courses are	9.0
required)		
CHE 431	Fundamentals of Solar Cells	
ECEP 380	Introduction to Renewable Energy	
ECEP 480	Solar Energy Engineering	
EET 320	Renewable Energy Systems	
ENTP 270	Social Entrepreneurship	
ENTP 290	An Entrepreneur's Introduction to Land: Its Essence, Ethics, and Opportunity	
ENTP 375	3BL - Triple Bottom Line	
ENTP 390	Energy Entrepreneurship	
ENVS 289	Global Warming, Biodiversity and Your Future	
ENVS 304	Energy and the Environment: Iceland	
GEO 111	Natural Disasters	
GEO 207	Introduction to Oceanography	
MEM 445	Solar Energy Fundamentals	
PBHL 457	Adapting to a Hotter Climate: Protecting Health of Vulnerable Populations	

**Total Credits** 

24.0

## DragonsTeach Certification Minor

#### **Program Requirements**

Introductory Cou	irses	
ESTM 201	DragonsTeach: Step 1	1.5
ESTM 210	DragonsTeach: Step 2	1.5
STEM Education	Core Courses	
ESTM 301	Knowing and Learning in Mathematics and Science	3.0
ESTM 302	Classroom Interactions	3.0
ESTM 350	Project-Based Instruction	4.0
History of Science	ce or Mathematics Course *	
ESTM 362	Perspectives in Science and Mathematics Education	3.0
or MTED 428	Cultural and Historical Significance of Mathematics	
or HIST 285	Technology in Historical Perspective	
STEM Teaching I	Methods Course	
MTED 419	Teaching Secondary Mathematics	3.0
or EDUC 315	Secondary Science Teaching Methods	
or ESTM 335	Teaching Secondary Computer Science	
STEM Research	Methods **	
ESTM 364	Methods of Research and Inquiry in Science and Mathematics	3.0
Special Educatio	n and English Language Learner Courses	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
Student Teaching	9	
ESTM 409	Student Teaching Seminar	3.0
Total Credits		34.0

\* Specific course selected in consultation with a School of Education academic advisor and is dependent on student's aspirations for teacher certification.

\*\* A Research/Methods/Design course from a student's home department may be substituted in consultation with a School of Education academic advisor.

NOTE: In addition, students specifically pursuing secondary level Mathematics PA Teacher Certification must also complete ESTM T380: Functions and Modeling.

## DragonsTeach Math Certification Minor

Introductory Cou	rses	
ESTM 201	DragonsTeach: Step 1	1.5
ESTM 210	DragonsTeach: Step 2	1.5
STEM Education	Core Courses	
ESTM 301	Knowing and Learning in Mathematics and Science	3.0
ESTM 302	Classroom Interactions	3.0
ESTM 350	Project-Based Instruction	4.0
History of Science	e or Mathematics Course *	
ESTM 362	Perspectives in Science and Mathematics Education	3.0
or MTED 428	Cultural and Historical Significance of Mathematics	
or HIST 285	Technology in Historical Perspective	
STEM Teaching	Nethods Course	
MTED 419	Teaching Secondary Mathematics	3.0
or EDUC 315	Secondary Science Teaching Methods	
or ESTM 335	Teaching Secondary Computer Science	
STEM Research	Methods **	
ESTM 364	Methods of Research and Inquiry in Science and Mathematics	3.0
Special Educatio	n and English Language Learner Courses	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
Student Teaching	3	
ESTM 409	Student Teaching Seminar	3.0
Math Certification	n Course	
	Special topics in ESTM	3.0
ESTM T380		5.0

\* Specific course selected in consultation with a School of Education academic advisor and is dependent on student's aspirations for teacher certification.

\*\* A Research/Methods/Design course from a student's home department may be substituted in consultation with a School of Education academic advisor.

NOTE: In addition, students specifically pursuing secondary level Mathematics PA Teacher Certification must also complete ESTM T380

## DragonsTeach Middle Years Certification Minor

Total Credits		37.5
ESTM 409	Student Teaching Seminar (repeat 3-credit course twice)	6.0
Student Teaching	g	
MTED 363	Middle Years Mathematics Methods (4-8)	1.5
EDUC 362	Middle Years Social Studies Methods	1.5
EDUC 361	Middle Years Science Methods	1.5
EDUC 360	English/Language Arts Teaching Methods for the Middle Years	1.5
Pre-residency		
EDUC 328	Language Arts Processes 4-8	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 223	Teaching the Middle School Child	3.0
Pedagogy Cours	es	
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
Special Educatio	n and English Language Learner Courses	
ESTM 201	DragonsTeach: Step 1	1.5
Introductory Cou	Irse	

## DragonsTeach Middle Years Minor

Introductory Co	urses	
ESTM 201	DragonsTeach: Step 1	1.5
ESTM 210	DragonsTeach: Step 2	1.5
Special Education	on and English Language Learner Courses	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
Pedagogy Cours	ses	
EDUC 223	Teaching the Middle School Child	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 316	Teaching in Urban Contexts	3.0
Total Credits		24.0

## Economics and Business

#### **Degree Requirements**

#### University Requirements

MATH 483

Introduction to Monte Carlo Methods

University Requi	rements	
COOP 101	Career Management and Professional Development	1.0
CIVC 101	Introduction to Civic Engagement	1.0
UNIV B101	The Drexel Experience	1.0
UNIV B201 [WI]	Career Management	1.0
or UNIV S201	Looking Forward: Academics and Careers	
General Education	n Courses	
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	
COM 230	Techniques of Speaking	3.0
CS 150	Computer Science Principles	3.0
or CS 164	Introduction to Computer Science	
CS 171	Computer Programming I	3.0
CS 172	Computer Programming II	3.0
One course in PH	IL, PSY, SOC, HIST or PSCI	3.0
One course in BIC	D, CHEM, ENVS or PHYS	3.0
Mathematics Requ		
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 311	Probability and Statistics I	4.0
MATH 312	Probability and Statistics II	4.0
MATH 401	Elements of Modern Analysis I	3.0
	tives: Choose 14 credits from the following	14.0
MATH 222	Combinatorics	1 110
[WI]		
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 313	Probability and Statistics III	
MATH 318 [WI]	Mathematical Applications of Statistical Software	
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 402	Elements of Modern Analysis II	
MATH 449	Mathematical Finance	
MATH 450	Introduction to Graph Theory	
MATH 475	Cryptography	
MATH 402	later duction to Mante Orde Mathada	

ou		
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ECON 250	Game Theory and Applications	4.0
ECON 301	Microeconomics	4.0
ECON 321	Macroeconomics	4.0
ECON 322 [WI]	Economics Seminar	4.0
ECON 348	Mathematical Economics	4.0
ECON 350 [WI]	Applied Econometrics	4.0
ECON 360	Time Series Econometrics	4.0
or ECON 370	Experiments and Causality in Economics	
Economics Electiv	es choose 4 of the following courses	16.0
ECON 203 [WI]	Survey of Economic Policy	
ECON 260	Economics of Small Business	
ECON 270	Using Big Data to Solve Economic and Social Problems	
ECON 326 [WI]	Economic Ideas	
ECON 330	Managerial Economics	
ECON 331	International Macroeconomics	
ECON 334	Public Finance	
ECON 336	Labor Economics	
ECON 338	Industrial Organization	
ECON 342	Economic Development	
ECON 344	Comparative Economic Systems	
ECON 351	Resource and Environmental Economics	
ECON 354	Money and Banking	
ECON 360	Time Series Econometrics	
ECON 361	Health Economics	
ECON 365	Behavioral Economics	
ECON 366	Topics in Behavioral Economics	
ECON 370	Experiments and Causality in Economics	
ECON T480	Special Topics in ECON	
INTB 332	Multinational Corporations	
INTB 334	International Trade	
INTB 336	International Money and Finance	
INTB 338	Regional Studies in Economic Policies and International Business	
INTB 440	Seminar in International Business	
SMT 320	Sport Economics	
Free Electives		45.0
Total Credits		180.0

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

#### Sample Plan of Study

#### 5 Year 3 Coop

Economics Requirements

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CIVC 101	1.	0 CS 171	3	3.0 COOP 101	1.	0 VACATION	
CS 150 or 164	3.	0 ECON 202	2	4.0 CS 172	3.	0	
ECON 201	4.	0 ENGL 102 or 112	3	3.0 ENGL 103 or 113	3.	0	
ENGL 101 or 111	3.	0 MATH 122	4	4.0 MATH 123	4.	0	

MATH 121			ECON Elective		4.0	MATH 200		4.0			
UNIV B101		1.0				ECON Elective***		4.0			
		16			18			19			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECON 301		4.0	ECON 250			COOP EXPERIEN	CE		COOP EXPERIEN	ICE	
MATH 220		3.0	ECON 321		4.0						
MATH 311		4.0	MATH 312		4.0						
Science elective			PHIL or Social Science Elective		3.0						
		14			15			0			0
Third Year											
						Spring	Credits		Summer	Credits	
ECON 350			ECON 360 or 370			COOP EXPERIEN	CE		COOP EXPERIEN	ICE	
MATH 201		4.0	MATH 210		4.0						
ECON			MATH		4.0						
Elective			Elective Free		4.0						
Elective			Free Elective		4.0						
		16			16			0			0
Fourth Yea	r										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECON			ECON 348						COOP		
Elective						EXPERIEN	CE		EXPERIEN	ICE	
MATH Elective			MATH Elective		3.0						
Free Electives			Free Electives		7.0						
		15			14			0			0
Fifth Year											
						Spring					
ECON 322			Free Electives			Free Electives	1	2.0			
UNIV B201 or S201		1.0									
Free Electives		8.0									
		13			12			12			

Total Credits 180

- \* ECON 270 recommended
- \*\* 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.
- \*\*\* ECON 203 [WI] recommended

#### 4 Year 1 Coop

First Year				
Fall	Credits Winter	Credits Spring	Credits	Summer Credits
CIVC 101	1.0 CS 171	3.0 COOP 10	D1 <sup>**</sup> 1.0 '	VACATION
CS 150 or 164	3.0 ECON 202	2 4.0 CS 172	3.0	
ECON 201	4.0 ENGL 102 or 112	2 3.0 ENGL 10 or 113	3.0	
ENGL 101 or 111	3.0 MATH 122	2 4.0 MATH 12	4.0	
MATH 121	4.0 ECON Elective *	4.0 MATH 20	4.0	

UNIV B101		1.0				ECON Elective		4.0			
		16			18			19			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	6
ECON 301		4.0	ECON 250		4.0	ECON 350		4.0	MATH 210		4.0
MATH 220		3.0	ECON 321		4.0	MATH 201			ECON Elective		4.0
MATH 311		4.0	MATH 312		4.0	ECON Elective		4.0	MATH Elective		3.0
Science elective		3.0	PHIL of Social Science Elective		4.0	MATH Elective			Free Electives		3.0
		14			16			15			14
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	5
ECON 360 or 370		4.0	ECON 348		4.0	COOP EXPERIEN	CE		COOP EXPERIEN	CE	
Free Elective			MATH Elective		3.0						
MATH Elective		3.0	Free Electives		7.0						
		14			14			0			0
Fourth Yea	r										
Fall	Credits		Winter	Credits		Spring	Credits				
ECON 322			Free Electives	1	14.0	Free Electives	1	3.0			
UNIV B101 or S201		1.0									
Free Electives		8.0									
		13			14			13			

Total Credits 180

- \* ECON 270 recommended
- \*\* 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.
- \*\*\* ECON 203 [WI] recommended

#### 4 Year No Coop

First Year											
Fall	Credits	Win	ter	Credits		Spring	Credits		Summer	Credits	
CIVC 101	1	.0 CS <sup>,</sup>	171		3.0	CS 172		3.0	VACATION		
CS 150 or 164	3	.0 ECC	ON 202			ENGL 103 or 113		3.0			
ECON 201	4	0 ENG. or 1			3.0	MATH 123		4.0			
ENGL 101 or 111	3	.0 MAT	<sup>-</sup> H 122		4.0	MATH 200		4.0			
MATH 121	4	.0 ECC Elec				ECON Elective <sup>**</sup>		4.0			
UNIV B101	1	.0									
	1	6			18			18			0
Second Ye	ar										
Fall	Credits	Win	ter	Credits		Spring	Credits		Summer	Credits	
ECON 301	4	.0 ECC	ON 250		4.0	ECON 350		4.0	VACATION		
MATH 220	3	.0 ECC	DN 321		4.0	MATH 201		4.0			
MATH 311	4	.0 MAT	<sup>-</sup> H 312			ECON Elective		4.0			

Total Cred	its 180										_
		13			13			13			_
Free Electives	:	8.0									
UNIV B201 or S201		1.0									
ECON 322		4.0 F E	Free Electives	1	13.0	Free Electives	1	3.0			
Fall			Winter	Credits		Spring	Credits				
Fourth Yea	ır										
		15			14			16			0
Free Elective		4.0									
MATH Elective	:		Free Elective		3.0	Free Electives		8.0			
MATH 210			MATH Elective		3.0	MATH Elective		4.0			
ECON 360 or 370			ECON Electives		8.0	ECON 348		4.0	VACATION		
Fall	Credits	٧	Winter	Credits		Spring	Credits		Summer	Credits	
Third Year		14			15			15			0
		E	Science Elective								
Science elective			PHIL or Social		3.0	MATH Elective		3.0			

\* ECON 270 recommended

\*\* ECON 203 [WI] recommended

12.0

# Economics and Data Science

#### **Degree Requirements**

**Economics Electives** 

209.00	in equilemente	
University Requi	rements	
UNIV B101	The Drexel Experience	1.
or UNIV C101	The Drexel Experience	
CIVC 101	Introduction to Civic Engagement	1.
COOP 101	Career Management and Professional Development	1.
UNIV B201 [WI]	Career Management	1.
General Education	on Requirements	
English Requirem	ents	
ENGL 101 or ENGL 111	Composition and Rhetoric I: Inquiry and Exploratory Research English Composition I	3.
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.
or ENGL 113	English Composition III	
Communications F	÷ .	
COM 230	Techniques of Speaking	3.
Mathematics and		
MATH 121	Calculus I	4.
MATH 180	Discrete Computational Structures	4
MATH 201	Linear Algebra	4
STAT 201	Introduction to Business Statistics	4
STAT 202	Business Statistics II	4.
Computer Science		т.
CS 150	Computer Science Principles	3.
or CS 164	Introduction to Computer Science	5
CS 171	Computer Programming I	3
CS 172	Computer Programming I	3
Economics Requ		5
ECON 201		4
ECON 201 ECON 202	Principles of Microeconomics	4.
	Principles of Macroeconomics	
ECON 250 ECON 270	Game Theory and Applications	4.
	Using Big Data to Solve Economic and Social Problems	4.
ECON 301	Microeconomics	4.
ECON 321	Macroeconomics	4.
ECON 322 [WI]	Economics Seminar	4.
ECON 350 [WI]	Applied Econometrics	4.
ECON 360	Time Series Econometrics	4.
or ECON 370		
Data Science Red		
CS 260	Data Structures	3.
CS 265	Advanced Programming Tools and Techniques	3.
DSCI 351	Recommender Systems	3.
DSCI 471	Applied Deep Learning	3
INFO 101	Introduction to Computing and Security Technology	3
INFO 103	Introduction to Data Science	3
INFO 210	Database Management Systems	3
INFO 212	Data Science Programming I	3
INFO 213	Data Science Programming II	3
INFO 250	Information Visualization	3
INFO 323	Cloud Computing and Big Data	3
INFO 332	Exploratory Data Analytics	3
INFO 440	Social Media Data Analysis	3.
INFO 442	Data Science Projects	3.

ECON 203 Survey of Economic Policy [WI] ECON 260 Economics of Small Business ECON 326 Economic Ideas [WI] ECON 330 Managerial Economics ECON 331 International Macroeconomics ECON 334 Public Finance ECON 336 Labor Economics ECON 338 Industrial Organization ECON 342 Economic Development ECON 344 Comparative Economic Systems ECON 348 Mathematical Economics ECON 351 Resource and Environmental Economics ECON 354 Money and Banking ECON 360 Time Series Econometrics ECON 361 Health Economics ECON 365 Behavioral Economics ECON 366 Topics in Behavioral Economics ECON 370 Experiments and Causality in Economics ECON T480 Special Topics in ECON INTB 332 Multinational Corporations INTB 334 International Trade INTB 336 International Money and Finance INTB 338 Regional Studies in Economic Policies and International Business INTB 440 Seminar in International Business SMT 320 Sport Economics **Data Science Electives** Select 6 credits from the following courses 6.0 CS 270 Mathematical Foundations of Computer Science Artificial Intelligence CS 380 CS 383 Machine Learning INFO 315 Advanced Database Management Systems INFO 371 Data Mining Applications INFO 432 Advanced Data Analytics Free Electives 39.0 **Total Credits** 180.0

#### Sample Plan of Study 5 Year 3 Coop

Select 12 credits from the following

#### First Year

i not i cui										
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
CIVC 101	1.0	) COOP 101	•	1.0	CS 150 or 164		3.0	VACATION		
ECON 201	4.0	) ECON 202		4.0	ENGL 103 or 113		3.0			
ENGL 101 or 111	3.0	) ECON 270		4.0	INFO 103		3.0			
INFO 101	3.0	0 ENGL 102 or 112		3.0	MATH 180		4.0			
MATH 121	4.0	) MATH 201		4.0						
UNIV B101 or C101	1.0	)								
	16	6		16			13			0
Second Ye	ar									
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE	COOP EXPERIEN	CE		CS 171		3.0	COM 230	3	3.0
					ECON 301		4.0	CS 172	3	3.0

						INFO 210		3.0	ECON 250		4.0
						STAT 201			STAT 202		4.0
		0						4.0			4.0
Third Year		0			0			14			14
						<b>.</b> .	<b>o</b> "'				
	Credits		Winter	Credits						Credits	
COOP EXPERIEN	ICE		COOP EXPERIEN	CE		CS 265		3.0	CS 260		3.0
						ECON 321		4.0	INFO 213		3.0
						ECON 350		4.0	INFO 250		3.0
						INFO 212		3.0	ECON Elective		4.0
						INFO 440		3.0	Free Elective		4.0
		0			0			17			17
Fourth Yea	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	5
COOP EXPERIEN	ICE		COOP EXPERIEN	CE		DSCI 351		3.0	DSCI 471		3.0
						INFO 323		3.0	INFO 332		3.0
						ECON Elective			Free Electives		8.0
						Free Elective		4.0			
		0			0			14			14
Fifth Year											
Fall	Credits		Winter	Credits		Spring	Credits				
ECON 360 or 370		4.0	UNIV B201		1.0	ECON 322		4.0			
Free Electives		8.0	Data Science Elective		3.0	INFO 442		3.0			
Data Science Elective		3.0	ECON Elective		4.0	Free Electives		8.0			
			Free		7.0						
			Elective								
		15			15			15			
Total Cred	ite 190										

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.

#### 4 Year 1 Coop

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
UNIV B101 or C101	1.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0	) VACATION	l
CIVC 101	1.0	MATH 201	4.0	MATH 180	4.0	)	
ENGL 101 or 111	3.0	ECON 202	4.0	CS 150 or 164	3.0	)	
MATH 121	4.0	ECON 270	4.0	INFO 103	3.0	)	
INFO 101	3.0			Free Elective	3.0	)	
ECON 201	4.0						
	16		15		10	3	0

Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	5
COOP 101*		1.0	CS 172		3.0	ECON 350		4.0	INFO 213		3.0
CS 171		3.0	ECON 321		4.0	COM 230		3.0	INFO 250		3.0
STAT 201		4.0	STAT 202		4.0	INFO 212		3.0	CS 260		3.0
ECON 301			Free Elective		3.0	CS 265			Free Electives		7.0
INFO 210		3.0									
		15			14			13			16
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	5
COOP EXPERIEN	CE		COOP EXPERIEN	CE		ECON 370 or 360		4.0	ECON 250		4.0
						INFO 323		3.0	INFO 332		3.0
						INFO 440		3.0	Free Electives		7.0
						Econ Elective		4.0			
		0			0			14			14
Fourth Yea	r										
Fall	Credits		Winter	Credits		Spring	Credits				
UNIV B201		1.0	DSCI 351		3.0	DSCI 471		3.0			
ECON 322		4.0	Data Science Elective		3.0	INFO 442		3.0			
Econ Elective		4.0	Econ Elective		4.0	Free Electives	1	10.0			
Data Science Elective			Free Electives		6.0						
Free Elective		3.0									
		15			16			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,

## Economics and Mathematics

#### **Degree Requirements**

#### University Requirements

MATH 483

Introduction to Monte Carlo Methods

University Requi	rements	
COOP 101	Career Management and Professional Development	1.0
CIVC 101	Introduction to Civic Engagement	1.0
UNIV B101	The Drexel Experience	1.0
UNIV B201 [WI]	Career Management	1.0
or UNIV S201	Looking Forward: Academics and Careers	
General Education	Courses	
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	
COM 230	Techniques of Speaking	3.0
CS 150	Computer Science Principles	3.0
or CS 164	Introduction to Computer Science	
CS 171	Computer Programming I	3.0
CS 172	Computer Programming II	3.0
One course in PH	IL, PSY, SOC, HIST or PSCI	3.0
One course in BIC	), CHEM, ENVS or PHYS	3.0
Mathematics Requ	uirements	
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 311	Probability and Statistics I	4.0
MATH 312	Probability and Statistics II	4.0
MATH 401	Elements of Modern Analysis I	3.0
Mathematics Elect	tives: Choose 14 credits from the following	14.0
MATH 222 [WI]	Combinatorics	
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 313	Probability and Statistics III	
MATH 318 [WI]	Mathematical Applications of Statistical Software	
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 402	Elements of Modern Analysis II	
MATH 449	Mathematical Finance	
MATH 450	Introduction to Graph Theory	
MATH 475	Cryptography	

Total Credits		180.0
Free Electives		45.0
SMT 320	Sport Economics	
INTB 440	Seminar in International Business	
INTB 338	Regional Studies in Economic Policies and International Business	
INTB 336	International Money and Finance	
INTB 334	International Trade	
INTB 332	Multinational Corporations	
ECON T480	Special Topics in ECON	
ECON 370	Experiments and Causality in Economics	
ECON 366	Topics in Behavioral Economics	
ECON 365	Behavioral Economics	
ECON 361	Health Economics	
ECON 360	Time Series Econometrics	
ECON 354	Money and Banking	
ECON 351	Resource and Environmental Economics	
ECON 344	Comparative Economic Systems	
ECON 342	Economic Development	
ECON 338	Industrial Organization	
ECON 336	Labor Economics	
ECON 334	Public Finance	
ECON 331	International Macroeconomics	
ECON 330	Managerial Economics	
ECON 326 [WI]	Economic Ideas	
ECON 270	Using Big Data to Solve Economic and Social Problems	
ECON 260	Economics of Small Business	
ECON 203 [WI]	Survey of Economic Policy	
Economics Electiv	res choose 4 of the following courses	16.0
or ECON 370	Experiments and Causality in Economics	
ECON 360	Time Series Econometrics	4.0
ECON 350 [WI]	Applied Econometrics	4.0
ECON 348	Mathematical Economics	4.0
ECON 322 [WI]	Economics Seminar	4.0
ECON 321	Macroeconomics	4.0
ECON 301	Microeconomics	4.0
ECON 250	Game Theory and Applications	4.0
ECON 202	Principles of Macroeconomics	4.0
ECON 201	Principles of Microeconomics	4.0

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

#### Sample Plan of Study

#### 5 Year 3 Coop

Economics Requirements

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CIVC 101	1.	0 CS 171	3	3.0 COOP 101	1.	0 VACATION	
CS 150 or 164	3.	0 ECON 202	2	4.0 CS 172	3.	0	
ECON 201	4.	0 ENGL 102 or 112	3	3.0 ENGL 103 or 113	3.	0	
ENGL 101 or 111	3.	0 MATH 122	4	4.0 MATH 123	4.	0	

MATH 121			ECON Elective <sup>*</sup>		4.0	MATH 200		4.0			
UNIV B101		1.0				ECON Elective***		4.0			
		16			18			19			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECON 301		4.0	ECON 250			COOP EXPERIEN	CE		COOP EXPERIEN	ICE	
MATH 220		3.0	ECON 321		4.0						
MATH 311		4.0	MATH 312		4.0						
Science elective		3.0	PHIL or Social Science Elective		3.0						
		14			15			0			0
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECON 350			ECON 360 or 370			COOP EXPERIEN	CE		COOP EXPERIEN	ICE	
MATH 201		4.0	MATH 210		4.0						
ECON			MATH		4.0						
Elective			Elective								
MATH Elective			Free Elective		4.0						
LIECTIVE		16			16			0			0
Fourth Yea	r	10			10			0			U
Fall			Winter	Credits		Spring	Credits		Summer	Credits	
ECON			ECON 348			COOP	oreans		COOP	oreans	
Elective			20011010			EXPERIEN	CE			ICE	
MATH Elective			MATH Elective		3.0						
Free Electives			Free Electives		7.0						
		15			14			0			0
Fifth Year											
Fall	Credits		Winter	Credits		Spring	Credits				
ECON 322			Free Electives			Free Electives	1	2.0			
UNIV B201 or S201		1.0									
Free Electives		8.0									

Total Credits 180

- \* ECON 270 recommended
- \*\* 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.
- \*\*\* ECON 203 [WI] recommended

#### 4 Year 1 Coop

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CIVC 101		1.0 CS 171		3.0 COOP 101	**	1.0 VACATION	
CS 150 or 164	:	3.0 ECON 202		4.0 CS 172		3.0	
ECON 201	4	4.0 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	4.0 ECON Elective *		4.0 MATH 200		4.0	

Elective         Elective         16       19       0         Second Year         Fall       Credits       Winter       Credits       Spring       Credits       Summer       Credits         ECON 301       4.0 ECON 250       4.0 ECON 350       4.0 MATH 210       4.0         MATH 220       3.0 ECON 321       4.0 MATH 201       4.0 ECON Elective       4.0 MATH 310       4.0 ECON Elective       4.0 MATH 310       3.0 ECON 321       4.0 ECON Elective       3.0 Free       3.0       Free       3.0       Free       3.0       Free       3.0       Free       3.0       Free       3.0       Free       3.0       Free       3.0       Free       4.0 COOP       Elective       Elective       Texperile       Texperile </th <th>UNIV B101</th> <th></th> <th>1.0</th> <th></th> <th></th> <th></th> <th>ECON</th> <th></th> <th>4.0</th> <th></th> <th></th> <th></th>	UNIV B101		1.0				ECON		4.0			
Second Year         Fall         Credits         Winter         Credits         Spring         Credits         Summer         Credits           ECON 301         4.0 ECON 250         4.0 ECON 350         4.0 MATH 210         4.0           MATH 220         3.0 ECON 321         4.0 MATH 201         4.0 ECON         4.0 ECON           MATH 311         4.0 MATH 312         4.0 ECON         4.0 MATH         3.0 Elective           Science         3.0 PHIL of Social Science         4.0 MATH         3.0 Free Elective         3.0 Elective           Science         Social Elective         Social Science         Elective         3.0 Free Elective         3.0 Free Elective           Third Year         1         16         15         14           Free         7.0 MATH         3.0 ECON 348         4.0 COOP EXPERIENCE         EXPERIENCE           Free         7.0 MATH         3.0 Free         7.0 Elective         EXPERIENCE         EXPERIENCE           MATH         3.0 Free         7.0 Elective         7.0 Elective         EXPERIENCE         EXPERIENCE         EXPERIENCE           Free         7.0 MATH         3.0 Free         7.0 Elective         TO         MATH         TO         0         0           MATH         3.0							Elective					
FallCreditsWinterCreditsSpringCreditsSummerCreditsECON 3014.0 ECON 2504.0 ECON 3504.0 MATH 2104.0MATH 2203.0 ECON 3214.0 MATH 2014.0 ECON4.0 ECONMATH 3114.0 MATH 3124.0 ECON4.0 ECON4.0 ElectiveScience3.0 PHIL of Social Science Elective4.0 MATH3.0 Free Elective3.0 Free Elective3.0Third YearYongCreditsSpringCreditsSummerCredits ElectiveFallCreditsWinterCreditsSpringCreditsSummerCredits ECON 360COOP EXPERIENCESummerCreditsFree Elective7.0 MATH 			16			18			19			0
ECON 301       4.0 ECON 250       4.0 ECON 350       4.0 MATH 210       4.0         MATH 220       3.0 ECON 321       4.0 MATH 201       4.0 ECON Elective       4.0 ECON         MATH 311       4.0 MATH 312       4.0 ECON       4.0 MATH 201       4.0 MATH 201       4.0 ECON         Science       3.0 PHIL of elective       4.0 MATH       3.0 Free       3.0 Elective       3.0 Free       3.0 Elective       14       1	Second Ye	ar										
MATH 2203.0 ECON 3214.0 MATH 2014.0 ECON Elective4.0 ECON Elective4.0MATH 3114.0 MATH 3124.0 ECON Elective4.0 MATH Elective3.0Science elective3.0 PHIL of Social Science Elective4.0 MATH Elective3.0 Free Elective3.0Third Year14161514Third YearFallCredits ECON 360 or 370Winter ECON 348Spring CreditsCredits COOP EXPERIENCESummer CreditsCredits COOP EXPERIENCEFree Elective7.0 MATH Elective3.0	Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
MATH 311       4.0 MATH 312       4.0 ECON Elective       4.0 MATH Elective       3.0         Science elective       3.0 PHIL of Social Science Elective       4.0 MATH Elective       3.0 Free Elective       3.0         10       Third Year       16       15       14         11       16       COOP EXPERIENCE       COOP EXPERIENCE       COOP EXPERIENCE       COOP EXPERIENCE       COOP EXPERIENCE       COOP EXPERIENCE       COOP EXPERIENCE         MATH       3.0 Free Elective       7.0       7.0       7.0       7.0       7.0         MATH       3.0 Free Elective       7.0       7.0       7.0       7.0       7.0       7.0         MATH       3.0 Free Elective       7.0       7.0       7.0       7.0       7.0       7.0         MATH       3.0 Free Elective       7.0       7.0       7.0       7.0       7.0       7.0       7.0         Telective       14       10       0       0       0       0       0         MATH       3.0 Free Electives       7.0       7.0       7.0       7.0       7.0       0       0         MATH       14       0       0       0       0 </td <td>ECON 301</td> <td>4</td> <td>4.0</td> <td>ECON 250</td> <td></td> <td>4.0</td> <td>ECON 350</td> <td></td> <td>4.0</td> <td>MATH 210</td> <td></td> <td>4.0</td>	ECON 301	4	4.0	ECON 250		4.0	ECON 350		4.0	MATH 210		4.0
Science elective     3.0     PHIL of Social Science Elective     4.0     MATH     3.0     Free Elective     3.0       Science Elective     Social Science Elective     Elective     Elective     Electives     3.0       14     16     15     14       Third Year       Fall     Credits     Minter     Credits     Spring     Credits     Summer     Credits       Fall     Credits     Vinter     Credits     Spring     Credits     Summer     Credits       Fall     Credits     Spring     Credits     Summer     Credits     Elective       Free     7.0     MATH     3.0     Free     7.0     Elective     Elective       MATH     3.0     Free     7.0     Free     7.0     COOP     O       Identive     Elective     14     0     0     0	MATH 220	:	3.0	ECON 321		4.0	MATH 201		4.0			4.0
elective Science Elective Elective Electives Science Elective Third Year Third Year Fall Credits Winter Credits Spring Credits Summer Credits ECON 360 4.0 ECON 348 4.0 COOP COOP COOP STREET ELECTIVE ELECTIVE ELECTIVE ELECTIVE ELECTIVE ELECTIVE ELECTIVE ELECTIVE THE ADD FREE THE SCIENCE THE ADD FREET THE SCIENCE THE SCIENCE ADD FREET ADD	MATH 311	2	4.0	MATH 312		4.0			4.0			3.0
Third Year     Fall     Credits     Winter     Credits     Spring     Credits     Summer     Credits       ECON 360     4.0 ECON 348     4.0 COOP     COOP     COOP       or 370     2.0 MATH     3.0     Elective     ExPERIENCE     EXPERIENCE       MATH     3.0 Free     7.0     Free     6.0     COOP       14     14     0     0     0		:		Social Science		4.0						3.0
Fall     Credits     Winter     Credits     Spring     Credits     Summer     Credits       ECON 360 or 370     4.0 ECON 348     4.0 COOP EXPERIENCE     COOP EXPERIENCE     COOP EXPERIENCE     COOP EXPERIENCE       Free Elective     7.0 MATH Elective     3.0 Free Elective     7.0     T       MATH Elective     3.0 Free Elective     7.0     T     0     0       T     T     T     T     T     T     T       Fourth Year     T     T     0     0			14			16			15			14
ECON 360 or 370     4.0 ECON 348     4.0 COP EXPERIENCE     COOP EXPERIENCE       Free     7.0 MATH Elective     3.0       MATH     3.0 Free Electives     7.0       14     14     0     0	Third Year											
or 370 EXPERIENCE EXPERIENCE Free 7.0 MATH 3.0 Elective Elective MATH 3.0 Free 7.0 Electives 14 14 0 0	Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
Elective     Elective       MATH     3.0 Free     7.0       Electives     Electives       14     14     0		2	4.0	ECON 348		4.0		CE			CE	
Elective Electives           Id         14         0         0           Fourth Year         14         0         0		ī				3.0						
Fourth Year		:				7.0						
			14			14			0			0
Fall Credits Winter Credits Spring Credits	Fourth Yea	ar										
	Fall	Credits		Winter	Credits		Spring	Credits				
ECON 322 4.0 Free 14.0 Free 13.0 Electives Electives	ECON 322	2			1	14.0		1	3.0			
UNIV B101 1.0 or S201			1.0									
Free 8.0 Electives		٤	8.0									
13 14 13			13			14			13			

Total Credits 180

- \* ECON 270 recommended
- \*\* 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.
- \*\*\* ECON 203 [WI] recommended

First Year										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits
CIVC 101		1.0	CS 171		3.0	CS 172		3.0	VACATION	
CS 150 or 164		3.0	ECON 202		4.0	ENGL 103 or 113		3.0		
ECON 201		4.0	ENGL 102 or 112		3.0	MATH 123		4.0		
ENGL 101 or 111		3.0	MATH 122		4.0	MATH 200		4.0		
MATH 121		4.0	ECON Elective		4.0	ECON Elective**		4.0		
UNIV B101		1.0								
		16			18			18		
Second Ye	ar									
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits
ECON 301		4.0	ECON 250		4.0	ECON 350		4.0	VACATION	
MATH 220		3.0	ECON 321		4.0	MATH 201		4.0		
MATH 311		4.0	MATH 312		4.0	ECON Elective		4.0		

Total Cred	- 400										
		13			13			13			
Free Electives		8.0									
UNIV B201 or S201		1.0									
ECON 322		4.0	Free Electives		13.0	Free Electives	1	3.0			
Fall	Credits		Winter	Credits		Spring					
Fourth Yea	ır										
LIGGUVE		15			14			16			0
Free Elective		4.0									
Elective		5.0	Elective		5.0	Electives		0.0			
MATH			Elective			Elective		8.0			
or 370 MATH 210		10	Electives		3.0	MATH		4.0			
ECON 360		4.0	ECON		8.0	ECON 348		4.0	VACATION		
Third Year Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
		14			15			15			C
			Elective								
elective			Social Science			Elective					
Science		3.0	PHIL or		3.0	MATH		3.0			

\* ECON 270 recommended

\*\* ECON 203 [WI] recommended

# Economics and Public Health

#### **Degree Requirements**

#### General Education Requirements

ECON 301

Microeconomics

General Luucatio	n Requirements	
University Requi	rements	
COOP 101	Career Management and Professional Development	1.0
CIVC 101	Introduction to Civic Engagement	1.0
UNIV B101	The Drexel Experience	1.0
UNIV B201 [WI]	Career Management	1.0
Common Compe	tency Requirements	
COM 230	Techniques of Speaking	3.0
or COM 270	Business Communication	
PBHL 101	Public Health 101	3.0
PSY 101	General Psychology I	3.0
SOC 101	Introduction to Sociology	3.0
English		
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 of the the fo	ollowing math sequences	8.0
MATH 101	Introduction to Analysis I	
& MATH 102 & MATH 239	and Introduction to Analysis II and Mathematics for the Life Sciences	
Or		
MATH 121 & MATH 122 & MATH 123	Calculus I and Calculus II and Calculus III	
Physical Sciences		
Select one of the f	ollowing biology sequences *	8.0
BIO 107 & BIO 108 & BIO 109 & BIO 110	Cells, Genetics & Physiology and Cells, Genetics and Physiology Laboratory and Biological Diversity, Ecology & Evolution and Biological Diversity, Ecology and Evolution Laboratory	
Or		
BIO 131	Cells and Biomolecules	
BIO 134	Cells and Biomolecules Lab	
BIO 132	Genetics and Evolution	
BIO 135	Genetics and Evolution Lab	
Select one of the f	ollowing chemistry sequences	8.0
CHEM 101 & CHEM 102	General Chemistry I and General Chemistry II	
Or		
CHEM 111 & CHEM 112	General Chemistry I and General Chemistry II	
Public Health Co	re Requirements	
PBHL 301	Epidemiology in Public Health	3.0
PBHL 302	Introduction to the History of Public Health	3.0
PBHL 303	Overview of Issues in Global Health	3.0
PBHL 304	Introduction to Health & Human Rights	3.0
PBHL 308	The U.S. Public Health System	3.0
PBHL 314	Environmental and Occupational Health	3.0
Economics Core	Requirements	
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
FOOLAGE		

ECON 350	[WI]	Applied Econometrics	4.0							
ECON 361		Health Economics	4.0							
ECON 370	TAT 201 Introduction to Business Statistics									
STAT 201		Introduction to Business Statistics	4.0							
Interdiscip	inary F	Public Health Requirements								
Select one of	course	from each public health Department – CHP, EOH, EPI, HMP	12.0							
Select 6 add	ditional	public health credits	6.0							
Public Heal	th Cap	stone Experience								
PBHL 498		Capstone Experience II	3.0							
PBHL 499		Capstone Experience III	3.0							
Economics	Electi	ves								
ECON 203	[WI]	Survey of Economic Policy	4.0							
Select 16 cr	edits fr	om the courses below	16.0							
ECON 2	50	Game Theory and Applications								
ECON 2	60	Economics of Small Business								
ECON 2	70	Using Big Data to Solve Economic and Social Problems								
ECON 3	21	Macroeconomics								
ECON 3 [WI]	22	Economics Seminar								
ECON 3 [WI]	26	Economic Ideas								
ECON 3	30	Managerial Economics								
ECON 3	31	International Macroeconomics								
ECON 3	34	Public Finance								
ECON 3	36	Labor Economics								
ECON 3	38	Industrial Organization								
ECON 3	42	Economic Development								
ECON 3	48	Mathematical Economics								
ECON 3	51	Resource and Environmental Economics								
ECON 3	54	Money and Banking								
ECON 3	60	Time Series Econometrics								
ECON 3	65	Behavioral Economics								
ECON 3	66	Topics in Behavioral Economics								
ECON T	480	Special Topics in ECON								
INTB 33	2	Multinational Corporations								
INTB 33	4	International Trade								
INTB 33	6	International Money and Finance								
INTB 33	8	Regional Studies in Economic Policies and International Business								
INTB 44	0	Seminar in International Business								
SMT 32	0	Sport Economics								
Free Electiv	es		41.0							
Total Credi	ts		180.0							

Students who elect the BIO 131, BIO 132, BIO 134, BIO 135 sequence will have two fewer free elective credits.

#### Sample Plan of Study 5 Year, 3 COOP

#### First Year

4.0

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CIVC 101	1.0	ECON 202	4.0	COOP 101		VACATION	
ECON 201	4.0	0 ENGL 102 or 112	3.0	ENGL 103 or 113	3.	)	
ENGL 101 or 111	3.0	0 MATH 102 or 122	4.0	0 MATH 239 or 123	4.0	)	
MATH 101 or 121	4.0	Economics Elective	4.0	) PSY 101	3.0	)	
PBHL 101	3.0	)		Economics Elective	4.0	)	

UNIV B101		1.0									
		16			15			15	•		0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECON 301		4.0	COM 230		3.0	COOP			COOP		
			or 270			EXPERIEN	CE		EXPERIEN	ICE	
SOC 101		3.0	ECON 361		4.0						
PBHL 301		3.0	STAT 201		4.0						
BIO			BIO		4.0						
Course			Course								
		14			15			0			0
Third Year											
			Winter				Credits		Summer	Credits	
ECON 350		4.0	ECON 370		4.0	COOP			COOP	105	
		• •			0.0	EXPERIEN	CE		EXPERIEN	NCE	
PBHL 302			PBHL 303		3.0						
ECON Elective			ECON Elective		4.0						
CHEM			CHEM		4.0						
Course			Course		4.0						
		15			15			0			0
Fourth Yea	r										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
PBHL 304		3.0	PBHL 308		3.0	COOP			COOP		
						EXPERIEN	CE		EXPERIEN	ICE	
CHP			EOH		3.0						
Elective			Elective								
ECON		4.0	ECON		4.0						
Elective		4.0	Elective		4.0						
Free Elective		4.0	Free Elective		4.0						
LICOUVO		14			14			0			0
Fifth Year											Ŭ
	Crodite		Winter	Cradite		Spring	Cradite				
	Greats		PBHL 498	oreuita		PBHL 499	Jieuita	3.0			
		0.0	. DIL 700					6.0			
PBHL 314		10	HMP		30	PRHI					
			HMP Elective		3.0	PBHL Electives					
PBHL 314								7.0			
PBHL 314 UNIV B201		3.0	Elective			Electives		7.0			
PBHL 314 UNIV B201 EPI		3.0	Elective Free Electives	·		Electives Free		7.0			
PBHL 314 UNIV B201 EPI Elective		3.0	Elective Free Electives			Electives Free		7.0			

Total Credits 180

- \* ECON 270 recommended
- \*\* 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 (http://catalog.drexel.edu/search/?P=COOP %20101) 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 (http://catalog.drexel.edu/search/?P=COOP

%20001) in place of COOP 101 (http://catalog.drexel.edu/search/? P=COOP%20101).

\*\*\* ECON 203 [WI] recommended

#### 4 Year, One COOP

Fire	st Y	'ea

Fall	Credits	Winter	Credits	Spring	Credits	Summe	r Credits
CIVC 101	1.	0 ECON 202	4.0	COOP 101	**	1.0 VACATI	ON
ECON 201	4.	0 ENGL 102	3.0	ENGL 103		3.0	
		or 112		or 113			

ENGL 101			MATH 102 or 122			MATH 239 or 123		4.0			
MATH 101		4.0	Economics Elective <sup>*</sup>		4.0	PSY 101		3.0			
PBHL 101		3.0				Economics Elective***		4.0			
UNIV B101		1.0									
		16			15			15			0
Second Ye	ar										
			Winter	Credits		Spring	Credits		Summer	Credits	
ECON 301		4.0	COM 230 or 270			ECON 350			ECON Electives	e. eu.	8.0
SOC 101		3.0	ECON 361		4.0	PBHL 302			Free Electives		8.0
PBHL 301		3.0	STAT 201			ECON Elective		4.0			
BIO			BIO			CHEM		4.0			
Course			Course			Course					
		14			15			15			16
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
PBHL 303		3.0	ECON 370			COOP EXPERIEN	CE		COOP EXPERIEN	NCE	
ECON Elective		4.0	PBHL 304		3.0						
Free Elective		4.0	CHP Elective		3.0						
CHEM Course			ECON Elective		4.0						
		15			14			0			0
Fourth Yea	ır										
Fall	Credits		Winter	Credits		Spring	Credits				
PBHL 308		3.0	PBHL 498		3.0	PBHL 499		3.0			
PBHL 314						00111					
			EPI Elective			PBHL Electives		6.0			
UNIV B201		1.0			3.0			6.0 7.0			
UNIV B201 Free Elective		1.0 3.0	Elective HMP		3.0	Electives Free Electives					
Free		1.0 3.0	Elective HMP Elective Free Electives		3.0	Electives Free Electives					

Total Credits 180

ECON 270 recommended

\*\* 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 (http://catalog.drexel.edu/search/?P=COOP %20101) 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 (http://catalog.drexel.edu/search/?P=COOP %20001) in place of COOP 101 (http://catalog.drexel.edu/search/? P=COOP%20101).

\*\*\* ECON 203 [WI] recommended

## Minor in Law

#### **About the Minor**

The undergraduate minor in Law provides foundational knowledge of the American legal system and how law interacts with every aspect of society, including policy, technology, and multiple career fields. The choice of electives allows students the opportunity for a more in-depth exploration of how the law applies to their major area of interest or study.

#### **Program requirements**

Required Course	es	
LAW 101	Law & Society	4.0
LAW 110	American Legal Systems	4.0
Electives		16.0
Select four underg	graduate LAW courses; at least three must be 200-level or above	
LAW 102	Law Lab	
LAW 201	The Role of the Common Law in the American Legal System	
LAW 210	Public Law: Legislation and Regulation	
LAW 211	Public Law II	
LAW 215	Law & Religion in America Today	
LAW 301	Legal Reasoning	
LAW 304	Comparative Legal Institutions	
LAW 305	Mediation, Arbitration, and the Law of Alternate Dispute Resolution	
LAW 310	Environmental Law	
LAW 312	Immigration Law	
LAW 340	Regulating the Commons	
Total Credits		24.0

\* Students may substitute one Law elective with a non-Law course with advisor permission

## **Minor in Linguistics**

#### **Program Requirements**

Required Course	es	
LING 101	Introduction to Linguistics	3.0
LING 102	Language and Society	3.0
Elective Courses	s (Must equal a minimum of 18 credits)	18.0
	up to 8 credits of Modern Language Courses (ARBC, CHIN, RW, ITAL, JAP, KOR, SPAN) to fulfill electives.	
AFAS 301	Politics of Hip Hop	
ANTH 112	Language, Culture & Cognition	
ANTH 312	Approaches to Intercultural Behavior	
ANTH 350	Anthropology of Language	
BACS 255	Multicultural Counseling	
COM 342	English Worldwide	
COM 345	Intercultural Communication	
COM 355	Ethnography of Communication	
COM 491	Senior Project in Communication I	
COM 492	Senior Project in Communication II	
COM 1399	Independent Study in COM	
CS 171	Computer Programming I	
CS 172	Computer Programming II	
EDUC 216	Diversity and Today's Teacher	
EDUC 236	Early Literacy I	
EDUC 326 [WI]	Language Arts Processes	
EDUC 328	Language Arts Processes 4-8	
EDUC 365	Foundations in Instructing English Language Learners	
GST 100	Introduction to Cultural Diversity	
GST 101	Becoming Global: Language and Cultural Context	
JWST 214	Language and Cultural Diversity in the USA	
LANG T180	Special Topics in Languages *	
PHIL 111	Symbolic Logic I	
PHIL 121	Symbolic Logic II	
PHIL 215	Contemporary Philosophy	
PSY 330	Cognitive Psychology	
PSY 336	Psychology of Language	
WRIT 200	Language Puzzles and Word Games: Issues in Modern Grammar	
WRIT 212	Argument and Rhetoric	
Total Credits		24.0

\* Advisor permission needed, depending on topic.

## **Special Education PK-12**

#### **Degree Requirements**

	on/Content Requirements	
	ic Elective (Choose one):	3.0
ARTH 101	History of Art I	
ARTH 102	History of Art II	
ARTH 103	History of Art III	
ARTH 316	African Art	
MUSC 130	Introduction to Music	
BIO 161	General Biology I	3.0
BIO 162	General Biology II	3.0
Science Elective (	Choose One):	3.0-4.0
CHEM 111	General Chemistry I	
ENVS 260	Environmental Science and Society	
PHYS 131	Survey of the Universe	
PHYS 151	Applied Physics	
COM 111	Principles of Communication	3.0
ECON 201	Principles of Microeconomics	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	
English (Literature	e) elective: Select course between ENGL 200 - ENGL 360	3.0
HIST 275	History of Pennsylvania	3.0
MATH 107	Probability and Statistics for Liberal Arts	3.0
MATH 110	Precalculus	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
Pedagogy Requir		
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical	3.0
2000 101	Perspective	0.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 314	Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 336	Early Literacy II	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 360	English/Language Arts Teaching Methods for the Middle Years	1.5

Total Credits		181.0-182.0
EDEX 414 [WI]	Special Education Student Teaching Seminar	9.0
EDUC 409	Student Teaching Seminar I	9.0
Student Teachin	g Experience	
EDEX 388	Implementing Academic Interventions in Inclusive Educational Environments	3.0
EDEX 378	Special Education: Methods & Practices PK-12	3.0
EDEX 375	Teaching STEAM in an Inclusive Environment PK-12	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDEX 355	Teaching Students with Autism Spectrum Disorders	3.0
EDEX 352	Integrating Technology for Learning & Achievement	3.0
EDEX 350	Teaching Individuals with Low Incident Disabilities	3.0
EDEX 349	High Incident Disabilities	3.
EDEX 348	Emotional and Behavioral Support of Individuals with Disabilities	3.
EDEX 344	Inclusionary Practices for Exceptional Students	3.
EDEX 336	Special Education Law and Processes PK-12	3.
EDEX 142	Special Education Foundations: Referral and Assessment	3.
Special Education	on Core Courses	
MTED 418	Mathematics Methods and Content	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
EDUC 411	Family and Community Partnerships	3.0
EDUC 405	Senior Pedagogy Seminar	1.
EDUC 365	Foundations in Instructing English Language Learners	3.
EDUC 363	Middle Years Mathematics Methods	1.
EDUC 362	Middle Years Social Studies Methods	1.
EDUC 361	Middle Years Science Methods	1.

#### Sample Plan of Study

First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.	0 EDUC 120		3.0 EDEX 142	3.0	EDUC 216	3.0
ENGL 101	3.	0 EDUC 107		1.0 EDUC 121	3.0	ENGL 103	3.0
EDUC 106	1.	0 ENGL 102		3.0 EDUC 108	1.0	HIST 275	3.0
PSY 101	3.	0 MATH 171		3.0 MATH 172	3.0		
	1	0		10	10	)	9
Second Ye	ar (Part-Ti	me)					
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 161	3.	0 BIO 162		3.0 EDUC 236	3.0	Art History or Music Elective	3.0
EDEX 344	3.	0 EDEX 368		3.0 EDUC 305	1.0	EDEX 336	3.0
EDUC 205	1.	0 EDUC 322		3.0 EDUC 308	3.0	EDUC 312	3.0
MATH 107	3.	0		EDUC 365	3.0	)	
	1	0		9	10	)	9
Third Year	(Part-Time	3					
initia real	(Fait-Time	9					
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
	Credits	,		Spring 3.0 EDEX 352		Summer EDEX 350	Credits 3.0
Fall	Credits 3.	Winter		-	3.0		
<b>Fall</b> EDEX 349	Credits 3. 3.	Winter 0 EDEX 355		3.0 EDEX 352 3.0 Literature	3.0 3.0	EDEX 350	3.0
Fall EDEX 349 EDEX 375	Credits 3. 3.	Winter 0 EDEX 355 0 EDUC 316		3.0 EDEX 352 3.0 Literature Elective 2.0 Science	3.0 3.0	EDEX 350 EDLT 325	3.0 3.0
Fall EDEX 349 EDEX 375	Credits 3. 3. 3.	<ul> <li>Winter</li> <li>0 EDEX 355</li> <li>0 EDUC 316</li> <li>0 NFS 100</li> </ul>		3.0 EDEX 352 3.0 Literature Elective 2.0 Science Elective	3.0 3.0	EDEX 350 EDLT 325 EDUC 355	3.0 3.0
Fall EDEX 349 EDEX 375	Credits 3. 3. 3.	Winter 0 EDEX 355 0 EDUC 316 0 NFS 100 NFS 101 9		3.0 EDEX 352 3.0 Literature Elective 2.0 Science Elective 1.0	3.0 3.0 3.0-4.0	EDEX 350 EDLT 325 EDUC 355	3.0 3.0 3.0
Fall EDEX 349 EDEX 375 MATH 110	Credits 3. 3. 3.	Winter 0 EDEX 355 0 EDUC 316 0 NFS 100 NFS 101 9 ne)		3.0 EDEX 352 3.0 Literature Elective 2.0 Science Elective 1.0 9	3.0 3.0 3.0-4.0	EDEX 350 EDLT 325 EDUC 355	3.0 3.0 3.0
Fall EDEX 349 EDEX 375 MATH 110 Fourth Yea	Credits 3. 3. 3. ar (Part-Tin Credits	Winter 0 EDEX 355 0 EDUC 316 0 NFS 100 NFS 101 9 ne)	Credits	3.0 EDEX 352 3.0 Literature Elective 2.0 Science Elective 1.0 9	3.0 3.0 3.0-4.0 9-10 Credits	EDEX 350 EDLT 325 EDUC 355	3.0 3.0 3.0 9
Fall EDEX 349 EDEX 375 MATH 110 Fourth Yea Fall	Credits 3. 3. 3. rr (Part-Tin Credits 3.	Winter 0 EDEX 355 0 EDUC 316 0 NFS 100 NFS 101 9 we) Winter	Credits	3.0 EDEX 352 3.0 Literature Elective 2.0 Science Elective 1.0 9 Spring	3.0 3.0 3.0-4.0 9-10 Credits 3.0	EDEX 350 EDLT 325 EDUC 355	3.0 3.0 3.0 9 Credits
Fall EDEX 349 EDEX 375 MATH 110 Fourth Yea Fall EDEX 378	Credits 3. 3. 3. r (Part-Tin Credits 3. 3.	Winter 0 EDEX 355 0 EDUC 316 0 NFS 100 NFS 101 9 winter 0 EDEX 348	Credits	3.0 EDEX 352 3.0 Literature Elective 2.0 Science Elective 1.0 9 Spring 3.0 EDEX 388	3.0 3.0-4.0 9-10 Credits 3.0 3.0 3.0	EDEX 350 EDLT 325 EDUC 355 Summer EDUC 360	3.0 3.0 3.0 9 Credits 1.5
Fall EDEX 349 EDEX 375 MATH 110 Fourth Yea Fall EDEX 378 EDUC 324	Credits 3. 3. 3. r (Part-Tin Credits 3. 3.	Winter 0 EDEX 355 0 EDUC 316 0 NFS 100 NFS 101 9 winter 0 EDEX 348 0 EDUC 314	Credits	3.0 EDEX 352 3.0 Literature Elective 2.0 Science Elective 1.0 9 Spring 3.0 EDEX 388 3.0 EDUC 336	3.0 3.0-4.0 9-10 Credits 3.0 3.0 3.0	EDEX 350 EDLT 325 EDUC 355 Summer EDUC 360 EDUC 361	3.0 3.0 3.0 9 Credits 1.5 1.5

#### 2 Special Education PK-12

#### Fifth Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 405	1.	0 EDEX 414	9.0	COM 111	:	3.0 MTED 418	3.0
EDUC 409	9.	0		ECON 201	4	4.0 PSY 330	3.0
				SOC 335	:	3.0	
	1	0	9			10	6

Total Credits 181-182

## **Teacher Education: Computer Science**

### **Degree Requirements**

#### General Education 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
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	
HIST 285	Technology in Historical Perspective	4.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 221	Discrete Mathematics	3.0
MATH 311	Probability and Statistics I	4.0
or MATH 410	Scientific Data Analysis I	
PHIL 311	Ethics and Information Technology	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
or CI 120	CCI Transfer Student Seminar	

#### Science Requirements

Science Requirer	henta	12.0-15.0
Choose one lab se	equence	
BIO 131 & BIO 134	Cells and Biomolecules and Cells and Biomolecules Lab	
BIO 132 & BIO 135	Genetics and Evolution and Genetics and Evolution Lab	
BIO 133 & BIO 136	Physiology and Ecology and Anatomy and Ecology Lab	
CHEM 101 & CHEM 102 & CHEM 103	General Chemistry I and General Chemistry II and General Chemistry III	
PHYS 101 & PHYS 102 & PHYS 201	Fundamentals of Physics I and Fundamentals of Physics II and Fundamentals of Physics III	
Computer Science	e Requirements	
CS 150	Computer Science Principles	3.0
CS 171	Computer Programming I	3.0
or CS 175	Advanced Computer Programming I	
CS 172	Computer Programming II	3.0
or CS 176	Advanced Computer Programming II	
CS 260	Data Structures	3.0
CS 265	Advanced Programming Tools and Techniques	3.0
CS 270	Mathematical Foundations of Computer Science	3.0
CS 375	Web Development	3.0
CS Electives		24.0
Recommended:		
CS 277	Algorithms and Analysis	
CS 281	Systems Architecture	
SE 181	Introduction to Software Engineering and Development	
SE 310	Software Architecture I	
Choose additio	onal courses from CCI: CS, SE, INFO, CT 200 level and above	
Computing & Info	ormatics Requirements	
CI 101	Computing and Informatics Design I	2.0

CI 102	Computing and Informatics Design II	2.0
CI 103	Computing and Informatics Design III	2.0
Pedagogy Requi	rements	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 409	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
ESTM 335	Teaching Secondary Computer Science	3.0
Total Credits		183.0-186.0

## Sample Plan of Study

#### 4 year, 1 co-op

12.0-15.0

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CI 101	2	.0 CI 102		2.0 CI 103	2.	VACATION	
CS 150	3	.0 CIVC 1	101	1.0 CS 172	3.	)	
EDUC 101	3	.0 CS 171	1	3.0 EDEX 14	42 3.	C	
EDUC 106	1	.0 EDUC	107	1.0 EDUC 1	08 1.0	C	
ENGL 101 or 111	3	.0 EDUC	113	3.0 EDUC 1	23 3.0	)	
MATH 121	4	0 ENGL or 112		3.0 ENGL 10 or 113	03 3.0	)	
UNIV T101	1	.0 MATH	122	4.0 MATH 1	23 4.0	)	
	1	7		17	1	Э	0
Second Ye	ar						
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101			-				
COOF 101	1	.0 CS 260	0	3.0 CS 375	3.0	0 EDLT 326	3.0
CS 265		.0 CS 260	-	3.0 CS 375 4.0 EDEX 3		) EDLT 326 ) EDUC 322	3.0 3.0
	3		201		68 3.0		
CS 265	3	.0 ECON	201 216	4.0 EDEX 3	68 3.0 05 1.0	) EDUC 322	3.0
CS 265 CS 270	3 3 3	.0 ECON .0 EDUC	201 216	4.0 EDEX 3 3.0 EDUC 3	68 3.1 05 1.1 08 3.1	D EDUC 322 D PSY 101 D CCI Electives	3.0 3.0
CS 265 CS 270 EDEX 344	3 3 3 1	.0 ECON .0 EDUC .0 MATH	201 216	4.0 EDEX 30 3.0 EDUC 3 3.0 EDUC 3	68         3.0           05         1.0           08         3.0           01         4.0	<ul> <li>DEDUC 322</li> <li>DPSY 101</li> <li>DCCI Electives</li> </ul>	3.0 3.0
CS 265 CS 270 EDEX 344 EDUC 205	3 3 3 1 3	.0 ECON .0 EDUC .0 MATH .0	201 216	4.0 EDEX 30 3.0 EDUC 3 3.0 EDUC 3 PHYS 10	68         3.           05         1.           08         3.           01         4.	D EDUC 322 D PSY 101 D CCI Electives	3.0 3.0
CS 265 CS 270 EDEX 344 EDUC 205	3 3 3 1 3 1	.0 ECON .0 EDUC .0 MATH .0	201 216	4.0 EDEX 3 3.0 EDUC 3 3.0 EDUC 3 PHYS 10 PHIL 31	68         3.1           05         1.1           08         3.1           01         4.1           1         3.1	D EDUC 322 D PSY 101 D CCI Electives	3.0 3.0 6.0
CS 265 CS 270 EDEX 344 EDUC 205 EDUC 365	3 3 3 1 3 1	.0 ECON .0 EDUC .0 MATH .0 .0	201 216 221	4.0 EDEX 3/ 3.0 EDUC 3 3.0 EDUC 3 PHYS 1/ PHIL 31 13	68         3.1           05         1.1           08         3.1           01         4.1           1         3.1	D EDUC 322 D PSY 101 D CCI Electives D D 7	3.0 3.0 6.0
CS 265 CS 270 EDEX 344 EDUC 205 EDUC 365 Third Year	3 3 3 1 3 7 1 <b>Credits</b>	.0 ECON .0 EDUC .0 MATH .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	201 216 221	4.0 EDEX 3/ 3.0 EDUC 3 3.0 EDUC 3 PHYS 1/ PHIL 31 13 5 Spring	68 3. 05 1. 08 3. 01 4. 1 3. <b>Credits</b>	D EDUC 322 D PSY 101 D CCI Electives D D 7	3.0 3.0 6.0 15 Credits
CS 265 CS 270 EDEX 344 EDUC 205 EDUC 365 Third Year Fall COOP	3 3 3 1 3 7 7 <b>Credits</b> CE	.0 ECON .0 EDUC .0 MATH .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	201 216 221	4.0 EDEX 3/ 3.0 EDUC 3 3.0 EDUC 3 PHYS 1/ PHIL 31 13 5 Spring	68 3. 05 1. 08 3. 01 4. 1 3. <b>Credits</b> 16 3.	D EDUC 322 D PSY 101 D CCI Electives D T Summer	3.0 3.0 6.0 15 Credits

#### 2 Teacher Education: Computer Science

				PSY 320	3.0	CCI Electives	6.0
	3			0	14		16
Fourth Yea	ar						
Fall	Credits	Winter	Credits	Spring	Credits		
EDUC 223	3.0	EDUC 410	9.	0 EDUC 405	1.0		
EDUC 409	9.0	PHYS 201	4.	0 CCI Electives	12.0		
	12		1	3	13		

Total Credits 183

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## Post-Baccalaureate Certificate in Applied Artificial Intelligence/ Machine Learning for Data Science

#### **Program Requirements**

Required Courses	s	
DSCI 501	Quantitative Foundations of Data Science	3.0
DSCI 521	Data Analysis and Interpretation	3.0
DSCI 631	Applied Machine Learning for Data Science	3.0
Choose 2 of the e	electives below	6.0
CS 501	Introduction to Programming	
or CS 570	Programming Foundations	
CS 502	Data Structures and Algorithms	
CS 503	Systems Basics	
CS 510	Introduction to Artificial Intelligence	
CS 613	Machine Learning	
CS 615	Deep Learning	
DSCI 591	Data Science Capstone I	
DSCI 592	Data Science Capstone II	
Total Credits		15.0

### Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	
DSCI 501		3.0 DSCI 631		3.0
DSCI 521		3.0 Electives		6.0
		6		9

Total Credits 15

## **Graduate Minor in Arts in Public Health**

#### **Degree Requirements**

CHP 530	Arts for Community Health and Wellbeing	3.0
	, 0	
CHP 531	Community-Engaged Practice in Arts and Community Health	3.0
Electives (Choos	,	6.0
Dornsife School o		
CHP 550	Community Based Prevention Practices	
CHP 670	Multicultural Competence in Community Health and Prevention	
CHP 671	Community Organizing and Community Assessment for Health and Wellness	
CHP 683	Intersectional Perspectives	
CHP 692	Migration and Health	
CHP 802	Theory & Practice of Community Health and Prevention II	
CHP 804	Qualitative Research in Community Health	
CHP 806	Community Based Participatory Research	
EPI 563	Interprofessional Collaboration for Urban Health	
EOH 550	Introduction to Urban Health	
HMP 550	Health Disparities: Systemic, Structural, Environmental & Economic	
HMP 555	Violence, Trauma and Adversity in Public Health	
HMP 600	Public Health Advocacy and Activism	
HMP 802	Health and Human Rights	
Antoinette Westp	hal College of Media Arts and Design	
AADM 741	Arts Entrepreneurship	
AADM 745	Arts in Education	
AADM 746	Creative Placemaking	
AADM 755	Community Cultural Planning	
AADM 757	Political Activism in the Arts	
URBS 610	Civic Engagement & Participatory Methods	
URBS 650	Urbanism, Health & the Built Environment	
College of Nursin	g and Health Professions	
CATX 501	Foundations of Creative Arts Therapies	
Center for Food a	and Hospitality Management	
FOOD 605	Culture and Gastronomy	
School of Educat	ion	
CRTV 501	Foundations in Creativity	
CRTV 502	Tools and Techniques in Creativity	
CRTV 660	Diagnostic Creative Intervention	

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## Post-Baccalaureate Certificate in Big Data Analytics

#### **Program Requirements**

#### **Required Courses**

Total Credits		15.0
INFO 633	Information Visualization	
DSCI 691	Natural Language Processing with Deep Learning	
DSCI 592	Data Science Capstone II *	
DSCI 591	Data Science Capstone I *	
CS 676	Parallel Programming	
Choose 3 of the	e electives below	9.0
DSCI 632	Applied Cloud Computing	3.0
CS 660	Data Analysis at Scale	3.0

\* DSCI 591 and DSCI 592 are recommended if a student wants to pursue an MSDS.

#### Sample Plan of Study

First Year		
Fall	Credits Winter	Credits
DSCI 632	3.0 CS 660	3.0
Elective	3.0 Elective	es 6.0
	6	9

**Total Credits 15** 

# Business Information Technology MSBIT

#### **Degree Requirements**

Required Cours	ses - Information Technology & Management	
CT 500	Introduction to the Digital Environment	3.0
CT 600	Cloud Technology	3.0
CT 610	Disaster Recovery, Continuity Planning and Digital Risk Assessment	3.0
MIS 615	Aligning Information Technologies and Operations	3.0
MIS 625	Management of Information Technology Operations	3.0
Choose 2 of the	e following elective areas	30.0
Organizational	Security	
CT 605	Cloud Security and Virtual Environments	
CT 620	Security, Policy and Governance	
INFO 517	Principles of Cybersecurity	
INFO 710	Information Forensics	
INFO 712	Information Assurance	
Information Tec	chnology Strategy & Execution	
MIS 612	Aligning Information Systems and Business Strategies	
MIS 641	MIS Policy and Strategy	
ORGB 602	Leading and Executing Change	
SE 630	Software Engineering Economics	
SE 638	Software Project Management	
Information Syt	ems Development	
CT 630	Application Software Construction and Operation	
INFO 540	Perspectives on Information Systems	
INFO 605	Database Management Systems	
MIS 624	Systems Analysis & Design	
MIS 652	Business Agility and IT	
Digital Transfor	mation	
MGMT 602	Innovation Management	
MGMT 603	Technology Strategy	
MIS 642	Emerging Information Technologies in Business	
MIS 643	Digital Platform Management	
MIS 653	Design Thinking for Digital Innovations	
Total Credits		45.0

### Sample Plan of Study

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CT 500	3.	0 CT 600	з	3.0 CT 610	3.	0 MIS 615	3.0
Elective	3.	0 Elective	3	3.0 Elective	3.	) Elective	3.0
Area 1		Area 2		Area 1		Area 2	
		6		6		6	6
Second Ye	ear						
Fall	Credits	Winter	Credits	Spring	Credits		
MIS 625	3.	0 Elective	3	3.0 Elective	3.	0	
		Area 1		Area 1			
Elective	3.	0 Elective	3	3.0 Elective	6.	)	
Area 1		Area 2		Area 2			
		6		6	!	9	

# Post-Baccalaureate Certificate in Change Leadership Strategy

#### **Program Requirements**

MGMT 600	Introduction to Change Management: An Integration of Macro and Micro Perspectives	3.0
MGMT 604	Strategic Change Management	3.0
MGMT 690	Change Management Experiential Capstone	3.0
ORGB 602	Leading and Executing Change	3.0
Total Credits		12.0

### Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
MGMT 600	3.0	ORGB 602	3.	0 MGMT	604	3.0 MGMT 690	) 3	8.0
	3	3		3		3		3

# Graduate Minor in Change Leadership Strategy

### **Program Requirements**

MGMT 600	Introduction to Change Management: An Integration of Macro and Micro Perspectives	3.0
MGMT 604	Strategic Change Management	3.0
MGMT 690	Change Management Experiential Capstone	3.0
ORGB 602	Leading and Executing Change	3.0
Total Credits		12.0

# Post-Baccalaureate Certificate in Computing Systems Security and Privacy

#### **Program Requirements**

Required Cours	ses				
CS 590	Privacy		3.0		
CS 645	Network Security		3.0		
SE 578	Security Engineering		3.0		
Elective Course	es (choose 2)		6.0		
CS 523	Cryptography				
CS 543	Operating Systems				
CS 544	Computer Networks				
CS 613	Machine Learning				
Consult depa	Consult departmental advisor for additional electives				
Total Credits			15.0		

### Sample Plan of Study

First Year				
Fall	Credits	Winter	Credits	
SE 578		3.0 CS 590		3.0
Elective		3.0 CS 645		3.0
		Elective		3.0
		6		9

# **Creative Education and Entrepreneurship**

### **Degree Requirements**

#### Required Courses

	Innovation Core:	
CRTV 501	Foundations in Creativity	3.0
CRTV 502	Tools and Techniques in Creativity	3.0
CRTV 503	Creativity in the Workplace	3.0
CRTV 610	Creativity and Change Leadership	3.0
CRTV 615	Neuroscience, Creativity and Innovation	3.0
Entrepreneur	rship Core:	
ENTP 501	Entrepreneurship Practice & Mindset	3.0
ENTP 515	Pitch It!	3.0
ENTP 575	Entrepreneurship in Education	3.0
ENTP 611	Learning from Failure	3.0
ENTP 621	Innovation & Ideation	3.0
Capstone Co	oursework:	
CRTV 695	Applied Project in Creativity Studies I	3.0
CRTV 696	Applied Project in Creativity Studies II	3.0
Electives:		
	n the following suggested graduate electives list (with advisor	9.0
approval):		
approval): Creativity and Inn	ovation	
,	ovation Research Methods and Assessment of Creative and Innovative Thinking	
Creativity and Inn	Research Methods and Assessment of Creative and Innovative	
Creativity and Inn CRTV 620	Research Methods and Assessment of Creative and Innovative Thinking	
Creativity and Inn CRTV 620 CRTV 630	Research Methods and Assessment of Creative and Innovative Thinking Global Perspectives on Creativity	
Creativity and Inn CRTV 620 CRTV 630 CRTV 650 CRTV 660	Research Methods and Assessment of Creative and Innovative Thinking Global Perspectives on Creativity Current Trends in Creativity & Innovation Diagnostic Creative Intervention	
Creativity and Inn CRTV 620 CRTV 630 CRTV 650 CRTV 660	Research Methods and Assessment of Creative and Innovative Thinking Global Perspectives on Creativity Current Trends in Creativity & Innovation Diagnostic Creative Intervention	
Creativity and Inn CRTV 620 CRTV 630 CRTV 650 CRTV 660 Design Research	Research Methods and Assessment of Creative and Innovative Thinking Global Perspectives on Creativity Current Trends in Creativity & Innovation Diagnostic Creative Intervention	
Creativity and Inn CRTV 620 CRTV 630 CRTV 650 CRTV 660 Design Research DSRE 620	Research Methods and Assessment of Creative and Innovative Thinking Global Perspectives on Creativity Current Trends in Creativity & Innovation Diagnostic Creative Intervention Design Problem Solving	
Creativity and Inn CRTV 620 CRTV 630 CRTV 650 CRTV 660 Design Research DSRE 620 DSRE 630 DSRE 635	Research Methods and Assessment of Creative and Innovative Thinking         Global Perspectives on Creativity         Current Trends in Creativity & Innovation         Diagnostic Creative Intervention         Design Problem Solving         Data Visualization for Design Professionals         Translational Design Research	
Creativity and Inn CRTV 620 CRTV 630 CRTV 650 CRTV 660 Design Research DSRE 620 DSRE 630 DSRE 635	Research Methods and Assessment of Creative and Innovative Thinking         Global Perspectives on Creativity         Current Trends in Creativity & Innovation         Diagnostic Creative Intervention         Design Problem Solving         Data Visualization for Design Professionals         Translational Design Research	
Creativity and Inn CRTV 620 CRTV 630 CRTV 650 CRTV 660 Design Research DSRE 620 DSRE 630 DSRE 635 Entrepreneurship	Research Methods and Assessment of Creative and Innovative Thinking         Global Perspectives on Creativity         Current Trends in Creativity & Innovation         Diagnostic Creative Intervention         Design Problem Solving         Data Visualization for Design Professionals         Translational Design Research	

### Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CRTV 501	3	.0 CRTV 502	3.0	0 CRTV 503	3.0	CRTV 610	3.0
ENTP 501	3	.0 ENTP 621	3.0	) ENTP 535	3.0	ENTP 575	3.0
		6	(	6	6		6
Second Ye	ar						
Fall	Credits	Winter	Credits	Spring	Credits		
CRTV 615	3	.0 CRTV 695	3.0	0 CRTV 696	3.0	)	
ENTP 515	3	.0 Suggested Elective (See List/ Advisor)	3.(	D Suggested Electives (See List/ Advisor)	6.0		
		6		6	9		

# Post-Baccalaureate Certificate in Creativity Tools and Techniques for the Classroom and Workplace

#### **Program Requirements**

Require Courses		
CRTV 502	Tools and Techniques in Creativity	3.0
CRTV 503	Creativity in the Workplace	3.0
CRTV 615	Neuroscience, Creativity and Innovation	3.0
or CRTV 650	Current Trends in Creativity & Innovation	
Total Credits		9.0

#### Sample Plan of Study

#### Sample Plan for 1 Course Per Term Enrollment:

First Year					
Fall	Credits	Winter	Credits	Spring	Credits
CRTV 502	3.0	CRTV 503	3.0	CRTV 615 or 650	3.0
	3		3		3

Total Credits 9

Sample Plan for Multiple Courses Per Term Enrollment:

First Year

Fall	Credits	Winter	Credits
CRTV 502	3.0	CRTV 503	3.0
CRTV 615 or 650	3.0		
	6		3

## Post-Baccalaureate Certificate in Digital Transformation

### **Program Requirements**

MGMT 602Innovation Management3.1MGMT 603Technology Strategy3.1MIS 642Emerging Information Technologies in Business3.1MIS 643Digital Platform Management3.1MIS 653Design Thinking for Digital Innovations3.1
MGMT 603     Technology Strategy     3.1       MIS 642     Emerging Information Technologies in Business     3.1
MGMT 603 Technology Strategy 3.
MGMT 602 Innovation Management 3.

### Sample Plan of Study

	6		9
		MGMT 603	3.0
MGMT 602	3.0	MIS 653	3.0
MIS 642	3.0	MIS 643	3.0
Fall	Credits	Winter	Credits
First Year			

# Post-Baccalaureate Certificate in Disability and Health Equity Policy

HMP 661	Disability and Measurement	3.0
HMP 660	Public Policy and Advocacy	3.0
Selectives (pick 2)		6.0
HMP 662	Medicaid and Disability Policy	
HMP 519	Maternal & Child Health Policy	
HMP 551	Historical and Contemporary Developments in Social Justice	
CHP 683	Intersectional Perspectives	

24.0

45.0

# **Finance MS**

#### **Degree Requirements**

#### Required Courses

Required Course	25	
BUSN 501	Measuring and Maximizing Financial Performance	3.0
or ACCT 510	Essentials of Financial Reporting	
FIN 601	Corporate Financial Management	3.0
Students may ch	oose (1) one of the following Specializations	15.0
Strategic Finance	e and Risk	
FIN 649	Comparative Financial Analysis	
Select (4) four of t	the following:	
FIN 602	Advanced Financial Management	
FIN 605	Business Valuation	
FIN 624	Risk Management	
FIN 626	Investment Management	
FIN 610	Corporate Governance	
FIN 640	Mergers and Acquisitions	
FIN 790	Seminar in Finance	
MGMT 676	Sustainability and Value Creation	
ORGB 640	Negotiations for Leaders	
Corporate Finan	ce	
FIN 602	Advanced Financial Management	
Select (4) four of t	the following:	
ACCT 601	Managerial Accounting	
FIN 610	Corporate Governance	
FIN 615	Environmental and Social Issues in Finance	
FIN 635	Entrepreneurial Finance	
FIN 640	Mergers and Acquisitions	
FIN 648	International Financial Management	
FIN 649	Comparative Financial Analysis	
FIN 790	Seminar in Finance	
Investments		
FIN 626	Investment Management	
Select (4) four of t	the following:	
FIN 622	Financial Institutions & Markets	
FIN 624	Risk Management	
FIN 639	FinTech	
FIN 645	Behavioral Finance	
FIN 648	International Financial Management	
FIN 649	Comparative Financial Analysis	
FIN 650	Derivative Securities	
FIN 794	Seminar in Investments	
STAT 610	Statistics for Business Analytics	
FinTech		
FIN 639	FinTech	
Select (4) four of t	the following:	
FIN 602	Advanced Financial Management	
FIN 622	Financial Institutions & Markets	
FIN 635	Entrepreneurial Finance	
FIN 642	Business Conditions and Forecasting	
FIN 649	Comparative Financial Analysis	
MIS 636	Python Programming for Business Applications	
STAT 632	Datamining for Managers	
Non-Specializati	on	

Students who do not choose a Specialization can complete 39 credits in the following subject codes: Accounting (ACCT), Statistics (STAT), Economics (ECON), Finance (FIN), General Business (BUSN), International Business (INTB), Legal Studies (BLAW), Management (MGMT), Management Information Systems (MIS), Marketing (MKTG), Operations management (OPM), Operations Research (OPR), Organizational Behavior (ORGB), Production Operations Management (POM), Sport Management (SMT) or Taxation (TAX), with course number range between 600-799, and a maximum of fifteen (15) credits can be from outside the area of Finance (FIN)

#### **Required Elective Courses**

Students who selected a Specialization will select 24 credits in the following subject codes: Accounting (ACCT), Statistics (STAT), Economics (ECON), Finance (FIN), General Business (BUSN), International Business (INTB), Legal Studies (BLAW), Management (MGMT), Management Information Systems (MIS), Marketing (MKTG), Operations management (OPM), Operations Research (OPR), Organizational Behavior (ORGB), Production Operations Management (POM), Sport Management (SMT) or Taxation (TAX), with course number range between 600-799, and a maximum of fifteen (15) credits can be from outside the area of Finance (FIN)

**Total Credits** 

### Sample Plan of Study Sample Full-Time

#### First Year Fall Credits Winter Credits Spring Credits Summer Credits **BUSN 501** 3.0 FIN 648 3.0 FIN 622 3.0 VACATION or ACCT 510 FIN 601 3.0 FIN 649 3.0 FIN 626 3.0 Elective 3.0 Elective 3.0 Elective 3.0 Course Course Course 9 ٩ 9 0 Second Year Fall Credits Winter Credits FIN 602 3.0 FIN 650 3.0 **FIN 624** 3.0 FIN 794 3.0 Elective 3.0 Elective 3.0 Course Course 9 9

Total Credits 45

#### Sample Part-Time

First Year Fall Credits Winter Credits Spring Credits Summer Credits **BUSN 501** 3.0 VACATION 3.0 FIN 648 3.0 FIN 622 or ACCT 510 FIN 601 3.0 FIN 649 3.0 FIN 626 3.0 6 6 6 0 Second Year Fall Credits Winter Credits Spring Credits Summer Credits FIN 602 3.0 FIN 650 3.0 Electives 6.0 VACATION 3.0 FIN 794 **FIN 624** 3.0 6 6 6 0 Third Year Fall Credits Winter Credits Electives 6.0 Elective 3.0 3 6

# Post-Baccalaureate Certificate in Hardware Systems Engineering

#### **Program Requirements**

Required System Engineering Courses

Total Credits		18.0
COE Technical Ele MEM or MATE)*	actives (2 Courses ECEC, ECEE, ECEP, ECET, ECES, ET,	6.0
or SYSE 682	Introduction to Systems Science	
or SYSE 531	Systems Architecture Development	
SYSE 530	Systems Engineering Design	3.0
Systems Engineer	ing Course Elective	
SYSE 688	Systems Engineering Analysis	3.0
SYSE 685	Systems Engineering Management	3.0
SYSE 533	Systems Integration and Test	3.0

\* Technical Electives must be graduate level courses (500, 600 or 700 level)

### Sample Plan of Study

#### First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
SYSE 685	3.0	0 SYSE 688		3.0 SYSE 533	3	3.0 SYSE 530,	3.0
						533, or 682	2
	;	3		3		3	3
Second Ye	ar						
Fall	Credits	Winter	Credits				
Technical	3.0	0 Technical		3.0			
Elective 1*		Elective 2*					
	;	3		3			

Total Credits 18

\* Technical Elective courses must be graduate level 500, 600 or 700 level courses from COE

# Healthcare Simulation MS

### **Degree Requirements**

IPS 502	Advanced Ethical Decision Making in Health Care	3.0
IPS 503	Confronting Issues in Contemporary Health Care Environments	3.0
IPS 544	Quality and Safety in Healthcare	3.0
IPS 585	Science of Safety, Human Factors, and System Thinking	3.0
IPS 586	Creating a Culture of Safety	2.0
IPS 591	Foundations of Healthcare Education	3.0
IPS 617	Simulation in Healthcare Education	4.5
IPS 618	Standardized Patients	3.0
IPS 619	Advanced Debriefing and Reflective Practice	3.0
IPS 620	Simulation Center Leadership	3.0
IPS 621	Evaluation in Simulation-Based Education	3.0
IPS 622	Simulation Capstone	5.5
RSCH 503	Research Methods and Biostatistics	3.0
RSCH 504	Evaluation and Translation of Health Research	3.0
Total Credits		45.0

### Sample Plan of Study

#### First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Winter	Credits
IPS 503	3.0	IPS 502	3.0	IPS 617	4.5	IPS 618	3.0
IPS 591	3.0	IPS 544	3.0			RSCH 503	3.0
	6		6		4.5		6
Second Ye	ear (Part-Ti	me)					
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
IPS 619	3.0	IPS 585	3	.0 IPS 620	3	.0 IPS 622	5.5
RSCH 504	3.0	IPS 586	2	.0 IPS 621	3	.0	
		6		5		6	5.5

# Post-Baccalaureate Certificate in Higher Education Leadership

#### **Degree Requirements**

Choose 3 of the following.				
EDHE 501	Foundations of Higher Education and Governance			
EDHE 521	Student Development Theory and Application			
EDHE 531	Legal Issues & Ethics in Higher Education			
EDHE 541	Institutional Assessment, Accreditation and Effectiveness			
Total Credits		9.0		

### Sample Plan of Study

First	Year	

Fall	Credits	Winter	Credits	Spring	Credits
EDHE 501, 521, 531, or 541	3.0	EDHE 501, 521, 531, or 541	3.0	EDHE 501, 521, 531 or 541	, 3.0
	3		3		3

# Post-Baccalaureate Certificate in Information Systems Development

#### **Program Requirements**

CT 630	Application Software Construction and Operation	3.0
INFO 540	Perspectives on Information Systems	3.0
INFO 605	Database Management Systems	3.0
MIS 624	Systems Analysis & Design	3.0
MIS 652	Business Agility and IT	3.0

#### Sample Plan of Study

First Year				
Fall	Credits \	Ninter	Credits	
INFO 540	3.0 (	CT 630		3.0
MIS 624	3.0 I	NFO 605		3.0
	1	VIS 652		3.0
	6			9

# Post-Baccalaureate Certificate in Information Technology and Management

#### **Program Requirements**

Total Credits		15.0
MIS 625	Management of Information Technology Operations	3.0
MIS 615	Aligning Information Technologies and Operations	3.0
CT 610	Disaster Recovery, Continuity Planning and Digital Risk Assessment	3.0
CT 600	Cloud Technology	3.0
CT 500	Introduction to the Digital Environment	3.0

### Sample Plan of Study

First Year				
Fall	Credits	Winter	Credits	
CT 500		3.0 CT 600		3.0
MIS 615		3.0 CT 610		3.0
		MIS 625		3.0
		6		9

# Post-Baccalaureate Certificate in Information Technology Strategy & Execution

#### **Program Requirements**

Total Credits		15.0
SE 638	Software Project Management	3.0
SE 630	Software Engineering Economics	3.0
ORGB 602	Leading and Executing Change	3.0
MIS 641	MIS Policy and Strategy	3.0
MIS 612	Aligning Information Systems and Business Strategies	3.0

#### Sample Plan of Study

First Year Fall

Fall	Credits	Winter	Credits	
MIS 612		3.0 MIS 641		3.0
SE 630		3.0 ORGB 602		3.0
		SE 638		3.0
		6		9

# Introduction to Data Science PBC

#### Program Requirements

#### **Required Courses**

Total Credits		15.0
INFO 725	Information Policy and Ethics	
INFO 712	Information Assurance	
INFO 648	Healthcare Informatics	
INFO 623	Social Network Analytics	
INFO 605	Database Management Systems	
CS 590	Privacy	
CS 500	Fundamentals of Databases	
Choose 2 of the	electives below	6.0
INFO 659	Introduction to Data Analytics	3.0
DSCI 511	Data Acquisition and Pre-Processing	3.0
CS 570	Programming Foundations	3.0

### Sample Plan of Study

First Year			
Fall	Credits	Winter	Credits
CS 570	3.0	INFO 659	3.0
DSCI 511	3.0	Electives	6.0
	6		9

### Post-Baccalaureate Certificate in Instructional Design for e-Learning

#### **Degree Requirements**

Total Credits		9.0
ELL 503	Teaching and Learning Issues in E-Learning	3.0
EDLT 552	Instructional Design: Project Management	3.0
EDLT 551	Instructional Design Methods	3.0

### Sample Plan of Study

First Year					
Fall	Credits	Winter	Credits	Spring	Credits
EDLT 551	3.0	EDLT 552	3.0	ELL 503	3.0
	3		3		3

# Post-Baccalaureate Certificate in Learning Analytics

### **Degree Requirements**

EDLT 591	Learning Analytics: Lenses on students, teaching, and curriculum enactment	3.0
EDLT 592	Information Enabled Change in Educational Organizations	3.0
EDLT 593	Using Data to Understand Educational Systems	3.0
Total Credits		9.0

### Sample Plan of Study

First Year					
Fall	Credits	Winter	Credits	Spring	Credits
EDLT 591	3.0	EDLT 592	3.0	EDLT 593	3.0
	3		3		3

### Middle Level (grades 4-8) Certification: English Language Arts Concentration

#### **Degree Requirements**

#### Middle Years (grades 4-8) Certification

Total Credits		33.0		
MTED 563	Middle Years Mathematical Methods (4-8)	1.5		
EDUC 567	Middle Years Science Methods	1.5		
EDUC 565	Foundations in Instructing English Language Learners	3.0		
EDUC 564	English/Language Arts Teaching Methods for the Middle Years	1.5		
EDUC 562	Middle Years Social Studies Methods	1.5		
EDUC 540	Field Experience	3.0		
EDUC 522	Evaluation of Instruction	3.0		
EDUC 520	Professional Studies in Instruction (Middle )	3.0		
EDUC 507	Teaching the Middle School Child	3.0		
EDLT 525	Design for Learning with Digital Media	3.0		
EDEX 568	Literacy and Content Skill Development PK-12	3.0		
EDEX 544	The Inclusive Classroom	3.0		
EDEX 542	Fundamentals of Special Education			

\* Candidates seeking Middle Level certification with a concentration in English Language Arts will be required to complete their student teaching placement in an approved 7th or 8th grade ELA classroom.

#### Sample Plan of Study

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 520	3.	0 EDEX 544	:	3.0 EDUC 565	3.0	EDUC 564	1.5
EDEX 542	3.	0 EDUC 507	:	3.0 EDEX 568	3.0	EDUC 567	1.5
						MTED 563	1.5
		6		6	6	;	4.5
Second Ye	ar						
Fall	Credits	Winter	Credits				
EDUC 562	1.	5 EDUC 522	:	3.0			
EDUC 540	3.	0 EDLT 525	:	3.0			
	4.	5		6			

### Middle Level (grades 4-8) Certification: General Science Concentration

#### **Degree Requirements**

#### Middle Years (grades 4-8) Certification

Total Credits		33.0
MTED 563	Middle Years Mathematical Methods (4-8)	1.5
EDUC 567	Middle Years Science Methods	1.5
EDUC 565	Foundations in Instructing English Language Learners	3.0
EDUC 564	English/Language Arts Teaching Methods for the Middle Years	1.5
EDUC 562	Middle Years Social Studies Methods	1.5
EDUC 540	Field Experience	3.0
EDUC 522	Evaluation of Instruction	3.0
EDUC 520	Professional Studies in Instruction (Middle )	3.0
EDUC 507	Teaching the Middle School Child	3.0
EDLT 525	Design for Learning with Digital Media	3.0
EDEX 568	Literacy and Content Skill Development PK-12	3.0
EDEX 544	The Inclusive Classroom	3.0
EDEX 542	Fundamentals of Special Education	3.0

\* Candidates seeking Middle Level certification with a concentration in Science will be required to complete their student teaching placement in an approved Science classroom.

#### Sample Plan of Study

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 520	3.	0 EDEX 544	3	0 EDUC 565	3.0	EDUC 564	1.5
EDEX 542	3.	0 EDUC 507	3	0 EDEX 568	3.0	EDUC 567	1.5
						MTED 563	1.5
		6		6	6	;	4.5
Second Ye	ar						
Fall	Credits	Winter	Credits				
EDUC 562	1.	5 EDUC 522	3	.0			
EDUC 540	3.	0 EDLT 525	3	.0			
	4.	5		6			
Total Crad	He 22						

### Middle Level (grades 4-8) Certification: Mathematics Concentration

#### **Degree Requirements**

#### Middle Years (grades 4-8) Certification

Total Credits		33.0
MTED 563	Middle Years Mathematical Methods (4-8)	1.5
EDUC 567	Middle Years Science Methods	1.5
EDUC 565	Foundations in Instructing English Language Learners	3.0
EDUC 564	English/Language Arts Teaching Methods for the Middle Years	1.5
EDUC 562	Middle Years Social Studies Methods	1.5
EDUC 540	Field Experience	3.0
EDUC 522	Evaluation of Instruction	3.0
EDUC 520	Professional Studies in Instruction (Middle )	3.0
EDUC 507	Teaching the Middle School Child	3.0
EDLT 525	Design for Learning with Digital Media	3.0
EDEX 568	Literacy and Content Skill Development PK-12	3.0
EDEX 544	The Inclusive Classroom	3.0
EDEX 542	Fundamentals of Special Education	3.0

\* Candidates seeking Middle Level certification with a concentration in Mathematics will be required to complete their student teaching placement in an approved Math classroom.

#### Sample Plan of Study

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 520	3	.0 EDEX 544	:	3.0 EDUC 565	3.0	EDUC 564	1.5
EDEX 542	3	.0 EDUC 507	3	3.0 EDEX 568	3.0	EDUC 567	1.5
						MTED 563	1.5
		6		6	6	;	4.5
Second Ye	ear						
Fall	Credits	Winter	Credits				
EDUC 562	1	.5 EDUC 522	3	3.0			
EDUC 540	3	.0 EDLT 525	3	3.0			
	4	.5		6			

# Middle Level (grades 4-8) Certification: Social Studies Concentration

#### **Degree Requirements**

#### Middle Years (grades 4-8) Certification

Total Credits		33.0
MTED 563	Middle Years Mathematical Methods (4-8)	1.5
EDUC 567	Middle Years Science Methods	1.5
EDUC 565	Foundations in Instructing English Language Learners	3.0
EDUC 564	English/Language Arts Teaching Methods for the Middle Years	1.5
EDUC 562	Middle Years Social Studies Methods	1.5
EDUC 540	Field Experience	3.0
EDUC 522	Evaluation of Instruction	3.0
EDUC 520	Professional Studies in Instruction (Middle )	3.0
EDUC 507	Teaching the Middle School Child	3.0
EDLT 525	Design for Learning with Digital Media	3.0
EDEX 568	Literacy and Content Skill Development PK-12	3.0
EDEX 544	The Inclusive Classroom	3.0
EDEX 542	Fundamentals of Special Education	3.0

\* Candidates seeking Middle Level certification with a concentration in Social Studies will be required to complete their student teaching placement in an approved Social Studies classroom.

#### Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 520		3.0 EDEX 544		3.0 EDUC 565	3	0 EDUC 564	1.5
EDEX 542		3.0 EDUC 507		3.0 EDEX 568	3	0 EDUC 567	1.5
						MTED 563	1.5
		6		6		6	4.5
Second Ye	ar						
Fall	Credits	Winter	Credits				
EDUC 562		1.5 EDUC 522	2	3.0			
EDUC 540		3.0 EDLT 525		3.0			
		4.5		6			

# MSN: Healthcare Simulation

#### **Degree Requirements**

IPS 585	Science of Safety, Human Factors, and System Thinking	3.0
IPS 586	Creating a Culture of Safety	2.0
IPS 617	Simulation in Healthcare Education	4.5
IPS 618	Standardized Patients	3.0
IPS 619	Advanced Debriefing and Reflective Practice	3.0
IPS 620	Simulation Center Leadership	3.0
IPS 621	Evaluation in Simulation-Based Education	3.0
IPS 622	Simulation Capstone	5.5
NURS 500 [WI]	Confronting Issues in Contemporary Health Care Environments	3.0
NURS 502	Advanced Ethical Decision Making in Health Care	3.0
NURS 544	Quality and Safety in Healthcare	3.0
NURS 591	Foundations of Healthcare Education	3.0
RSCH 503	Research Methods and Biostatistics	3.0
RSCH 504	Evaluation and Translation of Health Research	3.0
Total Credits		45.0

### Sample Plan of Study

#### First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
NURS 500	3.	0 NURS 502	3	.0 IPS 617	4	.5 IPS 618	3.0
NURS 591	3.	0 NURS 544	3	.0		RSCH 503	3.0
		6		6	4	.5	6
Second Ye	ar (Part-Tir	ne)					
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
IPS 619	3.	0 IPS 585	3	.0 IPS 620	3	.0 IPS 622	5.5
RSCH 504	3.	0 IPS 586	2	.0 IPS 621	3	.0	
	6		5		6	5.5	

# **Post-Baccalaureate Certificate in Online Teaching and Learning**

#### **Program Requirements**

Total Credits		9.0
ELL 504	Learning Technologies & Disabilities	
EDLT 551	Instructional Design Methods	
EDLT 512	Using and Integrating Learning Technologies	
EDLT 503	The Learning Sciences	
Choose 3 of 4 co	purses	9.0

### Sample Plan of Study

First Year		
Fall	Credits	Winter

Fall	Credits	Winter	Credits	Summer	Credits
EDLT 512 or 551	3.0	EDLT 503	3.0	ELL 504	3.0
	3		3		3

# Post-Baccalaureate Certificate in Organization and Talent Development

### **Degree Requirements**

Program Requi	Program Requirements					
EHRD 500	Foundations of Human Resources Development					
EHRD 602	Coaching and Mentoring for Sustainable Learning					
EHRD 611	Organization Development and Change					
Total Credits						

3.0 3.0 3.0 **9.0** 

#### Sample Plan of Study

First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits
EHRD 500	3.0	EHRD 602	3.0	EHRD 611	3.0
	3		3		3

# Post-Baccalaureate Certificate in Quantum Technology and Quantum Information

#### **Degree Requirements**

Required Core C	Courses	
PHYS 554	Quantum Technology	3.0
PHYS 558	Quantum Information	3.0
Elective Courses	s (Select two)	6.0
MATE 512	Introduction to Solid State Materials	
MATE 514	Structure, Symmetry, and Properties of Materials	
PHYS 516	Quantum Mechanics I	
PHYS 517	Quantum Mechanics II	
PHYS 553	Nanoscience	
PHYS 626	Solid State Physics I	
PHYS 627	Solid State Physics II	
Total Credits		12.0

#### Sample Plan of Study

#### First Year

Fall	Credits	Winter	Credits	Spring	Credits
PHYS 558	3.0	PHYS 554	3.0	Elective	3.0
Elective	3.0				
	6		3		3

## Post-Baccalaureate Certificate in Software Architecture

### **Degree Requirements**

Core Courses		
SE 575	Software Design	3.0
SE 577	Software Architecture	3.0
Core electives		6.0
Choose 2 from th	e following	
CS 500	Fundamentals of Databases	
SE 572	Web Services and Mobile Architectures	
SE 576	Software Reliability and Testing	
SE 627	Requirements Engineering and Management	
Elective		3.0
Choose from the	following or approved by the department	
CS 647	Distributed Systems Software	
INFO 608	Human-Computer Interaction	
INFO 659	Introduction to Data Analytics	
SE 578	Security Engineering	
SE 610	Open Source Software Engineering	
SE 630	Software Engineering Economics	
SE 638	Software Project Management	
Total Credits		15.0

### Sample Plan of Study

 First Year
 Credits
 Winter
 Credits

 SE 575
 3.0 SE 577
 3.0 Core Elective

 Core Elective
 3.0 Core Elective
 Elective

 Elective

3.0

3.0

3.0

9

# Post-Baccalaureate Certificate in Software Management

#### **Degree Requirements**

#### **Required Courses**

Total Credits		15.0		
Consult with	your advisor for additional appropriate courses.			
SE 610	Open Source Software Engineering			
SE 578	Security Engineering			
SE 577	Software Architecture			
SE 576	Software Reliability and Testing			
SE 575	Software Design			
SE 572	Web Services and Mobile Architectures			
SE 570	Agile Software Development Process			
INFO 659	Introduction to Data Analytics			
INFO 608	Human-Computer Interaction			
CS 647	Distributed Systems Software			
Elective Course	e - choose 1	3.0		
SE 638	Software Project Management	3.0		
SE 630	Software Engineering Economics	3.0		
SE 627	E 627 Requirements Engineering and Management			
INFO 646	Information Systems Management	3.0		

#### Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	
SE 627		3.0 INFO 646		3.0
SE 630		3.0 SE 638		3.0
		Elective		3.0
		6		9

# Post-Baccalaureate Certificate in Sport Leadership

### **Degree Requirements**

SCL 501	Coaching Theory and Principles	3.0
SCL 503	Pedagogical Strategies in Coaching	3.0
SCL 504	Coaching Psychology	3.0
SMT 629	Managing Coaches & Teams	3.0
Total Credits		12.0

#### Sample Plan of Study

First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
SCL 501	3.0 SCL 503		3.0 SCL 504		3.0 SMT 629		3	3.0
	3		3		3			3

# Strategic and Digital **Communication MS**

#### **Degree Requirements**

#### Required Core Courses

Total Credits		45.0
Graduate Electiv	ves	12.0
COM T680	Special Topics in Communication	
COM T580	Special Topics in Communication	
COM 1699	Independent Study in COM	
COM 1599	Independent Study in COM	
COM 673	Medical Journalism	
COM 670	Medical Writing	
COM 660	Investigative Journalism	
COM 614	Social Media Concepts that Matter	
COM 600	Graduate Seminar in Communication	
COM 586	Strategic International Communication	
COM 578	Focus Groups	
COM 577	Communication for Civic Engagement	
COM 576	Nonprofit Communications	
COM 575	Grant Writing	
COM 570	Technical, Science and Health Editing	
COM 563	Event Planning	
COM 562	International Negotiations	
COM 561	Fundamentals of Journalism & Newswriting	
COM 551	Creative Content Production	
COM 544	Media Relations in a Digital Age	
COM 543	Public Relations Planning	
COM 541	Public Relations Writing	
COM 550	Foundations of Public Relations	
COM 535	Strategic Social Media Communication	
COM 535	Digital Publishing	
COM 525	Modern Desktop Publishing	
COM 525	Document Design and Usability	
COM 518	Communicating Health and Risk in a 'Fake News' World Science Writing	
COM 516 COM 518	Campaigns for Health and Environment	
	e following courses:	
Program Electiv		12.0
	Age	10.0
COM 698	Managing Communication Professional Identities in a Digital	3.0
COM 651	Media and Communication Policy in a Digitized World	3.0
COM 615	Media Environments in a Digital World	3.0
COM 613	Ethics for Professional Communication	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 574	Organizational Communication in Project Management	3.0
COM 500	Reading & Research in Communication	3.0

Students can select up to 12.0 credits of graduate-level electives (500-799) in the following subject areas (AADM, AAML, ACCT, BUSN, CCM, CHP, COM, CRTV, CW, DIGM, ECON, EDAM, EDHE, EDLT, EDUC, ENTP, ENVP, ENVS, EOH, HMP, HRM, LING, MGMT, MGMT, MKTG, MUSL, NPM, ORGB, PBHL, PLCY, PROJ, PRST, RMER, SCRP, SCTS, SMT, TVMN). Other graduate courses outside these areas might be taken pending approval from the graduate advisor or program director.

#### Sample Plan of Study **Full Time**

#### First Year

COM 500       3.0 COM 610       3.0 COM 698       3.0 COM 574       3.0         COM 613       3.0 COM 651       3.0 Program       3.0 Program       3.0 Program       3.0         Program       3.0 Program       3.0 Graduate       3.0 Graduate       3.0 Graduate       3.0         Program       3.0 Program       3.0 Graduate       3.0 Graduate       3.0 Graduate       3.0         Second Year       Fall       Credits       Winter       Credits       Spring       Credits			0		0			9	
COM 500     3.0 COM 610     3.0 COM 698     3.0 COM 574     3.0       COM 613     3.0 COM 651     3.0 Program     3.0 Program     3.0 Program       Program     3.0 Program     3.0 Graduate     3.0 Graduate       Program     3.0 Program     3.0 Graduate     3.0 Graduate       9     9     9       Second Year     Fall     Credits							6.	)	
COM 500     3.0 COM 610     3.0 COM 698     3.0 COM 574     3.       COM 613     3.0 COM 651     3.0 Program Elective     3.0 Program Elective     3.0 Program Elective     3.0 Graduate Elective     3.0 Graduate	INTERNSH	lIP <sup>*</sup>	INTERNS	HIP <sup>*</sup>	CON	<i>I</i> 615	3.	0	
COM 500         3.0 COM 610         3.0 COM 698         3.0 COM 574         3.0           COM 613         3.0 COM 651         3.0 Program         3.0 Program         3.0 Program         3.0 Program         3.0 Graduate         3.0 Graduate	Fall	Credits	Winter	Credits	Spri	ng	Credits		
COM 500         3.0 COM 610         3.0 COM 698         3.0 COM 574         3.0           COM 613         3.0 COM 651         3.0 Program         3.0 Program         3.0 Program         3.0           Program         3.0 Program         3.0 Graduate         3.0 Graduate         3.0 Graduate         3.0	Second Ye		9		9		1	9	
COM 500         3.0 COM 610         3.0 COM 698         3.0 COM 574         3.           COM 613         3.0 COM 651         3.0 Program         3.0 Program         3.	0	3	0				3.		3.
	COM 613	3	.0 COM 651				3.	•	3.
Fall Credits Winter Credits Spring Credits Summer Credits	COM 500	3	.0 COM 610		3.0 CON	/ 698	3.	COM 574	3.
	Fall	Credits	Winter	Credits	Spri	ng	Credits	Summer	Credits

Total Credits 45

Internships are required but are non-credit bearing. Some students complete two 3-month internships; other students complete 12 months part time. Six months of full-time experience is required. The terms in which internships are taken will vary depending on the student's plan of study. Students who come in to the program with relevant prior professional experience can get the internship waived. Students are only eligible for financial aid during terms in which they enroll for a minimum of 4.5 credits that count toward degree completion.

#### **Part-Time**

First Year

FIISLIE							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COM 613	3.	0 COM 615	3.0	COM 651	3.0	COM 574	3.0
Program	3.	0 Program	3.0	) Program	3.0	) Program	3.0
Elective		Elective		Elective		Elective	
		6	(	6	(	6	6
Second Ye	ear						
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COM 500	3.	0 Graduate Electives	6.0	0 COM 610	3.0	) Graduate Elective	3.0
COM 698	3.	0 INTERNSH	II	Graduate Elective	3.0	) INTERNS	41
INTERNSH	11P <sup>*</sup>			INTERNSH	1IP <sup>*</sup>		
		6	(	6	(	6	3

#### **Total Credits 45**

Internships are required but are non-credit bearing. Some students complete two 3-month internships; other students complete 12 months part time. Six months of full-time experience is required. The terms in which internships are taken will vary depending on the student's plan of study. Students who come in to the program with relevant prior professional experience can get the internship waived. Students are only eligible for financial aid during terms in which they enroll for a minimum of 4.5 credits that count toward degree completion.

# Undergraduate STEM Education

### **Degree Requirements**

Core		
ISTM 511	Foundations in Evidence-Based STEM Pedagogy	3.0
ISTM 512	Advanced Undergraduate STEM Pedagogical Techniques	3.0
ISTM 513	Improving STEM Education Through Research	3.0
ISTM 514	STEM Program Evaluation and Assessment	3.0
Electives (choos	se two of the following, in consultation with advisor)	6.0
EDCR 510	Leadership in Educational Contexts and Systems	
EDCR 512	Using and Integrating Learning Technologies	
EDLT 535	Researching & Evaluating Instructional Technology	
EDUC 514	Science Teaching Methods	
EDUC 840	Theories of Individual Cognition in STEM Education **	
EDUC 842	Social Foundation and Group Cognition in STEM Education **	
EDUC 844	Creativity and Innovation in STEM Education **	
PhD Content Ar	ea Knowledge <sup>‡</sup>	9.0
PhD Research E	Experience <sup>†</sup>	9.0
Capstone Exper	ience	9.0
ISTM 515	Seminar in UG STEM Education	
ISTM 516	Rotations in STEM Education *	
or ISTM 5	517Projects in Undergraduate STEM Education	
Total Credits		45.0

- \* ISTM 515 is taken 3 times for a total of 3.0 credits. ISTM 516 or ISTM 517 is taken 3 times for a total of 6.0 credits.
- \*\* EDUC 840, EDUC 842, and EDUC 844 can only be taken by PhD students.
- <sup>‡</sup> Courses selected from student's PhD coursework in their STEM content area.
- † 9.0 credits of student's supervised PhD research.

# Post-Baccalaureate Certificate in U.S. Education Policy

#### **Degree Requirements**

Total Credits		9.0
EDPO 636	Access & Equity in Educational Policy Making	3.0
EDPO 628	American Educational Policy and U.S. Competitiveness	3.0
EDPO 620	Education Policy: Concepts, Issues, and Applications	3.0

### Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits
EDPO 620	3.0	EDPO 628	3.0	EDPO 636	3.0
	3			3	3

# Communication BS / Strategic & Digital Communication MS

#### **Degree Requirements**

#### General Requirements

General Require	ments	
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 fir	ne arts	12.0
Social sciences		9.0
International studi	es	6.0
Studies in diversit	у	6.0
Select one of the	following Science Sequences:	8.0
Biology Seque		
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 Sec		
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
Physics Seque	•	
PHYS 170	Electricity and Motion	
PHYS 175	Light and Sound	
Select one of the	following Mathematics Sequences:	8.0
Analysis Sequ		
MATH 101	Introduction to Analysis I	
MATH 102	Introduction to Analysis II	
Calculus Sequ		
MATH 121	Calculus I	
MATH 122	Calculus II	
	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
	Seminar in Communication	3.0
COM 400		
LING 101 or LING 102	Introduction to Linguistics	3.0
	Language and Society	
Methods Sequen		0.0
COM 220 COM 221	Qualitative Research Methods	3.0
	Quantitative Research Methods in Communication	3.0
or COM 284	Public Relations Research, Measurement and Evaluation	
Additional Core	•	
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 Communication	3.0
COM 247	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 Concent		0.0
	ollowing concentrations (Communication, Public Relations, or	30.0-36.0
	nce Communication)	
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	
	tives at 300 level or higher	
Six COM Election	ves	
Public Relations		
COM 160	Introduction to Journalism	
COM 181	Public Relations Principles and Theory	
	Public Relations Writing	
COM 286	Public Relations Strategies and Tactics	
COM 335	Digital Publishing	
	DModern Desktop Publishing	
COM 386	Public Relations Campaign Planning	
MKTG 201 Three COM Ele	Introduction to Marketing Management	
	Ice Communication	
COM 160	Introduction to Journalism	
COM 181	Public Relations Principles and Theory	
	Technical Communication	
	Science Writing	
COM 325	Digital Publishing	
	Document Design and Evaluation	
COM 420	Technical, Science and Health Editing	
Three COM Ele		
Free Electives		43.0
	Digital Communication Requirements	
Required Core Co		
COM 500	Reading & Research in Communication	3.0
COM 574	Organizational Communication in Project Management	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 613	Ethics for Professional Communication	3.0
COM 615	Media Environments in a Digital World	3.0
COM 651	Media and Communication Policy in a Digitized World	3.0
COM 698	Managing Communication Professional Identities in a Digital	3.0
	Age	
Program Electives		12.0
Choose four of the	-	
COM 516	Campaigns for Health and Environment	
COM 518	Communicating Health and Risk in a 'Fake News' World	
COM 520	Science Writing	
COM 525	Document Design and Usability	
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 COM 544	Public Relations Planning Media Relations in a Digital Age	
COM 544 COM 551	Creative Content Production	
COM 551	Fundamentals of Journalism & Newswriting	
COM 562	International Negotiations	
COM 563	Event Planning	
	5	

COM 570	Technical, Science and Health Editing	
COM 575	Grant Writing	
COM 576	Nonprofit Communications	
COM 577	Communication for Civic Engagement	
COM 578	Focus Groups	
COM 586	Strategic International Communication	
COM 600	Graduate Seminar in Communication	
COM 614	Social Media Concepts that Matter	
COM 660	Investigative Journalism	
COM 670	Medical Writing	
COM 673	Medical Journalism	
COM 1599	Independent Study in COM	
COM 1699	Independent Study in COM	
COM T580	Special Topics in Communication	
COM T680	Special Topics in Communication	
Graduate Elective	es *	12.0
Total Credits		225.0-231.0

\* Students can select up to 12.0 credits of graduate-level electives (500-799) in the following subject areas (AADM, AAML, ACCT, BUSN, CCM, CHP, CRTV, CW, DIGM, ECON, EDAM, EDHE, EDLT, EDUC, ENTP, ENVP, ENVS, EOH, HMP, HRM, LING, MGMT, MGMT, MKTG, MUSL, NPM, ORGB, PBHL, PLCY, PROJ, PRST, RMER, SCRP, SCTS, SMT, TVMN). Other graduate courses outside these areas might be taken pending approval from the graduate advisor or program director.

#### Sample Plan of Study 4+1, 1 co-op (Accelerated program completed in 5 years)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

#### 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 <sup>*</sup>		1.0	ENGL 103 or 113		3.0			
PSY 101		3.0	ENGL 102 or 112		3.0	(UG) Humanities Elective		3.0			
UNIV H101			(UG) Math Sequence Course		4.0	(UG) Free Elective		3.0			
(UG) Math Sequence Course		4.0	(UG) Social Science Elective		3.0						
		17			15			15			0
Second Ye	ar										
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	(UG) COM Concentration Course		3.0

Concentration Course			LING 101 or 102		3.0	(UG) COM Concentration Course	on		(UG) COM Elective or Free Elective		3.0
(UG) Humanities Elective	3.		(UG) COM Elective		3.0	(UG) COM Elective or Free Elective		3.0	(UG) Free Elective		3.0
(UG) Science Sequence Course	4.		(UG) Science Sequence Course		4.0	(UG) Free Elective		3.0	(UG) Internationa or Diversity Elective	I	3.0
(UG) Free Elective	2.	.0				(UG) Internationa or Diversity Elective		3.0			
	1	8			16			18			15
Third Year									_		
	redits			Credits		Spring	Credits		Summer	Credits	
COM 240	3.		(UG) COM Concentratio Course	on	3.0	COOP EXPERIEN	CE		COOP EXPERIEN(	CE	
UNIV H201	1.		(UG) COM Elective		3.0				COM 574		3.0
(UG ) COM	3.		(UG)		3.0						
Concentration Course			Social Science Elective								
(UG) Humanities Elective	3.		(UG) Free Electives		6.0						
(UG) Free Elective	2.	.0	COM 610		3.0						
COM 500	3.	.0									
		5			18			0			3
Fourth Year											
	redits		Winter	Credits		Spring	Credits		Summer	Credits	
			Winter COM 491	Credits	3.0	Spring COM 492	Credits		Summer Student converts to Graduate Status	Credits	
Fall COM 400 COM (UG) COM	3.	.0	COM 491 (UG) COM	Credits		COM 492 (UG) COM	Credits		Student converts to Graduate	Credits	
Fall Com 400	3.	.0	COM 491	Credits		COM 492		3.0	Student converts to Graduate	Credits	
Fall COM 400	3.	.0	COM 491 (UG) COM Elective	Credits	3.0	COM 492 (UG) COM Elective Course or COM Concentratio Course		3.0	Student converts to Graduate	Credits	
Fall C COM 400	3.	.0	COM 491 (UG) COM	Credits	3.0	COM 492 (UG) COM Elective Course or COM Concentratio		3.0	Student converts to Graduate	Credits	
Fall CI COM 400 CI Elective or COM Concentration Course CI Course CI Elective ci Elective ci Elective ci CI CI CI CI CI CI CI CI CI CI CI CI CI	3. 3. 3.	.0	COM 491 (UG) COM Elective (UG) Humanities Elective (UG) Social Science	Credits	3.0	COM 492 (UG) COM Elective Course or COM Concentratic Course (UG) COM Elective of Free		3.0	Student converts to Graduate	Credits	
Fall COM 400	3. 3. 3.	.0 .0 .0	COM 491 (UG) COM Elective (UG) Humanities Elective (UG) Social		3.0 3.0 3.0	COM 492 (UG) COM Elective Course or COM Concentratic Course (UG) COM Elective of Free Elective (UG) Free		3.0 3.0 3.0	Student converts to Graduate	Credits	
Fall CI COM 400 CI Elective or COM Concentration Course CI Course CI Elective or Free Elective ci Ci Elective ci Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci C	3. 3. 3. 3.	.0 .0 .0	COM 491 (UG) COM Elective (UG) Humanities Elective (UG) Social Science Elective (UG) International or Diversity		3.0 3.0 3.0	COM 492 (UG) COM Elective Course or COM Concentratio Course (UG) COM Elective of Free Elective (UG) Free Elective		<ul><li>3.0</li><li>3.0</li><li>3.0</li><li>3.0</li></ul>	Student converts to Graduate	Credits	
Fail     Ca       COM 400     Image: Calibration of the calibration of	3. 3. 3. 3. 3.	.0 .0 .0	COM 491 (UG) COM Elective (UG) Humanities Elective (UG) Social Science Elective (UG) International or Diversity Elective		3.0 3.0 3.0	COM 492 (UG) COM Elective Course or COM Concentratic Course (UG) COM Elective of Free Elective (UG) Free Elective COM 615 (GR) SDC Program		<ul><li>3.0</li><li>3.0</li><li>3.0</li><li>3.0</li><li>3.0</li></ul>	Student converts to Graduate Status	Credits	0
Fail     Ca       COM 400     Image: Calibration of the calibration of	3. 3. 3. 3. 3.	000000000000000000000000000000000000000	COM 491 (UG) COM Elective (UG) Humanities Elective (UG) Social Science Elective (UG) International or Diversity Elective		3.0 3.0 3.0 3.0	COM 492 (UG) COM Elective Course or COM Concentratic Course (UG) COM Elective of Free Elective (UG) Free Elective COM 615 (GR) SDC Program		<ul><li>3.0</li><li>3.0</li><li>3.0</li><li>3.0</li><li>3.0</li></ul>	Student converts to Graduate Status	Credits	0

(GR) Graduate Electives	6.0 (GR) Graduate Elective	3.0 (GR) Graduate Elective	3.0	
	9	6	6	

Total Credits 225

\* 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+0, 3 co-op, co-terminal (Accelerated program completed in 5 years)

Students take graduate courses in the third, fourth, and fifth years, while finishing their undergraduate requirements. They receive both the BS and MS at the end of the fifth year.

#### 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	(UG) Humanities Elective		3.0			
UNIV H101		1.0	(UG) Math Sequence Course		4.0	(UG) Free Elective		3.0			
(UG) Math Sequence Course		4.0	(UG) Social Science Elective		3.0	(UG) COM Elective		3.0			
			(UG) Free Elective		3.0						
		17			18			18			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COM 210		3.0	COM 220		3.0	COOP EXPERIEN	CE		COOP EXPERIEN	CE	
COM 222		3.0	COM 247		3.0						
(UG) COM Concentrati Course	on	3.0	LING 101 or 102		3.0						
(UG) Science Sequence Course		4.0	(UG) COM Concentrati Course	(	3.0						
(UG) Free Elective		2.0	(UG) Science Sequence Course		4.0						
(UG) Humanities Elective		3.0	(UG) Free Elective		3.0						
		18			19			0			0
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COM 221		3.0	PHIL 305		3.0	COOP			COOP		
or 284		0.0	11112 303			EXPERIEN	CE		EXPERIEN	CE	
or 284 (UG) COM Concentrati Courses	i.		(UG) COM Concentrati Course	(	3.0	EXPERIEN (GR) SDC Program Elective	CE	3.0	EXPERIEN COM 574		3.0

(UG)	:	3.0	(UG) COM		3.0						
International or Diversity Elective			Elective								
COM 500	:	3.0	(UG) Free Elective		3.0						
			(UG) Internationa or Diveristy Elective	I	3.0						
			COM 610		3.0						
		15			18			3			3
Fourth Year									-		
	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COM 240	·	3.0	(UG) COM Elective or COM Concentration Course	on	3.0	COOP EXPERIEN	ICE		COOP EXPERIEN	CE	
UNIV H201		1.0	(UG) Humanities Elective		3.0	COM 615		3.0	(GR) SDC Program Elective		3.0
(UG) COM Concentratio Course		3.0	(UG) Internationa or Diversity Elective	I	3.0						
(UG) COM Elective or Free Elective	:	3.0	(UG) Social Science Elective		3.0						
(UG) Free Elective	:	2.0	COM 651		3.0						
COM 613	;	3.0	(GR) Graduate Elective		3.0						
(GR) Graduate Elective	;	3.0									
		18			18			•			
Eifth Voor								3			3
Fifth Year	Credite		Minter	Credito		Casing	Credito	3			3
Fall	Credits	3.0	Winter	Credits		Spring	Credits				3
Fall COM 400	;		COM 491	Credits	3.0	COM 492	Credits	3 3.0 6.0			3
Fall	;			Credits	3.0		Credits	3.0			3
Fall         O           COM 400         (UG) COM	:	3.0	COM 491 (UG) COM	Credits	3.0 3.0	COM 492 (UG) COM	Credits	3.0			3
Fall COM 400 (UG) COM Elective (UG) International or Diversity	:	3.0 3.0	COM 491 (UG) COM Elective (UG) Humanities	Credits	3.0 3.0 3.0	COM 492 (UG) COM Electives (UG) Free	Credits	3.0 6.0			3
Fall (UG) COM Elective (UG) International or Diversity Elective (UG) COM Elective or Free	:	3.0 3.0 3.0	COM 491 (UG) COM Elective (UG) Humanities Elective (UG) Social Science	Credits	3.0 3.0 3.0 3.0	COM 492 (UG) COM Electives (UG) Free Elective	Credits	3.0 6.0 3.0			3
Fall COM 400 (UG) COM Elective con Diversity Elective (UG) COM Elective or Free Elective con Free Elective (GR) SDC Program	:	3.0 3.0 3.0 3.0	COM 491 (UG) COM Elective (UG) Humanities Elective (UG) Social Science Elective (UG) Free	Credits	3.0 3.0 3.0 3.0	COM 492 (UG) COM Electives (UG) Free Elective COM 698 (GR) Graduate	Credits	3.0 6.0 3.0 3.0			3

**Total Credits 225** 

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 BA / Strategic & Digital Communication MS

#### **Degree Requirements**

#### General Requirement

General Requirer	nents	
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 cours	ses	6.0-8.0
Foreign language	courses	8.0-12.0
Humanities and fir		12.0
Social sciences		9.0
International studie	25	6.0
Studies in diversity		6.0
	Core Requirements	0.0
Theory Sequence		
COM 101	Human Communication	3.0
COM 150	Mass Media and Society	3.0
COM 130	Theory and Models of Communication	3.0
COM 210	Seminar in Communication	3.0
LING 101		
	Introduction to Linguistics	3.0
or LING 102	Language and Society	
Methods Sequen		
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 F		
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 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 Concer	ntration Courses	
Select one of the f Journalism):	ollowing concentrations (Communication, Public Relations, or	31.0-45.0
Communication		
COM 160	Introduction to Journalism	
COM 181	Public Relations Principles and Theory	
COM 261	Advanced Journalism	
or COM 28	2 Public Relations Writing	
COM 310 [WI]	Technical Communication	
Two COM Elec	ctives at 300 level or higher	
Six COM Elect	tives	

#### COM 160 Introduction to Journalism COM 282 [WI] Public Relations Writing COM 286 Public Relations Strategies and Tactics COM 335 Digital Publishing or COM 340Modern 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 Journalists, the Courts, and the Law COM 365 **TVPR 220** TV News Writing Six COM Electives Free Electives 38.0 MS Strategic & Digital Communication Requirements Required Core Courses COM 500 Reading & Research in Communication 3.0 COM 574 Organizational Communication in Project Management 3.0 COM 610 Theories of Communication and Persuasion 3.0 COM 613 Ethics for Professional Communication 3.0 COM 615 Media Environments in a Digital World 3.0 COM 651 Media and Communication Policy in a Digitized World 3.0 COM 698 Managing Communication Professional Identities in a Digital 3.0 Age Program Electives 12.0 Choose four of the following courses: COM 516 Campaigns for Health and Environment COM 518 Communicating Health and Risk in a 'Fake News' World COM 520 Science Writing COM 525 Document Design and Usability COM 533 Modern Desktop Publishing COM 535 Digital Publishing Strategic Social Media Communication COM 536 COM 541 Foundations of Public Relations COM 542 Public Relations Writing COM 543 Public Relations Planning COM 544 Media Relations in a Digital Age COM 551 Creative Content Production COM 561 Fundamentals of Journalism & Newswriting COM 562 International Negotiations COM 563 Event Planning COM 570 Technical, Science and Health Editing COM 575 Grant Writing COM 576 Nonprofit Communications COM 577 Communication for Civic Engagement COM 578 Focus Groups COM 586 Strategic International Communication COM 600 Graduate Seminar in Communication COM 614 Social Media Concepts that Matter COM 660 Investigative Journalism Medical Writing COM 670 Medical Journalism COM 673 COM 1599 Independent Study in COM COM 1699 Independent Study in COM COM T580 Special Topics in Communication COM T680 Special Topics in Communication

#### Public Relations

COM 181 Public Relations Principles and Theory

Graduate Electives **	12.0
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).
- \*\* Students can select up to 12.0 credits of graduate-level electives (500-799) in the following subject areas (AADM, AAML, ACCT, BUSN, CCM, CHP, CRTV, CW, DIGM, ECON, EDAM, EDHE, EDLT, EDUC, ENTP, ENVP, ENVS, EOH, HMP, HRM, LING, MGMT, MGMT, MKTG, MUSL, NPM, ORGB, PBHL, PLCY, PROJ, PRST, RMER, SCRP, SCTS, SMT, TVMN). Other graduate courses outside these areas might be taken pending approval from the graduate advisor or program director.

## Sample Plan of Study

# 4+1, 1 co-op (Accelerated program completed in 5 years)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

First Year Fall	Credits		Winter	Credits	Spring	Credits	Summer	Credits
COM 101			CIVC 101		0 COM 181 or 160		.0 VACATION	
COM 150			COM 181 or 160	3.0	) COM 230	3	.0	
ENGL 101 or 111			ENGL 102 or 112	3.0	0 ENGL 103 or 113	3	.0	
PSY 101		3.0	(UG) Math Course	3.0-4.0	) (UG) Humanities Elective		.0	
UNIV H101			(UG) Foreign Language Course*	4.0	) (UG) Math Course	3.0-4	.0	
(UG) Foreign Language Course*		4.0	(UG) Free Elective	3.0	)			
		17		17-18	}	15-1	6	0
Second Ye	ar							
Fall	Credits		Winter	Credits	Spring	Credits	Summer	Credits
Fall COM 210	Credits		Winter COM 220	Credits 3.0	Spring COM 221 or 284	Credits 3	<b>Summer</b> .0 COOP 101	<b>Credits</b> ** 1.0
		3.0		3.0	) COM 221	3		**
COM 210		3.0 3.0 3.0	COM 220	3.(	or 284 or 284 O (UG) COM Elective or Free	3 3 3	.0 COOP 101	** 1.0 3.0
COM 210 COM 222 (UG) COM Concentrati	on	3.0 3.0 3.0	COM 220 COM 247 LING 101	3.0 3.0 3.0 3.0	<ul> <li>COM 221 or 284</li> <li>(UG) COM Elective or Free Elective</li> <li>(UG) COM Concentrati</li> </ul>	3 3 on 3	.0 COOP 101 .0 PHIL 305 .0 (UG) COM Elective or Free	•• 1.0 3.0 3.0 3.0
COM 210 COM 222 (UG) COM Concentrati Course	on 3.0-	3.0 3.0 3.0 4.0 3.0	COM 220 COM 247 LING 101 or 102 (UG) COM Concentrati	3.( 3.( 3.(	<ul> <li>O COM 221 or 284</li> <li>O (UG) COM Elective or Free Elective</li> <li>O (UG) COM Concentrati Course</li> <li>O (UG) International</li> </ul>	3 3 oon 3 3	.0 COOP 101 .0 PHIL 305 .0 (UG) COM Elective or Free Elective .0 (UG) COM Concentrat	•• 1.0 3.0 3.0 3.0
COM 210 COM 222 (UG) COM Concentrati Course (UG) Science Course (UG) Humanities	on 3.0-	3.0 3.0 3.0 4.0 3.0	COM 220 COM 247 LING 101 or 102 (UG) COM Concentrati Course (UG) Science	3.( 3.( 3.( 3.0-4.(	<ul> <li>) COM 221 or 284</li> <li>) (UG) COM Elective or Free Elective</li> <li>) (UG) COM Concentrati Course</li> <li>) (UG) Internationa Elective</li> <li>) (UG) Social Science</li> </ul>	3 3 on 3 1 3	.0 COOP 101 .0 PHIL 305 .0 (UG) COM Elective or Free Elective .0 (UG) COM Concentrat Course .0 (UG) Free	т 1.0 3.0 3.0 ік 3.0

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
COM 240	3.0	) (UG) Social Science Elective		3.0 COOP EXPERIEN	CE	COOP EXPERIEN	CE	
UNIV H201	1.(	) (UG) Internationa Elective	I	3.0		COM 574	:	3.0
(UG) COM Concentrati Course		) (UG) Free Electives		6.0				
(UG) Humanities Elective		) COM 610		3.0				
(UG) COM Elective or Free Elective	3.0	)						
COM 500	3.0	)						
2 0 000				15	0			3
Fourth Yea								
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
COM 400	3.(	) COM 491		3.0 COM 492	3.0	Student converts to Graduate Status		
(UG) Diversity Elective	3.0	) (UG) COM Elective		3.0 (UG) COM Elective	3.0			
(UG) COM Elective Course	3.0	) (UG) Humanities Elective		3.0 (UG) COM Elective or Free Elective	3.0			
Elective		Humanities		Elective or Free	3.0 4.0			
Elective Course (UG) COM Elective or Free	3.(	Humanities Elective (UG) Social Science		Elective or Free Elective 3.0 (UG) Free				
Elective Course (UG) COM Elective or Free Elective	3.(	Humanities Elective 0 (UG) Social Science Elective		Elective or Free Elective 3.0 (UG) Free Elective	4.0			
Elective Course (UG) COM Elective or Free Elective COM 613 (GR) SDC Program	3.(	Humanities Elective ) (UG) Social Science Elective ) COM 651 ) (GR) SDC Program Elective		Elective or Free Elective 3.0 (UG) Free Elective 3.0 COM 615	4.0			(
Elective Course (UG) COM Elective or Free Elective COM 613 (GR) SDC Program	3.0 3.0 3.0	Humanities Elective ) (UG) Social Science Elective ) COM 651 ) (GR) SDC Program Elective		Elective or Free Elective 3.0 (UG) Free Elective 3.0 COM 615 3.0	4.0 3.0			(
Elective Course (UG) COM Elective or Free Elective COM 613 (GR) SDC Program Elective	3.0 3.0 3.0	Humanities Elective ) (UG) Social Science Elective ) COM 651 ) (GR) SDC Program Elective	Credits	Elective or Free Elective 3.0 (UG) Free Elective 3.0 COM 615 3.0	4.0 3.0			(
Elective Course (UG) COM Elective or Free Elective COM 613 (GR) SDC Program Elective	3.0 3.0 3.0 11 Credits	Humanities Elective (UG) Social Science Elective COM 651 (GR) SDC Program Elective	Credits	Elective or Free Elective 3.0 (UG) Free Elective 3.0 COM 615 3.0	4.0 3.0 16			(
Elective Course (UG) COM Elective or Free Elective COM 613 (GR) SDC Program Elective Fifth Year Fall (GR) SDC Program	3.0 3.0 3.0 11 Credits 3.0	Humanities Elective (UG) Social Science Elective COM 651 (GR) SDC Program Elective (GR) SDC Program	Credits	Elective or Free Elective 3.0 (UG) Free Elective 3.0 COM 615 3.0 18 Spring	4.0 3.0 16 Credits			C

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).

\*\* 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+0, 3 co-op, Co-terminal (Accelerated program completed in 5 years)

Students take graduate courses in the third, fourth, and fifth years, while finishing their undergraduate requirements. They receive both BA and MS at the end of the fifth year.

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	(UG) Humanities Elective		3.0			
UNIV H101		1.0	(UG) Math Course	3.0	-4.0	(UG) Math Course	3.0-	4.0			
(UG) Foreign Language Course*		4.0	(UG) Foreign Language Course* (UG) Free		4.0	(UG) Social Science Elective		3.0			
			Elective								
Second Ye	ar	17		18	8-19		18	-19			C
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COM 210		3.0	COM 220		3.0	COOP EXPERIEN	CE		COOP EXPERIEN	CE	
COM 222		3.0	COM 247		3.0						
(UG) COM Concentrati Course	on	3.0	LING 101 or 102		3.0						
(UG) Science Course	3.0	-4.0	(UG) COM Concentrati Course	¢	3.0						
(UG) Humanities Elective		3.0	(UG) Science Course	3.0	-4.0						
(UG) Free Elective		4.0	(UG) Free Elective		3.0						
Third Year	19	9-20		18	8-19			0			C
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COM 221 or 284			PHIL 305			COOP			COOP EXPERIEN		
(UG) COM Elective or Free Elective		3.0	(UG) COM Elective or Free Elective		3.0	(GR) SDC Program Elective		3.0	COM 574		3.0
(UG) COM Concentrati Course	on	3.0	(UG) COM Concentrati Course	on	3.0						
(UG) Internationa Elective	1	3.0	(UG) Free Elective		3.0						
COM 500		3.0	(UG) Diversity Elective		3.0						
			COM 610		3.0						
Faunt V		15			18			3			3
Elective or Free Elective (UG) COM Concentrati Course (UG) Internationa Elective	1	3.0 3.0 3.0	Elective or Free Elective (UG) COM Concentrati Course (UG) Free Elective (UG) Diversity Elective COM 610	on	3.0 3.0 3.0	Program Elective					

Fall	Credits Wint	ter Credits	Spring	Credits	Summer	Credits
COM 240	3.0 (UG)	) Free	6.0 COOP		COOP	
	Elec	tives	EXPERIE	NCE	EXPERIEN	ICE

(UG) Humanities	3.0	(UG) International	3.0				
Elective		Elective					
(UG) COM Elective or Free Elective	3.0	COM 651	3.0				
(UG) COM Concentration Course	3.0	(GR) Graduate Elective	3.0				
(UG) Free Elective	2.0						
COM 613	3.0						
Fifth Year	18		18			3	3
Fall Credits		Winter Credi	its	Spring	Credits		
COM 400	3.0	COM 491	3.0	COM 492	3	3.0	
(110)	0.0						
(UG) Diversity Elective	3.0	(UG) COM Elective	3.0	(UG) COM Elective	3	3.0	
Diversity		. ,		. ,		3.0	
Diversity Elective (UG) COM	3.0	Elective (UG) Humanities	3.0	Elective (UG) COM Elective or Free	3		
Diversity Elective (UG) COM Elective (UG) COM Elective or Free	3.0 3.0	Elective (UG) Humanities Elective (UG) Social Science	3.0 3.0	Elective (UG) COM Elective or Free Elective (UG) Free	3	3.0	
Diversity Elective (UG) COM Elective (UG) COM Elective or Free Elective (GR) SDC Program	3.0 3.0 3.0	Elective (UG) Humanities Elective (UG) Social Science Elective (GR) SDC Program	3.0 3.0 3.0	Elective (UG) COM Elective or Free Elective (UG) Free Elective	3	3.0	

Total Credits 225-229

- \* 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).
- \*\* 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.

# **Computer Engineering BSCE / Cybersecurity MS**

## **Program Requirements**

*Note:* Students majoring in Computer Engineering must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their Professional Requirements courses.

### General Education/Liberal Studies Requirements

COOP 101	Career Management and Professional Development *	1.0
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	
PHIL 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications E	Elective	3.0
COM 230	Techniques of Speaking	
or COM 31	CTechnical Communication	
General Education	n Requirements **	15.0
Foundation Requ	lirements	
CHEM 101	General Chemistry I	3.5
CS 260	Data Structures	3.0
CS 265	Advanced Programming Tools and Techniques	3.0
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
Choose any B	IO, CHEM, or PHYS	
Professional Req	uirements	
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits II	4.0
ECE 303	ECE Laboratory	3.0
ECE 350	Introduction to Computer Organization	3.0
ECE 361	Probability and Data Analytics for Engineers	4.0
ECEC 201	Advanced Programming for Engineers	3.0
ECEC 204	Design with Microcontrollers	3.0
ECES 301	Signals and Systems I	4.0
Senior Design		

ECE 491 [WI]	Senior Design Project I	3.0
ECE 492 [WI]	Senior Design Project II	3.0
ECE 493 [WI]	Senior Design Project III	3.0
CE Core Elective		3.0
ECE 370	Electronic Devices	
	1 Foundations of Electromagnetics for Computing & Wireless Systems	
ECE Electives <sup>†</sup>	0 Fundamentals of Power and Energy	6.0
ECE 400-level Ele	petivos <sup>††</sup>	9.0
Free Electives	501765	27.0
Master's Degree	Courses	21.0
INFO 517	Principles of Cybersecurity	3.0
INFO 725	Information Policy and Ethics	3.0
SE 578	Security Engineering	3.0
	rack-Specific Technical Electives	27.0
	below depending on track	
Computer Science		
CS 500	Fundamentals of Databases	
CS 501	Introduction to Programming	
CS 502	Data Structures and Algorithms	
CS 503	Systems Basics	
CS 510	Introduction to Artificial Intelligence	
CS 521	Data Structures and Algorithms I	
CS 522	Data Structures and Algorithms II	
CS 540	High Performance Computing	
CS 543	Operating Systems	
CS 544	Computer Networks	
CS 550	Programming Languages	
CS 551	Compiler Construction I	
CS 552	Compiler Construction II	
CS 575	Software Design	
CS 576	Dependable Software Systems	
CS 590	Privacy	
CS 610	Advanced Artificial Intelligence	
CS 612	Knowledge-based Agents	
CS 613	Machine Learning	
CS 620	Advanced Data Structure and Algorithms	
CS 621	Approximation Algorithms	
CS 630	Cognitive Systems	
CS 643	Advanced Operating Systems	
CS 645	Network Security	
CS 647	Distributed Systems Software	
CS 650	Program Generation and Optimization	
CS 675	Reverse Software Engineering	
CS 695	Research Rotations in Cybersecurity	
CS 741	Computer Networks II	
CS 751	Database Theory II	
CS 759	Complexity Theory	
CS 770	Topics in Artificial Intelligence	
CS 780	Advanced Topics in Software Engineering	
Electrical & Comp	uter Engineering Track Electives	
ECE 610	Machine Learning & Artificial Intelligence	
ECE 687	Pattern Recognition	
ECEC 500	Fundamentals Of Computer Hardware	
ECEC 501	Computational Principles of Representation and Reasoning	
ECEC 502	Principles of Data Analysis	
ECEC 503	Principles of Decision Making	
ECEC 511	Combinational Circuit Design	
ECEC 512	Sequential Circuit Design	
ECEC 513	Design for Testability	
ECEC 520	Dependable Computing	
ECEC 531	Principles of Computer Networking	

ECEC 620 Periodiamentals of Computer Architecture ECEC 622 Parallel Programming ECEC 623 Advanced Topics in Computer Architecture ECEC 622 Periodiance Analysis of Computer Networks ECEC 633 Advanced Topics in Computer Networking ECEC 641 Web Security I ECEC 642 Web Security I ECEC 643 Web Security II ECEC 641 Web Security II ECEC 641 Ueb Security II ECEC 641 Digital Systems Design ECES 511 Fundamentals of Systems I ECES 513 Fundamentals of Systems II ECES 523 Probability & Random Variables ECES 523 Detection & Estimation Theory ECES 523 Detection & Estimation Theory ECES 525 Detection & Estimation Theory ECES 526 Processing of the Human Voice ECES 527 Communications I ECES 528 Out Optimal Estimation & Stochastic Control ECES 520 Multimedia Forensics and Security ECES 521 Communications II ECES 522 Communications II ECES 523 Economications II ECES 523 Economications II ECES 524 Communications II ECES 525 Economications II ECES 525 Fundamentals of Dateministic Digital Signal Processing ECES 524 Communications II ECES 525 Economications II ECES 525 Economications II ECES 526 Economications II ECES 528 Economications II ECES 529 Fundamentals of Integration Security ECES 529 Economications II ECES 529 Economications Analysis & Design ECES 529 Economications Analysis & Design ECES 529 Economications Acoding II ECES 520 Endamentals of Image Processing ECES 521 Reliable Communications & Coding II ECES 522 Reliable Communications & Coding II ECES 523 Reliable Communications & Coding II ECES 520 Reliable Communications & Coding II ECES 521 Reliable Communications & Coding II ECES 522 Reliable Communications & Coding II ECES 523 Reliable Communications & Coding II ECES 524 Reliable Communications an Networks ECET 513 Wireless Netw	ECEC 621         High Performance Computer Architecture           ECEC 622         Parallel Programming           ECEC 623         Advanced Topics in Computer Networks           ECEC 633         Advanced Topics in Computer Networking           ECEC 643         Web Security II           ECEC 644         Web Security II           ECEC 645         Web Security II           ECEC 646         Web Security II           ECEC 647         Web Security II           ECEC 648         Web Security II           ECES 6511         Fundamentals of Systems II           ECES 5513         Fundamentals of Systems II           ECES 552         Probability & Random Variables           ECES 552         Digital Signal Processing of the Human Voice           ECES 552         Digital Signal Processing of the Human Voice           ECES 652         Communications I           ECES 652         Communications II           ECES 652         Communications II           ECES 652         Communications II           ECES 653         Digital Control           ECES 654         Digital Control           ECES 654         Digital Control           ECES 654         Digital Control           ECES 851         Indamentals of Statistical	ECEC 600	Eundomontolo of Computer Naturarka
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ECEC 623 Advanced Topics in Computer Architecture ECEC 633 Advanced Topics in Computer Networks ECEC 633 Advanced Topics in Computer Networking ECEC 642 Web Security I ECEC 643 Web Security II ECEC 643 Web Security II ECEC 643 Web Security II ECEC 644 Web Security II ECEC 645 Ubjetal Systems Design ECES 511 Fundamentals of Systems II ECES 512 Fundamentals of Systems II ECES 513 Fundamentals of Systems II ECES 513 Fundamentals of Systems II ECES 523 Detection & Estimation Theory ECES 525 Detection & Estimation Theory ECES 525 Detection & Estimation Theory ECES 620 Multimedia Forensics and Security ECES 527 Processing of the Human Voice ECES 628 Output III ECES 621 Communications II ECES 621 Communications II ECES 623 Communications II ECES 623 Communications II ECES 623 Communications II ECES 623 Endamentals of Sustems ECES 624 Optimal Control ECES 625 Fundamentals of Sustems ECES 625 Endamentals of Sustems ECES 626 Communications II ECES 627 Fundamentals of Sustems ECES 628 Fundamentals of Sustems ECES 630 Endamentals of Sustems ECES 631 Fundamentals of Sustems ECES 642 Optimal Control ECES 643 Digital Control Systems ECES 644 Computer Control Systems ECES 645 Digital Signal Processing ECES 645 Digital Control Systems ECES 645 Intelligent Control ECES 645 Intelligent Control ECES 645 Intelligent Control ECES 645 Runga Reconstruction Algorithms ECES 843 Digital Control Systems ECES 841 Communications & Coding II ECES 843 Reliable Communications & Coding II ECES 843 Reliable Communications & Coding II ECES 843 Reliable Communications & Coding II ECES 844 Reliable Communications & Coding II ECES 645 Computer-Aided Network Design ECES 740 Information Theory and Coding ECES 740 Information Theory and Coding ECES 740 Proteas Systems ECES 741 Physical Foundations of Telecommunications Remorks ECET 740 Information Theory and Coding ECES 740 Information Theory and Coding ECES 740 Presequery and Algorithmation ECES 740 Optimal Communications & Coding II ECES 740 Information Theory and Coding ECET 740 Information Theory a	ECEC 623 Advanced Topics in Computer Architecture ECEC 633 Advanced Topics in Computer Networks ECEC 633 Advanced Topics in Computer Networking ECEC 641 Web Security II ECEC 642 Web Security II ECEC 643 Web Security II ECEC 643 Digital Systems Design ECES 511 Fundamentals of Systems II ECES 512 Fundamentals of Systems III ECES 512 Fundamentals of Systems III ECES 522 Random Process & Spectral Analysis ECES 523 Detection & Estimation Theory ECES 559 Digital Signal Processing for Sound & Hearing ECES 651 Detection & Estimation Theory ECES 559 Digital Signal Processing for Sound & Hearing ECES 651 Communications III ECES 651 Communications III ECES 651 Communications III ECES 652 Communications III ECES 653 Digital Signal Processing GF Sound & Hearing ECES 653 Communications III ECES 653 Communications III ECES 651 Fundamentals of Statistical Digital Signal Processing ECES 653 Digital Control Statistical Digital Signal Processing ECES 654 Digital Control Systems S ECES 655 Evidamentals of Statistical Digital Signal Processing ECES 651 Intelligent Control ECES 862 Fundamentals of Intelligent Processing ECES 863 Evidamentals of Intelligent Processing ECES 861 Intelligent Control ECES 810 Optimal Control ECES 811 Optimization Methods for Engineering Design ECES 812 Reliable Communications & Coding II ECES 813 Communications & Coding II ECES 813 Communications & Coding II ECES 823 Reliable Communications & Coding II ECES 824 Reliable Communications & Coding II ECES 825 Reliable Communications & Coding II ECES 825 Reliable Communications & Coding II ECES 826 Reliable Communications & Coding II ECES 827 Reliable Communications & Coding II ECES 828 Reliable Communications & Coding II ECES 829 Reliable Communications & Coding II ECES 821 Reliable Communications & Coding II ECES 822 Reliable Communications & Coding II ECES 823 Reliable Communications & Coding II ECES 824 Reliable Communications & Coding II ECES 825 Reliable Communications & Coding II ECES 826 Reliable Communications & Coding II ECES 827 Reliable Communicat		
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INFO 629         Applied Artificial Intelligence           INFO 633         Information Visualization	INFO 629     Applied Artificial Intelligence       INFO 633     Information Visualization       INFO 634     Data Mining       INFO 646     Information Systems Management	INFO 613	XML and Databases
INFO 633 Information Visualization	INFO 633     Information Visualization       INFO 634     Data Mining       INFO 646     Information Systems Management	INFO 624	Information Retrieval Systems
	INFO 634         Data Mining           INFO 646         Information Systems Management	INFO 629	Applied Artificial Intelligence
INFO 634 Data Mining	INFO 646 Information Systems Management	INFO 633	Information Visualization
		INFO 634	Data Mining
INFO 646 Information Systems Management	INFO 655 Intro to Web Programming	INFO 646	Information Systems Management
INFO 655 Intro to Web Programming		INFO 655	Intro to Web Programming

Total Credits		226.5
Cybersecurity No	n-Track Electives <sup>‡</sup>	9.0
INFO 712	Information Assurance	
INFO 710	Information Forensics	
INFO 680	US Government Information	
INFO 670	Cross-platform Mobile Development	
INFO 662	Metadata and Resource Description	
INFO 659	Introduction to Data Analytics	
INFO 658	Information Architecture	

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.

- \*\* **General Education Requirements**
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI] , ECE 492 [WI] , ECE 493 [WI] credits with ECE elective credits.
- † 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>++</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).
- ‡ If enrolled in the Computer Science Track, choose 3 courses (9.0 credits) from either Electrical & Computer Engineering Track or Information Systems Track Technical Electives list. If enrolled in the Information Systems Track, choose 3 courses (9.0 credits) from either the Computer Science or Electrical & Computer Engineering Tracks.

If enrolled in the Electrical & Computer Engineering Track, choose 3 courses (9.0 credits) from either the Computer Science or Information Systems Tracks.

## Sample Plan of Study 5 year, 3 coop Co-Terminal

First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
CHEM 101		3.5	COOP 101 or CIVC 101 <sup>*</sup>		1.0	CIVC 101 or COOP 101 <sup>*</sup>		1.0	VACATION		
ECE 101		1.0	ECE 200		4.0	ECE 105		3.0			
ENGL 101 or 111		3.0	ENGR 131 or 132		3.0	ENGL 102 or 112		3.0			
ENGR 111		3.0	MATH 122		4.0	ENGR 113		3.0			
MATH 121		4.0	PHYS 101		4.0	MATH 200		4.0			
UNIV E101		1.0				PHYS 102		4.0			
	1	5.5			16			18			0
Second Ye		15.5			16			18			0
Second Ye Fall	ar		Winter	Credits		Spring	Credits			Credits	-
	ar Credits		Winter COOP EXPERIEN				Credits				-
Fall COOP	ar Credits		COOP			Spring	Credits	4.0	Summer COM 230		-
Fall COOP	ar Credits		COOP			Spring ECE 201	Credits	4.0	Summer COM 230 or 310		3.0
Fall COOP	ar Credits		COOP			Spring ECE 201 ECEC 201 ENGL 103		4.0 3.0 3.0	<b>Summer</b> COM 230 or 310 CS 265		3.0 3.0

						(10) 5			(10) 5		
						(UG) Free Elective		3.0	(UG) Free Elective		3.0
		0			0			19			19
Third Year Fall	Cradita		Minter	Cradita		Casing	Credite		Summer	Credito	
COOP EXPERIEN	Credits CE		Winter COOP EXPERIEN	Credits CE		Spring CS 260	Credits		ECE 361	Credits	4.0
INFO 725 (GR)		3.0				ECE 301		4.0	PHIL 315		3.0
						ECE 350		3.0	(UG) CE Core elective		3.0
						ECES 301		4.0	(UG) Science elective (Any BIO, CHEM or PHYS course)		3.0
						(UG) General Education Elective		3.0	(UG) Free Elective		3.0
						INFO 517		3.0	SE 578		3.0
		3			0			20			19
Fourth Yea Fall	r Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN			COOP EXPERIEN			ECE 303	Credits		(UG) ECE elective <sup>†</sup>	Credits	3.0
(GR) Non- Track Technical Elective		3.0	(GR) Track Technical Elective		3.0	MATH 291		4.0	(UG) General Education elective <sup>**</sup>		3.0
						(UG) ECE elective <sup>†</sup>		3.0	(UG) Free electives		6.0
						(UG) Free elective		3.0	(GR) Track Technical Elective		3.0
						(GR) Track Technical Electives		6.0	(GR) Non- Track Technical Elective		3.0
Fifth Year		3			3			19			18
Fall	Credits		Winter	Credits		Spring	Credits				
ECE 491			ECE 492			ECE 493		3.0			
(UG) ECE 400-level Elective <sup>††</sup>		3.0	(UG) ECE 400-level elective <sup>††</sup>		3.0	(UG) ECE 400-level elective <sup>††</sup>		3.0			
(UG) General Education elective		3.0	(UG) General Education elective		3.0	(UG) General Education elective		3.0			
(UG) Free elective		3.0	(UG) Free elective		3.0	(UG) Free elective		3.0			
(GR) Track Technical Elective		3.0	(GR) Track Technical Electives		6.0	(GR) Track Technical electives		6.0			
(GR) Non- Track Technical Elective		3.0									
		18			18			18			

### Total Credits 226.5

Note: Students majoring in Computer Engineering must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their professional requirements courses.

 \* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* CE Core Elective: Choose one of the following: ECE 370, ECE 371, or ECE 380
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- 11 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).

# **Computer Engineering BSCE / Electrical Engineering MSEE**

## **Program Requirements**

### General Education/Liberal Studies Requirements

ECE 493

Senior Design Project III

General Educatio	on/Liberal Studies 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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications E	Elective	3.0
COM 230	Techniques of Speaking	
or COM 31	CTechnical Communication	
General Education	n Requirements **	15.0
Foundation Requ	irements	
CHEM 101	General Chemistry I	3.5
CS 260	Data Structures	3.0
CS 265	Advanced Programming Tools and Techniques	3.0
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
Choose any B	IO, CHEM, or PHYS	
Professional Req	uirements	
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits II	4.0
ECE 303	ECE Laboratory	3.0
ECE 350	Introduction to Computer Organization	3.0
ECE 361	Probability and Data Analytics for Engineers	4.0
ECEC 201	Advanced Programming for Engineers	3.0
ECEC 204	Design with Microcontrollers	3.0
ECES 301	Signals and Systems I	4.0
Senior Design		
ECE 491 [WI]	Senior Design Project I	3.0
ECE 492 [WI]	Senior Design Project II	3.0

CE Core Elective	e (choose one of the following):	3.0
ECE 370	Electronic Devices	
ECE 371	Foundations of Electromagnetics for Computing & Wireless Systems	
ECE 380	Fundamentals of Power and Energy	
ECE Electives <sup>†</sup>		6.0
ECE 400-level El	lectives <sup>††</sup>	9.0
Free Electives		27.0
Master's Degree	Courses	
Electrical Engine	ering Courses <sup>‡</sup>	21.0
General ECE Co	urses <sup>‡‡</sup>	9.0
Graduate Electiv	es <sup>§</sup>	15.0
Total Credits		226.5

*Note:* Students majoring in Computer Engineering must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their Professional Requirements courses.

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI], ECE 492 [WI], ECE 493 credits with ECE elective credits
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- \*\* 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).
- <sup>‡</sup> 500-level or higher courses in ECEE, ECEP, ECES, and ECET
- \$\$\$500-level or higher courses in ECE, ECEC, ECEE, ECEP, ECES, ECET. Research-intensive courses (ECE 697, ECE 898, ECE 997, and ECE 998) cannot be used to fulfill this requirement.
- \$ 500-level or higher courses in the following areas: AE, BIO, BMES, CHE, CHEM, CIVE, CMGT, CS, ECE, ECEC, ECEE, ECEP, ECES, ECET, EGMT, ENGR, ENVE, ET, MATE, MATH, MEM, OPR, PROJ, PHYS, PRMT, SYSE.

## Sample Plan of Study

3.0

## 5 year, 3 coop Co-Terminal

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	COOP 101 or CIVC 101 <sup>*</sup>	1.0	CIVC 101 or COOP 101 <sup>*</sup>	1.	0 VACATION	
ECE 101	1.0	ECE 200	4.0	ECE 105	3.	D	
ENGL 101 or 111	3.0	ENGR 131 or 132	3.0	ENGL 102 or 112	3.	D	
ENGR 111	3.0	MATH 122	4.0	ENGR 113	3.	D	
MATH 121	4.0	PHYS 101	4.0	MATH 200	4.	D	
UNIV E101	1.0			PHYS 102	4.	D	
	15.5		16		1	В	0

Second Y	ear						
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIE	NCE	COOP EXPERIE	NCE	ECE 201	4.0	0 COM 230 or 310	3.0
				ECEC 201	3.0	) CS 265	3.0
				ENGL 103 or 113	3.0	) ECEC 204	3.0
				ENGR 231	3.0	) ENGR 232	3.0
				MATH 221	3.0	) PHYS 201	4.0
				(UG) Free Elective	3.0	0 (UG) Free Elective	3.0
		0		0	19	9	19
Third Yea	r						
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIE	NCE	COOP EXPERIE	NCE	CS 260	3.0	) ECE 361	4.0
(GR) Graduate	3.	0		ECE 301	4.0	) PHIL 315	3.0

Elective§

3

ECE 350	3.0 (UG) CE Core elective***	3.0
ECES 301	4.0 (UG) Free elective	3.0
(UG) General Education Elective <sup>**</sup>	3.0 (UG) Science elective	3.0
(GR) Graduate Elective <sup>§</sup>	3.0 Any BIO, CHEM or PHYS course	
	(GR) General ECE course <sup>‡‡</sup>	3.0

0

20

	•	,		•			20			15
Fourth Yea	ar									
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	ICE	COOP EXPERIEN	CE		ECE 303		3.0	(UG) ECE Elective <sup>†</sup>		3.0
(GR) Graduate Elective <sup>§</sup>	3.(	) (GR) Graduate Elective <sup>§</sup>		3.0	MATH 291		4.0	(UG) Free Electives		6.0
					(UG) ECE Elective <sup>†</sup>		3.0	(UG) General Education Elective <sup>**</sup>		3.0
					(UG) Free Elective		3.0	(GR) Electrical Eng Course <sup>‡</sup>		3.0
					(GR) Electrical Eng Courses <sup>‡</sup>		6.0	(GR) General ECE Course <sup>‡‡</sup>		3.0
	;	3		3			19			18
Fifth Year										
Fall	Credits	Winter	Credits		Spring	Credits				
ECE 491	3.0	) ECE 492		3.0	ECE 493		3.0			
(UG) ECE 400-level Elective <sup>††</sup>	3.0	0 (UG) ECE 400-level Elective <sup>††</sup>		3.0	(UG) ECE 400-level Elective <sup>††</sup>		3.0			
(UG) Free Elective	3.0	) (UG) Free Elective		3.0	(UG) Free Elective		3.0			

Total Credits 226.5

19

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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* CE Core Elective: Choose one of the following: ECE 370, ECE 371, or ECE 380
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- 11 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).
- ‡ 500-level or higher courses in ECEE, ECEP, ECES, and ECET
- \$500-level or higher courses in ECE, ECEC, ECEE, ECEP, ECES, ECET. Research-intensive courses (ECE 697, ECE 898, ECE 997, and ECE 998) cannot be used to fulfill this requirement.
- § 500-level or higher courses in the following areas: AE, BIO, BMES, CHE, CHEM, CIVE, CMGT, CS, ECE, ECEC, ECEE, ECEP, ECES, ECET, EGMT, ENGR, ENVE, ET, MATE, MATH, MEM, OPR, PROJ, PHYS, PRMT, SYSE.

# Computer Engineering BSCE / Machine Learning Engineering MSMLE

## **Program Requirements**

General Educatio	n/Liberal Studies 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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications E	Elective	3.0
COM 230	Techniques of Speaking	
or COM 31	(Technical Communication	
General Education	Requirements	15.0
Foundation Requ	irements	
CHEM 101	General Chemistry I	3.5
CS 260	Data Structures	3.0
CS 265	Advanced Programming Tools and Techniques	3.0
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
Choose any BIO, 0	CHEM, or PHYS	
Professional Req	uirements	
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits II	4.0
ECE 303	ECE Laboratory	3.0
ECE 350	Introduction to Computer Organization	3.0
ECE 361	Probability and Data Analytics for Engineers	4.0
ECEC 201	Advanced Programming for Engineers	3.0
ECEC 204	Design with Microcontrollers	3.0
ECES 301	Signals and Systems I	4.0
Senior Design ***		
ECE 491 [WI]	Senior Design Project I	3.0

ECE 686 ECES 620 ECES 641 ECES 650 ECES 660 Transformational Choose two electiv communication, ar COM 610 EDGI 510 EDGI 522 Engineering Electiv	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR I Electives ve courses that promote the development of leadership, and ethics: Theories of Communication and Persuasion Culture, Society & Education in Comparative Perspective Education for Global Citizenship, Sustainability, and Social Justice	3.0 6.0 9.0 6.0
ECES 620 ECES 641 ECES 650 ECES 660 Transformational Choose two electiv communication, ar COM 610 EDGI 510 EDGI 522 Engineering Electiv	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR Electives ve courses that promote the development of leadership, and ethics: Theories of Communication and Persuasion Culture, Society & Education in Comparative Perspective Education for Global Citizenship, Sustainability, and Social Justice ves <sup>‡</sup>	<b>6.0</b> 9.0
ECE 686 ECES 620 ECES 641 ECES 650 ECES 660 Transformational Choose two electiv communication, an COM 610 EDGI 510 EDGI 522	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR I Electives ve courses that promote the development of leadership, and ethics: Theories of Communication and Persuasion Culture, Society & Education in Comparative Perspective Education for Global Citizenship, Sustainability, and Social Justice	6.0
ECE 686 ECES 620 ECES 641 ECES 650 ECES 660 Transformational Choose two electiv communication, ar COM 610 EDGI 510	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR Electives ve courses that promote the development of leadership, and ethics: Theories of Communication and Persuasion Culture, Society & Education in Comparative Perspective Education for Global Citizenship, Sustainability, and Social	
ECE 686 ECES 620 ECES 641 ECES 650 ECES 660 Transformational Choose two electiv communication, ar COM 610	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR I Electives ve courses that promote the development of leadership, and ethics: Theories of Communication and Persuasion	
ECE 686 ECES 620 ECES 641 ECES 650 ECES 660 Transformational Choose two electiv communication, an	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR I Electives ve courses that promote the development of leadership, and ethics:	
ECE 686 ECES 620 ECES 641 ECES 650 ECES 660 Transformational Choose two electiv	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR I Electives ve courses that promote the development of leadership,	
ECE 686 ECES 620 ECES 641 ECES 650 ECES 660 Transformational	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR I Electives	
ECE 686 ECES 620 ECES 641 ECES 650 ECES 660	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics Machine Listening and Music IR	
ECE 686 ECES 620 ECES 641 ECES 650	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics Statistical Analysis of Genomics	3.0
ECE 686 ECES 620 ECES 641	Cell & Tissue Image Analysis Multimedia Forensics and Security Bioinformatics	3.(
ECE 686 ECES 620	Cell & Tissue Image Analysis Multimedia Forensics and Security	3.
ECE 686	Cell & Tissue Image Analysis	3.1
		3.(
Choose one of the	following	3.0
Applications		21
Applications	r unuamentais ur intage r tucessing	
ECES 681	Fundamentals of Image Processing	
ECES 631 ECES 681	Fundamentals of Deterministic Digital Signal Processing Fundamentals of Computer Vision	
Choose one of the ECES 631	•	
Signal Processing		3.0
		3.0
MATH 504 MATH 510	Linear Algebra & Matrix Analysis Applied Probability and Statistics I	
MATH 504		
ECES 811 ECET 602	Information Theory and Coding	
ECES 523 ECES 811	Optimization Methods for Engineering Design	
ECES 522 ECES 523	Detection & Estimation Theory	
ECES 522	Random Process & Spectral Analysis	
Choose two of the	•	0.
	atical Theory Courses	6.
ECES 521	Probability & Random Variables	3.
ECE 687	Pattern Recognition	3.
ECE 612	Applied Machine Learning Engineering	3.0
ECE 610	Machine Learning & Artificial Intelligence	3.0
Core Courses	ovulata	
Master's Degree (	Courses	27.0
Free Electives	cuves ··	9.1
ECE 400-level Elevel	actives <sup>tt</sup>	
ECE 360	Fundamentals of Power and Energy	6.
ECE 380	Systems	
ECE 371	Foundations of Electromagnetics for Computing & Wireless	
ECE 370	Electronic Devices	
CE Core Elective	(choose one of the following):	3.
ECE 493	Senior Design Project III	3.

Note: Students majoring in Computer Engineering must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their Professional Requirements courses.

\* 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.

\*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)

- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI], ECE 492 [WI], ECE 493 credits with ECE elective credits.
- † 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- 11 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).
- Choose 3 classes at the 500 level or higher from: ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, and SYSE.
- <sup>‡‡</sup> Thesis Option: A minimum of two terms of laboratory-based research that leads to a publicly defended MS thesis. Students will be advised by a faculty member, and when applicable, a representative of industry or government sponsor.

Non-Thesis Option: In lieu of research and thesis, students will complete 6.0 additional credits of coursework from the Mathematical Theory, Applications, or Signal Processing areas.

## Sample Plan of Study

### 5 year, 3 coop Co-Terminal

			-								
First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
CHEM 101		3.5	COOP 101 or CIVC 101 <sup>*</sup>		1.0	CIVC 101 or COOP 101 <sup>*</sup>		1.0	VACATION		
ECE 101		1.0	ECE 200		4.0	ECE 105		3.0			
ENGL 101 or 111		3.0	ENGR 131 or 132		3.0	ENGL 102 or 112		3.0			
ENGR 111		3.0	MATH 122		4.0	ENGR 113		3.0			
MATH 121		4.0	PHYS 101		4.0	MATH 200		4.0			
UNIV E101		1.0				PHYS 102		4.0			
		15.5			16	•		18			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE		COOP EXPERIEN	CE		ECE 201		4.0	COM 230 or 310		3.0
						ECEC 201		3.0	CS 265		3.0
						ENGL 103 or 113		3.0	ECEC 204		3.0
						ENGR 231		3.0	ENGR 232		3.0
						MATH 221		3.0	PHYS 201		4.0
						(UG) Free Elective		3.0	(UG) Free Elective		3.0
		0			0			19			19
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE		COOP EXPERIEN	CE		CS 260		3.0	ECE 361		4.0
(GR) Signal Processing Course		3.0				ECE 301		4.0	PHIL 315		3.0
						ECE 350		3.0	(UG) CE Core Elective		3.0
						ECES 301		4.0	(UG) Free Elective		3.0

						(UG) General Education Elective			(UG) Science Elective		3.0
						(GR) Engineering Elective	I	3.0	Any BIO, CHEM or PHYS course		
									(GR) Aligned Mathematica Theory Course	al	3.0
Fourth Year		3			0			20			19
	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIENC			COOP EXPERIEN			ECE 303			(UG) ECE Elective <sup>†</sup>		3.0
(GR) Applications Course	3	3.0	ECE 610		3.0	MATH 291		4.0	(UG) Free Electives		6.0
						(UG) ECE Elective <sup>†</sup>			(UG) General Education Elective		3.0
						(UG) Free Elective		3.0	ECE 612		3.0
						ECE 687			(GR) Aligned Mathematics Theory Course	al	3.0
						ECES 521		3.0			
Fifth Year		3			3			19			18
	Credits		Winter	Credits		Spring	Credits				
ECE 491			ECE 492			ECE 493		3.0			
(UG) ECE	3		(UG) ECE		3.0	(UG) ECE		3.0			
400-level Elective <sup>††</sup>			400-level Elective <sup>††</sup>			400-level Elective <sup>††</sup>					
	3	3.0			3.0			3.0			
Elective <sup>††</sup> (UG) Free		3.0 3.0	Elective <sup>††</sup> (UG) Free			Elective <sup>††</sup> (UG) Free		3.0 3.0			
Elective <sup>††</sup> (UG) Free Elective (UG) General Education	3	3.0 3.0 3.0	Elective <sup>††</sup> (UG) Free Elective (UG) General Education	tional	3.0	Elective <sup>††</sup> (UG) Free Elective (UG) General Education					
Elective <sup>††</sup> (UG) Free Elective (UG) General Education Elective <sup>**</sup> (GR) Engineering	3	3.0 3.0 3.0	Elective <sup>††</sup> (UG) Free Elective (UG) General Education Elective <sup>**</sup> (GR) Transformat	tional	3.0 3.0 3.0	Elective <sup>††</sup> (UG) Free Elective (UG) General Education Elective <sup>**</sup> (GR) Engineering		3.0			

### Total Credits 226.5

\* 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.

\*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)

- \*\*\* CE Core Elective: Choose one of the following: ECE 370, ECE 371, or ECE 380
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- 11 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).

# Computer Engineering BSCE / Robotics & Autonomy MSRA

1.0

1.0

3.0

3.0

3.0

3.0

1.0

3.0

15.0

3.5

3.0

3.0

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#### **Program Requirements** General Education/Liberal Studies Requirements **CIVC 101** Introduction to Civic Engagement COOP 101 Career Management and Professional Development ENGL 101 Composition and Rhetoric I: Inquiry and Exploratory Research or ENGL 111 English Composition I Composition and Rhetoric II: Advanced Research and **ENGL 102** Evidence-Based Writing or ENGL 112 English Composition II ENGL 103 Composition and Rhetoric III: Themes and Genres or ENGL 113 English Composition III Engineering Ethics PHIL 315 UNIV E101 The Drexel Experience **Communications Elective** COM 230 Techniques of Speaking or COM 31(Technical Communication General Education Requirements Foundation Requirements **CHEM 101** General Chemistry I CS 260 Data Structures CS 265 Advanced Programming Tools and Techniques **ENGR 111** Introduction to Engineering Design & Data Analysis **ENGR 113** First-Year Engineering Design **ENGR 131** Introductory Programming for Engineers or ENGR 132 Programming for Engineers ENGR 231 Linear Engineering Systems ENGR 232 Dynamic Engineering Systems **MATH 121** Calculus I **MATH 122** Calculus II Multivariate Calculus MATH 200 MATH 221 Discrete Mathematics **MATH 291** Complex and Vector Analysis for Engineers **PHYS 101** Fundamentals of Physics I **PHYS 102** Fundamentals of Physics II Fundamentals of Physics III **PHYS 201** Science Elective Choose any BIO, CHEM, or PHYS **Professional Requirements** ECE 101 Electrical and Computer Engineering in the Real World ECE 105 Programming for Engineers II ECE 200 Digital Logic Design ECE 201 Foundations of Electric Circuits I ECE 301 Foundations of Electric Circuits II ECE 303 ECE Laboratory ECE 350 Introduction to Computer Organization ECE 361 Probability and Data Analytics for Engineers **ECEC 201** Advanced Programming for Engineers **ECEC 204** Design with Microcontrollers ECES 301 Signals and Systems I Senior Design ECE 491 [WI] Senior Design Project I

ECE 492 [WI]

ECE 493

Senior Design Project II

Senior Design Project III

ECE 370	e (choose one of the following): Electronic Devices	3.0
ECE 371	Foundations of Electromagnetics for Computing & Wireless Systems	
ECE 380	Fundamentals of Power and Energy	
ECE Electives <sup>†</sup>		6.0
ECE 400-level Ele	ectives <sup>††</sup>	9.0
Free Electives		27.0
Master's Degree	Courses	
Foundation Cou	rses	6.0
Choose 2 courses	s in mathematics and/or signal processing	
Mathematics		
ECES 521	Probability & Random Variables	
MATH 504	Linear Algebra & Matrix Analysis	
MATH 510	Applied Probability and Statistics I	
MATH 623	Ordinary Differential Equations I	
MATH 630	Complex Variables I	
MEM 591	Applied Engr Analy Methods I	
MEM 592	Applied Engr Analy Methods II	
MEM 593	Applied Engr Analy Methods III	
Signal Processing		
ECES 522 ECES 523	Random Process & Spectral Analysis Detection & Estimation Theory	
ECES 523 ECES 604	Optimal Estimation & Stochastic Control	
ECES 631	Fundamentals of Deterministic Digital Signal Processing	
Systems Course		6.0
	s in robotics and autonomy from the perspective of full systems or	0.0
use		
CS 510	Introduction to Artificial Intelligence	
ECE 610	Machine Learning & Artificial Intelligence	
ECE 612	Applied Machine Learning Engineering	
ECES 511	Fundamentals of Systems I	
ECES 512	Fundamentals of Systems II	
ECES 513	Fundamentals of Systems III	
ECES 561	Medical Robotics I	
ECES 562	Medical Robotics II	
MEM 571	Introduction to Robot Technology	
MEM 572	Mechanics of Robot Manipulators	
MEM 573	Industrial Application of Robots	
	Areas     courses from a maximum of two Core Component areas:     ognition and Behavior, Action, Control	9.0
Core Componen	ts	
Take 1 course in	each of the four disciplines critical to robotics	
Perception Cours	e	3.0
ECE 687	Pattern Recognition	
ECES 681	Fundamentals of Computer Vision	
ECES 682	Fundamentals of Image Processing	
ECET 512	Wireless Systems	
ECET T580	Special Topics in ECET	
MEM 678	Nondestructive Evaluation Methods	
Cognition and Be		3.0
CS 510	Introduction to Artificial Intelligence	
CS 583	Introduction to Computer Vision	
CS 613	Machine Learning	
CS 630	Cognitive Systems	
ECE 610	Machine Learning & Artificial Intelligence	
ECE 612	Applied Machine Learning Engineering	
ECES 604	Optimal Estimation & Stochastic Control	
ECES 631	Fundamentals of Deterministic Digital Signal Processing	2.0
Action Course	Fundamentals of Systems I	3.0
ECES 511	Fundamentals of Systems I	

То	tal Credits		226.5
cre	dits of additiona	: In lieu of the research and thesis, students will complete 6.0 al coursework in a Technical Focus Area. Graduate Co-op is n-thesis students, but is not required.	
tha me	t leads to a pub mber, and whe	ninimum of two terms of laboratory-based research (ECE 898) licly defended MS thesis. Students will be advised by a faculty n applicable, a representative of industry or government sponsor.	
Ma	stery: Thesis of	or Alternative	6.0
	EDGI 522	Education for Global Citizenship, Sustainability, and Social Justice	
	EDGI 510	Culture, Society & Education in Comparative Perspective	
	COM 610	Theories of Communication and Persuasion	
	mmunication, ar	nd ethics	
Ch	oose 2 elective	courses that promote the development of leadership,	
Tra	ansformational		6.0
	MEM 735	Advanced Topics in Optimal Control	
	MEM 734	Applied Optimal Control II	
	MEM 733	Applied Optimal Control I	
	MEM 638	Theory of Nonlinear Control III	
	MEM 637	Theory of Nonlinear Control II	
	MEM 636	Theory of Nonlinear Control I	
	MEM 635	Robust Control Systems III	
	MEM 634	Robust Control Systems I	
	MEM 633	Robust Control Systems I	
	ECES 642	Optimal Control	
	ECE 612	Optimal Estimation & Stochastic Control	
00	ECE 612	Applied Machine Learning Engineering	3.0
0.0	MEM 668	Advanced Dynamics III	0.0
	MEM 667	Advanced Dynamics II	
	MEM 666	Advanced Dynamics I	
	MEM 530	Aircraft Flight Dynamics & Control I	
	ECES 513	Fundamentals of Systems III	

Note: Students majoring in Computer Engineering must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their Professional Requirements courses.

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI] , ECE 492 [WI] , ECE 493 credits with ECE elective credits.
- † 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- 11 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).

## Sample Plan of Study

## 5 year, 3 coop Co-Terminal

		•								
First Year										
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
CHEM 101	3.5	5 COOP 101 or CIVC 101 <sup>*</sup>		1.0	COOP 101 or CIVC 101 <sup>*</sup>		1.0	VACATION		
ECE 101	1.0	ECE 200		4.0	ECE 105		3.0			
ENGL 101 or 111	3.0	ENGR 131 or 132		3.0	ENGL 102 or 112		3.0			
ENGR 111	3.0	) MATH 122		4.0	ENGR 113		3.0			
MATH 121	4.0	PHYS 101		4.0	MATH 200		4.0			
UNIV E101	1.0	)			PHYS 102		4.0			
	15.5	i		16			18			0
Second Ye								_		
	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE	COOP EXPERIEN	CE		ECE 201		4.0	COM 230 or 310		3.0
					ECEC 201		3.0	CS 265		3.0
					ENGL 103 or 113		3.0	ECEC 204		3.0
					ENGR 231		3.0	ENGR 232		3.0
					MATH 221		3.0	PHYS 201		4.0
					(UG) Free		3.0	(UG) Free		3.0
					Elective			Elective		
Third Year	(	)		0			19			19
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
COOP		COOP			CS 260			ECE 361		4.0
EXPERIEN	CE	EXPERIEN	CE							
(GR) Systems Course <sup>‡</sup>	3.0	)			ECE 301		4.0	PHIL 315		3.0
					ECE 350		3.0	(UG) CE Core Elective		3.0
					ECES 301		4.0	(UG) Free Elective		3.0
					(UG) General Education Elective		3.0	(UG) Science Elective		3.0
					(GR) Foundation Course		3.0	Any BIO, CHEM or PHYS course		
								(GR) Systems Course		3.0
	3	3		0	)		20			19
Fourth Yea	r									
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE	COOP EXPERIEN	CE		ECE 303		3.0	(UG) ECE Elective <sup>†</sup>		3.0
(GR) Technical Focus Course	3.0	) (GR) Technical Focus Course		3.0	MATH 291		4.0	(UG) Free Electives		6.0
					(UG) ECE Elective <sup>†</sup>		3.0	(UG) General		3.0

Education Elective

		18			18			18		
(GR) Core Control Course		3.0	(GR) Transforma Elective	t	3.0	(GR) Thesis or Alternative		3.0		
Action Course		2.0	Thesis or Alternative		2.0	Technical Focus Course		3.0		
Elective <sup>**</sup> (GR) Core		3.0	Elective <sup>**</sup> (GR)		3.0	Elective**		3.0		
(UG) General Education		3.0	(UG) General Education		3.0	(UG) General Education		3.0		
(UG) Free Elective		3.0	(UG) Free Elective		3.0	(UG) Free Elective		3.0		
(UG) ECE 400-level Elective <sup>††</sup>		3.0	(UG) ECE 400-level Elective <sup>††</sup>		3.0	(UG) ECE 400-level Elective <sup>††</sup>		3.0		
ECE 491		3.0	ECE 492		3.0	ECE 493		3.0		
Fifth Year Fall	Credits		Winter	Credits		Spring	Credits			
		3			3			19		18
						(GR) Foundation Course		3.0		
						(GR) Core Perception Course		3.0	(GR) Transformational Elective	3.0
						(UG) Free Elective		3.0	(GR) Core Cognition & Behavior Course	3.0

### Total Credits 226.5

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* CE Core Elective: Choose one of the following: ECE 370, ECE 371, or ECE 380
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- 11 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).

# Computer Engineering BSCE / Telecommunications Engineering MSEET

## **Program Requirements**

General Educatio	on/Liberal Studies 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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications e	elective	3.0
COM 230	Techniques of Speaking	
or COM 31	CTechnical Communication	
General Education	n Requirements **	15.0
Foundation Requ	irements	
CHEM 101	General Chemistry I	3.5
CS 260	Data Structures	3.0
CS 265	Advanced Programming Tools and Techniques	3.0
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
Choose any Bl	IO, CHEM, or PHYS	
Professional Req	uirements	
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits II	4.0
ECE 303	ECE Laboratory	3.0
ECE 350	Introduction to Computer Organization	3.0
ECE 361	Probability and Data Analytics for Engineers	4.0
ECEC 201	Advanced Programming for Engineers	3.0
ECEC 204	Design with Microcontrollers	3.0
ECES 301	Signals and Systems I	4.0
Senior Design		
ECE 491 [WI]	Senior Design Project I	3.0

ECE 492 [WI]	3.0					
ECE 493	3.0					
CE Core Elective	3.0					
ECE 370	ECE 370 Electronic Devices					
ECE 371	Foundations of Electromagnetics for Computing & Wireless Systems					
ECE 380	Fundamentals of Power and Energy					
ECE Electives <sup>†</sup>	6.0					
ECE 400-level ele	9.0					
Free Electives		27.0				
Master's Degree	Courses					
Telecommunicatio	ons Engineering Courses (ECET 500-level or higher)	6.0				
Telecommunicatio	ons Electives <sup>‡</sup>	15.0				
General ECE courses <sup>‡‡</sup>						
Graduate Electives <sup>§</sup>						
Total Credits		226.5				

Note: Students majoring in Computer Engineering must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their Professional Requirements courses.

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI], ECE 492 [WI], ECE 493 credits with ECE elective credits.
- † 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).
- <sup>‡</sup> 500-level or higher courses from ECEE, ECEC, ECES, and ECET.
- ## 500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, and ECE.
- § 500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, SYSE, BMES, MATH, PHYS, CHEM, BIO, OPR, and CS.

## Sample Plan of Study

## 5 year, 3 coop Co-Terminal

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101		COOP 101 or CIVC 101 <sup>*</sup>	1	I.0 CIVC 101 <sup>*</sup>	1	0 VACATION	1
ECE 101	1.0	ECE 200	4	4.0 ECE 105	3	.0	
ENGL 101 or 111	3.0	ENGR 131 or 132	3	3.0 ENGL 102 or 112	3	.0	
ENGR 111	3.0	MATH 122	4	4.0 ENGR 113	3	.0	
MATH 121	4.0	PHYS 101	4	4.0 MATH 200	4	.0	
UNIV E101	1.0			PHYS 102	4	.0	
	15.5			16	1	18	0

Second Ye		14/1	One all's	Oraciana	0	0	One dist	
Fall COOP EXPERIEN	Credits CE	Winter COOP EXPERIEN	Credits	Spring ECE 201	Credits 4.0	Summer COM 230 or 310	Credits 3	3.0
				ECEC 201	3.	) CS 265	3	3.0
				ENGL 103 or 113	3.	) ECEC 204	3	3.0
				ENGR 231	3.	) ENGR 232	3	3.0
				MATH 221	3.	) PHYS 201	4	1.0
				(UG) Free Elective	3.0	0 (UG) Free Elective	3	3.0
		0		0	1	9		19
Third Year Fall	Credits	Wintor	Credits	Enring	Credits	Summer	Credits	
COOP	Credits	Winter COOP	Credits	Spring CS 260		) ECE 361		• •
EXPERIEN		EXPERIEN	ICE					1.0
(GR) Graduate Elective <sup>§</sup>	3.	0		ECE 301	4.1	) PHIL 315	3	3.0
				ECE 350	3.	O (UG) CE Core Elective	3	3.0
				ECES 301	4.0	0 (UG) Free Elective	3	3.0
				(UG) General Education Elective <sup>**</sup>	3.	) (UG) Science Elective	3	3.0
				(GR) Graduate Elective <sup>§</sup>	3.1	) Any BIO, CHEM or PHYS course		
						(GR) General ECE Course <sup>‡‡</sup>	3	3.0
Fourth Yea		3		0	2	)		19

Fourth fea	11								
Fall	Credits	Winter	Credits	Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE	COOP EXPERIEN	CE	ECE 303		3.0	(UG) ECE Elective <sup>†</sup>		3.0
(GR) Graduate Elective <sup>§</sup>	3.0	(GR) Graduate Elective <sup>§</sup>	3.0	MATH 291		4.0	(UG) Free Electives		6.0
				(UG) ECE Elective <sup>†</sup>		3.0	(UG) General Education Elective <sup>**</sup>		3.0
				(UG) Free Elective		3.0	(GR) ECET Course		3.0
				(GR) ECET Course		3.0	(GR) General ECE Course <sup>‡‡</sup>		3.0
				(GR) Telecom Elective Course <sup>‡</sup>		3.0			
	3	;	3			19			18
Fifth Year									
Fall	Credits	Winter	Credits	Spring	Credits				
ECE 491	3.0	ECE 492	3.0	ECE 493		3.0			
(UG) ECE 400-level Elective <sup>††</sup>	3.0	UG) ECE 400-level Elective <sup>††</sup>	3.0	(UG) ECE 400-level Elective <sup>††</sup>		3.0			

	18	18	18	
(GR) Telecom Elective Courses <sup>‡</sup>	3.0 (GR) Telecom Elective Course <sup>‡</sup>	3.0		
(GR) General ECE Course <sup>‡‡</sup>	3.0 (GR) Graduate Elective <sup>§</sup>	3.0 (GR) Telecom Elective Courses <sup>‡</sup>	6.0	
(UG) General Education Elective <sup>**</sup>	3.0 (UG) General Education Elective <sup>**</sup>	3.0 (UG) General Education Elective <sup>**</sup>	3.0	
(UG) Free Elective	3.0 (UG) Free Elective	3.0 (UG) Free Elective	3.0	

### Total Credits 226.5

<sup>\*</sup> 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* CE Core Elective: Choose one of the following: ECE 370, ECE 371, or ECE 380
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- 11 3 classes or at least 9.0 credits at the 400 level from subject codes ECE or ECEC. Includes Special Topics in each code (T480).
- ‡ 500-level or higher courses from ECEE, ECEP, ECES, and ECET.
- ## 500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, and ECE.
- § 500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, SYSE, BMES, MATH, PHYS, CHEM, BIO, OPR, and CS.

# Economics BS / Business Administration MBA

## **Program Requirements**

### University Requirements

University Requir	rements	
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development*	1.0
UNIV B101	The Drexel Experience	1.0
UNIV B201 [WI]	Career Management	1.0
General Education	on 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	
COM 270 [WI]	Business Communication	3.0
or COM 230	Techniques of Speaking	
Select one of the f	ollowing math sequences **	8.0
MATH 101 & MATH 122	Introduction to Analysis I and Calculus II	
MATH 121	Calculus I	
& MATH 122	and Calculus II	
CS 150	Computer Science Principles	3.0
or CS 171	Computer Programming I	
STAT 201	Introduction to Business Statistics	4.0
STAT 202	Business Statistics II	4.0
Science Elective (I	BIO, CHEM, or PHYS)	3.0
General Education	Elective (ANTH, HIST, PHIL, PSY, of SOC)	3.0
Economics Requ	irements	
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ECON 250	Game Theory and Applications	4.0
ECON 301	Microeconomics	4.0
ECON 321	Macroeconomics	4.0
ECON 322 [WI]	Economics Seminar	4.0
ECON 350 [WI]	Applied Econometrics	4.0
ECON 360	Time Series Econometrics	4.0
or ECON 370	Experiments and Causality in Economics	
Economics Elect	ives	
Select 28 credits fi	rom the following courses	28.0
ECON 203 [WI]	Survey of Economic Policy	
ECON 260	Economics of Small Business	
ECON 270	Using Big Data to Solve Economic and Social Problems	
ECON 326 [WI]	Economic Ideas	
ECON 330	Managerial Economics	
ECON 331	International Macroeconomics	
ECON 334	Public Finance	
ECON 336	Labor Economics	
ECON 338	Industrial Organization	
ECON 342	Economic Development	
ECON 348	Mathematical Economics	
ECON 351	Resource and Environmental Economics	
ECON 354	Money and Banking	
	,	

ECON 360	Time Series Econometrics	
ECON 365	Behavioral Economics	
ECON 366	Topics in Behavioral Economics	
ECON 370	Experiments and Causality in Economics	
ECON T480	Special Topics in ECON	
INTB 332	Multinational Corporations	
INTB 334	International Trade	
INTB 336	International Money and Finance	
INTB 338	Regional Studies in Economic Policies and International Business	
INTB 440	Seminar in International Business	
Free Electives		79.0
MBA Program		
Required Courses	S	
ACCT 510	Essentials of Financial Reporting	2.0
BLAW 510	Analyzing Legal Options in Decision-Making	1.0
ECON 601	Managerial Economics	3.0
FIN 601	Corporate Financial Management	3.0
MGMT 510	Business Problem Solving	3.0
MGMT 520	Strategy Analysis	2.0
MGMT 530	Managing and Leading the Total Enterprise	2.0
MGMT 770	MBA Capstone	2.0
MKTG 510	Marketing Strategy	2.0
ORGB 511	Leading in Dynamic Environments: A Personal, Relational, and Strategic Approach	3.0
ORGB 520	Leading High-Performance Teams	1.0
POM 510	Operations and Supply Chain Management	2.0
STAT 510	Introduction to Statistics for Business Analytics	2.0
Experiential Requir	rement: Select one	3.0
BUSN 615	Graduate Internship	
INTB 790	International Business Seminar and Residency	
MGMT 680	Leading for Innovation	
MGMT 715	Business Consulting	
MIS 652	Business Agility and IT	
ORGB 640	Negotiations for Leaders	
TAX 715	Tax Experiential Learning	
Concentration Req	uirements	9.0
Free Electives		9.0
Students selectin	g a concentration can choose from the following:	
Business Analytic	cs Concentration	
Required Course		
STAT 632	Datamining for Managers	
Select two of the fo		
ECON 650	Business & Economic Strategy: Game Theory & Applications	
FIN 642	Business Conditions and Forecasting	
MIS 630	Inter-Active Decision Support Systems	
MIS 633	Predictive Business Analytics with Relational Database Data	
MKTG 606	Customer Analytics	
MKTG 607	Marketing Experiments	
OPR 601	Managerial Decision Models and Simulation	
OPR 626	System Simulation	
POM 610	Supply Chain Management I	
STAT 634	Quality & Six-Sigma	
STAT 636	Experimental Design	
STAT T680 Finance Concentr	Special Topics in STAT	
Select three of the		
FIN 602	•	
FIN 602	Advanced Financial Management Corporate Governance	
FIN 610	Financial Institutions & Markets	
FIN 622 FIN 624	Risk Management	
FIN 626	Investment Management	

FIN 635	Entrepreneurial Finance	Salact and of the	following
FIN 635 FIN 640	Entrepreneurial Finance Mergers and Acquisitions	Select one of the CMGT 535	tollowing: Community Impact Analysis
FIN 640	Business Conditions and Forecasting	ECON 625	Urban and Real Estate Economics
	•	FIN 622	Financial Institutions & Markets
FIN 648 FIN 650	International Financial Management Derivative Securities	MKTG 638	
FIN 790	Seminar in Finance	ORGB 640	New Product Planning, Strategy, and Development
			Negotiations for Leaders
FIN 794	Seminar in Investments	POM 610	Supply Chain Management I
FIN T680	Special Topics in FIN	REAL 568	Real Estate Development
REMD 675	Real Estate Finance	REMD T680	Special Topics in REMD
Marketing Conce			anagement & Logistics Concentration
Required Courses		Required Course	
	e following, of which 2 MUST be from MKTG:	ECON 650	Business & Economic Strategy: Game Theory & Applications
BLAW T680	Special Topics in BLAW	FIN 635	Entrepreneurial Finance
ECON 540	Intro to Econometrics and Data Analysis	FIN 642	Business Conditions and Forecasting
ECON 610	Microeconomics	MIS 624	Systems Analysis & Design
FIN 642	Business Conditions and Forecasting	MIS 630	Inter-Active Decision Support Systems
FIN 648	International Financial Management	MKTG 606	Customer Analytics
INTB 620	International Business Management	MKTG 624	Channels of Distribution Management
MGMT 655	Knowledge Management	MKTG 638	New Product Planning, Strategy, and Development
MIS 624	Systems Analysis & Design	OPR 601	Managerial Decision Models and Simulation
MIS 630	Inter-Active Decision Support Systems	POM 610	Supply Chain Management I
MIS 632	Database Analysis and Design for Business	POM 615	Supply Chain Management II
MKTG 606	Customer Analytics	POM 624	Management of Service Firms
MKTG 607	Marketing Experiments	POM 630	Transportation & Logistics Management
MKTG 622	Buyer Behavior Theory	POM T680	Special Topics in POM
MKTG 624	Channels of Distribution Management	STAT 634	Quality & Six-Sigma
MKTG 627	Digital Marketing	STAT 632	Datamining for Managers
MKTG 630	Global Marketing	General Busine	ss Concentration
MKTG 634	Integrated Marketing Communications Management	Complete 9.0 gra	aduate credits. See your academic advisor for suggestions
MKTG 638	New Product Planning, Strategy, and Development	MBA Gradua	te Credits include courses in Accounting (ACCT), Statistics
MKTG 646	Services Marketing	(STAT), Eco	nomics (ECON), Finance (FIN), General Business (BUSN),
MKTG 652	Marketing Information Management and Research		Business (INTB), Legal Studies (BLAW), Management (MGMT,
MKTG T680	Special Topics in MKTG		t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior
		Managemen	
OPR 601	Managerial Decision Models and Simulation	(ORGB), Pro	duction Operations Management (POM). Sport Management
OPR 601 POM 624	Managerial Decision Models and Simulation Management of Service Firms		duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799.
	Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I	(SMT), or Ta	xation (TAX), with a course number range between 500-799.
POM 624	Management of Service Firms Supply Chain Management I		
POM 624 POM 610 STAT 634	Management of Service Firms Supply Chain Management I Quality & Six-Sigma	(SMT), or Ta Total Credits	xation (TAX), with a course number range between 500-799.
POM 624 POM 610 STAT 634 Strategic Techno	Management of Service Firms Supply Chain Management I Quality & Six-Sigma Sology & Innovation Management Concentration	(SMT), or Ta Total Credits * Co-op cy	xation (TAX), with a course number range between 500-799.
POM 624 POM 610 STAT 634 Strategic Techno Required Courses	Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dology & Innovation Management Concentration	(SMT), or Ta Total Credits * Co-op cy winter, s	xation (TAX), with a course number range between 500-799. 229.0 rcles may vary. Students are assigned a co-op cycle (fall/
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602	Management of Service Firms Supply Chain Management I Quality & Six-Sigma ology & Innovation Management Concentration s Innovation Management	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s	xation (TAX), with a course number range between 500-799. 229.0 rcles may vary. Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major.
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604	Management of Service Firms Supply Chain Management I Quality & Six-Sigma ology & Innovation Management Concentration Innovation Management Strategic Change Management	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 1	xation (TAX), with a course number range between 500-799. 229.0 rcles may vary. Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the	Management of Service Firms Supply Chain Management I Quality & Six-Sigma blogy & Innovation Management Concentration s Innovation Management Strategic Change Management following:	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 1 and may	xation (TAX), with a course number range between 500-799. 229.0 rcles may vary. Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650	Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dogy & Innovation Management Concentration Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, st COOP 1 and may eligible to	xation (TAX), with a course number range between 500-799. 229. rcles may vary. Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be o take COOP 001 in place of COOP 101.
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the	Management of Service Firms Supply Chain Management I Quality & Six-Sigma blogy & Innovation Management Concentration s Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, 4 COOP 1 and may eligible to ** Students sequence	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 2015
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650 FIN 642 MGMT 600	Management of Service Firms Supply Chain Management I Quality & Six-Sigma blogy & Innovation Management Concentration s Innovation Management Concentration Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, 4 COOP 1/2 and may eligible to ** Students sequence ** Students	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 2015 Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650 FIN 642 MGMT 600	Management of Service Firms Supply Chain Management I Quality & Six-Sigma blogy & Innovation Management Concentration s Innovation Management Concentration Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives Strategic Human Resource Management	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, sj COOP 1 and may eligible to ** Students sequence ** Students their con	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 2015 Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655	Management of Service Firms Supply Chain Management I Quality & Six-Sigma ology & Innovation Management Concentration s Innovation Management Concentration Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives Strategic Human Resource Management Knowledge Management	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, sj COOP 1 and may eligible to ** Students sequence ** Students their con following	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 2015 Constant of the example of the exam
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 600 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655 MGMT 676	Management of Service Firms Supply Chain Management I Quality & Six-Sigma logy & Innovation Management Concentration s Innovation Management Concentration S Innovation Management Concentration S Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives Strategic Human Resource Management Knowledge Management Sustainability and Value Creation	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, sj COOP 1 and may eligible to ** Students sequence ** Students their con following	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 2015 Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650 FIN 642 MGMT 640 MGMT 640 MGMT 655 MGMT 676	Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dogy & Innovation Management Concentration SINT Service Change Management following: Business & Economic Strategy: Game Theory & Applications Business & Economic Strategy: Game Theory & Applications Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives Strategic Human Resource Management Knowledge Management Sustainability and Value Creation Leading for Innovation	(SMT), or Ta Total Credits * Co-op cy winter, sp (4-year, sp COOP 10 and may eligible to ** Students sequence *** Students their con following Corpora and FIN	229. 229. 229. 229. 229. 229. 229. 229. 229. 20. 20. 20. 20. 20. 20. 20. 20
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 600 Select one of the ECON 650 FIN 642 MGMT 640 MGMT 640 MGMT 655 MGMT 676 MGMT 680	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Orgy & Innovation Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business & Economic Strategy: Game Theory & Applications         Strategic Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation	(SMT), or Ta Total Credits * Co-op cy winter, sp (4-year, sp COOP 10 and may eligible to ** Students sequence *** Students their con following Corpora and FIN	229. 229. 229. 229. 229. 229. 229. 229. 229. 20. 20. 20. 20. 20. 20. 20. 20
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 600 Select one of the ECON 650 FIN 642 MGMT 640 MGMT 640 MGMT 655 MGMT 676 MGMT 680 MGMT 680	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Jogy & Innovation Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone	(SMT), or Ta Total Credits * Co-op cy winter, sp (4-year, sp COOP 10 and may eligible to ** Students sequence *** Students their con following Corpora and FIN	229. 229. 229. 229. 229. 229. 229. 229. 229. 20. 20. 20. 20. 20. 20. 20. 20
POM 624 POM 610 STAT 634 Strategic Technol Required Courses MGMT 602 MGMT 600 Select one of the ECON 650 FIN 642 MGMT 640 MGMT 655 MGMT 676 MGMT 676 MGMT 680 MGMT 680 MGMT 680 MGMT 690	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Innovation Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         Mils Policy and Strategy	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794	229. 229. 229. 229. 229. 229. 229. 229. 229. 20. 20. 20. 20. 20. 20. 20. 20
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 600 Select one of the ECON 650 FIN 642 MGMT 640 MGMT 650 MGMT 670 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 690	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Jogy & Innovation Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 201 registration students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas. te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
POM 624 POM 610 STAT 634 Required Courses MGMT 602 MGMT 602 ECON 650 FIN 642 MGMT 600 MGMT 650 MGMT 650 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 690 MIS 641 MIS 652 MKTG 638	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Innovation Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business S Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794 Financia	229. 229. 229. 229. 229. 229. 229. 229. 229. 20. 20. 20. 20. 20. 20. 20. 20
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 602 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655 MGMT 686 MGMT 680 MGMT 690 MIS 641	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Jogy & Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development         Leading and Executing Change	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794 Financia	229. 229. 229. 229. 229. 229. 229. 229. 229. 201 registration, summer-only) based on their co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas. te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 602 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 640 MGMT 646 MGMT 686 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 638 MGMT 638 MGM 638 MGM 638 MGM 638 MGM 638 MGM 638	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Jogy & Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development         Leading and Executing Change         Negotiations for Leaders	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794 Financia	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 201 registration students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas. te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
POM 624 POM 610 STAT 634 Required Courses MGMT 602 MGMT 602 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655 MGMT 676 MGMT 686 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 638 MGMT 638 ORGB 602 ORGB 640	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development         Leading and Executing Change         Negotiations for Leaders         Managerial Decision Models and Simulation	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794 Financia	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 201 registration students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas. te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
POM 624 POM 610 STAT 634 Required Courses MGMT 602 MGMT 602 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655 MGMT 640 MGMT 688 MGMT 68	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Jogy & Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development         Leading and Executing Change         Negotiations for Leaders         Managerial Decision Models and Simulation	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794 Financia	229.0 229.0 229.0 rcles may vary. Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas. te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
POM 624 POM 610 STAT 634 Required Courses MGMT 602 MGMT 602 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655 MGMT 676 MGMT 688 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 688 MGMT 68	Management of Service Firms Supply Chain Management I Quality & Six-Sigma Orogy & Innovation Management Concentration Innovation Management Concentration Innovation Management Concentration Innovation Management Strategic Change Management Strategic Change Management Innovation Service Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives Strategic Human Resource Management Knowledge Management Strategy Implementation Leading for Innovation Strategy Implementation Change Management Experiential Capstone MIS Policy and Strategy Business Agility and IT New Product Planning, Strategy, and Development Leading and Executing Change Managerial Decision Models and Simulation agement & Development Concentration	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794 Financia	229.0 229.0 229.0 229.0 229.0 229.0 229.0 229.0 201 registration students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas. te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
POM 624 POM 610 STAT 634 Required Courses MGMT 602 MGMT 602 ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655 MGMT 640 MGMT 686 MGMT 686 MGMT 688 MGMT 690 MGMT 69	Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Jogy & Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development         Leading and Executing Change         Negotiations for Leaders         Managerial Decision Models and Simulation	(SMT), or Ta Total Credits * Co-op cy winter, sj (4-year, s COOP 11 and may eligible tr ** Students sequence *** Students their con following Corpora and FIN Investm FIN 794 Financia	229.0 229.0 229.0 rcles may vary. Students are assigned a co-op cycle (fall/ pring/summer, summer-only) based on their co-op program 5-year) and major. 01 registration is determined by the co-op cycle assigned be schedule in a different term. Select students may be to take COOP 001 in place of COOP 101. are encouraged to take the MATH 121, MATH 122 e pursuing a Finance concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas. te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and

## Sample Plan of Study

# 4+1, 1 co-op (Accelerated program completed in 5 years)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year

### First Year

Fall	Credits		Winter	Credits		Spring	Credits			Credits	
CIVC 101		1.0	ECON 202			ENGL 103 or 113		3.0	VACATION		
CS 171	:		ENGL 102 or 112		3.0	(UG) ECON Elective		4.0			
ECON 201		4.0	MATH 102		4.0	(UG) Free Electives		6.0			
ENGL 101 or 111	:		(UG) ECON Elective		4.0	(UG) General Education Elective		3.0			
MATH 101		4.0									
UNIV B101		1.0	-								
Second Ye	ar	16			15			16			0
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COM 230 or 270	:	3.0	COOP 101*	**	1.0	ECON 350		4.0	ECON 250		4.0
ECON 301		4.0	ECON 321		4.0	(UG) Free Electives		7.0	(UG) Free Electives	1	1.0
STAT 201		4.0	STAT 202		4.0	(UG) Science Course		3.0			
(UG) Free Electives		4.0	(UG) Free Electives		7.0						
		15			16			14			15
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
Fall COOP EXPERIEN			Winter COOP EXPERIEN			Spring ECON 360 or 370	Credits	4.0	Summer (UG) Free Electives		1.0
COOP			COOP			ECON 360	Credits	4.0	(UG) Free	1	1.0 4.0
COOP			COOP			ECON 360 or 370 (UG) ECON	Credits	4.0	(UG) Free Electives (UG) ECON	1	
COOP EXPERIEN	CE	0	COOP		0	ECON 360 or 370 (UG) ECON elective (UG) Free	Credits	4.0	(UG) Free Electives (UG) ECON	1	
COOP	CE	0	COOP		0	ECON 360 or 370 (UG) ECON elective (UG) Free	Credits	4.0 7.0 <b>15</b>	(UG) Free Electives (UG) ECON	1	4.0
COOP EXPERIEN	CE r Credits	0	COOP EXPERIEN	CE	0	ECON 360 or 370 (UG) ECON elective (UG) Free Electives		4.0 7.0 <b>15</b>	(UG) Free Electives (UG) ECON elective	1	4.0
COOP EXPERIEN Fourth Yea Fall	CE r Credits	<b>0</b> 1.0	COOP EXPERIEN Winter (UG) ECON	CE	<b>0</b> 4.0	ECON 360 or 370 (UG) ECON elective (UG) Free Electives		4.0 7.0 <b>15</b> 4.0	(UG) Free Electives (UG) ECON elective Summer Undergrad Degree	1	4.0
COOP EXPERIEN Fourth Yea Fall UNIV B201 (UG) ECON	CE rr Credits	<b>0</b> 1.0 4.0	COOP EXPERIEN Winter (UG) ECON elective (UG) Free	CE Credits	<b>0</b> 4.0	ECON 360 or 370 (UG) ECON elective (UG) Free Electives ECON 322 (UG) ECON		4.0 7.0 <b>15</b> 4.0	(UG) Free Electives (UG) ECON elective	1	4.0
COOP EXPERIEN Fourth Yea Fall UNIV B201 (UG) ECON elective (UG) Free	CE rr Credits	<b>0</b> 1.0 4.0	COOP EXPERIEN Winter (UG) ECON elective (UG) Free Electives	CE Credits	<b>0</b> 4.0	ECON 360 or 370 (UG) ECON elective (UG) Free Electives Spring ECON 322 (UG) ECON elective (UG) Free		4.0 7.0 <b>15</b> 4.0 4.0	(UG) Free Electives (UG) ECON elective	1	4.0
COOP EXPERIEN Fourth Yea Fall UNIV B201 (UG) ECON elective (UG) Free Electives	CE rr Credits	<b>0</b> 1.0 4.0	COOP EXPERIEN Winter (UG) ECON elective (UG) Free Electives	CE Credits	<b>0</b> 4.0	ECON 360 or 370 (UG) ECON elective (UG) Free Electives ECON 322 (UG) ECON elective (UG) Free Electives		4.0 7.0 <b>15</b> 4.0 4.0	(UG) Free Electives (UG) ECON elective Undergrad Degree Awarded Student classified as Graduate Student	1	4.0
COOP EXPERIEN Fourth Yea Fall UNIV B201 (UG) ECON elective (UG) Free Electives ACCT 510	CE rr Credits	0 1.0 4.0 2.0 17	COOP EXPERIEN Winter (UG) ECON elective (UG) Free Electives	CE Credits	0 4.0 10.0 3.0 <b>17</b>	ECON 360 or 370 (UG) ECON elective (UG) Free Electives ECON 322 (UG) ECON elective (UG) Free Electives		4.0 7.0 <b>15</b> 4.0 4.0 6.0 <u>3.0</u> <b>17</b>	(UG) Free Electives (UG) ECON elective Undergrad Degree Awarded Student classified as Graduate Student	1	4.0
COOP EXPERIEN Fourth Yea Fall UNIV B201 (UG) ECON elective Lectives ACCT 510 Fifth Year	CE r Credits	0 1.0 4.0 2.0 17	COOP EXPERIEN Winter (UG) ECON elective (UG) Free Electives	CE Credits	0 4.0 10.0 3.0 <b>17</b>	ECON 360 or 370 (UG) ECON elective (UG) Free Electives ECON 322 (UG) ECON elective (UG) Free Electives ECON 601	Credits	4.0 7.0 4.0 4.0 6.0 3.0 17	(UG) Free Electives (UG) ECON elective Undergrad Degree Awarded Student classified as Graduate Student	Credits	4.0
COOP EXPERIEN Fourth Yea Fall UNIV B201 (UG) ECON elective Lectives ACCT 510 Fifth Year Fall	CE rr Credits	0 1.0 4.0 2.0 17 3.0	COOP EXPERIEN (UG) ECON elective (UG) Free Electives MGMT 510 Winter	CE Credits	<b>0</b> 4.0 10.0 3.0 <b>17</b> 1.0	ECON 360 or 370 (UG) ECON elective (UG) Free Electives ECON 322 (UG) ECON elective (UG) Free Electives ECON 601 Spring	Credits	4.0 7.0 <b>15</b> 4.0 4.0 6.0 <u>3.0</u> <b>17</b> 2.0	(UG) Free Electives (UG) ECON elective Undergrad Degree Awarded Student classified as Graduate Student	Credits	4.0 15 0

	9	12	9	11
	(GR) Elective	3.0		
POM 510	2.0 (GR) Concentratio Requiremen	3.0 (GR) Elective	3.0 (GR) Elective	3.0
MKTG 510	2.0 STAT 510	2.0 (GR) Concentration Requirement	3.0 (GR) Concentration Requirement	3.0

**Total Credits 229** 

ECON 270 recommended

\*\* ECON 203 [WI] recommended

\*\*\* 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.

# Economics BA / Business Administration MBA

## **Program Requirements**

### University Requirements

University Requir	rements	
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
UNIV B101	The Drexel Experience	1.0
UNIV B201 [WI]	Career Management	1.0
General Educatio	on 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	0.0
COM 270 [WI]	Business Communication	3.0
or COM 230	Techniques of Speaking	0.0
Choose One Math		8.0
MATH 101	Introduction to Analysis I	0.0
& MATH 102	and Introduction to Analysis I	
MATH 121	Calculus I	
& MATH 122	and Calculus II	
STAT 201	Introduction to Business Statistics	4.0
Two Science Elect	tives (6-8)	6.0
Political Science E	**	4.0
Two Diversity Elec	tives	6.0
Two International	Studies Electives	6.0
Two Arts & Humar	nities Electives	6.0
Two Modern Lang	uage Electives	8.0
Economics Requ	irements	
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ECON 250	Game Theory and Applications	4.0
ECON 301	Microeconomics	4.0
ECON 321	Macroeconomics	4.0
ECON 322 [WI]	Economics Seminar	4.0
ECON 326 [WI]	Economic Ideas	4.0
Economics Election	ives	
Select 32 credits fr	rom the following courses	32.0
ECON 203 [WI]	Survey of Economic Policy	
ECON 260	Economics of Small Business	
ECON 270	Using Big Data to Solve Economic and Social Problems	
ECON 330	Managerial Economics	
ECON 331	International Macroeconomics	
ECON 334	Public Finance	
ECON 336	Labor Economics	
ECON 338	Industrial Organization	
ECON 330	Economic Development	
ECON 348	Mathematical Economics	
ECON 348 ECON 351	Resource and Environmental Economics	
ECON 351 ECON 350	Applied Econometrics	
[WI]	Applied Lotionetics	
ECON 354	Money and Banking	
ECON 360	Time Series Econometrics	

ECON 365	Behavioral Economics	
ECON 365 ECON 366	Topics in Behavioral Economics	
ECON 370	Experiments and Causality in Economics	
ECON T480	Special Topics in ECON	
INTB 332	Multinational Corporations	
INTB 334	International Trade	
INTB 336	International Money and Finance	
INTB 338	Regional Studies in Economic Policies and International Business	
INTB 440	Seminar in International Business	
Free Electives		56.0
MBA Program		
Required Courses	S	
ACCT 510	Essentials of Financial Reporting	2.0
BLAW 510	Analyzing Legal Options in Decision-Making	1.0
ECON 601	Managerial Economics	3.0
FIN 601	Corporate Financial Management	3.0
MGMT 510	Business Problem Solving	3.0
MGMT 520	Strategy Analysis	2.0
MGMT 530	Managing and Leading the Total Enterprise	2.0
MGMT 770	MBA Capstone	2.0
MKTG 510 ORGB 511	Marketing Strategy	2.0
	Leading in Dynamic Environments: A Personal, Relational, and Strategic Approach	3.0
ORGB 520	Leading High-Performance Teams	1.0
POM 510	Operations and Supply Chain Management	2.0
STAT 510	Introduction to Statistics for Business Analytics	2.0
BUSN 615	rement: Select one Graduate Internship	3.0
INTB 790	International Business Seminar and Residency	
MGMT 680	Leading for Innovation	
MGMT 715	Business Consulting	
MIS 652	Business Agility and IT	
ORGB 640	Negotiations for Leaders	
TAX 715	Tax Experiential Learning	
Concentration Req	uirements	9.0
Free Electives		9.0
Students selectin	g a concentration can choose from the following:	
Business Analytic	cs Concentration	
Required Course		
STAT 632	Datamining for Managers	
Select two of the fo		
ECON 650	Business & Economic Strategy: Game Theory & Applications	
FIN 642	Business Conditions and Forecasting	
MIS 630	Inter-Active Decision Support Systems	
MIS 633 MKTG 606	Predictive Business Analytics with Relational Database Data	
MKTG 607	Customer Analytics Marketing Experiments	
OPR 601	Managerial Decision Models and Simulation	
OPR 626	System Simulation	
POM 610	Supply Chain Management I	
STAT 634	Quality & Six-Sigma	
STAT 636	Experimental Design	
STAT T680	Special Topics in STAT	
Finance Concentr		
Select three of the	following:	
FIN 602	Advanced Financial Management	
FIN 610	Corporate Governance	
FIN 622	Financial Institutions & Markets	
FIN 624	Risk Management	
FIN 626	Investment Management	
FIN 635	Entrepreneurial Finance	

FIN 640	Mergers and Acquisitions	CMGT 535	Community Impact Analysis
FIN 642	Business Conditions and Forecasting	ECON 625	Urban and Real Estate Economics
FIN 648	International Financial Management	FIN 622	Financial Institutions & Markets
FIN 650	Derivative Securities	MKTG 638	New Product Planning, Strategy, and Development
FIN 790	Seminar in Finance	ORGB 640	Negotiations for Leaders
FIN 794	Seminar in Investments	POM 610	Supply Chain Management I
FIN T680	Special Topics in FIN	REAL 568	Real Estate Development
REMD 675	Real Estate Finance	REMD T680	Special Topics in REMD
Marketing Conce			lanagement & Logistics Concentration
Required Courses		Required Course	
	e following, of which 2 MUST be from MKTG:	ECON 650	Business & Economic Strategy: Game Theory & Applications
BLAW T680	Special Topics in BLAW	FIN 635	Entrepreneurial Finance
ECON 540	Intro to Econometrics and Data Analysis	FIN 642	Business Conditions and Forecasting
ECON 610	Microeconomics	MIS 624	Systems Analysis & Design
FIN 642	Business Conditions and Forecasting	MIS 630	Inter-Active Decision Support Systems
FIN 648	International Financial Management	MKTG 606	Customer Analytics
INTB 620	International Business Management	MKTG 624	Channels of Distribution Management
MGMT 655	Knowledge Management	MKTG 638	New Product Planning, Strategy, and Development
MIS 624	Systems Analysis & Design	OPR 601	Managerial Decision Models and Simulation
MIS 630	Inter-Active Decision Support Systems	POM 610	Supply Chain Management I
MIS 632	Database Analysis and Design for Business	POM 615	Supply Chain Management II
MKTG 606	Customer Analytics	POM 624	Management of Service Firms
MKTG 607	Marketing Experiments	POM 630	Transportation & Logistics Management
MKTG 622	Buyer Behavior Theory	POM T680	Special Topics in POM
MKTG 624	Channels of Distribution Management	STAT 634	Quality & Six-Sigma
MKTG 627	Digital Marketing	STAT 632	Datamining for Managers
MKTG 630	Global Marketing	General Busine	ss Concentration
MKTG 634	Integrated Marketing Communications Management	Complete 9.0 gra	aduate credits. See your academic advisor for suggestions
MKTG 638	New Product Planning, Strategy, and Development	MBA Gradua	te Credits include courses in Accounting (ACCT), Statistics
MKTG 646	Services Marketing	(STAT), Ecor	nomics (ECON), Finance (FIN), General Business (BUSN),
MKTG 652	Marketing Information Management and Research		Business (INTB), Legal Studies (BLAW), Management (MGMT,
MKTG 652 MKTG T680	Marketing Information Management and Research Special Topics in MKTG	Management	Business (INTB), Legal Studies (BLAW), Management (MGMT, I Information Systems (MIS), Marketing (MKTG), Operations
		Management Management	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior
MKTG T680	Special Topics in MKTG	Management Management (ORGB), Pro	Business (INTB), Legal Studies (BLAW), Management (MGMT, I Information Systems (MIS), Marketing (MKTG), Operations
MKTG T680 OPR 601	Special Topics in MKTG Managerial Decision Models and Simulation	Management Management (ORGB), Pro	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799.
MKTG T680 OPR 601 POM 624	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms	Management Management (ORGB), Pro (SMT), or Ta:	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management
MKTG T680 OPR 601 POM 624 POM 610 STAT 634	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I	Management Management (ORGB), Pro (SMT), or Ta: Total Credits	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799.
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dology & Innovation Management Concentration	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dogy & Innovation Management Concentration	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science ( Environm	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM),
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dogy & Innovation Management Concentration s Innovation Management	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm Environm	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV)
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dogy & Innovation Management Concentration s Innovation Management Strategic Change Management	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm Environm ** Students	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) e should contact the School of Economics for a list of courses
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma ology & Innovation Management Concentration s Innovation Management Strategic Change Management following:	Management Management (ORGB), Pro (SMT), or Tat Total Credits * Science of Environm Environm ** Students that fulfill	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses t his requirement.
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma Ology & Innovation Management Concentration s Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm Environm ** Students that fulfill *** COM 345	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200,
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650 FIN 642	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma Dology & Innovation Management Concentration SIN Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting	* Science of Environm * Students ** Students ** COM 348 INTB 332	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) e should contact the School of Economics for a list of courses I this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150,
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma logy & Innovation Management Concentration s Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro	* Science of Environm * Students ** Students ** COM 348 INTB 332	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200,
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650 FIN 642	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma logy & Innovation Management Concentration s Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm Environm ** Students that fulfill **** COM 345 INTB 332 PSCI 240	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) e should contact the School of Economics for a list of courses I this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150,
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650 FIN 642 MGMT 600 MGMT 640	Special Topics in MKTG Managerial Decision Models and Simulation Management of Service Firms Supply Chain Management I Quality & Six-Sigma ology & Innovation Management Concentration s Innovation Management Strategic Change Management following: Business & Economic Strategy: Game Theory & Applications Business Conditions and Forecasting Introduction to Change Management: An Integration of Macro and Micro Perspectives Strategic Human Resource Management	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm Environm ** Students that fulfill **** COM 344 INTB 332 PSCI 240 † Students	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) e should contact the School of Economics for a list of courses t this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340.
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 604 Select one of the ECON 650 FIN 642 MGMT 600 MGMT 640	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         ology & Innovation Management Concentration         s         Innovation Management         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm Environm ** Students that fulfill **** COM 348 INTB 332 PSCI 240 † Students their con	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) e should contact the School of Economics for a list of courses this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. e pursuing a Finance Concentration in the MBA can use
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 600 Select one of the ECON 650 FIN 642 MGMT 600 MGMT 640 MGMT 655 MGMT 676	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         ology & Innovation Management Concentration         s         Innovation Management         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm ** Students that fulfill *** COM 344 INTB 332 PSCI 240 † Students their con- following	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) e should contact the School of Economics for a list of courses I this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. e pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Technol Required Courses MGMT 602 MGMT 600 Select one of the ECON 650 FIN 642 MGMT 640 MGMT 640 MGMT 655 MGMT 676	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         ology & Innovation Management Concentration         s         Innovation Management         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Knowledge Management         Leading for Innovation	Management Management (ORGB), Pro (SMT), or Ta: Total Credits * Science of Environm ** Students that fulfill *** COM 344 INTB 332 PSCI 240 † Students their con- following	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. s pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640,
MKTG T680           OPR 601           POM 624           POM 610           STAT 634           Strategic Technol           Required Courses           MGMT 602           MGMT 604           Select one of the           ECON 650           FIN 642           MGMT 600           MGMT 640           MGMT 655           MGMT 676           MGMT 680           MGMT 680	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Orogy & Innovation Management Concentration         Strategic Change Management         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation	Management Management (ORGB), Pro (SMT), or Tail         Total Credits         * Science of Environm Environm         ** Students that fulfill         *** COM 344 INTB 332 PSCI 240         † Students their com following         Corpora and FIN	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. s pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640,
MKTG T680           OPR 601           POM 624           POM 610           STAT 634           Strategic Technol           Required Courses           MGMT 602           MGMT 604           Select one of the           ECON 650           FIN 642           MGMT 600           MGMT 655           MGMT 676           MGMT 680           MGMT 680           MGMT 680	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Orogy & Innovation Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone	Management Management (ORGB), Pro (SMT), or Tail         Total Credits         * Science of Environm Environm         ** Students that fulfill         *** COM 344 INTB 332 PSCI 240         † Students their com following         Corpora and FIN	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. e pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790
MKTG T680 OPR 601 POM 624 POM 610 STAT 634 Strategic Techno Required Courses MGMT 602 MGMT 602 MGMT 600 FIN 642 MGMT 640 MGMT 655 MGMT 676 MGMT 680 MGMT 680 MGMT 680 MGMT 680 MGMT 690 MIS 641	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Ology & Innovation Management Concentration         Strategic Change Management         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         Mils Policy and Strategy	<ul> <li>Management Management (ORGB), Pro (SMT), or Ta:</li> <li>Total Credits</li> <li>* Science of Environm Environm</li> <li>** Students that fulfill</li> <li>*** COM 345 INTB 332 PSCI 240</li> <li>† Students their cont following Corpora and FIN 1</li> <li>Investme FIN 794</li> </ul>	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. e pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790
MKTG T680           OPR 601           POM 624           POM 610           STAT 634           Strategic Technol           Required Courses           MGMT 602           MGMT 604           Select one of the           ECON 650           FIN 642           MGMT 600           MGMT 655           MGMT 676           MGMT 680           MGMT 680           MGMT 680           MGMT 680           MGMT 690	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Orogy & Innovation Management Concentration         Strategic Change Management         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT	<ul> <li>Management Management (ORGB), Pro (SMT), or Ta:</li> <li>Total Credits</li> <li>* Science of Environm Environm</li> <li>** Students that fulfill</li> <li>*** COM 345 INTB 332 PSCI 240</li> <li>† Students their cont following Corpora and FIN 1</li> <li>Investme FIN 794</li> </ul>	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) s should contact the School of Economics for a list of courses I this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. e pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
MKTG T680           OPR 601           POM 624           POM 610           STAT 634           Strategic Technol           Required Courses           MGMT 602           MGMT 604           Select one of the           ECON 650           FIN 642           MGMT 600           MGMT 642           MGMT 653           MGMT 663           MGMT 680           MGMT 680           MGMT 680           MGMT 690           MIS 641           MIS 652           MKTG 638	Special Topics in MKTG         Managerial Decision Models and Simulation         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Ology & Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development	* Science of Environm Environm ** Students that fulfill *** COM 34& INTB 332 PSCI 240 † Students their con- following <b>Corpora</b> and FIN 1 <b>Investme</b> FIN 794 <b>Financia</b>	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) a should contact the School of Economics for a list of courses I this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. a pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
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MKTG T680           OPR 601           POM 624           POM 610           STAT 634           Strategic Technol           Required Courses           MGMT 602           MGMT 604           Select one of the           ECON 650           FIN 642           MGMT 600           MGMT 600 </td <td>Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality &amp; Six-Sigma         Obgy &amp; Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business &amp; Economic Strategy: Game Theory &amp; Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development         Leading and Executing Change         Negotiations for Leaders</td> <td>* Science of Environm Environm ** Students that fulfill *** COM 34&amp; INTB 332 PSCI 240 † Students their con- following <b>Corpora</b> and FIN 1 <b>Investme</b> FIN 794 <b>Financia</b></td> <td>Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) a should contact the School of Economics for a list of courses I this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. a pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and</td>	Special Topics in MKTG         Managerial Decision Models and Simulation         Management of Service Firms         Supply Chain Management I         Quality & Six-Sigma         Obgy & Innovation Management Concentration         Strategic Change Management Concentration         Strategic Change Management         following:         Business & Economic Strategy: Game Theory & Applications         Business Conditions and Forecasting         Introduction to Change Management: An Integration of Macro and Micro Perspectives         Strategic Human Resource Management         Knowledge Management         Sustainability and Value Creation         Leading for Innovation         Strategy Implementation         Change Management Experiential Capstone         MIS Policy and Strategy         Business Agility and IT         New Product Planning, Strategy, and Development         Leading and Executing Change         Negotiations for Leaders	* Science of Environm Environm ** Students that fulfill *** COM 34& INTB 332 PSCI 240 † Students their con- following <b>Corpora</b> and FIN 1 <b>Investme</b> FIN 794 <b>Financia</b>	Business (INTB), Legal Studies (BLAW), Management (MGMT, t Information Systems (MIS), Marketing (MKTG), Operations t (OPM), Operations Research (OPR), Organizational Behavior duction Operations Management (POM), Sport Management xation (TAX), with a course number range between 500-799. 229.0 courses are selected from Biology (BIO), Chemistry (CHEM), nental Science (ENVS), Physics (PHYS), or Physics- nental Science (PHEV) a should contact the School of Economics for a list of courses I this requirement. 5, COM 362, GST 101, GST 102, GST 103, INTB 200, 2, INTB 334, INTB 336, INTB 338, PSCI 140, PSCI 150, 0, PSCI 252, PSCI 255, SOC 330, SOC 340. a pursuing a Finance Concentration in the MBA can use centration credits plus free electives to complete one of the suggested focus areas: te Finance Focus = FIN 602, FIN 610, FIN 635, FIN 640, 790 ents Focus = FIN 624, FIN 626, FIN 642, FIN 650, and al Markets Focus = FIN 622, FIN 642, FIN 648, and
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Select one of the following:

## Sample Plan of Study

# 4+1, 1 Co-op (Accelerated program completed in 5 years)

First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
CIVC 101		1.0	ECON 202		4.0	ENGL 103 or 113		3.0	VACATION		
UNIV B101			ENGL 102 or 112		3.0	(UG) ECON Elective		4.0			
ECON 201		4.0	MATH 102		4.0	(UG) Diversity elective		3.0			
ENGL 101 or 111		3.0	(UG) ECON Elective		4.0	(UG) Arts & Humanities elective		3.0			
MATH 101		4.0				(UG) Science Course		3.0			
		13			15			16			0
Second Yea	ar										
	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
STAT 201		4.0	COOP 101	**	1.0	ECON 326		4.0	(UG) ECON elective		4.0
ECON 301		4.0	ECON 250		4.0	(UG) Science elective		3.0	(UG) Internationa Studies elective		3.0
(UG) Political Science elective		4.0	ECON 321		4.0	(UG) Modern Language (Second Course)		4.0	(UG) Free Electives		8.0
(UG) Arts & Humanities elective		3.0	(UG) Diversity elective		3.0	(UG) Internationa Studies elective		3.0			
			(UG) Free Elective		3.0	(UG) Free Electives		4.0			
			(UG) Modern Language (First Course)		4.0						
		15	,		19			18			15
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIENC	СЕ		COOP EXPERIEN	CE		(UG) ECON electives		8.0	(UG) ECON elective		4.0
						(UG) Free Electives		8.0	(UG) Free Electives	1	2.0
		0			0			16			16
Fourth Year											
	Credits		Winter	Credits		Spring	Credits			Credits	
(UG) ECON elective			(UG) ECON elective		4.0	ECON 322		4.0	Undergrad Degree Awarded		
(UG) Free Electives		9.0	(UG) Free Electives		8.0	UNIV B201		1.0	Student classified as Graduate Student		
ACCT 510		2.0	MGMT 510		3.0	(UG) Free Electives		7.0			

				ECON 601	3.0	)	
	15		1	5	15	5	
Fifth Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
FIN 601	3.0	BLAW 510	1.0	0 MGMT 520	2.0	MGMT 770	2.
MGMT 530	2.0	ORGB 511	3.(	0 ORGB 520	1.0	) (GR) Experiential Elective	3.
MKTG 510	2.0	STAT 510	2.0	) (GR) Concentrati Requiremer	on	) (GR) Concentrati Requiremer	
POM 510	2.0	(GR) Concentrati Requiremen	c	0 (GR) Elective	3.0	(GR) Elective	3.
		(GR) Elective	3.0	0			
	9		1:	2	g		1

Total Credits 229

\* ECON 270 recommended

\*\* ECON 203 [WI] recommended

\*\*\* 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 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.

Admission Requirements

# Electrical Engineering BSEE / Computer Engineering MSCPE

## **Program Requirements**

### **BSEE Degree Requirements**

DSEE Degree Re	quirements	
General Education	on/Liberal Studies 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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications E	Elective	3.0
COM 230	Techniques of Speaking	
or COM 31	0Technical Communication	
General Education	n Courses **	15.0
Foundation Requ	irements	
CHEM 101	General Chemistry I	3.5
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
	M, or PHYS course	0.0
Professional Req		
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 200	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits I	4.0
ECE 303	ECE Laboratory	4.0
ECE 303		4.0
ECE 370	Probability and Data Analytics for Engineers Electronic Devices	
ECE 370 ECE 371	Foundations of Electromagnetics for Computing & Wireless	3.0 3.0
	Systems	
ECE 380	Fundamentals of Power and Energy	3.0
ECEC 201	Advanced Programming for Engineers	3.0
ECEC 204	Design with Microcontrollers	3.0
ECES 301	Signals and Systems I	4.0
Senior Design		
ECE 491 [WI]	Senior Design Project I	3.0
ECE 492 [WI]	Senior Design Project II	3.0

ECE 493	Senior Design Project III	3.0
EE Core Elective	(Choose one of the following):	3.0
CS 260	Data Structures	
CS 265	Advanced Programming Tools and Techniques	
ECE 350	Introduction to Computer Organization	
ECE Electives <sup>†</sup>		6.0
ECE 400-level Ele	ectives <sup>††</sup>	9.0
Free Electives		27.0
Master's Degree	Courses	
Computer Engine	ering Courses (ECEC 500-900 level)	21.0
General Electrica	I and Computer Engineering Courses <sup>‡</sup>	9.0
Mathematical Fo	oundations Requirement	
	ne of the following courses must be included within (not in 5.0 total required MS credits:	
CS 525	Theory of Computation	
CS 567	Applied Symbolic Computation	
CS 583	Introduction to Computer Vision	
CS 613	Machine Learning	
CS 621	Approximation Algorithms	
CS 623	Computational Geometry	
ECES 511	Fundamentals of Systems I	
ECES 512	Fundamentals of Systems II	
ECES 513	Fundamentals of Systems III	
ECES 521	Probability & Random Variables	
ECES 522	Random Process & Spectral Analysis	
ECES 523	Detection & Estimation Theory	
ECES 811	Optimization Methods for Engineering Design	
ECET 602	Information Theory and Coding	
OPR 624	Advanced Mathematical Program	
OPR 992	Applied Math Programming	
MATH 500-90	00 level	
Graduate Elective	es <sup>‡‡</sup>	15.0
Total Credits		226.5

\* 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.

- \*\* General Education Courses (http://catalog.drexel.edu/undergraduate/ collegeofengineering/#generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI], ECE 492 [WI], ECE 493 credits with ECE elective credits.
- 1 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).
- <sup>‡</sup> Courses at the 500-900 level from ECEC, ECEE, ECEP, ECES, ECET, or ECE.
- 15.0 credits at the 500-900 level from subject codes ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, SYSE, BMES, MATH, PHYS, CHEM, BIO, OPR, or CS.

## Sample Plan of Study 5 year, 3 coop Co-Terminal

First Year											
			Winter	Credits		Spring	Credits		Summer	Credits	
CHEM 101			COOP 101 <sup>*</sup>			CIVC 101			VACATION		
ECE 101			ECE 200			ECE 105		3.0			
ENGL 101 or 111	3		ENGR 131 or 132		3.0	ENGL 102 or 112		3.0			
ENGR 111	3		MATH 122		10	ENGR 113		3.0			
MATH 121			PHYS 101			MATH 200		4.0			
UNIV E101		.0			4.0	PHYS 102		4.0			
	15				16			18			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP			COOP			ECE 201		4.0	COM 230		3.0
EXPERIEN	CE		EXPERIEN	CE					or 310		
						ECEC 201		3.0	ECEC 204		3.0
						ENGL 103 or 113		3.0	ENGR 232		3.0
						ENGR 231		3.0	PHIL 315		3.0
						MATH 291		4.0	PHYS 201		4.0
						(UG) Free		3.0	(UG) Free		3.0
						Elective			Elective		
Third Year		0			0			20			19
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP	oreans		COOP	oreans		ECE 301	oreans		ECE 361	oreans	4.0
EXPERIEN			EXPERIEN	CE							
(GR) Graduate Elective <sup>‡‡</sup>	3	.0				ECE 370		3.0	ECE 371		3.0
						ECES 301		4.0	ECE 380		3.0
						(UG) EE		3.0	(UG) Free		3.0
						Core Elective			Elective		
						(UG)		3.0	(UG)		3.0
						General Education Elective			Science Elective		
						(GR)		3.0	Any		
						Graduate			BIO,		
						Elective <sup>‡‡</sup>			CHEM,		
									or PHYS		
									(GR)		3.0
									Graduate		
		~						00	Elective <sup>‡‡</sup>		40
Fourth Yea		3			0			20			19
Fourth Yea	r Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP	oredits		COOP	oreuns		ECE 303	oreuns		(UG) ECE	Greates	3.0
EXPERIEN			EXPERIEN	CE	0.5				elective <sup>†</sup>		
(GR) Graduate Elective <sup>‡‡</sup>	3	.0	(GR) Graduate Elective <sup>‡‡</sup>		3.0	MATH 221		3.0	(UG) Free Electives		6.0
						(UG) Free		3.0	(UG)		3.0
						Elective			General Education Elective <sup>**</sup>		
						(UG)		3.0	(GR)		6.0
						General Education Elective			Graduate CPE Courses		
						LICCUVE			0001363		

				(GR) Graduate CPE	6.0	
				Courses		
Fifth Year	3		3		18	18
Fall	Credits	Winter	Credits	Spring	Credits	
ECE 491	3.0	ECE 492	3.0	ECE 493	3.0	
(UG) ECE 400-level Elective <sup>††</sup>	3.0	(UG) ECE 400-level Elective <sup>††</sup>	3.0	(UG) ECE 400-level Elective <sup>††</sup>	3.0	
(UG) Free Elective	3.0	(UG) Free Elective	3.0	(UG) Free Elective	3.0	
(UG) General Education Elective <sup>**</sup>	3.0	(UG) General Education Elective <sup>**</sup>	3.0	(UG) General Education Elective <sup>**</sup>	3.0	
(GR) Graduate CPE Courses	6.0	(GR) General ECE Course <sup>‡</sup>	3.0	(GR) General ECE Courses <sup>‡</sup>	6.0	
		(GR) Graduate CPE Course	3.0			
	18		18	1	18	
Total Crod	140 000 E					

Total Credits 226.5

Note: An ECE student must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their ECE Professional Requirements.

\* 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.

- \*\* General Education Electives (http://catalog.drexel.edu/undergraduate/ collegeofengineering/#generaleducationrequirementstext)
- \*\*\* Choose one of CS 260, CS 265, or ECE 350
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).
- ‡ Courses at the 500-999 level from ECEC, ECEE, ECEP, ECES, ECET, or ECE.
- 15.0 credits at the 500-900 level from subject codes ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, SYSE, BMES, MATH, PHYS, CHEM, BIO, OPR, or CS.

# Electrical Engineering BSEE / Cybersecurity MS

### **Program Requirements**

#### **BSEE Degree Requirements** General Education/Liberal Studies Requirements CIVC 101 Introduction to Civic Engagement 1.0 COOP 101 1.0 Career Management and Professional Development 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 3.0 Evidence-Based Writing or ENGL 112 English Composition II Composition and Rhetoric III: Themes and Genres **ENGL 103** 3.0 or ENGL 113 English Composition III PHIL 315 Engineering Ethics 3.0 UNIV E101 The Drexel Experience 1.0 **Communications Elective** 3.0 COM 230 Techniques of Speaking or COM 310Technical Communication General Education Courses 15.0 Foundation Requirements CHEM 101 General Chemistry I 3.5 **ENGR 111** Introduction to Engineering Design & Data Analysis 3.0 **ENGR 113** First-Year Engineering Design 3.0 **ENGR 131** Introductory Programming for Engineers 3.0 or ENGR 132 Programming for Engineers ENGR 231 Linear Engineering Systems 3.0 ENGR 232 Dynamic Engineering Systems 3.0 MATH 121 Calculus I 4.0 MATH 122 Calculus II 4.0 MATH 200 Multivariate Calculus 4.0 Discrete Mathematics MATH 221 3.0 **MATH 291** Complex and Vector Analysis for Engineers 4.0 **PHYS 101** Fundamentals of Physics I 4.0 **PHYS 102** Fundamentals of Physics II 4.0 PHYS 201 Fundamentals of Physics III 4.0 Science Elective 3.0 Choose from BIO. PHYS or CHEM Professional Requirements ECE 101 Electrical and Computer Engineering in the Real World 1.0 ECE 105 Programming for Engineers II 3.0 ECE 200 Digital Logic Design 4.0 Foundations of Electric Circuits I ECE 201 4.0 Foundations of Electric Circuits II ECE 301 4.0 ECE 303 ECE Laboratory 3.0 ECE 361 Probability and Data Analytics for Engineers 4.0 ECE 370 **Electronic Devices** 3.0 ECE 371 Foundations of Electromagnetics for Computing & Wireless 3.0 Systems ECE 380 Fundamentals of Power and Energy 3.0 ECEC 201 Advanced Programming for Engineers 3.0 ECEC 204 Design with Microcontrollers 3.0 Signals and Systems I **ECES 301** 4.0 Senior Desian ECE 491 [WI] Senior Design Project I 3.0 ECE 492 [WI] Senior Design Project II 3.0

ECE 493	Senior Design Project III	3.0
	(Choose one of the following):	3.0
CS 260	Data Structures	
CS 265	Advanced Programming Tools and Techniques	
ECE 350	Introduction to Computer Organization	
ECE Electives T		6.0
ECE 400-level El	ectives ''	9.0
Free Electives	-	27.0
Master's Degree		
INFO 517	Principles of Cybersecurity	3.0
INFO 725	Information Policy and Ethics	3.0
SE 578	Security Engineering	3.0
	rack-Specific Technical Electives	27.0
	lists below depending on track	
	E Track Electives	
CS 500 CS 501	Fundamentals of Databases	
	Introduction to Programming	
CS 502	Data Structures and Algorithms	
CS 503	Systems Basics	
CS 510	Introduction to Artificial Intelligence	
CS 521	Data Structures and Algorithms I	
CS 522	Data Structures and Algorithms II	
CS 540	High Performance Computing	
CS 543	Operating Systems	
CS 544	Computer Networks	
CS 550	Programming Languages	
CS 551	Compiler Construction I	
CS 552	Compiler Construction II	
CS 575	Software Design	
CS 576	Dependable Software Systems	
CS 590	Privacy	
CS 610	Advanced Artificial Intelligence	
CS 612	Knowledge-based Agents	
CS 613	Machine Learning	
CS 620	Advanced Data Structure and Algorithms	
CS 621	Approximation Algorithms	
CS 630	Cognitive Systems	
CS 643 CS 645	Advanced Operating Systems	
	Network Security	
CS 647	Distributed Systems Software	
CS 650	Program Generation and Optimization	
CS 675	Reverse Software Engineering	
CS 695	Research Rotations in Cybersecurity	
CS 741	Computer Networks II	
CS 751	Database Theory II	
CS 759	Complexity Theory	
CS 770	Topics in Artificial Intelligence	
CS 780	Advanced Topics in Software Engineering	
	buter Engineering Track Electives	
ECE 610	Machine Learning & Artificial Intelligence	
ECE 687	Pattern Recognition	
ECEC 500	Fundamentals Of Computer Hardware	
ECEC 501	Computational Principles of Representation and Reasoning	
ECEC 502	Principles of Data Analysis	
ECEC 503	Principles of Decision Making	
ECEC 511	Combinational Circuit Design	
ECEC 512	Sequential Circuit Design	
ECEC 513	Design for Testability	
ECEC 520	Dependable Computing	
ECEC 531	Principles of Computer Networking	
ECEC 600	Fundamentals of Computer Networks	
ECEC 621	High Performance Computer Architecture	

ECEC 622	Parallel Programming
ECEC 622	Advanced Topics in Computer Architecture
ECEC 632	Performance Analysis of Computer Networks
ECEC 633	
	Advanced Topics in Computer Networking
ECEC 641 ECEC 642	Web Security I
	Web Security II
ECEC 643	Web Security III
ECEC 661	Digital Systems Design
ECES 511	Fundamentals of Systems I
ECES 512	Fundamentals of Systems II
ECES 513	Fundamentals of Systems III
ECES 521	Probability & Random Variables
ECES 522	Random Process & Spectral Analysis
ECES 523	Detection & Estimation Theory
ECES 558	Digital Signal Processing for Sound & Hearing
ECES 559	Processing of the Human Voice
ECES 604	Optimal Estimation & Stochastic Control
ECES 607	Estimation Theory
ECES 620	Multimedia Forensics and Security
ECES 621	Communications I
ECES 622	Communications II
ECES 623	Communications III
ECES 631	Fundamentals of Deterministic Digital Signal Processing
ECES 632	Fundamentals of Statistical Digital Signal Processing
ECES 641	Bioinformatics
ECES 642	Optimal Control
ECES 643	Digital Control Systems Analysis & Design
ECES 644	Computer Control Systems
ECES 651	Intelligent Control
ECES 682	Fundamentals of Image Processing
ECES 685	Image Reconstruction Algorithms
ECES 811	Optimization Methods for Engineering Design
ECES 812	Mathematical Program Engineering Design
ECES 813	Computer-Aided Network Design
ECES 818	Machine Learning & Adaptive Control
ECES 821	Reliable Communications & Coding I
ECES 822	Reliable Communications & Coding II
ECES 823	Reliable Communications & Coding III
ECET 501	Fundamentals of Communications Engineering
ECET 511	
	Physical Foundations of Telecommunications Networks
ECET 512	Physical Foundations of Telecommunications Networks Wireless Systems
ECET 512 ECET 513	•
ECET 513	Wireless Systems Wireless Networks
	Wireless Systems
ECET 513 ECET 602	Wireless Systems Wireless Networks Information Theory and Coding
ECET 513 ECET 602 ECET 603 ECET 604	Wireless Systems Wireless Networks Information Theory and Coding Optical Communications and Networks Internet Laboratory
ECET 513 ECET 602 ECET 603 ECET 604	Wireless Systems Wireless Networks Information Theory and Coding Optical Communications and Networks Internet Laboratory
ECET 513 ECET 602 ECET 603 ECET 604 Information Track	Wireless Systems Wireless Networks Information Theory and Coding Optical Communications and Networks Internet Laboratory Electives Software Development
ECET 513 ECET 602 ECET 603 ECET 604 Information Track INFO 532	Wireless Systems Wireless Networks Information Theory and Coding Optical Communications and Networks Internet Laboratory Electives
ECET 513 ECET 602 ECET 603 ECET 604 Information Track INFO 532 INFO 540 INFO 590	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information
ECET 513 ECET 602 ECET 603 ECET 604 Information Track INFO 532 INFO 540 INFO 590 INFO 605	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems
ECET 513 ECET 602 ECET 603 ECET 604 Information Track INFO 532 INFO 540 INFO 590	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management
ECET 513 ECET 602 ECET 603 ECET 604 Information Track INFO 532 INFO 540 INFO 590 INFO 605 INFO 606 INFO 607	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Database Technologies
ECET 513 ECET 602 ECET 603 ECET 604 INFO 532 INFO 540 INFO 590 INFO 605 INFO 606 INFO 607 INFO 612	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Database Technologies         Knowledge Base Systems
ECET 513 ECET 602 ECET 603 ECET 604 INFO 532 INFO 540 INFO 590 INFO 605 INFO 606 INFO 607 INFO 612 INFO 613	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Database Technologies         Knowledge Base Systems         XML and Databases
ECET 513 ECET 602 ECET 603 ECET 604 Information Track INFO 532 INFO 540 INFO 590 INFO 605 INFO 605 INFO 607 INFO 612 INFO 613 INFO 624	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Database Technologies         Knowledge Base Systems         XML and Databases         Information Retrieval Systems
ECET 513 ECET 602 ECET 603 ECET 604 INFO 532 INFO 540 INFO 590 INFO 605 INFO 607 INFO 612 INFO 613 INFO 624 INFO 629	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Databases         XML and Databases         Information Retrieval Systems         Applied Artificial Intelligence
ECET 513 ECET 602 ECET 603 ECET 604 Information Track INFO 532 INFO 540 INFO 590 INFO 605 INFO 607 INFO 613 INFO 613 INFO 624 INFO 629 INFO 633	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Database Technologies         Knowledge Base Systems         XML and Databases         Information Retrieval Systems         Applied Artificial Intelligence         Information Visualization
ECET 513 ECET 602 ECET 603 ECET 604 INFO 532 INFO 540 INFO 605 INFO 605 INFO 607 INFO 612 INFO 613 INFO 624 INFO 623 INFO 633	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Advanced Database Technologies         Knowledge Base Systems         XML and Databases         Information Retrieval Systems         Applied Artificial Intelligence         Information Visualization         Data Mining
ECET 513 ECET 602 ECET 603 ECET 604 INFO 532 INFO 540 INFO 605 INFO 607 INFO 607 INFO 612 INFO 613 INFO 624 INFO 623 INFO 634 INFO 634 INFO 646	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Database Technologies         Knowledge Base Systems         XML and Databases         Information Retrieval Systems         Applied Artificial Intelligence         Information Visualization         Data Mining         Information Systems Management
ECET 513 ECET 602 ECET 603 ECET 604 INFO 532 INFO 540 INFO 605 INFO 607 INFO 607 INFO 612 INFO 613 INFO 624 INFO 623 INFO 634 INFO 646 INFO 655	Wireless Systems           Wireless Networks           Information Theory and Coding           Optical Communications and Networks           Internet Laboratory           Electives           Software Development           Perspectives on Information Systems           Foundations of Data and Information           Database Management Systems           Advanced Database Management           Advanced Database Technologies           Knowledge Base Systems           XML and Databases           Information Retrieval Systems           Applied Artificial Intelligence           Information Systems Management           Information Systems           Information Retrieval Systems           Information Retrieval Systems           Information Visualization           Information Systems Management           Information Visualization           Information Systems Management           Information Visualization
ECET 513 ECET 602 ECET 603 ECET 604 INFO 532 INFO 540 INFO 605 INFO 605 INFO 607 INFO 612 INFO 613 INFO 624 INFO 623 INFO 634 INFO 634 INFO 646	Wireless Systems         Wireless Networks         Information Theory and Coding         Optical Communications and Networks         Internet Laboratory         Electives         Software Development         Perspectives on Information Systems         Foundations of Data and Information         Database Management Systems         Advanced Database Management         Applied Database Technologies         Knowledge Base Systems         XML and Databases         Information Retrieval Systems         Applied Artificial Intelligence         Information Visualization         Data Mining         Information Systems Management

Total Credits		226.5
Cybersecurity I	Non-Track Electives <sup>‡</sup>	9.0
INFO 712	Information Assurance	
INFO 710	Information Forensics	
INFO 680	US Government Information	
INFO 670	Cross-platform Mobile Development	
INFO 662	Metadata and Resource Description	

### **Total 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 able to take COOP 001 in place of COOP 101.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI] , ECE 492 [WI] , ECE 493 credits with ECE elective credits.
- † 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).
- ‡ If enrolled in the Computer Science Track, choose 3 courses (9.0 credits) from either Electrical & Computer Engineering or Information Tracks.

If enrolled in the Information Track, choose 3 courses (9.0 credits) from either the Computer Science or Electrical & Computer Engineering Tracks.

If enrolled in the Electrical & Computer Engineering Track, choose 3 courses (9.0 credits) from either the Computer Science or Information Tracks.

## Sample Plan of Study

## 5 year, 3 coop Co-Terminal

First Year										
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
CHEM 101	3.5	CIVC 101 or COOP 101 <sup>*</sup>			COOP 101 or CIVC 101 <sup>*</sup>		1.0	VACATION		
ECE 101	1.0	ECE 200		4.0	ECE 105		3.0			
ENGL 101 or 111	3.0	ENGR 131 or 132			ENGL 102 or 112		3.0			
ENGR 111	3.0	MATH 122		4.0	ENGR 113		3.0			
MATH 121	4.0	PHYS 101		4.0	MATH 200		4.0			
UNIV E101	1.0				PHYS 102		4.0			
	15.5			16			18			0
Second Ye				16			18			0
Second Ye Fall		Winter	Credits			Credits		Summer	Credits	0
	ar Credits			3.0						0
Fall	ar Credits 4.0	Winter COM 230		3.0	Spring COOP			Summer COOP		0
Fall ECE 201	ar Credits 4.0 3.0	Winter COM 230 or 310		3.0	Spring COOP			Summer COOP		0
Fall ECE 201 ECEC 201 ENGL 103	ar Credits 4.0 3.0 3.0	Winter COM 230 or 310 ECEC 204		3.0 3.0	Spring COOP			Summer COOP		0

		2.0			2.0						
(UG) Free Elective		3.0	(UG) Free Elective		3.0						
		20			19			0			0
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ECE 301		4.0	ECE 361		4.0	COOP EXPERIEN	CE		COOP EXPERIEN	CE	
ECE 370		3.0	ECE 371		3.0	INFO 725		3.0			
ECES 301		4.0	ECE 380		3.0						
(UG) EE Core Elective		3.0	(UG) Free Elective		3.0						
(UG) General Education Elective		3.0	(UG) Science Elective		3.0						
INFO 517		3.0	Any BIO, CHEM or PHYS								
			SE 578		3.0						
		20			19			3			0
Fourth Yea											
Fall	Credits		Winter	Credits	2.0	Spring	Credits		Summer	Credits	
ECE 303		3.0	(UG) ECE Elective <sup>†</sup>		3.0	COOP	CE		COOP EXPERIEN	CE	
MATH 221		3.0	(UG) Free Electives		6.0	(GR) Non- Track Tech Elective		3.0	(GR) Track Tech Elective		3.0
(UG) ECE Elective <sup>†</sup>		3.0	(UG) General Education Elective		3.0						
(UG) Free Elective		3.0	(GR) Track Tech Elective		3.0						
(GR) Track Tech Electives		6.0	(GR) Non- Track Tech Elective		3.0						
Fifth Year		18			18			3			3
Fall	Credits		Winter	Credits		Spring	Credits				
ECE 491		3.0	ECE 492		3.0	ECE 493		3.0			
(UG) ECE 400-level Elective <sup>††</sup>		3.0	(UG) ECE 400-level Elective <sup>††</sup>		3.0	(UG) ECE 400-level Electives <sup>††</sup>		3.0			
(UG) Free Elective		3.0	(UG) Free Elective		3.0	(UG) Free Elective		3.0			
(UG) General Education Elective <sup>**</sup>		3.0	(UG) General Education Elective <sup>**</sup>		3.0	(UG) General Education Elective <sup>**</sup>		3.0			
(GR) Track Tech Elective		3.0	(GR) Track Tech Electives		6.0	(GR) Track Tech Electives		6.0			
(GR) Non- Track Tech Elective		3.0									
		18			18			18			_

Total Credits 226.5

Note: An ECE student must have a 2.0 cumulative overall undergraduate GPA and a 2.0 cumulative GPA in their undergraduate ECE Professional Requirements.

\* 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

and may be scheduled in a different term. Select students may be able to take COOP 001 in place of COOP 101.

- \*\* General Education Electives (http://catalog.drexel.edu/ undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Choose one of CS 260, CS 265, or ECE 350
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).

# Electrical Engineering BSEE / Machine Learning Engineering MSMLE

## **Program Requirements**

### BSEE Degree Requirements

ECEC 204

**ECES 301** 

Design with Microcontrollers

Signals and Systems I

DOLL Degree Ke	quirements	
General Education	on/Liberal Studies 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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications E	Elective	3.0
COM 230	Techniques of Speaking	
or COM 31	0Technical Communication	
General Education	n Courses **	15.0
Foundation Requ	irements	
CHEM 101	General Chemistry I	3.5
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
Any BIO, CHE	M or PHYS course	
Professional Req	uirements	
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits II	4.0
ECE 303	ECE Laboratory	3.0
ECE 361	Probability and Data Analytics for Engineers	4.0
ECE 370	Electronic Devices	3.0
ECE 371	Foundations of Electromagnetics for Computing & Wireless Systems	3.0
ECE 380	Fundamentals of Power and Energy	3.0
ECEC 201	Advanced Programming for Engineers	3.0

Total Credits		226.5
ECE 898	Master's Thesis	
	and Non-Thesis Option) <sup>‡‡</sup>	6.0
	Justice	
EDGI 522	Education for Global Citizenship, Sustainability, and Social	
EDGI 510	Culture, Society & Education in Comparative Perspective	
COM 610	Theories of Communication and Persuasion	
	e courses that promote the development of leadership, and ethics	
Transformationa		6.0
	aduate-level courses from the College of Engineering	
Engineering Ele		9.0
ECES 660	Machine Listening and Music IR	
ECES 650	Statistical Analysis of Genomics	
ECES 641	Bioinformatics	
ECES 620	Multimedia Forensics and Security	
ECE 686	Cell & Tissue Image Analysis	
Choose 1 course		
Applications		3.0
ECES 682	Fundamentals of Image Processing	
ECES 681	Fundamentals of Computer Vision	
ECES 631	Fundamentals of Deterministic Digital Signal Processing	
Choose 1 course		
Signal Processi	•	3.0
MATH 510	Applied Probability and Statistics I	
MATH 504	Linear Algebra & Matrix Analysis	
ECET 602	Information Theory and Coding	
ECES 811	Optimization Methods for Engineering Design	
ECES 523	Detection & Estimation Theory	
ECES 522	Random Process & Spectral Analysis	
Choose 2 course	s	
Aligned Mathem	atical Theory	6.0
ECES 521	Probability & Random Variables	3.0
ECE 687	Pattern Recognition	3.0
ECE 612	Applied Machine Learning Engineering	3.0
ECE 610	Machine Learning & Artificial Intelligence	3.0
Core Courses		
Master's Degree	Courses	
Free Electives		27.0
ECE 400-level El	ectives <sup>††</sup>	9.0
ECE Electives <sup>†</sup>		6.0
ECE 350	Introduction to Computer Organization	
CS 265	Advanced Programming Tools and Techniques	
CS 260	Data Structures	
EE Core Elective	(Choose one of the following):	3.0
ECE 493	Senior Design Project III	3.0
ECE 492 [WI]	Senior Design Project II	3.0
ECE 491 [WI]	Senior Design Project I	3.0
Senior Design		

- \* 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.
- \*\* General Education Courses (http://catalog.drexel.edu/undergraduate/ collegeofengineering/#generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI], ECE 492 [WI], ECE 493 credits with ECE elective credits.

3.0

4.0

- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).
- Choose three courses of 500-level or higher from: ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, and SYSE
- \*\* Thesis Option: A minimum of two terms of laboratory-based research that leads to a publicly defended MS thesis. Students will be advised by a faculty member, and when applicable, a representative of industry or government sponsor.

Non-thesis Option: In lieu of research and thesis, students will complete 6.0 additional credits of coursework from the Mathematical Theory, Applications, or Signal Processing area.

## Sample Plan of Study

## 5 year, 3 coop Co-Terminal

o ycu	, • •		op oc			mai					
First Year											
Fall CHEM 101	Credits		Winter COOP 101 or CIVC 101 <sup>*</sup>	Credits		Spring CIVC 101 or COOP 101 <sup>*</sup>	Credits		Summer VACATION	Credits	
ECE 101		1.0	ECE 200		4.0	ECE 105		3.0			
ENGL 101 or 111		3.0	ENGR 131 or 132		3.0	ENGL 102 or 112		3.0			
ENGR 111		3.0	MATH 122		4.0	ENGR 113		3.0			
MATH 121		4.0	PHYS 101		4.0	MATH 200		4.0			
UNIV E101		1.0				PHYS 102		4.0			
Second Ye		15.5			16			18			0
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE		COOP EXPERIEN	CE		ECE 201		4.0	COM 230 or 310		3.0
						ECEC 201		3.0	ECEC 204		3.0
						ENGL 103 or 113		3.0	ENGR 232		3.0
						ENGR 231		3.0	PHIL 315		3.0
						MATH 291		4.0	PHYS 201		4.0
						(UG) Free Elective		3.0	(UG) Free Elective		3.0
		0			0			20			19
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP EXPERIEN	CE		COOP EXPERIEN	CE		ECE 301		4.0	ECE 361		4.0
(GR) Signal Processing Course		3.0				ECE 370		3.0	ECE 371		3.0
						ECES 301		4.0	ECE 380		3.0
						(UG) EE Core Elective <sup>***</sup>		3.0	Science Elective		3.0
						(UG) General Education Elective		3.0	Any BIO, CHEM or		

					(GR) Engineering Elective <sup>§§</sup>	I	3.0	(UG) Free elective		3.0
								(GR) Aligned Mathematic Theory Course	al	3.0
		3		0			20			19
Fourth Yea			One dite		Our size se	0		0	One dista	
Fall	Credits	Winter	Credits		Spring ECE 303	Credits	2.0	Summer (UG) ECE	Credits	
COOP EXPERIEN	CE	COOP EXPERIEN	CE		ECE 303		3.0	Elective		3.0
(GR) Applications Course		0 ECE 610		3.0	MATH 221		3.0	(UG) Free Electives		6.0
					(UG) ECE Elective <sup>†</sup>		3.0	(UG) General Education Elective <sup>**</sup>		3.0
					(UG) Free Elective		3.0	ECE 612		3.0
					ECE 687		3.0	(GR) Aligned Mathematic	م	3.0
								Theory Course		
					ECES 521		3.0	Theory		
Fifth Year		3		3	ECES 521		3.0 18	Theory		18
Fifth Year Fall	Credits	Winter	Credits	3	ECES 521	Credits		Theory		18
Fall ECE 491	Credits 3.	Winter 0 ECE 492	Credits	<b>3</b> 3.0	Spring ECE 493	Credits	<b>18</b> 3.0	Theory		18
Fall	Credits 3.	Winter	Credits	<b>3</b> 3.0 3.0	Spring	Credits	18	Theory		18
Fall ECE 491 (UG) ECE 400-level	Credits 3. 3.	Winter 0 ECE 492 0 (UG) ECE 400-level	Credits	3.0 3.0 3.0	Spring ECE 493 (UG) ECE 400-level	Credits	<b>18</b> 3.0	Theory		18
Fall ECE 491 (UG) ECE 400-level elective <sup>††</sup> (UG) Free	Credits 3. 3. 3.	Winter 0 ECE 492 0 (UG) ECE 400-level elective <sup>††</sup> 0 (UG) Free	Credits	3.0 3.0 3.0 3.0	Spring ECE 493 (UG) ECE 400-level elective <sup>††</sup> (UG) Free	Credits	18 3.0 3.0	Theory		18
Fall ECE 491 (UG) ECE 400-level elective <sup>11</sup> (UG) Free elective (UG) General Education	Credits 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	Winter 0 ECE 492 0 (UG) ECE 400-level elective <sup>††</sup> 0 (UG) Free elective 0 (UG) General Education	Credits	3.0 3.0 3.0 3.0 3.0	Spring ECE 493 (UG) ECE 400-level elective <sup>††</sup> (UG) Free elective (UG) General Education		18 3.0 3.0 3.0	Theory		18
Fall ECE 491 (UG) ECE 400-level elective <sup>1†</sup> (UG) Free elective (UG) General Education elective <sup>**</sup> (GR) Engineering	Credits 3. 3. 3. 3. 3. 3. 3.	Winter 0 ECE 492 0 (UG) ECE 400-level elective <sup>1†</sup> 0 (UG) Free elective 0 (UG) General Education elective <sup>**</sup> 0 (GR) Thesis or		3.0 3.0 3.0 3.0 3.0 3.0	Spring ECE 493 (UG) ECE 400-level elective <sup>††</sup> (UG) Free elective (UG) General Education elective <sup>**</sup> (GR) Engineering		<ol> <li>3.0</li> <li>3.0</li> <li>3.0</li> <li>3.0</li> </ol>	Theory		18

### Total Credits 226.5

PHYS course Note: An ECE student must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their ECE Professional Requirements.

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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Choose one of CS 260, CS 265, or ECE 350
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).

<sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).

# Electrical Engineering BSEE / Robotics & Autonomy MSRA

## **Program Requirements**

### BSEE Degree Requirements

BSEE Degree Re	quirements	
General Educatio	on/Liberal Studies 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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications E	Elective	3.0
COM 230	Techniques of Speaking	
or COM 31	0Technical Communication	
General Education	n Courses **	15.0
Foundation Requ	irements	
CHEM 101	General Chemistry I	3.5
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
Choose any Bl	IO, CHEM, or PHYS	
Professional Req	uirements	
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits II	4.0
ECE 303	ECE Laboratory	3.0
ECE 361	Probability and Data Analytics for Engineers	4.0
ECE 370	Electronic Devices	3.0
ECE 371	Foundations of Electromagnetics for Computing & Wireless Systems	3.0
ECE 380	Fundamentals of Power and Energy	3.0
ECEC 201	Advanced Programming for Engineers	3.0
ECEC 204	Design with Microcontrollers	3.0
ECES 301	Signals and Systems I	4.0
Senior Design		
ECE 491 [WI]	Senior Design Project I	3.0
ECE 492 [WI]	Senior Design Project II	3.0
		210

505 (00		
ECE 493	Senior Design Project III	3.0
CS 260	(Choose one of the following): Data Structures	3.0
CS 265 ECE 350	Advanced Programming Tools and Techniques	
ECE Electives <sup>†</sup>	Introduction to Computer Organization	6.0
ECE 400-level Ele	actives <sup>††</sup>	9.0
Free Electives		27.0
Master's Degree	Courses	27.0
Foundation Cour		6.0
	s in mathematics and/or signal processing	0.0
Mathematics		
ECES 521	Probability & Random Variables	
MATH 504	Linear Algebra & Matrix Analysis	
MATH 510	Applied Probability and Statistics I	
MATH 623	Ordinary Differential Equations I	
MATH 630	Complex Variables I	
MEM 591	Applied Engr Analy Methods I	
MEM 592	Applied Engr Analy Methods II	
MEM 593	Applied Engr Analy Methods III	
Signal Processing		
ECES 522	Random Process & Spectral Analysis	
ECES 523	Detection & Estimation Theory	
ECES 604	Optimal Estimation & Stochastic Control	
ECES 631	Fundamentals of Deterministic Digital Signal Processing	
Systems Course		6.0
Choose 2 courses	s in robotics and autonomy from the perspective of full systems or	
use		
CS 510	Introduction to Artificial Intelligence	
ECE 610	Machine Learning & Artificial Intelligence	
ECE 612	Applied Machine Learning Engineering	
ECES 511	Fundamentals of Systems I	
ECES 512	Fundamentals of Systems II	
ECES 513	Fundamentals of Systems III	
ECES 561	Medical Robotics I	
ECES 562	Medical Robotics II	
MEM 571	Introduction to Robot Technology	
MEM 572	Mechanics of Robot Manipulators	
MEM 573	Industrial Application of Robots	
Core Component	ts	
Take 1 course in e	each of the four disciplines critical to robotics	
Perception		3.0
ECE 687	Pattern Recognition	
ECES 681	Fundamentals of Computer Vision	
ECES 682	Fundamentals of Image Processing	
ECET 512	Wireless Systems	
ECET T580	Special Topics in ECET	
MEM 678	Nondestructive Evaluation Methods	
Cognition and Bel		3.0
CS 510	Introduction to Artificial Intelligence	
CS 583	Introduction to Computer Vision	
CS 613	Machine Learning	
CS 630	Cognitive Systems	
ECE 610	Machine Learning & Artificial Intelligence	
ECE 612	Applied Machine Learning Engineering	
ECES 604	Optimal Estimation & Stochastic Control	
ECES 631	Fundamentals of Deterministic Digital Signal Processing	
Action		3.0
ECES 511	Fundamentals of Systems I	
ECES 512	Fundamentals of Systems II	
ECES 513	Fundamentals of Systems III	
MEM 530	Aircraft Flight Dynamics & Control I	

Total Credits		226.5
encouraged for	non-thesis students, but is not required.	
credits of addition	onal coursework in a Technical Focus Area. Graduate Co-op is	
	on: In lieu of the research and thesis, students will complete six	
that leads to a p	A minimum of two terms of laboratory-based research (ECE 898) ublicly defended MS thesis. Students will be advised by a faculty hen applicable, a representative of industry or government sponsor.	
Mastery		6.0
	Education for Global Citizenship, Sustainability, and Social Justice	
EDGI 510 EDGI 522	Culture, Society & Education in Comparative Perspective	
COM 610	Theories of Communication and Persuasion	
communication,		
	ve courses that promote the development of leadership,	
Transformation		6.0
	in a maximum of two core component areas listed above	
Technical Focu	ıs Areas <sup>∓</sup>	9.0
MEM 735	Advanced Topics in Optimal Control	
MEM 734	Applied Optimal Control II	
MEM 733	Applied Optimal Control I	
MEM 638	Theory of Nonlinear Control III	
MEM 637	Theory of Nonlinear Control II	
MEM 636	Theory of Nonlinear Control I	
MEM 635	Robust Control Systems III	
MEM 634	Robust Control Systems II	
MEM 633	Robust Control Systems I	
ECES 642	Optimal Control	
ECES 604	Optimal Estimation & Stochastic Control	
ECE 612	Applied Machine Learning Engineering	
Control		3.0
MEM 668	Advanced Dynamics III	
MEM 667	Advanced Dynamics II	
MEM 666	Advanced Dynamics I	

\* 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.

- \*\* General Education Courses (http://catalog.drexel.edu/undergraduate/ collegeofengineering/#generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI (http://catalog.drexel.edu/ programadmin/1228/)], ECE 492 [WI (http://catalog.drexel.edu/ programadmin/1228/)], ECE 493 credits with ECE elective credits.
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).
- <sup>‡</sup> Choose three courses from a maximum of two Core Component areas: Perception, Cognition and Behavior, Action, Control

# Sample Plan of Study

## 5 year, 3 coop Co-Terminal

First Year

	First Year											
	Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
	CHEM 101		3.5	COOP 101		1.0	CIVC 101		1.0	VACATION		
				or CIVC			or COOP					
				101			101					
	ECE 101		1.0	ECE 200		4.0	ECE 105		3.0			
	ENGL 101		3.0	ENGR 131		3.0	ENGL 102		3.0			
	or 111			or 132			or 112					
	ENGR 111			MATH 122			ENGR 113		3.0			
	MATH 121		4.0	PHYS 101		4.0	MATH 200		4.0			
	UNIV E101		1.0				PHYS 102		4.0			
			5.5			16			18			0
	Second Yea											
		Credits		Winter	Credits		Spring	Credits		Summer	Credits	
	COOP	~ -		COOP	05		ECE 201		4.0	COM 230		3.0
	EXPERIEN	JE		EXPERIEN	CE		5050 004			or 310		~ ~
							ECEC 201			ECEC 204		3.0
							ENGL 103 or 113		3.0	ENGR 232		3.0
							ENGR 231		3.0	PHIL 315		3.0
							MATH 291			PHYS 201		4.0
							(UG) Free			(UG) Free		3.0
							Elective			Elective		
			0			0			20			19
	Third Year											
	Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
	COOP EXPERIENC	CF		COOP EXPERIEN	CF		ECE 301		4.0	ECE 361		4.0
	(GR)		3.0		02		ECE 370		3.0	ECE 371		3.0
	Signal Processing											
	Course											
							ECES 301			ECE 380		3.0
							(UG) EE Core Elective		3.0	Science Elective		3.0
							(UG)		3.0	Any		
							General			BIO,		
							Education			CHEM		
							Elective			or PHYS		
										course		
							(GR)		3.0	(UG) Free		3.0
							Engineering Elective <sup>§§</sup>	9		elective		
										(GR)		3.0
										Aligned Mathematic	al	
										Theory	di	
										Course		
ľ			3			0			20			19
	Fourth Yea	r										
	Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
		CE		COOP EXPERIEN	CF		ECE 303		3.0	(UG) ECE Elective <sup>†</sup>		3.0
	(GR)	52	3.0	ECE 610	02	3.0	MATH 221		3.0	(UG) Free		6.0
	Applications Course	i								Electives		
							(UG) ECE		3.0	(UG)		3.0
									0.0			5.0
							Elective <sup>†</sup>		0.0	General		5.0
									0.0			5.0
							Elective <sup>†</sup>			General Education		3.0
										General Education Elective <sup>**</sup>		

						ECE 687		3.0	(GR) Aligned Mathematical Theory Course	3.0
						ECES 521		3.0		
		3			3			18		18
Fifth Year										
Fall	Credits		Winter	Credits		Spring	Credits			
ECE 491		3.0	ECE 492		3.0	ECE 493		3.0		
(UG) ECE 400-level elective <sup>††</sup>		3.0	(UG) ECE 400-level elective <sup>††</sup>		3.0	(UG) ECE 400-level elective <sup>††</sup>		3.0		
(UG) Free elective		3.0	(UG) Free elective		3.0	(UG) Free elective		3.0		
(UG) General Education elective		3.0	(UG) General Education elective		3.0	(UG) General Education elective		3.0		
(GR) Engineering Elective		3.0	(GR) Thesis or alternative		3.0	(GR) Engineering Elective		3.0		
(GR) Transforma Elective		3.0	(GR) Transforma Elective	t	3.0	(GR) Thesis or alternative		3.0		
		18			18			18		

### Total Credits 226.5

Note: An ECE student must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their ECE Professional Requirements.

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Choose one of CS 260, CS 265, or ECE 350
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).

# Electrical Engineering BSEE / Telecommunications Engineering MSEET

## **Program Requirements**

### BSEE Degree Requirements

DOLL Degree Ke	quirements	
General Education	on/Liberal Studies 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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
Communications E	Elective	3.0
COM 230	Techniques of Speaking	
or COM 31	0Technical Communication	
General Education	n Courses **	15.0
Foundation Requ	lirements	
CHEM 101	General Chemistry I	3.5
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 221	Discrete Mathematics	3.0
MATH 291	Complex and Vector Analysis for Engineers	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Science Elective		3.0
Any BIO, CHE	M or PHYS course	
Professional Req	uirements	
ECE 101	Electrical and Computer Engineering in the Real World	1.0
ECE 105	Programming for Engineers II	3.0
ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0

ECE 200	Digital Logic Design	4.0
ECE 201	Foundations of Electric Circuits I	4.0
ECE 301	Foundations of Electric Circuits II	4.0
ECE 303	ECE Laboratory	3.0
ECE 361	Probability and Data Analytics for Engineers	4.0
ECE 370	Electronic Devices	3.0
ECE 371	Foundations of Electromagnetics for Computing & Wireless Systems	3.0
ECE 380	Fundamentals of Power and Energy	3.0
ECEC 201	Advanced Programming for Engineers	3.0
ECEC 204	Design with Microcontrollers	3.0
ECES 301	Signals and Systems I	4.0

Total Credits		226.5			
Graduate Electives §	Graduate Electives §				
General ECE Courses <sup>‡‡</sup>	9.0				
Telecommunications Engineerin	g Elective Courses <sup>‡</sup>	15.0			
Telecommunications Engineerin	g (500+ level ECET) Courses	6.0			
Master's Degree Courses					
Free Electives		27.0			
ECE 400-level Electives <sup>††</sup>	ECE 400-level Electives <sup>††</sup>				
ECE Electives <sup>†</sup>		6.0			
ECE 350 Introduction	to Computer Organization				
CS 265 Advanced P	rogramming Tools and Techniques	3			
CS 260 Data Structu	res				
EE Core Elective (Choose one c	f the following):	3.0			
ECE 493 Senior Desig	n Project III	3.0			
ECE 492 [WI] Senior Desig	n Project II	3.0			
ECE 491 [WI] Senior Desig	3.0				
Senior Design					

\* 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.

- \*\* General Education Courses (http://catalog.drexel.edu/undergraduate/ collegeofengineering/#generaleducationrequirementstext)
- \*\*\* Students who choose the Master's Thesis instead of Senior Design must replace ECE 491 [WI], ECE 492 [WI], ECE 493 credits with ECE elective credits.
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).
- ‡ 500-level or higher courses from ECEC, ECEE, ECES, and ECET
- \$500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, and ECE
- § 500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, SYSE, BMES, MATH, PHYS, CHEM, BIO, OPR, and CS

## Sample Plan of Study

### 5 year, 3 coop Co-Terminal

First Year				
Fall	Credits Winter	Credits Spring	Credits Summ	ner Credits
CHEM 101	3.5 COOP 101	1.0 CIVC 101 or ECE 200	1.0 VACA	TION
ECE 101	1.0 ECE 200 or CIVC 101	4.0 ECE 105	3.0	
ENGL 101 or 111	3.0 ENGR 131 or 132	3.0 ENGL 102 or 112	3.0	
ENGR 111	3.0 MATH 122	4.0 ENGR 113	3.0	
MATH 121	4.0 PHYS 101	4.0 MATH 200	4.0	
UNIV E101	1.0	PHYS 102	4.0	
	15.5	16	18	0

Second Ye	ar						
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIEN	CE	COOP EXPERIEN	ICE	ECE 201	4.0	OCOM 230 or 310	3.
				ECEC 201	3.0	ECEC 204	3.
				ENGL 103 or 113	3.0	) ENGR 232	3.
				ENGR 231	3.0	) PHIL 315	3.
				MATH 291	4.0	PHYS 201	4.0
				(UG) Free Elective	3.0	) (UG) Free Elective	3.0
		0		0	20	)	1
Third Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIEN	CE	COOP EXPERIEN	ICE	ECE 301	4.0	ECE 361	4.0
(GR) Graduate Elective <sup>§</sup>	3.	.0		ECE 370	3.0	ECE 371	3.
				ECES 301	4.0	ECE 380	3.
				(UG) EE Core Elective	3.0	) (UG) Free Elective	3.
				(UG) General Education Elective <sup>**</sup>	3.0	) (UG) Science Elective	3.
				(GR) Graduate Elective <sup>§</sup>	3.0	Any BIO, CHEM or PHYS course	
						(GR) General ECE Course <sup>‡‡</sup>	3.
		3		0	20		1
Fourth Yea					- ·	_	_
Fall COOP	Credits	Winter COOP	Credits	Spring ECE 303	Credits 3.0	Summer (UG) ECE	Credits 3.0
EXPERIEN (GR) Graduate Elective <sup>§</sup>		EXPERIEN .0 (GR) Graduate Elective <sup>§</sup>		3.0 MATH 221	3.0	Elective <sup>†</sup> (UG) Free Electives	6.0
LICOUVE		LICCUVE		(UG) ECE		) (UG)	3.0

				(UG) ECE Elective <sup>†</sup>	3	5.0 (UG) General Education Elective <sup>**</sup>	3.0
				(UG) Free Electives	3	.0 (GR) ECET Course	3.0
				(GR) ECET Course	Г 3	6.0 (GR) General ECE Course <sup>‡‡</sup>	3.0
				(GR) Telecomm Elective <sup>‡</sup>		.0	
	3			3		18	18
Fifth Year							
Fall	Credits	Winter	Credits	Spring	Credits		
ECE 491	3.0	ECE 492	3.	0 ECE 493	3	.0	
(UG) ECE 400-level Elective <sup>††</sup>	3.0	(UG) ECE 400-level Elective <sup>††</sup>	3.	0 (UG) ECE 400-level Elective <sup>††</sup>	3	.0	
(UG) Free Elective	3.0	(UG) Free Elective	3.	0 (UG) Free Elective	3	.0	

#### Total Credits 226.5

Note: An ECE student must have a 2.0 cumulative overall GPA and a 2.0 cumulative GPA in their ECE Professional Requirements.

\* 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.

- \*\* General Education Electives (http://catalog.drexel.edu/undergraduate/ collegeofengineering/#generaleducationrequirementstext)
- \*\*\* Choose one of CS 260, CS 265, or ECE 350
- <sup>†</sup> 2 classes or at least 6.0 credits at the 300-400 level from subject codes ECE, ECEC, ECEE, ECEL, ECEP, or ECES. Includes Special Topics in each code (T380, T480).
- <sup>††</sup> 3 classes or at least 9.0 credits at the 400 level from subject codes ECE, ECEE, ECEP, or ECES. Includes Special Topics in each code (T480).
- ‡ 500-level or higher courses from ECEC, ECEE, ECES, and ECET
- ## 500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, and ECE
- § 500-level or higher courses from ECEC, ECEE, ECEP, ECES, ECET, ECE, AE, CHE, CIVE, CMGT, EGMT, ENGR, ENVE, ET, MATE, MEM, PROJ, PRMT, SYSE, BMES, MATH, PHYS, CHEM, BIO, OPR, and CS

# Elementary Education (PK & Spec Ed) BS / Teaching, Learning & Curriculum MS

## **Degree Requirements**

General Educatio	on/Content Requirements	
BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	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	
English (Literature	) elective: Select course between ENGL 200 - ENGL 360	3.0
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience	1.0
Pedagogy Requir	rements	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0

Professional or C	concentration Electives	15.0 233.0
or EDUP 780		
or EDUT 780	Thesis Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0
or EDUP 780	Practitioner Capstone Course I	
or EDUT 780	Thesis Capstone Course I	
EDUL 780	Lesson Study Capstone Course I	3.0
EDU 780	Capstone Research	3.0
MS in TLC Capsto	one Sequence	
EDUC 804	Program Evaluation in Organizations	
EDPO 620	Education Policy: Concepts, Issues, and Applications	
EDAM 705	School Law and Politics	
Policy, Law & Org	ganization Courses (Choose 2)	6.0
EDUC 609	Language & Culture in Education	3.0
EDUC 530	Advanced Techniques in Instruction & Assessment	3.0
EDUC 524	Current Research in Curriculum & Instruction	3.0
EDLT 532	Designing Virtual Communities for Staff Development - Non- Field Experience	3.0
EDAM 714	Instructional and Curriculum Leadership	3.0
MS in TLC Core		
EDEX 414 [WI]	Special Education Student Teaching Seminar	9.0
EDUC 409	Student Teaching Seminar I	9.0
Student Teaching	JExperience	
	Environments	
EDEX 388	Implementing Academic Interventions in Inclusive Educational	3.0
EDEX 378	Special Education: Methods & Practices PK-12	3.0
EDEX 355	Teaching Students with Autism Spectrum Disorders	3.0
EDEX 352	Integrating Technology for Learning & Achievement	3.0
EDEX 350	Teaching Individuals with Low Incident Disabilities	3.0
EDEX 349	High Incident Disabilities	3.0
EDEX 348	Emotional and Behavioral Support of Individuals with Disabilities	3.0
EDEX 336	Special Education Law and Processes PK-12	3.0
Special Education		
MTED 418	Mathematics Methods and Content	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
EDUC 411	Family and Community Partnerships	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 336	Early Literacy II	3.0
EDUC 335	Engaging the Learner	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 314	Science Teaching Methods	3.0

\* COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with a 3 credit elective choice of ESTM 342 or EDEX 375.

## Sample Plan of Study

### First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	BIO 100 or	3.	0 EDEX 142	3.0	VACATION	
		161					

EDUC 106		1.0	CIVC 101		1.0	ENGL 103 or 113		3.0			
EDUC 120		3.0	COM 111		3.0	EDUC 108		1.0			
ENGL 101		3.0	EDUC 107		1.0	MATH 173		3.0			
or 111						or 107					
MATH 171			EDUC 121			MUSC 130		3.0			
UNIV T101		1.0	ENGL 102 or 112		3.0	PSY 101		3.0			
			MATH 172		3.0						
		14			17			16			0
Second Ye			14/1	0		Quality	0		0	0	
Fall EDEX 344	Credits		Winter BIO 101 or	Credits		Spring EDUC 236	Credits		Summer EDEX 350	Credits	3.0
			162								
EDEX 349			COOP 101			EDUC 326			EDUC 306		3.0
EDUC 205 EDUC 308			EDEX 348 EDEX 368			EDUC 365 NFS 100			EDUC 312 EDUC 324		3.0 3.0
English			EDUC 216			NFS 100			HIST 275		3.0
(Literature) elective: ENGL 200 - ENGL 360		5.0	200210		5.0			1.0	1101 213		5.0
			EDUC 314		3.0	PSY 320		3.0			
			EDUC 316		3.0						
		13			19			15			15
Third Year Fall	Credito		Minter	Credite		Carlan	Credite		C	Credite	
COOP	Credits		Winter COOP	Credits		Spring EDEX 378	Credits		Summer EDUC 335	Credits	3.0
EXPERIEN	CE		EXPERIEN	CE		LDLX 5/0		0.0	2000 333		5.0
MTED 417		3.0	EDUC 336		3.0	EDEX 388		3.0	EDUC 338		3.0
						EDUC 305		1.0	EDUC 355		3.0
						EDUC 411		3.0	ENVS 260		3.0
						PHYS 151			MTED 418		3.0
						PSY 330		3.0	(GR) MS Professiona Elective		3.0
						(GR) MS Professiona Elective	al	3.0			
		3			3			19			18
Fourth Yea	ır										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EDEX 336		3.0	EDEX 355		3.0	CHEM 111		4.0	EDAM 705		3.0
EDUC 405		1.0	EDEX 414		9.0	ECON 201		4.0	EDUC 530		3.0
EDUC 409		9.0	SOC 335		3.0	EDEX 352		3.0	EDUC 524		3.0
EDPO 620 or EDUC 804		3.0	EDLT 532		3.0	EDLT 325		3.0			
						EDAM 714		3.0			
						Student converts to Grad status at the end of the Spring term					
		16			18			17			9
Fifth Year											
Fall	Credits		Winter	Credits		Spring	Credits				
EDU 780	Creats		EDUL 780, EDUT 780, or EDUP 780			EDUL 781, EDUT 780, or EDUP 780		3.0			

	9	6	6	
(GR) MS Professional Elective	3.0			
EDUC 609	3.0 (GR) MS Professiona Elective	3.0 (GR) MS Professiona Elective	3.0	

Total Credits 233

\* 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.

# Elementary Education PK-4th Grade BS / Creativity & Innovation MS

## **Program Requirements**

General Education	on/Content Requirements	
BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development*	1.0
ECON 201	Principles of Microeconomics	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	
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience *	1.0
English (Literature	e) elective: Select course between ENGL 200 - ENGL 360	3.0
Free electives		10.0
Pedagogy Requi	rements	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 210	Early Language Development	3.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0

EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	5	3.0
EDUC 312	Educational Policy, Law & Advocacy Science Teaching Methods	3.0
EDUC 314	Teaching in Urban Contexts	3.0
EDUC 318	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 335	Engaging the Learner	3.0
EDUC 336	Early Literacy II	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 411	Family and Community Partnerships	3.0
ESTM 342	Teaching Engineering Concepts to Children	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
MTED 418	Mathematics Methods and Content	3.0
Student Teaching	•	
EDUC 409	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
MS in Creativity 8	Innovation Core	
CRTV 501	Foundations in Creativity	3.0
CRTV 502	Tools and Techniques in Creativity	3.0
CRTV 503	Creativity in the Workplace	3.0
CRTV 615	Neuroscience, Creativity and Innovation	3.0
CRTV 650	Current Trends in Creativity & Innovation	3.0
CRTV 660	Diagnostic Creative Intervention	3.0
EDCR 510	Leadership in Educational Contexts and Systems	3.0
EDCR 514	Diversity, Equity, and Social Justice in Education	3.0
MS in Creativity 8	Innovation Capstone Sequence	
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0-4.5
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
Concentration Co	urse Options (Select one concentration from the options	12.0
below)		
Human Resou	rce Development	
EHRD 500	Foundations of Human Resources Development	
EHRD 602	Coaching and Mentoring for Sustainable Learning	
EHRD 611	Organization Development and Change	
EHRD 612	Strategic Human Resource Development	
or EHRD 66	6 Principles of Adult Learning	
Global & Inter	national Education	
EDGI 503	Global, International & Comparative Education	
EDGI 510	Culture, Society & Education in Comparative Perspective	
EDGI 522	Education for Global Citizenship, Sustainability, and Social Justice	
EDGI 524	Measuring the World: Education and National Development	
Higher Educat	•	
EDHE 501	Foundations of Higher Education and Governance	
EDHE 531	Legal Issues & Ethics in Higher Education	
EDHE 607	Higher Education Career Development, Leadership & Application	
EHRD 660	Principles of Adult Learning	
Learning Tech		
EDLT 503	The Learning Sciences	
EDLT 53	Technologies for Performance Support	
	Using and Integrating Learning Technologies	

То	tal Credits		225.0-226.5					
	will be selected in consultation with the Program Director and/or Advisor. You may also choose to declare a Graduate Minor.							
		gned concentration will consist of 12.0 professional electives that						
Cu	stom-Designed	d Concentration						
	ELL 504	Learning Technologies & Disabilities						
	EDLT 554	Learning with Social Media and Mobiles						
	EDLT 543	Play & Learning in a Participatory Culture						
	EDLT 541	Foundations of Game-Based Learning						
	Learning in G	ame-Based Environments						
	ELL 501	The Purpose and Business of E-Learning						
	EDLT 551	Instructional Design Methods						

<sup>\*</sup> COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with free electives.

### Sample Plan of Study

# 4+1, 1 co-op (Accelerated program completed in 5 years)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

### First Year

Fail         Credits         Winter         Credits         Spring         Credits         Summer         Credits           EDUC 106         1.0 B(O 100 or 161         3.0 CVC 101         1.0 EDUC 108         1.0         1.0           EDUC 101         3.0 COM 111         0.0 EDUC 103         3.0 COM 111         3.0 ENGL 103 or 113         3.0 COM 111         3.0 ENGL 103 or 113         3.0 COM 111         3.0 ENGL 103 or 107         3.0 ENGL 103         3.0         Secont         3.0 ENGL 102         3.0 COM 111         3.0 ENGL 103         3.0         Secont         Secont         Secont         Secont         Secont         Secont         Secont 200	i li st i cai											
161         EDUC 101       3.0 CIVC 10*       1.0 EDUC 108       1.0         EDUC 120       3.0 COM 111       3.0 ENGL 103 or 113       3.0 or 107         ENGL 101       3.0 EDUC 107       1.0 MATH 173 or 107       3.0 or 107         MATH 171       3.0 EDUC 121       3.0 MUSC 130       3.0         UNIV T101       1.0 ENGL 102 or 112       3.0 MUSC 130       3.0         MATH 172       3.0       0       1.0         MATH 172       3.0       0       0         MATH 172       3.0       0       1.0         MATH 172       3.0       0       1.0         MATH 172       3.0       0       0         Credits Winter Credits Spring Credits Summer Credits         CHEM 111       4.0 BIO 101 or 161       1.0 EDUC 326       3.0 EDUC 210       3.0         EDUC 205       1.0 EDEX 368       3.0 EDUC 336       3.0 EDUC 335       3.0         EDUC 205       1.0 EDEX 368       3.0 EDUC 336       3.0 EDUC 335       3.0         EDUC 205       1.0 EDEX 368       3.0 EDUC 336       3.0 EDUC 336       3.0         EDUC 308       3.0 EDUC 314       3.0 NFS 101       1.0 MTED 417       3.0         EDUC 305       1.0 EDUC	Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EDUC 120       3.0 COM 111       3.0 ENGL 103 or 113 or 113       3.0 or 113 or 113         ENGL 101       3.0 EDUC 107       1.0 MATH 173 or 107 or 107       3.0 or 107         MATH 171       3.0 EDUC 121       3.0 MUSC 130       3.0         UNIV T101       1.0 ENGL 102 or 112       3.0 PSY 101       3.0         MATH 172       3.0       3.0       Image: Component of the temperature of tempera	EDUC 106		1.0			3.0	EDEX 142		3.0	VACATION		
ENGL 101       3.0 EDUC 107       1.0 MATH 173 or 107       3.0 or 107         MATH 171       3.0 EDUC 121       3.0 MUSC 130       3.0         UNIV T101       1.0 ENGL 102 or 112       3.0 PSY 101       3.0         MATH 172       3.0       3.0       3.0         MATH 172       3.0         Spring       Credits       Summer       Credits         Minter       Credits       Spring       Credits       Summer       Credits         AD EDUC 205       1.0 EDUC 306       3.0 EDUC 306       3.0       EDUC 310       3.0 <td>EDUC 101</td> <td></td> <td>3.0</td> <td>CIVC 101<sup>*</sup></td> <td></td> <td>1.0</td> <td>EDUC 108</td> <td></td> <td>1.0</td> <td></td> <td></td> <td></td>	EDUC 101		3.0	CIVC 101 <sup>*</sup>		1.0	EDUC 108		1.0			
MATH 171       3.0 EDUC 121       3.0 MUSC 130       3.0         UNIV T101       1.0 ENGL 102 or 112       3.0 PSY 101       3.0         MATH 172       3.0       Server 112       10         MATH 172       3.0       Server 112       16       0         Second Year       14       Credits       Server 116       10       10         CHEM 111       4.0 BIO 101 or 161       3.0 EDUC 326       3.0 EDUC 300       E0UC 303       3.0 EDUC 310       3.0 EDUC 310 <td>EDUC 120</td> <td></td> <td>3.0</td> <td>COM 111</td> <td></td> <td>3.0</td> <td></td> <td></td> <td>3.0</td> <td></td> <td></td> <td></td>	EDUC 120		3.0	COM 111		3.0			3.0			
UNIV T101 1.0 ENGL 102 or 112 3.0 PSY 101 3.0 MATH 172 3.0 14 17 16 0 Second Year Fall Credits Winter Credits Spring Credits Summer Credits CHEM 111 4.0 BIO 101 or 161 1.0 EDUC 236 3.0 EDUC 210 3.0 EDEX 344 3.0 COOP 101 1.0 EDUC 326 3.0 EDUC 306 3.0 EDUC 205 1.0 EDEX 368 3.0 EDUC 336 3.0 EDUC 312 3.0 EDUC 308 3.0 EDUC 216 3.0 EDUC 336 3.0 EDUC 335 3.0 PSY 330 3.0 EDUC 216 3.0 NFS 100 2.0 HIST 275 3.0 EDUC 316 3.0 NFS 101 1.0 MTED 417 3.0 PSY 320 3.0 14 16 18 18 Third Year Fall Credits Winter Credits Spring Credits Summer Credits COOP COOP EXPENSION EDUC 305 1.0 EDUC 326 3.0 EDUC 305 1.0 EDUC 314 3.0 NFS 101 1.0 MTED 417 3.0 PSY 320 3.0 14 16 18 18 Third Year Fall Credits Winter Credits Spring Credits Summer Credits COOP COOP EXPENSION EDUC 305 1.0 EDUC 324 3.0 EXPERIENCE EXPENSION EDUC 305 1.0 EDUC 328 3.0 (UG) 3.0 MTED 418 3.0 English (Literature) Elective: ENGL 200 - ENGL	ENGL 101		3.0	EDUC 107		1.0			3.0			
or 112         MATH 172         3.0           I         I         I         I6         0           Second Year         Fall         Credits         Winter         Credits         Spring         Credits         Summer         Credits           Fall         Credits         Winter         Credits         Spring         Credits         Summer         Credits           EDEX 344         3.0         COOP 101         1.0         EDUC 326         3.0         EDUC 300         3.0         EDUC 303         3.0         EDUC 336         3.0         EDUC 333         3.0         EDUC 333         3.0         EDUC 336         3.0         EDUC 336         3.0         EDUC 330         3.0 <th< td=""><td>MATH 171</td><td></td><td>3.0</td><td>EDUC 121</td><td></td><td>3.0</td><td>MUSC 130</td><td></td><td>3.0</td><td></td><td></td><td></td></th<>	MATH 171		3.0	EDUC 121		3.0	MUSC 130		3.0			
14         17         16         0           Second Year         Fail         Credits         Winter         Credits         Spring         Credits         Summer         Credits         Credits         Credits         Summer         Sum	UNIV T101					3.0	PSY 101		3.0			
Second Year         Fail         Credits         Winter         Credits         Spring         Credits         Summer         Credits           CHEM 111         4.0 BIO 101 or 161         3.0 EDUC 236         3.0 EDUC 210         3.0 EDUC 236         3.0 EDUC 300         3.0 EDUC 300         3.0         EDUC 302         3.0 EDUC 312         3.0         3.0         EDUC 303         3.0 EDUC 312         3.0         3.0         EDUC 303         3.0 EDUC 313         3.0         EDUC 303         3.0         EDUC 313         2.0         EDUC 313         2.0         EDUC 313         2.0         EDUC 313         2.0         EDUC 314         2.0         EDUC 314         EDUC 314         EDUC 314         EDUC 315         EDUC 315         EDUC 314				MATH 172		3.0						
Fail         Credits         Winter         Credits         Spring         Credits         Summer         Credits           CHEM 111         4.0 BIO 101 or 161         3.0 BIO 101 or 161         3.0 EDUC 236         3.0 EDUC 210         3.0 EDUC 300         3.0           EDEX 344         3.0 COOP 101         1.0 EDUC 326         3.0 EDUC 300         3.0 EDUC 300         3.0         EDUC 303         3.0 EDUC 312         3.0           EDUC 308         3.0 EDUC 216         3.0 EDUC 365         3.0 EDUC 335         3.0         3.0         EDUC 303         3.0         EDUC 336         3.0         EDUC 335         3.0         3.0           PSY 330         3.0 EDUC 314         3.0 NFS 101         1.0 MTED 417         3.0 </th <th></th> <th></th> <th>14</th> <th></th> <th></th> <th>17</th> <th></th> <th></th> <th>16</th> <th></th> <th></th> <th>0</th>			14			17			16			0
CHEM 111       4.0 BIO 101 or 161       3.0 EDUC 236       3.0 EDUC 210       3.0         EDEX 344       3.0 COOP 101       1.0 EDUC 326       3.0 EDUC 306       3.0         EDUC 205       1.0 EDEX 368       3.0 EDUC 336       3.0 EDUC 312       3.0         EDUC 308       3.0 EDUC 216       3.0 EDUC 365       3.0 EDUC 335       3.0         PSY 330       3.0 EDUC 314       3.0 NFS 100       2.0 HIST 275       3.0         PSY 330       3.0 EDUC 314       3.0 NFS 101       1.0 MTED 417       3.0         PSY 320       3.0       EDUC 316       3.0 NFS 101       1.0 MTED 417       3.0         PSY 320       3.0       EDUC 326       3.0       EDUC 326       3.0       EDUC 326       3.0         Fail       Credits       Winter       Credits       Spring       Credits       Summer       Credits         COOP       COOP       ECON 201       4.0 EDLT 325       3.0       3.0         EXPERIENCE       EDUC 305       1.0 EDUC 338       3.0         COOP       EXPERIENCE       EDUC 305       1.0 EDUC 324       3.0         ENGL       U(G)       3.0 MTED 418       3.0         English       (Literature)       Elective:	Second Ye	ar										
161         EDEX 344       3.0 COOP 101       1.0 EDUC 326       3.0 EDUC 306       3.0         EDUC 205       1.0 EDEX 368       3.0 EDUC 336       3.0 EDUC 312       3.0         EDUC 308       3.0 EDUC 216       3.0 EDUC 365       3.0 EDUC 335       3.0         PSY 330       3.0 EDUC 314       3.0 NFS 100       2.0 HIST 275       3.0         PSY 330       3.0 EDUC 316       3.0 NFS 101       1.0 MTED 417       3.0         PSY 320       3.0       14       16       18       18         Third Year         Fall       Credits       Winter       Credits       Spring       Credits       Summer       Credits         COOP       ECON 201       4.0 EDLT 325       3.0         EXPERIENCE       EXPERIENCE       EDUC 305       1.0 EDUC 338       3.0         (UG)       3.0 EDUC 335       3.0         Credits       Summer       Credits       3.0         LEDUC 305       1.0 EDUC 324       3.0         EXPERIENCE       EDUC 305       3.0         (UG)       3.0 EDUC 335       3.0         (UG)       3.0 EDUC 335       3.0	Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EDUC 205       1.0 EDEX 368       3.0 EDUC 336       3.0 EDUC 312       3.0         EDUC 308       3.0 EDUC 216       3.0 EDUC 365       3.0 EDUC 335       3.0         PSY 330       3.0 EDUC 314       3.0 NFS 100       2.0 HIST 275       3.0         PSY 330       3.0 EDUC 314       3.0 NFS 101       1.0 MTED 417       3.0         PSY 320       3.0       14       16       18       18         Third Year       COOP       COOP       ECON 201       4.0 EDLT 325       3.0         COOP       EXPERIENCE       EDUC 305       1.0 EDUC 338       3.0         COOP       COOP       ECON 201       4.0 EDLT 325       3.0         EXPERIENCE       EXPERIENCE       EDUC 305       1.0 EDUC 338       3.0         Image: COOP       COOP       ECON 201       1.0 EDUC 324       3.0         EXPERIENCE       EXPERIENCE       EDUC 305       1.0 EDUC 335       3.0         Image: COOP       Image: COOP       ECON 201       1.0 EDUC 324       3.0         Image: COOP       Image: COOP       ENGL 3.0       Image: COOP       3.0         Image: COOP       Image: COOP       Image: COOP       Image: COOP       Image: COOP       Image: COOP       Image: CO	CHEM 111		4.0			3.0	EDUC 236		3.0	EDUC 210		3.0
EDUC 308       3.0 EDUC 216       3.0 EDUC 365       3.0 EDUC 335       3.0         PSY 330       3.0 EDUC 314       3.0 NFS 100       2.0 HIST 275       3.0         EDUC 316       3.0 NFS 101       1.0 MTED 417       3.0         PSY 320       3.0       14       16       18       18         Third Year       Fall       Credits       Winter       Credits       Spring       Credits       Summer       Credits         COOP       COOP       ECON 201       4.0 EDLT 325       3.0         EXPERIENCE       EXPERIENCE       EDUC 305       1.0 EDUC 338       3.0         (UG)       3.0 EDUC 335       3.0       S.0       Eluc 335       3.0         (UG)       S.0 MTED 418       3.0       English       (Literature)       Elective:       ENGL 200       - ENGL	EDEX 344		3.0	COOP 101 <sup>*</sup>		1.0	EDUC 326		3.0	EDUC 306		3.0
PSY 330       3.0 EDUC 314       3.0 NFS 100       2.0 HIST 275       3.0         EDUC 316       3.0 NFS 101       1.0 MTED 417       3.0         PSY 320       3.0       9830       3.0         14       16       18       18         Third Year       Ccedits       Minter       Credits       Spring       Credits       Summer       Credits         COOP       COOP       ECON 201       4.0 EDLT 325       3.0         EXPERIENCE       EXPERIENCE       EDUC 305       1.0 EDUC 324       3.0         Image: Comparison of the stress of the	EDUC 205		1.0	EDEX 368		3.0	EDUC 336		3.0	EDUC 312		3.0
EDUC 316       3.0 NFS 101       1.0 MTED 417       3.0         PSY 320       3.0       PSY 320       3.0         14       16       18       18         Third Year       Credits       Spring       Credits       Summer       Credits         Fall       Credits       Winter       Credits       Spring       Credits       Summer       Credits         COOP       COOP       ECON 201       4.0 EDLT 325       3.0         EXPERIENCE       EDUC 305       1.0 EDUC 324       3.0         EVENT       EDUC 305       1.0 EDUC 338       3.0         Image: Coope       ESTM 342       3.0 EDUC 335       3.0         Image: Coope       Elective:       English       (Literature)       Elective:         ENGL 200       ENGL 200       ENGL 200       ENGL       English	EDUC 308		3.0	EDUC 216		3.0	EDUC 365		3.0	EDUC 335		3.0
PSY 320       3.0         14       16       18       18         Third Year       Credits       Spring       Credits       Summer       Credits       Credits       Summer       Summer       Credits       Summer       Summer<	PSY 330		3.0	EDUC 314		3.0	NFS 100		2.0	HIST 275		3.0
14         16         18         18           Third Year         Fall         Credits         Winter         Credits         Spring         Credits         Summer         Credits           COOP         COOP         ECON 201         4.0 EDLT 325         3.0           EXPERIENCE         EDUC 305         1.0 EDUC 324         3.0           COOP         ESTM 342         3.0 EDUC 338         3.0           COOP         PHYS 151         3.0 EDUC 355         3.0           COOP         Elective:         ENGL 200         - ENGL         ENGL 200				EDUC 316		3.0	NFS 101		1.0	MTED 417		3.0
FailCreditsWinterCreditsSpringCreditsSummerCreditsCOOPCOOPECON 2014.0 EDLT 3253.0EXPERIENCEEXPERIENCEEDUC 3051.0 EDUC 3243.0EVERTIENCEESTM 3423.0 EDUC 3383.0EVERTIENCEFINS 1513.0 EDUC 3553.0EVERTIENCEESTM 342S.0 MTED 4183.0ENGL 200ENGL 200ENGL 200ENGL							PSY 320		3.0			
FailCreditsWinterCreditsSpringCreditsSummerCreditsCOOPCOOPCOOPECON 2014.0 EDLT 3253.0EXPERIENCEEXPERIENCEEDUC 3051.0 EDUC 3243.0EXPERIENCEESTM 3423.0 EDUC 3383.0EXPERIENCEFIST 3423.0 EDUC 3553.0EXPERIENCEFIST 310BUDC 3553.0EXPERIENCEFIST 310SO MTED 4183.0ENGL 200- ENGLENGL 200- ENGL			14			16			18			18
COOP EXPERIENCE         COOP EXPERIENCE         ECON 201         4.0 EDLT 325         3.0           EXPERIENCE         EDUC 305         1.0 EDUC 324         3.0           ESTM 342         3.0 EDUC 338         3.0           PHYS 151         3.0 EDUC 355         3.0           (UG)         3.0 MTED 418         3.0           English (Literature) Elective: ENGL 200 - ENGL         ENGL 200	Third Year											
EXPERIENCE         EXPERIENCE           EDUC 305         1.0 EDUC 324         3.0           ESTM 342         3.0 EDUC 338         3.0           PHYS 151         3.0 EDUC 355         3.0           (UG)         3.0 MTED 418         3.0           English         (Literature)         Elective:           ENGL 200         - ENGL         -		Credits			Credits		Spring	Credits		Summer	Credits	
ESTM 342 3.0 EDUC 338 3.0 PHYS 151 3.0 EDUC 355 3.0 (UG) 3.0 MTED 418 3.0 English (Literature) Elective: ENGL 200 - ENGL		CE			CE		ECON 201		4.0	EDLT 325		3.0
PHYS 151         3.0 EDUC 355         3.0           (UG)         3.0 MTED 418         3.0           English         (Literature)         Elective:           ENGL 200         - ENGL         -							EDUC 305		1.0	EDUC 324		3.0
(UG) 3.0 MTED 418 3.0 English (Literature) Elective: ENGL 200 - ENGL							ESTM 342		3.0	EDUC 338		3.0
English (Literature) Elective: ENGL 200 - ENGL							PHYS 151		3.0	EDUC 355		3.0
							English (Literature) Elective: ENGL 200 - ENGL		3.0	MTED 418		3.0

						CRTV 501	3.	) CRTV 502		3.0
		0			0		1			18
Fourth Yea	r									
Fall	Credits		Winter	Credits		Spring	Credits	Summer	Credits	5
EDUC 405		1.0	EDUC 410		9.0	ENVS 260	3.	D Student classified as Graduate Student		
EDUC 409		9.0	SOC 335		3.0	(UG) Free electives	10.0	0 CRTV 615		3.0
EDUC 411		3.0	(GR) MS Concentrati Course	on	3.0	CRTV 503	3.1	0 CRTV 650		3.0
								(GR) MS Concentrati Course	c	3.0
		13			15		1	6		9
Fifth Year										
Fall	Credits		Winter	Credits		Spring	Credits			
EDCR 510		3.0	EDCR 514		3.0	CRTV 660	3.	C		
EDU 780		3.0	EDUL 780, EDUT 780, or EDUP 780		3.0	EDUL 781, EDUT 780, or EDUP 780	3.0-4.	5		
(GR) MS Concentration Course	on	3.0	(GR) MS Concentrati Course	on	3.0					

Total Credits 225-226.5

COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with free electives.

# English BA / Law JD

## **Program Requirements**

### General Education Requirements

General Educatio	n 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	3.0
	Evidence-Based Writing	
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
Two Math courses		6.0
Two Science cours		6.0
Studies in Diversity	*	6.0
Foreign Language	•	8.0
Humanities/Fine A		6.0
Social Science ele		12.0
International Studi		6.0
Core English Maj	•	
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
WRIT 225 [WI] Additional ENGL	•	3.0 <b>36.0</b>
	courses	
Additional ENGL Select four of the f	courses	
Additional ENGL Select four of the f	courses ollowing courses:	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201	courses ollowing courses: ] Classical to Medieval Literature	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 ENGL 202 [WI	courses ollowing courses: ] Classical to Medieval Literature Renaissance to the Enlightenment	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 ENGL 202 [WI	courses ollowing courses: ] Classical to Medieval Literature Renaissance to the Enlightenment ] Romanticism to Modernism	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 ENGL 202 [WI ENGL 203 [WI ENGL 204	courses ollowing courses: ] Classical to Medieval Literature Renaissance to the Enlightenment ] Romanticism to Modernism ] Survey of World Literature	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 ENGL 202 [WI ENGL 203 [WI ENGL 204 ENGL 205 [WI	courses ollowing courses: ] Classical to Medieval Literature Renaissance to the Enlightenment ] Romanticism to Modernism ] Survey of World Literature Post-Colonial Literature	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 202 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 206 [WI	courses         ollowing courses:         ] Classical to Medieval Literature         Renaissance to the Enlightenment         ] Romanticism to Modernism         ] Survey of World Literature         Post-Colonial Literature         ] American Literature I	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 202 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 206 [WI	courses         ollowing courses:         ] Classical to Medieval Literature         Renaissance to the Enlightenment         ] Romanticism to Modernism         ] Survey of World Literature         Post-Colonial Literature         ] American Literature I         ] American Literature II	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 ENGL 202 [WI ENGL 203 [WI ENGL 204 ENGL 205 [WI ENGL 206 [WI ENGL 211 [WI ENGL 212	courses         ollowing courses:         ] Classical to Medieval Literature         Renaissance to the Enlightenment         ] Romanticism to Modernism         ] Survey of World Literature         Post-Colonial Literature         ] American Literature I         ] American Literature I         ] British Literature I	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 ENGL 205 [WI ENGL 205 [WI ENGL 211 [WI ENGL 212 Authors and Perior	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Romanticism to Modernism Coursey of World Literature Post-Colonial Literature Post-Colonial Literature American Literature I American Literature II British Literature II British Literature II	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 205 [WI ENGL 205 [WI ENGL 210 [WI ENGL 211 [WI ENGL 212 Authors and Perior ENGL 310 [WI	courses ollowing courses: ] Classical to Medieval Literature Renaissance to the Enlightenment ] Romanticism to Modernism ] Survey of World Literature Post-Colonial Literature Post-Colonial Literature ] American Literature I ] American Literature I ] British Literature II British Literature II British Literature II British Literature II	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 [WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 210 [WI ENGL 212 [ Authors and Perioo ENGL 310 [WI ENGL 320 [WI	courses ollowing courses: 2 Classical to Medieval Literature Renaissance to the Enlightenment 3 Romanticism to Modernism 3 Survey of World Literature Post-Colonial Literature 9 American Literature I 4 American Literature I 9 British Literature II 9 Priod Studies	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 [WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 205 [WI ENGL 210 [WI ENGL 211 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts -	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Romanticism to Modernism Survey of World Literature Post-Colonial Literature Post-Colonial Literature Post-Colonial Literature American Literature I American Literature II British Litera	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 [WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 205 [WI ENGL 210 [WI ENGL 211 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts -	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Survey of World Literature Post-Colonial Literature Post-Colonial Literature Post-Colonial Literature American Literature I American Literature I Pritish Literature I British Literature	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 [WI ENGL 203 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 210 [WI ENGL 211 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI ENGL 323 [WI	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Post-Colonial Literature Post-Colonial Literature American Literature I American Literature I American Literature II British Literatur	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 WI ENGL 203 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 210 [WI ENGL 211 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts - 3 ENGL 300 [WI ENGL 323 ENGL 360 [WI Literary Traditions	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Post-Colonial Literature American Literature I American Literature I American Literature I Stitish Literature I British Lit	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 WI ENGL 203 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 ENGL 205 [WI ENGL 205 [WI ENGL 212 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI ENGL 320 [WI ENGL 323 ENGL 360 [WI	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Pos	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 WI ENGL 203 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 210 [WI ENGL 211 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts - 3 ENGL 300 [WI ENGL 323 ENGL 360 [WI Literary Traditions	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Pos	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 [WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 205 [WI ENGL 212 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts - ENGL 300 [WI ENGL 323 [ENGL 360 [WI Literary Traditions ENGL 330]	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Romanticism to Modernism Construction to Modernism Const	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 WI ENGL 205 [WI ENGL 205 [WI ENGL 206 [WI ENGL 212 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts - 3 ENGL 360 [WI Literary Traditions ENGL 330 ENGL 335 Literary Theory - 3 ENGL 380	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Mythology Credits Literaty Theory	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 WI ENGL 205 [WI ENGL 205 [WI ENGL 206 [WI ENGL 212 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts - 3 ENGL 360 [WI Literary Traditions ENGL 330 ENGL 335 Literary Theory - 3 ENGL 380	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Mythology Credits	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 WI ENGL 205 [WI ENGL 205 [WI ENGL 206 [WI ENGL 212 [WI ENGL 212 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts - 3 ENGL 360 [WI Literary Traditions ENGL 330 ENGL 335 Literary Theory - 3 ENGL 380	Courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Mythology Credits Literaty Theory	
Additional ENGL Select four of the f ENGL 200 [WI ENGL 201 WI ENGL 202 [WI ENGL 203 [WI ENGL 203 [WI ENGL 204 [WI ENGL 205 [WI ENGL 205 [WI ENGL 206 [WI ENGL 212 [WI ENGL 212 [WI ENGL 310 [WI ENGL 310 [WI ENGL 320 [WI Literary Impacts - 3 ENGL 300 [WI ENGL 323 ENGL 300 [WI Literary Traditions ENGL 330 ENGL 335 Literary Theory - 3 ENGL 380 Literature Seminar ENGL 490 ENGL 492	courses ollowing courses: Classical to Medieval Literature Renaissance to the Enlightenment Renaissance to the Enlightenment Survey of World Literature Post-Colonial Literature Post	

Free undergradu	uate electives from any discipline	19.0				
Free electives fulfilled by 22.0 semester credits from first-year law courses (Law School Requirements)						
Law School Requ	uirements ***					
LAW 550S	Torts					
LAW 552S	Contracts					
LAW 554S	Civil Procedure					
LAW 555S	Legislation and Regulation					
LAW 556S	Property					
LAW 558S	Criminal Law					
LAW 560S	Constitutional Law (Law Reqts/Electives)					
LAW 565S	Legal Methods I					
LAW 566S	Legal Methods II					
LAW 830S	Professional Responsibility					
Electives and Me	nu Requirements including:					
One Upper Le	evel Writing Course (WUL). See list below.					
One Statutory	/ Course					
One Professional	Practice Course					
Total Credits		180.0				

- \* 2 consecutive courses, reaching at least 103-level
- \*\* ENGL 301 is a 1-credit course, repeat twice for 3.0 total credits
- \*\*\* A minimum of 61.0 credits must be "in-class" credits. See Student Handbook for definitions.

Students must also complete a minimum of 50 hours of eligible pro bono work, documented with the Law School's Experiential Learning Office.

### Law School Courses

Upper-Level Writing (WUL) Courses (may also be used as electives once requirement is fulfilled):

requirement is fulfi	iled):	
LAW 610S	Reproductive Rights Law	2.0-3.0
LAW 611S	Sex, Gender, & the Law	2.0-3.0
LAW 614S	Supreme Court Seminar	3.0
LAW 647S	The Rights of Children	2.0
LAW 656S	Justice Lawyering Sem	1.0-3.0
LAW 673S	Crime and Community	2.0
LAW 790S	Toxic Torts	2.0-3.0
LAW 791S	Regulating Patient Safety	2.0-3.0
LAW 793S	Mental Health Law	2.0-3.0
LAW 827S	Immigration Litigation	2.0
LAW 828S	International Business Transactions	2.0-3.0
LAW 832S	Contract Theory Seminar	2.0-3.0
LAW 836S	Legal History	2.0-3.0
LAW 838S	Foundations of Legal Analysis	2.0
LAW 840S	Literature and The Law Seminar	2.0-3.0
LAW 842S	Law and Mind Sciences	2.0-3.0
LAW 844S	Law and Social Movements	2.0-3.0
LAW 910S	Appellate Advocacy	2.0
LAW 920S	Drexel Law Review ((if WUL option))	1.0-6.0
LAW T880S	Special Topics in LAW	1.0-5.0
Statutory Courses	(may also be used as electives once requirement is fulfilled):	
LAW 620S	Administrative Law	3.0-4.0
LAW 622S	Employment Discrimination	3.0
LAW 623S	Election Law	3.0-4.0
LAW 624S	Environmental Law	3.0
LAW 674S	Health Care Fraud and Abuse	2.0-3.0
LAW 675S	Federal Criminal Law	2.0-3.0
LAW 676S	White Collar Crime	2.0-3.0
LAW 700S	Business Organizations	3.0-4.0
LAW 701S	Federal Income Tax	3.0-4.0

LAW 702S	Enterprise Tax	3.0-4.0
LAW 706S	Secured Transactions	3.0
LAW 708S	Payment Systems	3.0
LAW 710S	Bankruptcy	3.0-4.0
LAW 711S	Sales	3.0
LAW 714S	Securities Regulation	3.0
LAW 740S	Trusts and Estates	3.0-4.0
LAW 760S	Copyright	3.0
LAW 764S	Trademarks & Unfair Competition	3.0
LAW 792S	Food and Drug Law	2.0-3.0
LAW 796S	Insurance Law	2.0-3.0
LAW 820S	Immigration Law	3.0-4.0
LAW 821S	European Union Law	2.0-3.0
LAW 826S	Refugee and Asylum Law	2.0-3.0
Professional Prac fulfilled):	tice Courses (may also be used as electives once requirement is	
LAW 931S	Law Co-op	5.0-11.0
& LAW 654S	and Lawyering Practice Seminar	
LAW 933S & LAW 654S	Co-op Intensive and Lawyering Practice Seminar	11.0-12.0
LAW 941S & LAW 944S & LAW 656S	Criminal Litigation Clinic I and Civil Litigation Clinic II and Justice Lawyering Sem	11.0-15.0
LAW 943S & LAW 944S & LAW 656S	Civil Litigation Clinic I and Civil Litigation Clinic II and Justice Lawyering Sem	11.0-15.0
LAW 947S & LAW 948S & LAW 656S	Federal Litigation and Appeals Clinic and Federal Litigation and Appeals Clinic II and Justice Lawyering Sem	11.0-15.0
LAW 950S & LAW 951S & LAW 656S	Community Lawyering Clinic I and Community Lawyering Clinic II and Justice Lawyering Sem	11.0-15.0
LAW 924S & LAW 653S	Entrepreneurial Law Clinic and Entrepreneurial Law Clinic Seminar	6.0-7.0
Free Electives (ma	ay require permission to enroll)	
Any other unspeci	fied LAW course numbered 550S and above may count as a JD	

Any other unspecified LAW course numbered 550S and above may count as a JD elective

# Sample Plan of Study

# Undergraduate course credits are quarter credits

First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ENGL 101		3.0	CIVC 101		1.0	ENGL 103		3.0	VACATION		
ENGL 195		3.0	ENGL 102		3.0	ENGL 204		3.0			
UNIV H101		1.0	ENGL 203		3.0	ENGL 301		1.0			
WRIT 195		3.0	WRIT 200		3.0	WRIT 225		3.0			
Language course			Language course		4.0	Math course		3.0			
Undergradu elective	1		Undergradu elective	l	3.0	Undergradu elective	l	3.0			
		17			17			16			0
Second Ye	ar	17			17			16			0
Second Ye Fall	ar Credits		Winter	Credits		Spring	Credits		Summer	Credits	0
	Credits		Winter ENGL 212	Credits		Spring ENGL 301	Credits		Summer VACATION	Credits	0
Fall	Credits	3.0		Credits	3.0		Credits			Credits	0
Fall ENGL 211	Credits	3.0 3.0	ENGL 212	Credits	3.0 1.0	ENGL 301	Credits	1.0		Credits	0

Undergraduate elective	e 4.0	Social Science elective		3.0	Science elective		3.0			
		Undergradu elective	l	3.0	Undergradu elective		3.0			
	16	i		16			16			0
Third Year										
Fall C	redits	Winter	Credits		Spring	Credits		Summer	Credits	
ENGL 335	3.0	ENGL 360		3.0	ENGL 315		3.0	Student transitions to First Year of Law School		
ENGL 490	3.0	ENGL 380		3.0	Science elective		3.0			
UNIV H201	1.0	ENGL 492		3.0	Social Science elective		3.0			
ENGL or WRIT Elective - 1 of 2	3.0	ENGL 495		3.0	Humanities elective		3.0			
Diversity Elective	3.0	ENGL or WRIT Elective - 2 of 2		3.0	Internationa Studies elective	I	3.0			
Internationa Studies Elective	3.0	Humanities elective		3.0						
	16			18			15			0

Total Credits 147

# Law School course credits are semester credits

First Year Law course credits (22 semester credits) are counted toward the English BA.

### Fourth Year

Fall	Credits		Spring	Credits	
LAW 550S (Counts toward UG free elective)		4.0	LAW 555S (Counts toward UG free elective)		3.0
LAW 552S (Counts toward UG free elective)		4.0	LAW 556S (Counts toward UG free elective)		4.0
LAW 554S (Counts toward UG free elective)		4.0	LAW 558S		4.0
LAW 565S (Counts toward UG free elective)		3.0	LAW 566S		3.0
		15			14
Fifth Year					
Fall	Credits		Spring	Credits	
LAW 560S		4.0	LAW 830S		2.0
LAW Requirements/Electives		10.0	Law Requirements Electives	i)	12.0
		14			14
Sixth Year					
Fall	Credits		Spring	Credits	
Law Requirements/Electives		14.0	Law Requirements Electives	;/	14.0
		14			14

**Total Credits 85** 

# English BA / Strategic & **Digital Communication** MŠ

# **Program 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 cour	ses	6.0
Science courses		6.0
Social and Behav	ioral Science courses	12.0
Humanities course	es (other than ENGL or WRIT)	6.0
Studies in Diversit	ty courses	6.0
International Stud	ies courses	6.0
Language require	ment (2 consecutive courses, reaching at least 103)	8.0
Core Courses, R	equired 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 Studi	es Concentration (36 credits)	
Literature Surveys	s - Select 4 for a minimum of 12 credits	
ENGL 200 [W	I] Classical to Medieval Literature	
ENGL 201	Renaissance to the Enlightenment	
ENGL 202 [W	I] Romanticism to Modernism	
ENGL 203 [W	I] Survey of World Literature	
ENGL 204	Post-Colonial Literature	
ENGL 205 [W	I] American Literature I	
ENGL 206 [W	I] American Literature II	
ENGL 211 [W	I] British Literature I	
ENGL 212		
Authors and Peric	ods - Select 1 for a minimum of 3 credits	
ENGL 310 [W	I] Period Studies	
or ENGL 3	- 32Major Authors	
	Select 1 for a minimum of 3 credits	
ENGL 300 [W	I] Literature & Science	
-	321 iterature and Other Arts	
or ENGL 3	36@iterature and Society	
	s - Select one for a minimum of 3 credits	
ENGL 330	The Bible as Literature	
	33\$/ythology	
Literary Theory - 3		

	Literary Theory	
	s - Take both for a minimum of 6 credits	
ENGL 490	Seminar in English and American Literature	
ENGL 492	Seminar in World Literature	
	minimum of 6 credits	
credits	ditional 2 courses (300+) in ENGL or WRIT for a minimum of 6	
B) Writing Concer		
	ct 1 for a minimum of 3 credits	
	The Peer Reader in Context	
	1Advanced Composition	
	nique - Select 1 for a minimum of 3 credits	
WRIT 212	Argument and Rhetoric	
	Forms Seminar	
	ss - Select 1 for a minimum of 3 credits	
	Writing for Target Audiences	
	5Writing for Social Change	
5 must be WRIT or		
COM 160	Introduction to Journalism	
	Business Communication	
	Technical Communication	
COM 375 [WI]		
ENGL 312	Research Project Development	
SCRP 220	Playwriting I	
SCRP 270 [WI]	Screenwriting I	
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 ad credits	ditional 2 courses (300+) in WRIT or ENGL for a minimum of 6	
ELECTIVES		52.0-54.0
MS Strategic & Di	gital Communication Requirements	
Required Core Co	urses	
COM 500	Reading & Research in Communication	3.0
COM 574	Organizational Communication in Project Management	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 613	Ethics for Professional Communication	3.0
COM 615	Media Environments in a Digital World	3.0
COM 651	Media and Communication Policy in a Digitized World	3.0
COM 698	Managing Communication Professional Identities in a Digital Age	3.0

Total Credits		226.0-228.0
Graduate Elect	ives **	12.0
COM T680	Special Topics in Communication	
COM T580	Special Topics in Communication	
COM 1699	Independent Study in COM	
COM 1599	Independent Study in COM	
COM 673	Medical Journalism	
COM 670	Medical Writing	
COM 660	Investigative Journalism	
COM 614	Social Media Concepts that Matter	
COM 600	Graduate Seminar in Communication	
COM 586	Strategic International Communication	
COM 578	Focus Groups	
COM 577	Communication for Civic Engagement	
COM 576	Nonprofit Communications	
COM 575	Grant Writing	
COM 570	Technical, Science and Health Editing	
COM 563	Event Planning	
COM 562	International Negotiations	
COM 561	Fundamentals of Journalism & Newswriting	
COM 551	Creative Content Production	
COM 544	Media Relations in a Digital Age	
COM 543	Public Relations Planning	
COM 542	Public Relations Writing	
COM 541	Foundations of Public Relations	
COM 536	Strategic Social Media Communication	
COM 535	Digital Publishing	
COM 523	Modern Desktop Publishing	
COM 525	Document Design and Usability	
COM 518	Communicating Health and Risk in a 'Fake News' World Science Writing	
COM 518	Campaigns for Health and Environment	
COM 516	0	

\* One credit course taken three times for a total of 3.0 credits.

\*\* Students can select up to 12.0 credits of graduate-level electives (500-799) in the following subject areas (AADM, AAML, ACCT, BUSN, CCM, CHP, COM, CRTV, CW, DIGM, ECON, EDAM, EDHE, EDLT, EDUC, ENTP, ENVP, ENVS, EOH, HMP, HRM, LING, MGMT, MGMT, MKTG, MUSL, NPM, ORGB, PBHL, PLCY, PROJ, PRST, RMER, SCRP, SCTS, SMT, TVMN). Other graduate courses outside these areas might be taken pending approval from the graduate advisor or program director.

# Sample Plan of Study Literary Studies 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 <sup>*</sup>		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	

ENGL 301       1.0 (UG) Literature Survey       3.0 ENGL 301       1.0 ENGL 325         WRIT 225       3.0 (UG) Authors & Periods       3.0 ENGL 315       3.0 (UG) Literature Survey       3.0 (UG)         (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)         Science       Diversity       Literature Survey       Literature Survey       Literature Literature         (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)         Science       1nternationa       Diversity       Electives       Elective         (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)         Studies       Studies       Studies       Elective       Elective         (UG)       3.0 (UG)       3.0 (UG) Free Elective       3.0       Science       Science       Science       Science       Science       Science       Science       COOP Elective       COOP EXPERIENCE       Science       COOP EXPERIENCE       COOP EXPERIENCE       Science												
LUG) Math Elective         3.0 (UG) Social/ Social/ Social/ Social/ Social/ Social/ Social/ Social/ Social/ Social/ Elective         3.0 (UG) Social/ Social/ Social/ Elective         3.0 (UG) Social/ Social/ Elective         3.0 (UG) Social/ Social/ Elective         3.0 (UG) Social/ Social/ Elective         3.0 (UG) Social/ Social/ Elective         3.0 (UG) Social/ Elective         3.0 (UG) Social/ Elective         3.0 (UG) Social/ Elective         3.0 (UG) Image display         3.0 (UG) 	Foreign Language		4.0	Foreign Language Course (level		4.0	WRIT 195		3.0			
Social/ Behavioral ElectiveSocial/ Behavioral ElectiveScience ElectiveScience ElectiveScience ElectiveIterative Science ElectiveIterative Science Science ElectiveScience 			3.0	(UG) Math		3.0	Social/ Behavioral Science		3.0			
Second Year         Fail         Credits         Winter         Credits         Spring         Credits         Summer         Fordits           ENGL 301         1.0         (UG) Literature Survey         1.0         (UG) Authors & Periods         3.0         ENGL 301         1.0         ENGL 302         1.0         ENGL 302           (UG)         3.0         (UG)         3.0         (UG)         3.0         (UG)         3.0         (UG)         3.0         UG)         1.0         Elective         Elective         Elective         Survey         Survey <t< td=""><td>Social/ Behavioral Science</td><td></td><td>3.0</td><td>Social/ Behavioral Science</td><td></td><td>3.0</td><td>Science</td><td></td><td>3.0</td><td></td><td></td><td></td></t<>	Social/ Behavioral Science		3.0	Social/ Behavioral Science		3.0	Science		3.0			
Fail         Credits         Vinter         Credits         Spring         Credits         Summer         Credits           ENGL 301         1.0         (UG) Literature Survey         3.0         ENGL 301         1.0         ENGL 301			17			17			16			0
ENGL 301       1.0 (UG) Literature Survey       3.0 ENGL 301       1.0 ENGL 325         WRIT 225       3.0 (UG) Authors & Periods       3.0 ENGL 315       3.0 (UG) Literature Survey       3.0 (UG) Literature Survey       3.0 (UG)         Science       3.0 (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)         Science       Diversity       Survey       International International       Diversity       Survey         Studies       St												
WRIT 225       3.0 (UG) Authors & Authors & Periods       3.0 ENGL 315       3.0 (UG) Literature Survey       3.0 (UG) Literature Survey       3.0 (UG) Literature Survey       3.0 (UG) Literature Survey       3.0 (UG) Literature Survey       3.0 (UG) Literature Survey       3.0 (UG) Literature       3.0 (UG) Literature       3.0 (UG) Literature Survey       3.0 (UG) Literature       3.0 (UG) 		Credits			Credits			Credits			Credits	
Authors &       Literature       Survey         (UG)       3.0       (UG)       3.0       (UG)       1.0       (UG)         Science       Diversity       Literature       Literature       Literature       Literature         Elective       Studies       Survey       Impacts       Impacts </td <td>ENGL 301</td> <td></td> <td>1.0</td> <td>Literature</td> <td></td> <td>3.0</td> <td>ENGL 301</td> <td></td> <td>1.0</td> <td>ENGL 325</td> <td></td> <td>3.0</td>	ENGL 301		1.0	Literature		3.0	ENGL 301		1.0	ENGL 325		3.0
Science       Diversity       Literature       Literature       Literature       Studies       Survey       Impacts         (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)       Elective       Elective       Elective       Elective       Elective       Elective       Elective       Elective       Elective       Studies       Studies <t< td=""><td>WRIT 225</td><td></td><td></td><td>Authors &amp;</td><td></td><td>3.0</td><td>ENGL 315</td><td></td><td></td><td>Literature</td><td></td><td>3.0</td></t<>	WRIT 225			Authors &		3.0	ENGL 315			Literature		3.0
Literature       Internationa       Diversity       Electives         Survey       Studies       Studies       Studies       Studies       Studies       Elective         (UG)       3.0 (UG)       3.0 (UG)       3.0 (UG)       3.0       International       Studies	Science		3.0	Diversity		3.0	Literature			Literary		3.0
International Studies       Humanities       Humanities       Humanities         Studies       Elective       Elective       Elective         (UG)       3.0        (UG) Free       3.0         Social/       Behavioral       Science       Science       Science         Elective       Iterative       Elective       Science       Science         Elective       Iterative       Elective       Science       Science         Elective       Iterative       Science       Science       Science         Elective       Iterative       Science       Science       Science       Science         Elective       Iterative       Science	Literature		3.0	Internationa Studies		3.0	Diversity		3.0			6.0
Social/ Behavioral Science Elective       Image: Selective       Elective         Image: Science Elective       Image: Selective       Image: Selective       Image: Selective         Fall       Credits       Winter       Credits       Spring       Credits       Summer       Credits         Fall       Credits       Winter       Credits       Spring       Credits       Summer       Credits         ENGL 301       1.0 (UG) Free Electives       13.0 COOP	Internationa Studies			Humanities		3.0	Humanities		3.0			
I6         15         16           Third Year         Fall         Credits         Winter         Credits         Spring         Credits         Summer         Credits           ENGL 301         1.0 (UG) Free Electives         13.0 COOP         COO	Social/ Behavioral Science		3.0						3.0			
Fail         Credits         Winter         Credits         Spring         Credits         Summer         Credits           ENGL 301         1.0 (UG) Free Electives         13.0 COOP         COOP         COOP         COOP         EXPERIENCE         EXPERIENCE         EXPERIENCE         EXPERIENCE         EXPERIENCE         COM 574         EXPERIENCE         E			16			15			16			15
ENGL 301       1.0 (UG) Free Electives       13.0 COP EXPERIENCE       COOP EXPERIENCE         ENGL 380       3.0 COM 610       3.0       COM 574         (UG) Free Electives       9.0       COM 574       COM 574         COM 500       3.0       Com 574       COM 574         Fourth Year         Fall       Credits       Spring       Credits       Summer       Credits as Graduate         ENGL 490       3.0 ENGL 355       3.0 ENGL 495       3.0 Student classified as Graduate       Classified as Graduate       Classified as Graduate         UNIV H201       1.0 ENGL 492       3.0 (UG) Free Electives       9.0 Electives       9.0 Electives         (UG)       3.0 (UG)       3.0 COM 615       3.0       Credits	Third Year											
ENGL 380       3.0 COM 610       3.0       COM 574         (UG) Free       9.0         Electives       3.0         COM 500       3.0         IG       IG       0         Fourth Year         Fall       Credits       Spring       Credits       Summer       Credits         ENGL 490       3.0 ENGL 355       3.0 ENGL 495       3.0 Student classified as Graduate       Classified as Graduate         UNIV H201       1.0 ENGL 492       3.0 (UG) Free Electives       9.0       9.0         (UG)       3.0 (UG)       3.0 COM 615       3.0		Credits	1.0	(UG) Free		3.0	COOP			COOP	Credits	
COG Store       9.0         Electives       3.0         COM 500       3.0         Fourth Year       16       16       0         Fourth Year       Spring       Credits       Summer       Credits         FAIL       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)       3.0       COM 615       3.0	ENGL 380							OL			UL	3.0
COM 500         3.0         I         O           Fourth Year         Fall         Credits         Minter         Credits         Spring         Credits         Summer         Credits           ENGL 490         3.0         ENGL 355         3.0         ENGL 495         3.0         Student classified as Graduate         Credits         Graduate         Credits         Student classified as Graduate         Student classified as	(UG) Free											
I6     I6     O       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     3.0 Student classified as Graduate     Credits     Student classified as Graduate     Student classified as Graduate <td></td> <td></td> <td>3.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			3.0									
Fail     Credits     Winter     Credits     Spring     Credits     Summer     Credits       ENGL 490     3.0 ENGL 355     3.0 ENGL 495     So						16			0			3
ENGL 4903.0 ENGL 3553.0 ENGL 4953.0 Student classified as GraduateUNIV H2011.0 ENGL 4923.0 (UG) Free Electives9.0(UG)3.0 (UG)3.0 COM 6153.0	Fourth Yea	r										
UNIV H201 1.0 ENGL 492 3.0 (UG) Free 9.0 Electives (UG) 3.0 (UG) 3.0 COM 615 3.0					Credits			Credits		Student classified as	Credits	
	UNIV H201		1.0	ENGL 492		3.0			9.0			
Traditions Elective (ENGL or WRIT)	Literary		3.0	English Elective (ENGL or		3.0	COM 615		3.0			
(UG)     3.0 (UG) Free     6.0 (GR) SDC     3.0       English     Electives     Program       Elective     Elective	(LIG)		3.0			6.0	(GR) SDC		3.0			

(UG) 3.0

(UG) Free Electives	6.0 COM 651	3.0 Student graduates with BA degree		
COM 613	3.0			
	19	18	18	0
Fifth Year				
Fall	Credits Winter	Credits Spring	Credits	
(GR) SDC Program Electives	6.0 (GR) SDC Program Elective	3.0 COM 698	3.0	
(GR) Graduate Elective	3.0 (GR) Graduate Electives	6.0 (GR) Graduate Electives	3.0	
	9	9	6	

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.

## 5 Year, 3 Co-Op

### First Year

Fall ENGL 101 or 111	Credits		Winter CIVC 101	Credits		Spring COOP 101 <sup>*</sup>	Credits		Summer VACATION	Credits	
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			
						LIECTIVE					
Second Ye	ar	17			17			19			0
Second Ye Fall	ar Credits		Winter	Credits			Credits		Summer	Credits	
	Credits		Winter COOP EXPERIEN				Credits		Summer (UG) Literature Survey	Credits	
Fall COOP	Credits		COOP			Spring	Credits	1.0	(UG) Literature	Credits	
Fall COOP	Credits		COOP			Spring ENGL 301	Credits	1.0	(UG) Literature Survey (UG) Diversity		3.0
Fall COOP	Credits		COOP			Spring ENGL 301 WRIT 225 (UG) Science	Credits	1.0 3.0 3.0	(UG) Literature Survey (UG) Diversity Studies (UG) Internationa Studies		3.0 3.0

				(UG) Social/ Behavioral Sciences	,	3.0		
				(UG) Free Elective	:	3.0		
		0		0		19		18
Third Year	Cradita	Minter	Credito	Carina	Credite		C	Cradita
Fall COOP	Credits	Winter COOP	Credits	Spring ENGL 301	Credits		Summer ENGL 325	Credits 3.0
EXPERIEN	CE	EXPERIEN	ICE	(2nd of 3)		1.0 1	LINGE 525	5.0
		COM 610	3.	0 ENGL 315	;	l	(UG) Literature Survey	3.0
				(UG) Literature Survey	:		(UG) Free Electives	7.0
				(UG) Authors and Periods	:	3.0 (	COM 574	3.0
				(UG) Diversity Studies	:	3.0		
				(UG) Humanities Elective	:	3.0		
_				(GR) SDC Program Elective	:	3.0		
		0		3		19		16
Fourth Yea		14/1	Oracilita	Oraciana	0		<b>.</b>	One dista
Fall COOP EXPERIEN	Credits CE	Winter COOP EXPERIEN	Credits	Spring ENGL 301	Credits	1.0 (	Summer (UG) Free Electives	Credits 12.0
COM 615	3.	0 (GR)	3	0 ENGL 355		3.0 0	COM 651	3.0
	-	Graduate Elective	0.					010
		Graduate		(UG) Literary Impacts		3.0 ( I	(GR) SDC Program Elective	3.0
		Graduate		(UG) Literary	;	3.0 ( I	Program	
		Graduate		(UG) Literary Impacts (UG) Literary Traditions (UG) Free Elective	:	3.0 ( I	Program	
		Graduate		(UG) Literary Impacts (UG) Literary Traditions (UG) Free Elective COM 613	:	3.0 ( F 3.0 3.0 3.0	Program	
		Graduate Elective		(UG) Literary Impacts (UG) Literary Traditions (UG) Free Elective COM 613 (GR) SDC Program Elective	:	3.0 ( F 3.0 3.0 3.0 3.0 3.0	Program	3.0
Eiffb Voor		Graduate		(UG) Literary Impacts (UG) Literary Traditions (UG) Free Elective COM 613 (GR) SDC Program	:	3.0 ( F 3.0 3.0 3.0	Program	
Fifth Year Fall		Graduate Elective		(UG) Literary Impacts (UG) Literary Traditions (UG) Free Elective COM 613 (GR) SDC Program Elective	:	3.0 ( F 3.0 3.0 3.0 3.0 3.0	Program	3.0
	Credits	Graduate Elective	Credits	(UG) Literary Impacts (UG) Literary Traditions (UG) Free Elective COM 613 (GR) SDC Program Elective	Credits	3.0 ( F 3.0 3.0 3.0 3.0 3.0	Program	3.0
Fall	Credits 3.	Graduate Elective	Credits 3.	(UG) Literary Impacts (UG) Literary Traditions (UG) Free Elective COM 613 (GR) SDC Program Elective Spring	Credits	3.0 ( 1 3.0 3.0 3.0 3.0 <b>19</b>	Program	3.0
Fall ENGL 380	Credits 3. 3.	Graduate Elective	Credits 3. 3.	UG) Literary Impacts (UG) Literary Traditions Elective COM 613 (GR) SDC Program Elective Spring 0 ENGL 495 0 (UG) Free	Credits	3.0 ( F 3.0 3.0 3.0 <b>19</b> 3.0	Program	3.0
Fall ENGL 380 ENGL 490	Credits 3. 3. 1.	Graduate Elective Winter 0 ENGL 492 0 (UG) English Elective (ENGL or WRIT) 0 (UG) Free	Credits 3. 3. 6.	(UG) Literary Impacts (UG) Literary Traditions Elective COM 613 (GR) SDC Program Elective <b>Spring</b> 0 ENGL 495 0 (UG) Free Electives	Credits	3.0 ( 1 3.0 3.0 3.0 3.0 <b>19</b> 3.0 9.0	Program	3.0

Total Credits	226			
	19	18	18	
Graduate Elective				
(GR)	3.0			
COM 500	3.0			

\* 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 Concentration

## 4 Year, 1 Co-Op

Behavioral Science Elective

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First Year										
	Credits	Winter			Spring	Credits			Credits	
ENGL 101 or 111	3	.0 CIVC 1	101	1.0	COOP 101		1.0	VACATION		
ENGL 195	3	0 ENGL or 112	102	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 Langua Course (level 103+)	age	4.0	WRIT 195		3.0			
(UG) Math Elective	3	.0 (UG) M Electiv		3.0	(UG) Social/ Behavioral Science Elective		3.0			
(UG) Social/ Behavioral Science Elective	3	0 (UG) Social/ Behavi Scienc Elective	ioral e	3.0	(UG) Science Elective		3.0			
	1	7		4-			16			0
		'		17						
Second Yea	ar									
Fall	ar Credits	Winter		ts	Spring	Credits		Summer	Credits	
Fall ENGL 301	ar Credits			ts	Spring ENGL 301			Summer ENGL 325		3.0
Fall	ar Credits 1	Winter	212 I re	<b>ts</b> 3.0			1.0 3.0			
Fall ENGL 301 WRIT 210	ar Credits 1 3	Winter 0 WRIT 2 or 295 0 (UG) Writing Practic Course	212 9 9 9 9 9 9 1 1 1	<b>ts</b> 3.0 3.0	ENGL 301		1.0 3.0 3.0	ENGL 325 (UG) Writing Practice Course (3		3.0
Fall ENGL 301 WRIT 210 or 211	ar Credits 1 3 3	Winter 0 WRIT 2 or 295 0 (UG) Writing Practic Course of 7) 0 (UG) Diversi	212 9 ee e (1 ity s ttiona s	ts 3.0 3.0 3.0	ENGL 301 ENGL 315 (UG) Writing Practice Course (2		1.0 3.0 3.0	ENGL 325 (UG) Writing Practice Course (3 of 7) (UG) Writing Practice Course (4		3.0
Fall ENGL 301 WRIT 210 or 211 WRIT 225 (UG) Science	ar Credits 1 3 3 3 3 3	Winter 0 WRIT 2 or 295 0 (UG) Writing Practic Course of 7) 0 (UG) Diversi Studies 0 (UG) Interna Studies	212 ee e (1 ty s tiona s e hities	ts 3.0 3.0 3.0 3.0	ENGL 301 ENGL 315 (UG) Writing Practice Course (2 of 7) (UG) Diversity		1.0 3.0 3.0	ENGL 325 (UG) Writing Practice Course (3 of 7) (UG) Writing Practice Course (4 of 7) (UG) Free		3.0 3.0 3.0

15

16

15

Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ENGL 301		1.0	(UG) Free Electives		13.0	COOP EXPERIEN	CE		COOP EXPERIEN	NCE	
ENGL 380		3.0	COM 610		3.0				COM 574		3.0
(UG) Free Electives		9.0									
COM 500		3.0									
		16			16			0			3
Fourth Yea	r										
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	COM 615		3.0			
(UG) English Elective		3.0	(UG) Free Electives		6.0	(GR) SDC Program Elective		3.0			
(UG) Free Electives		6.0	COM 651		3.0	Student graduates with BA degree					
COM 613		3.0									
		19			18			18			0
Fifth Year											
Fall	Credits		Winter	Credits		Spring	Credits				
(GR) SDC Program Electives		6.0	(GR) SDC Program Elective		3.0	COM 698		3.0			
(GR) Graduate Elective		3.0	(GR) Graduate Electives		6.0	(GR) Graduate Electives		3.0			
		9			9			6			

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.

### 5 year, 3 co-op

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ENGL 101 or 111	3	8.0 CIVC 101		1.0 COOP 101	1.0	VACATION	
ENGL 195	3	3.0 ENGL 102 or 112		3.0 ENGL 103 or 113	3.0	I	
UNIV H101	1	.0 WRIT 200		3.0 ENGL 207	3.0	)	
(UG) Foreign Language Course	4	I.0 (UG) Foreign Language Course (level 103+ or higher)		4.0 WRIT 195	3.0		
(UG) Math Elective	3	8.0 (UG) Math Elective		3.0 (UG) Social/ Behavioral Science	3.0		

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(UG) Social/ Behavioral	3.0 (UG) Social/ Behavioral	3.0 (UG) Science Elective	3.0						(UG) Literary Traditions	3.0	
Sciences Elective	Science Elective	LIEGUVE							(UG) Free Elective	3.0	
		(UG) Free	3.0						COM 613	3.0	
	17	Elective 17	19	0					(GR) SDC	3.0	
Second Year	17		15	Ū					Program Elective		
all Credits	Winter	Credits Spring	Credits Summer	Credits		3			3	19	
OOP XPERIENCE	COOP EXPERIENC	ENGL 301	1.0 (UG) Literature Survey	3.0	Fifth Year Fall		Winter	Credits	Spring	Credits	
		WRIT 225	3.0 (UG) Diversity Studies	3.0	ENGL 380 ENGL 490	3.0 ( E	ENGL 492 UG) English Elective		3.0 ENGL 495 3.0 (UG) Free Electives	3.0 9.0	
		(UG) Science Elective	3.0 (UG) Internation Studies	3.0 al	UNIV H201	(	ENGL or WRIT) UG) Free		C 0 COM 600	2.0	
		(10)	Elective	0.0	UNIV H201		Electives		6.0 COM 698	3.0	
		(UG) Literature Survey	3.0 (UG) Humanitie: Elective		(UG) English Elective	F	GR) SDC Program Elective	:	3.0 (GR) Graduate Elective	3.0	
		(UG) Internation Studies	3.0 (UG) Free al Electives	6.0	(ENGL or WRIT) (UG) Free	3.0 (	GR)		3.0		
		Elective (UG)	3.0		Elective	(	Graduate Elective		3.0		
		Social/ Behavioral			COM 500	3.0					
		Sciences (UG) Free	3.0		(GR) Graduate Elective	3.0					
		Elective			Liective	19			18	18	
hird Year	0	0	19	18	Total Credi	ts 226					
all Credits	Winter	Credits Spring	Credits Summer								
COOP		oround oping		Credits	* 000	P 101 regi	stration	is deter	mined by t	ne co-op cycle	assigned
	COOP EXPERIENC	ENGL 301	1.0 ENGL 325	3.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	ne co-op cycle Select student	-
	COOP	ENGL 301			and r	ny be sche	eduled ir	n a diffe		Select student	-
	COOP EXPERIENC	ENGL 301	1.0 ENGL 325 3.0 (UG) Literature	3.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
	COOP EXPERIENC	ENGL 301 2E 3.0 ENGL 315 (UG) Literature Survey (UG) Authors and	1.0 ENGL 325 3.0 (UG) Literature Survey 3.0 (UG) Free	3.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
	COOP EXPERIENC	ENGL 301 2E 3.0 ENGL 315 (UG) Literature Survey (UG) Authors	1.0 ENGL 325 3.0 (UG) Literature Survey 3.0 (UG) Free Electives	3.0 3.0 7.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
	COOP EXPERIENC	ENGL 301 ENGL 301 3.0 ENGL 315 (UG) Literature Survey (UG) Authors and Periods (UG) Diversity	1.0 ENGL 325         3.0 (UG)         Literature         Survey         3.0 (UG) Free         Electives         3.0 COM 574         3.0         3.0         3.0	3.0 3.0 7.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
EXPERIENCE	COOP EXPERIENC	ENGL 301 ENGL 301 3.0 ENGL 315 (UG) Literature Survey (UG) Authors and Periods (UG) Diversity Studies Elective (GR) SDC Program	1.0 ENGL 325         3.0 (UG)         Literature         Survey         3.0 (UG) Free         Electives         3.0 COM 574         3.0         3.0         3.0	3.0 3.0 7.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
	COOP EXPERIENC	ENGL 301 ENGL 301 3.0 ENGL 315 (UG) Literature Survey (UG) Authors and Periods (UG) Diversity Studies (UG) Humanities Elective (GR) SDC	1.0 ENGL 325         3.0 (UG)         Literature         Survey         3.0 (UG) Free         Electives         3.0 COM 574         3.0         3.0	3.0 3.0 7.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
EXPERIENCE	COOP EXPERIENC COM 610	ENGL 301 ENGL 301 3.0 ENGL 315 (UG) Literature Survey (UG) Authors and Periods (UG) Diversity Studies Elective (GR) SDC Program Elective	1.0 ENGL 325         3.0 (UG)         Literature         Survey         3.0 (UG) Free         Electives         3.0 COM 574         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0	3.0 3.0 7.0 3.0	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
EXPERIENCE	COOP EXPERIENC COM 610	ENGL 301 ENGL 301 CUG) Literature Survey (UG) Authors and Periods (UG) Diversity Studies (UG) UG) Diversity Studies Elective (GR) SDC Program Elective Spring ENGL 301	1.0 ENGL 325         3.0 (UG)         Literature         Survey         3.0 (UG) Free         Electives         3.0 COM 574         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         1.10	3.0 3.0 7.0 3.0 4 4 4 5 6 7 6 7 6	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
EXPERIENCE	COOP EXPERIENC COM 610	ENGL 301 ENGL 301 CUG) Literature Survey (UG) Authors and Periods (UG) Diversity Studies (UG) UG) Diversity Studies Elective (GR) SDC Program Elective Spring ENGL 301	1.0 ENGL 325         3.0 (UG)         Literature         Survey         3.0 (UG) Free         Electives         3.0 COM 574         3.0         3.0         3.0         3.0         3.0         3.0         3.0         2.0         1.0         2.0         1.0         1.0         1.0 (UG) Free	3.0 3.0 7.0 3.0 4 4 4 5 6 7 6 7 6	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-
EXPERIENCE	COOP EXPERIENC COM 610	ENGL 301 ENGL 301 CIUCS CIUCS ENGL 315 (UG) Literature Survey (UG) Authors and Periods (UG) Diversity Studies (UG) Humanities Elective (GR) SDC Program Elective Strong ENGL 301 ENGL 301	1.0 ENGL 325         3.0 (UG)         3.0 (UG) Free         Survey         3.0 (UG) Free         B.0 COM 574         3.0 COM 574         1.0 (UG) Free         1.0 (UG) Free         Electives	<ul> <li>3.0</li> <li>3.0</li> <li>7.0</li> <li>3.0</li> <li>3.0</li> <li>4.0</li> <li>4.0</li> <li>4.0</li> <li>4.0</li> <li>3.0</li> <li>3.0</li> </ul>	and r	ny be sche	eduled ir	n a diffe	rent term. S	Select student	-

Literary

Impacts

Program

Elective

Econoticle of Einspecial Departing

# **Entertainment Arts** Management BS / **Business Administration MBA**

### Program Requirements

#### **General Education Requirements** Written Analysis and Communication 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 3.0 Evidence-Based Writing or ENGL 112 English Composition II **ENGL 103** Composition and Rhetoric III: Themes and Genres 3.0 or ENGL 113 English Composition III Mathematics and Natural Sciences Requirements 40 **MATH 101** Introduction to Analysis I MATH 102 Introduction to Analysis II 4.0 **PHYS 170** Electricity and Motion 3.0 **PHYS 171** Computational Lab for Electricity and Motion 1.0 **PHYS 175** Light and Sound 3.0 Computational Lab for Light and Sound **PHYS 176** 1.0 Arts/Humanities Requirements COM 230 Techniques of Speaking 3.0 Required Arts and Humanities-students elect a minimum of 6 credits 6.0 Social Science Requirements Required Social Science-students elect a minimum of 9.0 credits 9.0 **University Seminar Requirements** 1.0 CIVC 101 Introduction to Civic Engagement COOP 101 Career Management and Professional Development 1.0 UNIV A101 The Drexel Experience 2.0 Free electives (39 credits total; 3 of which are satisfied by GR Free Electives) 36.0 Entertainment and Arts Management Core Requirements Accounting for Professionals ACCT 110 4.0 BI AW 201 Business Law L 40 EAM 130 Overview of Entertainment and Arts Management 3.0 EAM 200 Introduction to the Music Industry 3.0 EAM 211 Strategic Management for Entertainment and Arts Management 3.0 3.0 EAM 220 Law for Entertainment and Arts Management Managers EAM 221 Copyrights and Trademarks 3.0 3.0 **FAM 225** Financial Management for Entertainment & Arts Managers EAM 308 Entertainment Promotion and Branding 3.0 EAM 310 Social Media in Entertainment 3.0 EAM 315 Content Strategies for Digital Products 3.0 3.0 EAM 340 Artist Representation and Management 3.0 EAM 420 Arts, Culture and Society 3.0 **FAM 422** Human Resources in the Creative Industries EAM 491 Entertainment and Arts Management Senior Project 3.0 **ECON 201** Principles of Microeconomics 4.0 **ECON 202** Principles of Macroeconomics 4.0 **MIS 200** Management Information Systems 4.0 Introduction to Marketing Management **MKTG 201** 4.0 ORGB 300 [WI] Organizational Behavior 40 **BS** Concentration Requirements 21.0 **BS** Concentration Electives 9.0 MBA Requirements

Total Credits		229.0
MBA Free Electi	ves	9.0
MBA Concentrat	tion Requirements	9.0
TAX 715	Tax Experiential Learning	
ORGB 640	Negotiations for Leaders	
MIS 652	Business Agility and IT	
MGMT 715	Business Consulting	
MGMT 680	Leading for Innovation	
INTB 790	International Business Seminar and Residency	
BUSN 615	Graduate Internship	
Experiential Elec	ctive - Select one	3.0
STAT 510	Introduction to Statistics for Business Analytics	2.0
POM 510	Operations and Supply Chain Management	2.0
ORGB 520	Leading High-Performance Teams	1.0
ORGB 511	Leading in Dynamic Environments: A Personal, Relational, and Strategic Approach	3.0
MKTG 510	Marketing Strategy	2.0
MGMT 770	MBA Capstone	2.0
MGMT 530	Managing and Leading the Total Enterprise	2.0
MGMT 520	Strategy Analysis	2.0
MGMT 510	Business Problem Solving	3.0
FIN 601	Corporate Financial Management	3.0
ECON 601	Managerial Economics	3.0
BLAW 510	Analyzing Legal Options in Decision-Making	1.0
ACCT 510	Essentials of Financial Reporting	2.0

BS/MBA students should take STAT 201 and FIN 301. Students who take STAT 201 and FIN 301 should not take BUSN 301.

\*\* EAM 491 is a 1.0 credit course, taken 3 times during the senior year, for a total of 3.0 credits.

# **UG Concentration Requirements**

### A. Visual Arts Management Concentration

EAM 215	Writing for Arts Managers	3.0
EAM 270	Audience Development for Arts	3.0
EAM 301	Gallery and Collection Management	3.0
EAM 302	Exhibition Design	3.0
EAM 312	Introduction to Fund Development for the Arts	3.0
EAM 313	Volunteer and Board Management	3.0
EAM 321	Box Office and Venue Management	3.0
Select three from	the following:	9.0
ARTH 150	Building Skills in Object Analysis	
ARTH 314	Contemporary Art	
ARTH 331	Global Material Culture	
OR		
DIGM 308 [WI	] Digital Cultural Heritage	
DIGM 451 [WI	Explorations in New Media	
IDM 211	User Interface Design I	

### Total Credits

### **B.** Performing Arts Management Concentration

EAM 215	Writing for Arts Managers	3.0
EAM 270	Audience Development for Arts	3.0
EAM 312	Introduction to Fund Development for the Arts	3.0
EAM 313	Volunteer and Board Management	3.0
EAM 321	Box Office and Venue Management	3.0
EAM 322	Performing Arts Touring	3.0
EAM 325	Producing for Live Entertainment	3.0
Select three from	the following:	9.0

30.0

То	tal Credits		30.0
	THTR 232	Contemporary Musical Theatre	
	THTR 231	Introduction to Musical Theatre	
	THTR 222 [WI]	Theatre History II	
	THTR 221 [WI]	Theatre History I	
Se	lect one of the fo	llowing:	
	THTR 240	Theatre Production I	
	THTR 121 [WI]	Dramatic Analysis	
OF	2		
	MUSC 331	World Musics	
	MUSC 249	Digital Music Composition	
	MUSC 121	Music Theory I	
OF	R		
	DANC 315	Twentieth Century Dance	
	DANC 215	Dance Appreciation	
	DANC 115	Introduction to Dance	

### **C. Media Arts Management Concentration**

Total Credits		30.0
IDM 221	Web Design I	
IDM 211	User Interface Design I	
IDM 100	Introduction to Web Development	
OR		
FMTV 285	Media Law and Ethics	
FMTV 282	Research, Sales and Programming	
FMTV 185	TV Industry	
OR		
FMTV 120	Basic Sound	
FMTV 115	Basic Editing	
FMTV 110	Basic Cinematography	
OR		
FMST 203	Film History III: Trends	
FMST 102	Film History II: New Waves	
FMST 101	Film History I: Emergence	
Select three fro	om the following:	9.0
TVIE 290	Introduction to Money and the Media	3.0
EAM 365	Media and Entertainment Business	3.0
EAM 338	Entertainment Enterprise	3.0
EAM 295	Streaming Entertainment Management	3.0
EAM 288	eSport Entertainment Management	3.0
EAM 215	Writing for Arts Managers	3.0
DIGM 105	Overview of Digital Media	3.0

**MBA Concentrations** 

### **Real Estate Management & Development** Concentration

Required Courses

Total Credits		9.0
REMD T680	Special Topics in REMD	
REAL 568	Real Estate Development	
POM 610	Supply Chain Management I	
ORGB 640	Negotiations for Leaders	
MKTG 638	New Product Planning, Strategy, and Development	
FIN 622	Financial Institutions & Markets	
ECON 625	Urban and Real Estate Economics	
CMGT 535	Community Impact Analysis	
Select one of the	following:	3.0
REMD 675	Real Estate Finance	3.0
BLAW 631	Real Estate Law for Managers and Developers	3.0

### **Business Analytics Concentration**

Re	quired Courses	5			
ST	AT 632	Datamining for Managers	3.0		
Se	lect two of the fo	bllowing:	6.0		
	ECON 650	Business & Economic Strategy: Game Theory & Applications			
	FIN 642	Business Conditions and Forecasting			
	MIS 630	Inter-Active Decision Support Systems			
	MIS 633	Predictive Business Analytics with Relational Database Data			
	MKTG 606	Customer Analytics			
	MKTG 607	Marketing Experiments			
	OPR 601	Managerial Decision Models and Simulation			
	OPR 626	System Simulation			
	POM 610	Supply Chain Management I			
	STAT 634	Quality & Six-Sigma			
	STAT 636	Experimental Design			
	STAT T680	Special Topics in STAT			
То	otal Credits 9.0				

### **Finance Concentration\***

#### Required Courses Select three of the following: 9.0 FIN 602 Advanced Financial Management FIN 610 Corporate Governance FIN 622 Financial Institutions & Markets FIN 624 **Risk Management** FIN 626 Investment Management FIN 635 Entrepreneurial Finance FIN 640 Mergers and Acquisitions FIN 642 Business Conditions and Forecasting FIN 648 International Financial Management FIN 650 **Derivative Securities** FIN 790 Seminar in Finance FIN 794 Seminar in Investments FIN T680 Special Topics in FIN REMD 675 Real Estate Finance **Total Credits** 9.0

Students pursuing a Finance Concentration in the MBA can use their concentration credits plus free electives to complete one of the following suggested focus areas:

Corporate Finance Focus: FIN 602, FIN 610, FIN 635, FIN 640, and FIN 790

Investments Focus: FIN 624, FIN 626, FIN 642, FIN 650, and FIN 794 Financial Markets Focus: FIN 622, FIN 642, FIN 648 and REMD 675

### **Marketing Concentration**

Required Courses

	•		
S	elect three of the	following, of which two MUST be from MKTG:	9.0
	BLAW T680	Special Topics in BLAW	
	ECON 540	Intro to Econometrics and Data Analysis	
	ECON 610	Microeconomics	
	FIN 642	Business Conditions and Forecasting	
	FIN 648	International Financial Management	
	INTB 620	International Business Management	
	MGMT 655	Knowledge Management	
	MIS 624	Systems Analysis & Design	
	MIS 630	Inter-Active Decision Support Systems	
	MIS 632	Database Analysis and Design for Business	
	MKTG 606	Customer Analytics	
	MKTG 607	Marketing Experiments	

STAT 634	Quality & Six-Sigma	
POM 610	Supply Chain Management I	
POM 624	Management of Service Firms	
OPR 601	Managerial Decision Models and Simulation	
MKTG T680	Special Topics in MKTG	
MKTG 652	Marketing Information Management and Research	
MKTG 646	Services Marketing	
MKTG 638	New Product Planning, Strategy, and Development	
MKTG 634	Integrated Marketing Communications Management	
MKTG 630	Global Marketing	
MKTG 627	Digital Marketing	
MKTG 624	Channels of Distribution Management	
MKTG 622	Buyer Behavior Theory	
	MKTG 624 MKTG 627 MKTG 630 MKTG 634 MKTG 638 MKTG 646 MKTG 652 MKTG 7680 OPR 601 POM 624 POM 610	MKTG 624Channels of Distribution ManagementMKTG 627Digital MarketingMKTG 630Global MarketingMKTG 634Integrated Marketing Communications ManagementMKTG 638New Product Planning, Strategy, and DevelopmentMKTG 646Services MarketingMKTG 652Marketing Information Management and ResearchMKTG 7680Special Topics in MKTGOPR 601Managerial Decision Models and SimulationPOM 624Supply Chain Management I

### **Strategic Technology & Innovation** Management Concentration (STIM)

**Required Courses** 

Total Credi	S	9.0
ORGB 6	40 Negotiations for Leaders	
ORGB 6	02 Leading and Executing Change	
OPR 60	Managerial Decision Models and Simulation	
MKTG 6	38 New Product Planning, Strategy, and Development	
MIS 652	Business Agility and IT	
MIS 641	MIS Policy and Strategy	
MGMT 6	90 Change Management Experiential Capstone	
MGMT 6	86 Strategy Implementation	
MGMT 6	80 Leading for Innovation	
MGMT 6	76 Sustainability and Value Creation	
MGMT 6	55 Knowledge Management	
MGMT 6	04 Strategic Change Management	
MGMT 6	00 Introduction to Change Management: An Integration of Macro and Micro Perspectives	
FIN 642	Business Conditions and Forecasting	
ECON 6	50 Business & Economic Strategy: Game Theory & Applications	
Select one of	f the following:	3.0
MGMT 603	Technology Strategy	3.0
MGMT 602	Innovation Management	3.0

### **Supply Chain Management & Logistics** Concentration

### **Required Courses**

	POM 610	Supply Chain Management I	3.0
	POM 615	Supply Chain Management II	3.0
	Select one of the	following:	3.0
	ECON 650	Business & Economic Strategy: Game Theory & Applications	
	FIN 635	Entrepreneurial Finance	
	FIN 642	Business Conditions and Forecasting	
	MIS 624	Systems Analysis & Design	
	MIS 630	Inter-Active Decision Support Systems	
	MKTG 606	Customer Analytics	
	MKTG 624	Channels of Distribution Management	
	MKTG 638	New Product Planning, Strategy, and Development	
	OPR 601	Managerial Decision Models and Simulation	
	POM 624	Management of Service Firms	
	POM 630	Transportation & Logistics Management	
	POM T680	Special Topics in POM	
	STAT 632	Datamining for Managers	

STAT 634	Quality & Six-Sigma	
Total Credits		9.0
General	<b>Business Concentration</b>	
Required Course	25	
Complete 9.0 grad	duate credits. See advisor for suggestions.	9.0
MBA Graduat	e Credits include courses in Accounting (ACCT), Statistics	
(STAT), Econ	omics (ECON), Finance (FIN), General Business (BUSN),	
International E	Business (INTB), Legal Studies (BLAW), Management (MGMT,	
Management	Information Systems (MIS), Marketing (MKTG), Operations	
Management	(OPM), Operations Research (OPR), Organizational Behavior	
(ORGB), Proc	luction Operations Management (POM), Sport Management	
(SMT), or Tax	ation (TAX), with a course number range between 500-799.	
Total Credits		9.0

# Sample Plan of Study **Visual Arts Management Concentration**

First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EAM 130		3.0	EAM 200			ACCT 110		4.0	VACATION		
ENGL 101 or 111		3.0	ENGL 102 or 112		3.0	CIVC 101		1.0			
MATH 101		4.0	MATH 102		4.0	EAM 211		3.0			
PHYS 170		3.0	PHYS 175		3.0	ENGL 103 or 113		3.0			
PHYS 171		1.0	PHYS 176		1.0	(UG) Arts and Humanities elective		3.0			
UNIV A101		1.0	UNIV A101		1.0	(UG) Social Science elective		3.0			
		15			15			17			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
BLAW 201		4.0	EAM 220		3.0	COM 230		3.0	COOP EXPERIEN	CE	
COOP 101		1.0	EAM 225		3.0	EAM 221		3.0			
EAM 215		3.0	EAM 270		3.0	EAM 301		3.0			
ECON 201		4.0	ECON 202		4.0	MKTG 201		4.0			
(UG) Concentrati Elective	on	3.0	(UG) Arts & Humanities Elective		3.0	(UG) Concentrati Elective	on	3.0			
(UG) Social Science elective		3.0									
		18			16			16			0
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EAM 308		3.0	EAM 302		3.0	EAM 313		3.0	COOP EXPERIEN	CE	
EAM 321		3.0	EAM 310		3.0	EAM 315		3.0			
EAM 340		3.0	EAM 312		3.0	ORGB 300		4.0			
MIS 200		4.0	(UG) Concentration Elective	:	3.0	(UG) Free Electives		6.0			

(UG) Free elective*			(UG) Social Science Elective		3.0						
		16			15			16			0
Fourth Yea	-			•		<b>.</b> .	<b>.</b>			o	
Fall EAM 422	Credits		Winter EAM 491	Credits		Spring EAM 420	Credits		Summer Convert to Graduate Status	Credits	
EAM 491		1.0	(UG) Free Electives		9.0	EAM 491		1.0			
(UG) Free electives			(GR) Elective (counts as UG Free elective)		3.0	(UG) Free Electives		9.0			
ACCT 510		2.0	MGMT 510		3.0	MGMT 520		2.0			
MGMT 530		2.0	ORGB 511		3.0	ORGB 520		1.0			
MKTG 510		2.0									
Fifth Year		19			19			16			0
Fall	Credits		Winter	Credits		Spring	Credits				
FIN 601		3.0	ECON 601		3.0	MGMT 770		2.0			
POM 510		2.0	BLAW 510		1.0	(GR) Electives		6.0			
(GR) Elective		3.0	STAT 510		2.0	(GR) Experiential Elective		3.0			
			(GR) Elective		6.0						
		8			12			11			

Total Credits 229

\* BS/MBA students should take STAT 201 and FIN 301. Students who take STAT 201 and FIN 301 should not take BUSN 301.

## Performing Arts Management Concentration

### First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
EAM 130	3.0	EAM 200	3	0 ACCT 110	4	.0 VACATION	1	
ENGL 101 or 111	3.0	ENGL 102 or 112	3	0 CIVC 101	1	.0		
PHYS 170	3.0	MATH 102	4	0 EAM 211	3	8.0		
PHYS 171	1.0	PHYS 175	3	0 ENGL 103 or 113	3	8.0		
MATH 101	4.0	PHYS 176	1.	0 (UG) Arts and Humanities elective	3	1.0		
UNIV A101	1.0	UNIV A101	1.	0 (UG) Social Science elective	3	8.0		
	15	;	1	5		17		0
Second Ye	ar							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
BLAW 201	4.0	EAM 220	3	0 COM 230	3	8.0 COOP EXPERIEN	ICE	
COOP 101	1.0	EAM 225	3	0 EAM 221	3	8.0		
EAM 215	3.0	EAM 322	3	0 EAM 270	3	8.0		
ECON 201	4.0	ECON 202	4	0 MKTG 201	4	.0		

(UG) Concentrati Elective	on		(UG) Arts & Humanities		3.0	(UG) Concentrati Elective	on	3.0			
(UG) Social Science Elective		3.0									
		18			16			16			0
Third Year									_		
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EAM 308			EAM 310			EAM 313			COOP EXPERIEN	CE	
EAM 321			EAM 312			EAM 315		3.0			
EAM 340		3.0	EAM 325		3.0	ORGB 300		4.0			
MIS 200		4.0	(UG) Concentration Elective	t	3.0	(UG) Free Elective		6.0			
(UG) Free Elective		3.0	(UG) Social Science Elective		3.0						
		16			15			16			0
Fourth Yea	r										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EAM 422		3.0	EAM 491		1.0	EAM 420		3.0	Convert to Graduate Status		
EAM 491		1.0	(UG) Free Electives	1	12.0	EAM 491		1.0			
(UG) Free Electives		9.0	(GR) Elective (counts as UG Free elective)		3.0	(UG) Free Electives		6.0			
ACCT 510		2.0	MGMT 510		3.0	MGMT 520		2.0			
MGMT 530		2.0	ORGB 511		3.0	ORGB 520		1.0			
MKTG 510		2.0									
		19			22			13			0
Fifth Year											
Fall	Credits		Winter	Credits		Spring	Credits				
FIN 601			BLAW 510			MGMT 770		2.0			
POM 510		2.0	ECON 601		3.0	(GR) Electives		6.0			
(GR) Elective		3.0	STAT 510		2.0	(GR) Experiential Elective		3.0			
			(GR) Elective		6.0						
		8			12			11			

Total Credits 229

# **Media Arts Management Concentration**

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EAM 130	3.0	) EAM 200	3	.0 ACCT 110	4.0	VACATION	
ENGL 101 or 111	3.0	0 ENGL 102 or 112	3	.0 CIVC 101	1.0		
MATH 101	4.0	) MATH 102	4	.0 EAM 211	3.0		
PHYS 170	3.0	) PHYS 175	3	0 ENGL 103 or 113	3.0		
PHYS 171	1.(	) PHYS 176	1	.0 (UG) Arts and Humanities elective	3.0		

UNIV A101	1	.0	UNIV A101		1.0	(UG)		3.0			
						Social Science					
		_				elective					
		15			15			17			0
Second Yea											
	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
BLAW 201	4	.0	EAM 220		3.0	COM 230		3.0	COOP EXPERIEN	CE	
COOP 101	1	.0	EAM 225		3.0	EAM 215		3.0			
DIGM 105	3	.0	ECON 202		4.0	EAM 221		3.0			
ECON 201	4	.0	TVIE 290		3.0	MKTG 201		4.0			
(UG) Concentration Elective			(UG) Arts & Humanities Elective		3.0	(UG) Concentration Elective		3.0			
(UG) Social Science Elective	3	.0									
	1	8			16			16			0
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EAM 288	3	.0	EAM 295		3.0	EAM 315			COOP EXPERIEN	CE	
EAM 308	3	.0	EAM 310		3.0	EAM 338		3.0			
EAM 340	3	.0	EAM 365		3.0	ORGB 300		4.0			
MIS 200	4		(UG) Social Science Elective		3.0	(UG) Free Electives		6.0			
(UG) Free Elective	3		(UG) Concentrati Elective	on	3.0						
Fourth Yea		6			15			16			0
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EAM 422	3	.0	EAM 491		1.0	EAM 420		3.0	Convert to Graduate		
									Status		
EAM 491	1	.0	(UG) Free Electives		9.0	EAM 491		1.0	Status		
EAM 491 (UG) Free Electives						EAM 491 (UG) Free Electives		1.0 9.0	Status		
(UG) Free Electives	9	.0	Electives (GR) Elective (counts as UG Free		3.0	(UG) Free			Status		
(UG) Free Electives	9	.0	Electives (GR) Elective (counts as UG Free elective)		3.0 3.0	(UG) Free Electives		9.0			
(UG) Free Electives ACCT 510	9 2 2	.0	Electives (GR) Elective (counts as UG Free elective) MGMT 510		3.0 3.0	(UG) Free Electives MGMT 520		9.0 2.0			
(UG) Free Electives ACCT 510 MGMT 530	9 2 2 2	.0 .0 .0	Electives (GR) Elective (counts as UG Free elective) MGMT 510		3.0 3.0	(UG) Free Electives MGMT 520		9.0 2.0			0
(UG) Free Electives ACCT 510 MGMT 530	9 2 2 2	.0 .0 .0	Electives (GR) Elective (counts as UG Free elective) MGMT 510		3.0 3.0 3.0	(UG) Free Electives MGMT 520		9.0 2.0 1.0			0
(UG) Free Electives ACCT 510 MGMT 530 MKTG 510 Fifth Year	9 2 2 2	.0 .0 .0	Electives (GR) Elective (counts as UG Free elective) MGMT 510	Credits	3.0 3.0 3.0 <b>19</b>	(UG) Free Electives MGMT 520 ORGB 520		9.0 2.0 1.0			0
(UG) Free Electives ACCT 510 MGMT 530 MKTG 510 Fifth Year	9 2 2 2 1 Credits	.0 .0 .0	Electives (GR) Elective (counts as UG Free elective) MGMT 510 ORGB 511	Credits	3.0 3.0 3.0 <b>19</b>	(UG) Free Electives MGMT 520 ORGB 520	Credits	9.0 2.0 1.0			0
(UG) Free Electives ACCT 510 MGMT 530 MKTG 510 Fifth Year Fall	9 2 2 2 1 <b>Credits</b> 3	.0 .0 .0 .0	Electives (GR) Elective (counts as UG Free elective) MGMT 510 ORGB 511 Winter	Credits	3.0 3.0 3.0 <b>19</b> 1.0	(UG) Free Electives MGMT 520 ORGB 520 Spring	Credits	9.0 2.0 1.0 <b>16</b>			0
(UG) Free Electives ACCT 510 MGMT 530 MKTG 510 Fifth Year Fall FIN 601	9 2 2 2 1 <b>Credits</b> 3 2	0. 0. 0. 0. 0.	Electives (GR) Elective (counts as UG Free elective) MGMT 510 ORGB 511 Winter BLAW 510	Credits	3.0 3.0 3.0 <b>19</b> 1.0 3.0	(UG) Free Electives MGMT 520 ORGB 520 ORGB 520 Spring MGMT 770 (GR)	Credits	9.0 2.0 1.0 <b>16</b> 2.0			0
(UG) Free Electives ACCT 510 MGMT 530 MKTG 510 Fifth Year Fall FIN 601 POM 510 (GR)	9 2 2 2 1 <b>Credits</b> 3 2	0. 0. 0. 0. 0.	Electives (GR) Elective (counts as UG Free elective) MGMT 510 ORGB 511 ORGB 511 Winter BLAW 510 ECON 601	Credits	3.0 3.0 3.0 <b>19</b> 1.0 3.0	(UG) Free Electives MGMT 520 ORGB 520 Spring MGMT 770 (GR) Electives (GR) Experiential	Credits	9.0 2.0 1.0 <b>16</b> 2.0 6.0			0

Total Credits 229

\* See degree requirements (http://catalog.drexel.edu/undergraduate/ collegeofmediaartsanddesign/entertainmentartmgmt/ #degreerequirementsbstext).

# Environmental Engineering BSENE / Peace Engineering MS

### **Program Requirements**

### General Education/Liberal Studies Requirements

General Educatio	n/Liberal Studies Requirements	
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development $\overset{*}{}$	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 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
General Educatior	Requirements	12.0
	cial Dimension course will count as 3.0 credits of General uirements as shared coursework	
Engineering Core	Courses	
BIO 141	Essential Biology	4.5
CAEE 361	Statistical Analysis of Engineering Systems	3.0
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
ENGR 210	Introduction to Thermodynamics	3.0
ENGR 220	Fundamentals of Materials	4.0
ENGR 231	Linear Engineering Systems	3.0
ENGR 232	Dynamic Engineering Systems	3.0
MATH 121	Calculus I	4.(
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
	ngineering Requirements	
BIO 221	Microbiology	3.0
CAEE 202	Introduction to Civil, Architectural & Environmental Engineering	3.0
CAEE 202	System Balances and Design in CAEE	3.0
CAEE 212	Geologic Principles for Infrastructure & Environmental Engineering	4.0
CHE 211	Material and Energy Balances I	4.0
CHEM 230	Quantitative Analysis	4.(
CHEM 231 [WI]	Quantitative Analysis Laboratory	2.0
CHEM 241	Organic Chemistry I	4.(
CHEM 242	Organic Chemistry II	4.(
CIVE 240 [WI]	Engineering Economic Analysis	3.0
CIVE 320	Introduction to Fluid Flow	3.0
CIVE 330	Hydraulics	4.0
CIVE 430	Hydrology	3.0
CIVE 431	Hydrology-Ground Water	3.0
ENVE 300	Introduction to Environmental Engineering	3.0
ENVE 302	Environmental Transport and Kinetics	3.0
ENVE 410	Solid and Hazardous Waste	3.0
		5.0

ENVE 421	Water and Waste Treatment II	3.0
ENVE 422	Water and Waste Treatment Design	3.0
ENVE 435	Groundwater Remediation	3.0
ENVE 460	Fundamentals of Air Pollution Control	3.0
or ENVE 465	Indoor Air Quality	
ENVE 485	Professional Environmental Engineering Practice	1.0
ENVE 486	Environmental Engineering Processes Laboratory I	2.0
ENVE 487	Environmental Engineering Processes Laboratory II	2.0
ENVE 491 [WI]	Senior Project Design I	3.0
ENVE 492 [WI]	Senior Design Project II	3.0
ENVE 493 [WI]	Senior Design Project III	3.0
ENVS 230	General Ecology	3.0
ENVS 401	Chemistry of the Environment	3.0
Technical Electiv	es ***	6.0
ENVE 727 and coursework	ENVE 750 count as 6.0 credits of Technical Electives as shared	
Master's Degree	Courses	
Core Peacebuildi	ng Requirements	
PENG 501	Peace Engineering Seminar - Fall	1.0
PENG 502	Peace Engineering Seminar - Winter	1.0
PENG 503	Peace Engineering Seminar - Spring	1.0
PENG 545	Introduction to Peacebuilding for Engineers	3.0
PENG 550	Conflict Management for Engineers	3.0
PENG 560	Peacebuilding Skills	3.0
Core Engineering	g Requirements	
ENVE 727	Risk Assessment	3.0
PROJ 501	Introduction to Project Management	3.0
SYSE 540	Systems Engineering for Peacebuilding	3.0
Research Method	ls	
CAEE 501	Community-Based Design	3.0
ENVE 750	Data-based Engineering Modeling	3.0
SCTS 502	Research Methods	3.0
Experiential Lear	ning	
PENG 600	Peace Engineering Experiential Learning	6.0
Social Dimension	ns of Conflict Electives <sup>†</sup>	6.0
	Sequences <sup>††</sup>	6.0

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext).
- \*\*\* Any 300-499 level courses from AE, BIO, BMES, CHE, CHEM, CIVE, CS, ECE, ENVE, ENVS, MATE, MATH, MEM, PHYS, or SE. CIVE 250 is also allowed. The following courses duplicate content in required courses and will not be accepted: MATH 310, MATH 311, MATH 410, ECE 361, BMES 310, MEM 361, and CHE 350.
- † Social Dimensions of Conflict Electives

Students must complete a minimum of six credits, at the graduate level, from the following approved courses.

- Science, Technology and Society
   electives: SCTS 501, SCTS 570, SCTS 571, SCTS 615, SCTS 620, SCTS 641, SCTS
- Politics electives: PSCI 510, PSCI 553, ENVP 552
- Education electives: EDGI 550, EDGI 533, EDGI 536

### **††** Technical Focus Sequences

Students must complete one sequence of at least 2 courses (6 credits) from the following approved sequences.

- Systems Analysis: SYSE 688, SYSE 690, EGMT 660
- Software Development: CS 502 CS 575, CS 576
- Machine Learning and AI: CS 510, CS 613, CS 610
- Information Security: INFO 517, INFO 712, INFO 710
- Database Management: INFO 605, INFO 606, INFO 607
- Information Retrieval: INFO 605, INFO 624, INFO 633
- Data Mining: INFO 605, INFO 634, INFO 633
- Web and Mobile Development: INFO 552, INFO 655
- Game Design: DIGM 505, DIGM 506
- · Serious gaming: DIGM 530, DIGM 531
- Interactivity: DIGM 520, DIGM 521
- WASH: CIVE 564, CIVE 567, CIVE 561
- Power Systems and Distribution: ECEP 501, ECEP 502, ECEP 601

## Sample Plan of Study

### 5 year, 3 coop Co-Terminal

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	CHEM 102	4.5	5 BIO 141	4.	5 VACATION	l
ENGL 101 or 111	3.0	CIVC 101 or COOP 101 <sup>*</sup>	1.0	0 CIVC 101 or COOP 101 <sup>*</sup>	1.0	)	
ENGR 111	3.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0	)	
MATH 121	4.0	ENGR 131 or 132	3.0	) ENGR 113	3.0	)	
UNIV E101	1.0	MATH 122	4.0	MATH 200	4.0	C	
		PHYS 101	4.0	) PHYS 102	4.0	C	
	14.5		19.5	5	19.	5	0

### Second Year

Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
CAEE 202		3.0	CAEE 203		3.0	COOP			COOP		
						EXPERIEN	CE		EXPERIEN	CE	
CAEE 361		3.0	ENGR 210		3.0						
CIVE 240		3.0	ENGR 232		3.0						
ENGR 220		4.0	ENVS 230		3.0						
ENGR 231		3.0	PHIL 315		3.0						
PHYS 201		4.0									
		20			15			0			0
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
CAEE 212		4.0	BIO 221		3.0	COOP			COOP		
						EXPERIEN	CE		EXPERIEN	CE	
CHE 211		4.0	CHEM 241		4.0	PENG 560		3.0			
CIVE 320		3.0	CIVE 330		4.0						
ENVE 300		3.0	CIVE 431		3.0						
PENG 545		3.0	ENVE 302		3.0						
(GR)		3.0	PENG 550		3.0						
Social											
Dimension											
elective											
		20			20			3			0
Fourth Yea	-										
Fall	Credits		Winter						Summer	Credits	
CHEM 230		4.0	CHEM 231		2.0	COOP EXPERIEN			COOP EXPERIEN	CE	
CHEM 242		4.0	ENVE 410		3.0	PENG 600		3.0	PENG 600		3.0

General Education       General Education         ENVS 401       3.0 (UG) Technical Elective       3.0 ENVE 727         ENVE 750       3.0 ENVE 727       3.0 ENVE 727         SUG       as UG       as UG         Technical elective       Technical elective       3.0 ENVE 727         PROJ 501       3.0 (GR) Technical Focus Course       3.0 ENVE 421         Forth Year       Technical Focus Course       3.0 ENVE 422         FNVE 405       3.0 ENVE 421       3.0 ENVE 422       3.0         ENVE 405       3.0 ENVE 421       3.0 ENVE 422       3.0         ENVE 405       3.0 ENVE 421       3.0 ENVE 422       3.0         ENVE 405       3.0 ENVE 422       3.0       3.0         ENVE 405       3.0 ENVE 422       3.0       3.0         ENVE 405       3.0 ENVE 423       3.0       3.0         ENVE 405       3.0 ENVE 424       3.0 ENVE 427       3.0         ENVE 405       3.0 ENVE 423       3.0       3.0         General Education elective       2.0       ENVE 423       3.0         General Education elective       3.0       ENVE 423       3.0         General Education elective       General Education elective       3.0       ENVE 423       3.0	Course						
General Education elective       General Education elective         ENVS 401       0. (UG) Technical Elective       0. (VE 727 (counts a SUG) elective)         Technical elective       3.0 (NVE 727 (counts a SUG) elective)       0.0 (GR) Technical elective         PROJ 501       0. (GR) Technical Four elective)       0.0 (GR) Technical Four elective       0.0 (Counts a SUG) elective         FI1       Ventos       0.0 (RN) Technical Four elective       0.0 ENVE 421       0.0 ENVE 421         FNVE 405       0.0 ENVE 421       0.0 ENVE 422       0.0 ENVE 423         ENVE 405       0.0 ENVE 421       0.0 ENVE 423       0.0 ENVE 423         General Education elective       0.0 ENVE 424       0.0 ENVE 423       0.0 ENVE 424         ENVE 405       0.0 UGN       0.0 ENVE 423       0.0 ENVE 424       0.0 ENVE 424         General Education elective       0.0 ENVE 424       0.0 ENVE 423       0.0 ENVE 424       0.0 ENVE 424         CUGN       General Education elective       0.0 ENVE 424       0.0 ENVE 424       0.0 ENVE 424       0.0 ENVE 424         Flettive       Education elective       Education elective       0.0 ENVE 424       0.0 ENVE 424       0.0 ENVE 424         ENVE 490       0.0 ENVE 492       0.0 ENVE 493       ENVE 493       0.0 ENVE 493       0.0 ENVE 493	Technical Focus						
General Education elective       General Education elective       3.0       S.         ENVS 40       3.0       ENVE 727 (counts as UG       3.0       ENVE 727 (counts)       3.0         ENVE 750       3.0       ENVE 727 (counts)       3.0       Forehnical elective       3.0         PROJ 501       3.0       GR) Technical Focus Course       3.0       GR) Technical Focus Course       3.0         PROJ 501       3.0       GR) Technical Focus Course       3.0       Forehnical Focus Course       3.0         PROJ 501       3.0       GR) Social Focus Course       Spring Spring       Credits Credits         Fifth Yea Fall       1.0       ENVE 485       3.0       ENVE 485       3.0         ENVE 485       1.0       ENVE 485       3.0       ENVE 485       3.0         ENVE 485       1.0       ENVE 485       3.0       ENVE 485       3.0         General Education General Education elective       Social General Education elective       Social Social Dimension elective       Social Social Dimension elective       Social Social Dimension elective       Social Social Dimension elective       Social Social Dimension elective       Social Social Dimension elective       Social Social Dimension elective       Social Social Dimension elective       Social Social Dimensio Elective       Social Social Dimensi	(GR)	30	General Education				
FNVS 401       Role and Education allocation all		5.0	Social Dimension elective (counts	0.0		1.0	
General					CAEE 501		
Seneral Education of elective       Seneral Education of elective         ENVS 401       Single Construction of elective       Single Construction of elective         ENVE 750       Single Elective       Single Construction of elective         ENVE 750       Single Elective       Single Elective         Fechnical Elective       Single Elective       Single Elective         PROJ 50       Single Elective       Single Elective         Fifth Year       Foreix Elective       Single Elective         Fifth Year       Single Elective       Single Elective         Single Elective       Single Elective       Single Elective         Single Elective       Single Elective       Single Elective         Single Elective       Single Elective	Technical	3.0	PENG 502	1.0	General Education	3.0	
General Education elective       So       So       So         ENVS 401       So       (UG) Technical Elective       So       So       So         ENVE 757 (counts as UG Technical elective       So       So       So       So         PROJ 501       So       So       So       So       So         PROJ 501       So       GRAPH Socus Course       So       So       So         FIGH ENVE 465       So       So       So       So       So         FIGH ENVE 465       So       So       So       So       So         ENVE 465       So       So       ENVE 465       So       So	General Education	3.0	General Education	3.0	ENVE 493	3.0	
General Education elective       So       So         ENVS 401       So       (UG) Technical Elective       So       So         ENVE 750 (counts as UG Technical elective)       So       So       So         Technical elective       So       ENVE 727 (counts as UG Technical elective)       So       So         PROJ 501       So       So       So       So         PROJ 501       So       GGR       So       So         Fifth Year       Technical Focus Course       So       So       So         FII       Credits       Winter       Credits       So EnvE 422       So         ENVE 465 or 460       So       ENVE 422       So       So	ENVE 491	3.0	ENVE 492	3.0	ENVE 487	2.0	
General Education elective       S.0       S.0         ENVS 401       S.0       UGO Technical Elective       S.0         ENVE 750       S.0       ENVE 727 (counts as UG Technical elective)       S.0         Technical elective       S.0       ENVE 727 (counts as UG Technical elective)       S.0         PROJ 501       S.0       GGR       S.0         PROJ 501       S.0       GGR       S.0         FIGH       Credits       Sring       Credits         FIGH       Minter       Credits       Spring       Credits         ENVE 465       S.0       ENVE 422       S.0		1.0	ENVE 486	2.0	ENVE 435	3.0	
General Education elective       S.0         ENVS 401       3.0 (UG) Technical Elective       S.0         SNVE 727 (counts as UG Technical elective)       3.0         SNVE 727 (counts as UG Technical elective)       3.0         PROJ 501       3.0 (GR) Technical Elective       3.0         PROJ 501       3.0 (Course       3.0         20       17       3         Fifth Year       3		3.0	ENVE 421	3.0			
General Education elective*S.0ENVS 4013.0 (UG) Technical Elective**3.0ENVE 750 (counts as UG Technical elective)3.0ENVE 750 (counts as UG Technical elective)3.0PROJ 501 Course3.0GRP Technical Focus Course20173		Credits	Winter	Credits	Spring	Credits	
General Education electiveGeneral Education electiveENVS 4013.0 (UG) Technical elective3.0 Counts as UG Technical elective3.0 PNE 727 (counts as UG rechnical elective3.0 PNE 727 (counts rechnical elective3.0 PNE 727 (counts rechnical elective3.0 PNE 727 (counts rechnical electivePNE 750 (COUNTS rechnical PNE 727 (counts re		20		17	,	3	
General Education elective     Selective       ENVS 401     3.0 (UG) Technical Elective     3.0       ENVE 750     3.0 ENVE 727     3.0       (counts as UG     (counts as UG     3.0       Technical     Technical	PROJ 501		Technical Focus	3.0			
ENVS 401 3.0 (UG) 3.0 Technical	(counts as UG Technical	3.0	(counts as UG Technical	3.0			
General Education	ENVS 401	3.0	Technical	3.0			
CIVE 430 3.0 (UG) 3.0		5.0	General Education	0.0			

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* Any 300-499 level courses from AE, BIO, BMES, CHE, CHEM, CIVE, CS, ECE, ENVE, ENVS, MATE, MATH, MEM, PHYS, or SE. CIVE 250 is also allowed. The following courses duplicate content in required courses and will not be accepted: MATH 310, MATH 311, MATH 410, ECE 361, BMES 310, MEM 361, and CHE 350.

# Global Studies BA / Business Administration MBA

### **Program Requirements**

### General Requirements

nents	
Introduction to Civic Engagement	1.0
Career Management and Professional Development	1.0
Principles of Microeconomics	4.0
Principles of Macroeconomics	4.0
Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
English Composition I	
Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
English Composition II	
Composition and Rhetoric III: Themes and Genres	3.0
English Composition III	
International Politics	4.0
The Drexel Experience	1.0
Looking Forward: Academics and Careers	1.0
courses	6.0-8.0
Ses	6.0-8.0
ore Requirements	
•	3.0
	3.0
	3.0
-	12.0
	3.0
	24.0
orth Africa Studies	
,	95.0-91.0
	2.0
	1.0
Managerial Economics	3.0
Corporate Financial Management	3.0
Business Problem Solving	3.0
Strategy Analysis	2.0
Managing and Leading the Total Enterprise	2.0
MBA Capstone	2.0
Marketing Strategy	2.0
Leading in Dynamic Environments: A Personal, Relational, and Strategic Approach	3.0
Leading High-Performance Teams	1.0
Operations and Supply Chain Management	2.0
Introduction to Statistics for Business Analytics	2.0
irements - Select one course:	3.0
Graduate Internship	
International Business Seminar and Residency	
Leading for Innovation	
Business Consulting	
Business Agility and IT	
Negotiations for Leaders	
Tax Experiential Learning	
n Requirements (Select one concentration from the list below)	9.0
	Introduction to Civic Engagement Career Management and Professional Development Principles of Microeconomics Principles of Macroeconomics Composition and Rhetoric I: Inquiry and Exploratory Research English Composition I Composition and Rhetoric II: Advanced Research and Evidence-Based Writing English Composition II Composition and Rhetoric III: Advanced Research and Evidence-Based Writing English Composition III Composition and Rhetoric III: Themes and Genres English Composition III International Politics The Drexel Experience Looking Forward: Academics and Careers Courses <b>Requirements</b> Becoming Global: Language and Cultural Context Understanding Global: Markets and Governance Acting Global: Research Methods in Global Studies To courses Senior Project in Global Studies Senior Project in Global Studies Courses Courses Senior Project in Global Studies Senish, French, or Japanese, or minor in Asian Studies or orth Africa Studies Corporate Financial Reporting Analyzing Legal Options in Decision-Making Managerial Economics Corporate Financial Reporting Analyzing Legal Options in Decision-Making Managerial Economics Managing and Leading the Total Enterprise Managing and Leading the Total Enterprise Managing and Leading the Total Enterprise Managing and Leading the Total Enterprise Marketing Strategy Leading High-Performance Teams Operations and Supply Chain Management Introduction to Statistics for Business Analytics Leading High-Performance Teams Operations and Supply Chain Management Introduction to Statistics for Business Analytics Leading For Innovation Business Consulting Business Consulting Business Consulting Business Agility and IT Negotiations for Leaders

\* Students must complete at least 24.0 credits above the 103 language level to earn a language minor.

# Undergraduate Concentration: Global Justice and Human Rights

### Global Justice and Human Rights Distribution Requirements

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 f	ollowing	3.0-4.0	
PSCI 351	The United Nations in World Politics		
PSCI 357	The European Union in World Politics		
	Human Rights Distribution Options	24.0	
AFAS T280	Special Topics in Africana Studies <sup>course must have a global theme</sup>		
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	Strategic International Communication		
COM 362	International Negotiations		
CULA 426	The Kitchen Garden: Summer		
or CULA 42	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 (Model Organization of American States)		
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		
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		

Total Credits		96.0-94.0
Electives		52.0-47.0
WGST T280	Special Topics in Women's and Gender Studies <sup>must have a</sup> global theme	
WGST 240	Women and Society in a Global Context	
SOC 444	Social Movements	
SOC 355 [WI]	Classical Social Theory	
SOC 346	Environmental Justice	
SOC 340	Globalization	
SOC 315	HIV/AIDS and Africa	
SOC 220	Wealth and Power	
SOC 210	Race, Ethnicity and Social Inequality	
PSCI 361	The Politics of LGBT Movements and Rights	
PSCI 360	International Law	
PSCI 357	The European Union in World Politics	
PSCI 352	Ethics and International Relations	
PSCI 351	The United Nations in World Politics	
PSCI 325	Political Theory from Below	
PSCI 305	Social Development: A Global Approach	
PSCI 260 [WI]	Power in Protest: Social Movements in Comparative Perspective	
PSCI 255	International Political Economy	

# **Undergraduate Concentrations Global Health and Sustainability**

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 th	e following English classes	3.0
ENGL 300 [WI]	Literature & Science	
ENGL 302	Environmental Literature	
ENGL 370	Topics in Literature and Medicine	
Choose one of th	e following Ethics courses	3.0
PBHL 309	Public Health Ethics	
PHIL 321	Biomedical Ethics	
PHIL 340	Environmental Ethics	
Global Health Dis	tribution Options	24.0
Students must con	nplete 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	
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 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 PBHL 305	Introduction to Health & Human Rights Women and Children: Health & Society	
PBHL 305	Introduction to Community Health	
PBHL 317	The World's Water	
PBHL 320	Exploring the HIV/AIDS Pandemic	
PBHL 320	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 204	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	
ectives		52.0-47

# Global Business, Economics, and Development

### Global Business, Economics, and Development Concentration Requirements

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 com	plete 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	Strategic International Communication	
COM 362	International Negotiations	
COM 375 [WI]	Grant Writing	
ECON 301	Microeconomics	
ECON 321	Macroeconomics	
ECON 326 [WI]	Economic Ideas	
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 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	
Elec	ctives		49.0-45.0
Total Credits			95.0-91.0

### **Global Media, Arts, and Cultures**

Glo	bal Studies Me	edia, Arts, and Cultures Concentration	
Me	dia, Arts, and C	Cultures Distribution Requirements	
AN	TH 212 [WI]	Topics in World Ethnography	3.0
AN	TH 330	Media Anthropology	3.0
EN	GL 325	Topics in World Literature	3.0
WE	ST 100	Introduction to Digital Design Tools	3.0
PH	IL 305	Ethics and the Media	3.0
Se	ect one of the f	following:	3.0
	ARTH 301 [WI]	Asian Art and Culture	
	ARTH 302	Art of India	
	ARTH 304	Art of Japan	
	ARTH 311	Twentieth Century American Art	
	ARTH 312	Nineteenth Century Art	
	ARTH 313	20th Century Art	
	ARTH 314	Contemporary Art	
	ARTH 315	African-American Art	
	ARTH 316	African Art	
	ARTH 317	Modern Art Theory and Criticism	
	ARTH 318	Latin American Art	
Me dist	dia, Arts, and C ribution credits fro	Cultures Distribution Options Students must complete at least 24 22 om the approved list	24.0
	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	Strategic International Communication	
	COM 375 [WI]	Grant Writing	
	COM 376	Nonprofit Communication	
	COM 385	Media Effects	
	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	

otal Credits		98.0
ectives		56.0
WRIT 310	Literary Editing & Publication	
WGST 240	Women and Society in a Global Context	
SOC 340	Globalization	
SOC 210	Race, Ethnicity and Social Inequality	
PSCI 335	Political Communication	
PSCI 330	Public Opinion & Propaganda	
PSCI 120	History of Political Thought	
PHIL 391	Philosophy of Religion	
PHIL 335	Global Ethical Issues	
PHIL 241	Social & Political Philosophy	
PHIL 231	Aesthetics: Philosophy of Art	
PHIL 211	Metaphysics: Philosophy of Reality	
NFS 446	Perspectives in World Nutrition	
MUSC 331	World Musics	
MUSC 130	Introduction to Music	
GST T380	Special Topics in Global Studies	
GST T280	Special Topics in Global Studies	
GST 361	Advanced Studies in Global Health and Sustainability	
GST 351	Advanced Studies in Global Media, Arts, and Cultures	
GST 341	Advanced Studies in Power and Resistance	
GST 331	Advanced Studies in Identities and Communities	
GST 321	Advanced Studies in Global Capital and Development	
GST 261	Introduction to Global Health and Sustainability	
GST 251	Introduction to Global Media, Arts, and Cultures	
GST 241	Introduction to Power and Resistance	
GST 231	Introduction to Identities and Communities	
GST 221	Introduction to Global Capital and Development	
FMST T280	Special Topics in Film Studies	

### **MBA** Concentrations

### **Real Estate Management and Development**

Total Credits		9.0
REMD T680	Special Topics in REMD	
REAL 568	Real Estate Development	
POM 610	Supply Chain Management I	
ORGB 640	Negotiations for Leaders	
MKTG 638	New Product Planning, Strategy, and Development	
FIN 622	Financial Institutions & Markets	
ECON 625	Urban and Real Estate Economics	
CMGT 535	Community Impact Analysis	
Select one of the f	following:	3.0
REMD 675	Real Estate Finance	3.0
BLAW 631	Real Estate Law for Managers and Developers	3.0

### **Business Analytics Concentration**

#### **Required Courses**

STAT 632	Datamining for Managers	3.0
Select two of the fe	ollowing:	6.0
ECON 650	Business & Economic Strategy: Game Theory & Applications	
FIN 642	Business Conditions and Forecasting	
MIS 630	Inter-Active Decision Support Systems	
MIS 633	Predictive Business Analytics with Relational Database Data	
MKTG 606	Customer Analytics	
MKTG 607	Marketing Experiments	
OPR 601	Managerial Decision Models and Simulation	
OPR 626	System Simulation	

Т	otal Credits		9.0
	STAT T680	Special Topics in STAT	
	STAT 636	Experimental Design	
	STAT 634	Quality & Six-Sigma	
	POM 610	Supply Chain Management I	

### **Finance Concentration\***

Required Courses		
Select three of the	following:	9.0
FIN 602	Advanced Financial Management	
FIN 610	Corporate Governance	
FIN 622	Financial Institutions & Markets	
FIN 624	Risk Management	
FIN 626	Investment Management	
FIN 635	Entrepreneurial Finance	
FIN 640	Mergers and Acquisitions	
FIN 642	Business Conditions and Forecasting	
FIN 648	International Financial Management	
FIN 650	Derivative Securities	
FIN 790	Seminar in Finance	
FIN 794	Seminar in Investments	
FIN T680	Special Topics in FIN	
REMD 675	Real Estate Finance	
Total Credits		9.0

\* Students pursuing a Finance concentration in the MBA can use their concentration plus free electives to complete one of the following suggested focus areas:

Corporate Finance Focus: FIN 602, FIN 610, FIN 635, FIN 640, and FIN 790

Investments Focus: FIN 624, FIN 626, FIN 642, FIN 650, and FIN 794 Financial Markets Focus: FIN 622, FIN 642, FIN 648, and REMD 675

### **Marketing Concentration**

### **Required Courses**

Required Cours		
Select three of th	ne following, of which two MUST be from MKTG:	9.0
BLAW T680	Special Topics in BLAW	
ECON 540	Intro to Econometrics and Data Analysis	
ECON 610	Microeconomics	
FIN 642	Business Conditions and Forecasting	
FIN 648	International Financial Management	
INTB 620	International Business Management	
MGMT 655	Knowledge Management	
MIS 624	Systems Analysis & Design	
MIS 630	Inter-Active Decision Support Systems	
MIS 632	Database Analysis and Design for Business	
MKTG 606	Customer Analytics	
MKTG 607	Marketing Experiments	
MKTG 622	Buyer Behavior Theory	
MKTG 624	Channels of Distribution Management	
MKTG 627	Digital Marketing	
MKTG 630	Global Marketing	
MKTG 634	Integrated Marketing Communications Management	
MKTG 638	New Product Planning, Strategy, and Development	
MKTG 646	Services Marketing	
MKTG 652	Marketing Information Management and Research	
MKTG T680	Special Topics in MKTG	
OPR 601	Managerial Decision Models and Simulation	
POM 610	Supply Chain Management I	
POM 624	Management of Service Firms	

STAT 634 Quality & Six-Sigma

**Total Credits** 

### **Strategic Technology & Innovation** Management Concentration (STIM)

**Required Courses** 

MONT 000		
MGMT 602	Innovation Management	3.0
MGMT 603	Technology Strategy	3.0
Select one of the f	following:	3.0
ECON 650	Business & Economic Strategy: Game Theory & Applications	
FIN 642	Business Conditions and Forecasting	
MGMT 600	Introduction to Change Management: An Integration of Macro and Micro Perspectives	
MGMT 604	Strategic Change Management	
MGMT 640	Strategic Human Resource Management	
MGMT 655	Knowledge Management	
MGMT 676	Sustainability and Value Creation	
MGMT 680	Leading for Innovation	
MGMT 686	Strategy Implementation	
MGMT 690	Change Management Experiential Capstone	
MIS 641	MIS Policy and Strategy	
MIS 652	Business Agility and IT	
MKTG 638	New Product Planning, Strategy, and Development	
OPR 601	Managerial Decision Models and Simulation	
ORGB 602	Leading and Executing Change	
ORGB 640	Negotiations for Leaders	

# Sample Plan of Study

### 4+1, 1 co-op (Accelerated program completed in 5 years)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

First Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ENGL 101		3.0	ENGL 102		3.0	CIVC 101		1.0	VACATION		
GST 101		3.0	GST 102		3.0	ENGL 103		3.0			
UNIV H101		1.0	MATH 102		4.0	GST 103		3.0			
MATH 101			(UG) Language course		4.0	PSCI 150		4.0			
(UG)			(UG) Free		3.0	(UG)		4.0			
Language			elective			Language					
course						course					
		15			17			15			0
Second Ye	ar										
Decond re	ai										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
			Winter ECON 202	Credits	4.0	<b>Spring</b> (UG) Language course	Credits		Summer (UG) Language course	Credits	3.0
Fall	Credits	1.0		(		(UG) Language	Credits	4.0 4.0	(UG) Language	Credits	3.0 4.0
Fall COOP 101	Credits	1.0 4.0 4.0	ECON 202 (UG) GST Concentration	(	3.0	(UG) Language course (UG) GST Distribution	Credits	4.0 4.0 3.0	(UG) Language course (UG) GST Distribution	Credits	

		9			9			12			11
POM 510		2.0	(GR) Graduate elective		3.0	(GR) Concentration Requirement		6.0	(GR) Concentration Requirement		3.0
MGMT 530			STAT 510			(GR) Graduate Elective			(GR) Graduate Elective		3.0
MKTG 510		2.0	ORGB 511		3.0	ORGB 520		1.0	(GR) Experiential Elective		3.0
FIN 601			BLAW 510			MGMT 520			MGMT 770		2.0
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
Fifth Year				_			_		_	_	
		15			15			15			0
ACCT 510		2.0									
(UG) Free elective		3.0	MGMT 510		3.0						
(UG) Language course		3.0	(UG) Free elective		3.0	ECON 601		3.0			
(UG) GST 200+			(UG) GST Concentration requirement		3.0	(UG) Free electives		6.0			
(UG) GST Distribution option			(UG) Distribution option		3.0	(UG) Concentration Requirement		3.0	Student converts to Grad status		
UNIV H201		1.0	GST 400		3.0	(UG) GST Distribution option		3.0	VACATION		
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
Fourth Yea	r							5			
		15	elective		16			0			0
			(UG) Free		3.0						
(UG) Free electives		6.0	(UG) Concentration Requirement		3.0						
(UG) Concentrati Requiremer			(UG) Distribution Option		4.0						
(UG) GST Distribution Option			(UG) GST 200+		3.0						
(UG) Language course			(UG) Language course		3.0	COOP	CE		COOP EXPERIENC	CE	
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
Third Year											
elective		18			17			17			13
(UG) Free		3.0									
(UG) GST 200+		3.0	(UG) Free elective		3.0						

Total Credits 229

9.0

# Global Studies BA / Strategic & Digital Communication MS

# **Program 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
Two Math courses	3	6.0-8.0
Two Science cour	ses	6.0-8.0
UNIV H101	The Drexel Experience	1.0
UNIV H201	Looking Forward: Academics and Careers	1.0
Global Studies C	ore 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 G		12.0
GST 400	Senior Project in Global Studies	3.0
Language minor	in French, Spanish or Japanese, or minor in Asian Studies, nd North Africa Studies	24.0
Students must cor a language minor.	mplete at least 24.0 credits above the 103 language level to earn	
	d 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	
	e following ethics courses	3.0
PHIL 321	Biomedical Ethics	5.0
PHIL 340	Environmental Ethics	
PBHL 309	Public Health Ethics	
		3.0
	e following English courses	3.0
-	] Literature & Science	
ENGL 302	Environmental Literature	
ENGL 370	Topics in Literature and Medicine	
	d Sustainability Distribution Requirements	24.0
	nplete 24.0 credits from the approved list:	
	] 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	
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
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 Strategic & D	Digital Communication	
Required Core C	ourses	
COM 500	Reading & Research in Communication	3.0
COM 574	Organizational Communication in Project Management	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 613	Ethics for Professional Communication	3.0
COM 615	Media Environments in a Digital World	3.0
COM 651	Media and Communication Policy in a Digitized World	3.0
COM 698	Managing Communication Professional Identities in a Digital Age	3.0
Program Elective	es	12.0
Choose four of th	e following courses:	
COM 516	Campaigns for Health and Environment	
COM 518	Communicating Health and Risk in a 'Fake News' World	
COM 520	Science Writing	
COM 525	Document Design and Usability	
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 544	Media Relations in a Digital Age	
COM 551	Creative Content Production	
COM 561	Fundamentals of Journalism & Newswriting	
COM 562	International Negotiations	
COM 563	Event Planning	
COM 570	Technical, Science and Health Editing	
COM 575	Grant Writing	
COM 576	Nonprofit Communications	
COM 577	Communication for Civic Engagement	
COM 578	Focus Groups	
COM 586	Strategic International Communication	
COM 600	Graduate Seminar in Communication	
COM 614	Social Media Concepts that Matter	
COM 660	Investigative Journalism	
COM 670	Medical Writing	
COM 673	Medical Journalism	
COM 1599	Independent Study in COM	
COM 1699	Independent Study in COM	
COM T580	Special Topics in Communication	
COM T680	Special Topics in Communication	
Graduate Electiv	* /es	12.0

\* Students can select up to 12.0 credits of graduate-level electives (500-799) in the following subject areas (AADM, AAML, ACCT, BUSN, CCM, CHP, COM, CRTV, CW, DIGM, ECON, EDAM, EDHE, EDLT, EDUC, ENTP, ENVP, ENVS, EOH, HMP, HRM, LING, MGMT, MGMT, MKTG, MUSL, NPM, ORGB, PBHL, PLCY, PROJ, PRST, RMER, SCRP, SCTS, SMT, TVMN). Other graduate courses outside these areas might be taken pending approval from the graduate advisor or program director.

### Sample Plan of Study

ear

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits	
ENGL 101	3.0	0 ENGL 102	3.0	0 CIVC 101	1.0	VACATION	J	
or 111		or 112						

0
redits
4.0
3.0
3.0
3.0
3.0
16
redits
3.0
3
redits
0
0
0

(GR) Grad Electives	6.0 (GR) Graduate Elective	3.0 (GR) Graduate 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.

# History BA / Law JD

## **Program Requirements**

General Educatio	n 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	3.0
	Evidence-Based Writing	
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
CIVC 101	Introduction to Civic Engagement	1.0
Math courses		6.0-8.0
Science courses **		6.0-8.0
Foundation Requ	irements	
Studies in Diversity	y electives	6.0
Two Consecutive F	Foreign Language courses (must complete level 201)	8.0
Humanities/Fine A	rts electives	12.0
Social Science ele	ctives	12.0
International Studie	es electives	6.0
Core History Req	uirements	32.0
HIST 101	Introductory Seminar in History I <sup>†</sup>	
HIST 102	Introductory Seminar in History II <sup>†</sup>	
HIST 296	Research Methods in History I <sup>†</sup>	
HIST 301	The Study of History <sup>†</sup>	
HIST 396	Research Methods in History II <sup>†</sup>	
HIST 490 [WI]	Senior Seminar I <sup>†</sup>	
HIST 491 [WI]	Senior Seminar II <sup>†</sup>	
	ed History Seminar (Topics will vary)	
HIST 380	Advanced History Seminar	
History Distribution requirement)	n Courses (Only 200-level and above HIST courses will fulfill this	20.0
Any 2 non-U.S	. History courses	
Any 1 U.S. His	tory Course	
Any 1 History of	course covering pre-1700 history (May not be HIST 201)	
Any 1 History of	of Science, Technology, and Environment course	
History Concentrat level and above)	tion courses or any 7 History courses (at least four must be 200-	28.0
Free electives fulfil	lled by 22 semester credits from first-year law courses	33.0
Law School Requ	lirements	
LAW 550S	Torts	
LAW 552S	Contracts	
LAW 554S	Civil Procedure	
LAW 555S	Legislation and Regulation	
LAW 556S	Property	
LAW 558S	Criminal Law	
LAW 560S	Constitutional Law	
LAW 565S	Legal Methods I	
LAW 566S	Legal Methods II	
	Professional Responsibility	
LAW 830S		
	u Requirements including:	49.0-50.0
Electives and Men		49.0-50.0
Electives and Men	u Requirements including: vel Writing Course (WUL)	49.0-50.0

\*\* Any Biology (BIO), Chemistry (CHEM), Geoscience (GEO), Nutrition (NFS), Physics (PHYS) or Environmental Science (ENVS) course, or Physics-Environmental Science (PHEV)

- \*\*\* University requirement is two consecutive courses; the third language course, though listed here, is a departmental requirement.
- † HIST 101 HIST 491 [WI] must be taken in sequence.

Upper-Level Writing (WUL) Courses (may also be used as electives one

requirement is fulf	illed):	
LAW 610S	Reproductive Rights Law	2.0-3.0
LAW 611S	Sex, Gender, & the Law	3.0
LAW 614S	Supreme Court Seminar	3.0
LAW 647S	The Rights of Children	2.0
LAW 656S	Justice Lawyering Sem (if full-year paper)	1.0-3.0
LAW 673S	Crime and Community	2.0
LAW 790S	Toxic Torts	2.0
LAW 791S	Regulating Patient Safety	2.0
LAW 793S	Mental Health Law (if paper option)	3.0
LAW 827S	Immigration Litigation	2.0
LAW 828S	International Business Transactions	2.0-3.0
LAW 832S	Contract Theory Seminar	2.0-3.0
LAW 836S	Legal History	2.0-3.0
LAW 838S	Foundations of Legal Analysis	2.0
LAW 840S	Literature and The Law Seminar	2.0
LAW 842S	Law and Mind Sciences	2.0
LAW 844S	Law and Social Movements	3.0
LAW 848S	Courts and Public Policy	2.0-3.0
LAW 882S	Litigation Drafting	2.0
LAW 884S	Contract Drafting	2.0
LAW 910S	Appellate Advocacy	2.0
LAW 920S	Drexel Law Review (if WUL option)	1.0-6.0
LAW T880S	Special Topics in LAW	1.0-5.0
Statutory Courses	(may also be used as electives once requirement is fulfilled):	
LAW 620S	Administrative Law	4.0
LAW 622S	Employment Discrimination	3.0
LAW 623S	Election Law	3.0
LAW 624S	Environmental Law	3.0
LAW 642S	Special Education Law	2.0-3.0
LAW 674S	Health Care Fraud and Abuse	2.0
LAW 675S	Federal Criminal Law	2.0-3.0
LAW 676S	White Collar Crime	2.0-3.0
LAW 700S	Business Organizations	3.0-4.0
LAW 701S	Federal Income Tax	4.0
LAW 702S	Enterprise Tax	4.0
LAW 706S	Secured Transactions	3.0
LAW 708S	Payment Systems	3.0
LAW 710S	Bankruptcy	3.0-4.0
LAW 711S	Sales	3.0
LAW 714S	Securities Regulation	3.0
LAW 740S	Trusts and Estates	3.0
LAW 760S	Copyright	3.0
LAW 764S	Trademarks & Unfair Competition	3.0
LAW 792S	Food and Drug Law	3.0
LAW 796S	Insurance Law	2.0
LAW 820S	Immigration Law	3.0-4.0
LAW 821S	European Union Law	2.0-3.0
LAW 826S	Refugee and Asylum Law	2.0
Professional Pract fulfilled):	tice Courses (may also be used as electives once requirement is	
LAW 924S & LAW 653S	Entrepreneurial Law Clinic and Entrepreneurial Law Clinic Seminar	7.0
LAW 931S & LAW 654S	Law Co-op and Lawyering Practice Seminar	8.0-9.0
LAW 941S	Criminal Litigation Clinic I	14.0-15.0
& LAW 942S & LAW 656S	and Criminal Litigation Clinic II and Justice Lawyering Sem	

### 2 History BA / Law JD

LAW 943S & LAW 944S & LAW 656S	Civil Litigation Clinic I and Civil Litigation Clinic II and Justice Lawyering Sem	14.0-15.0
LAW 947S & LAW 948S & LAW 656S	Federal Litigation and Appeals Clinic and Federal Litigation and Appeals Clinic II and Justice Lawyering Sem	14.0-15.0
LAW 950S & LAW 951S & LAW 656S	Community Lawyering Clinic I and Community Lawyering Clinic II and Justice Lawyering Sem	14.0-15.0
Free Electives (m	ay require permission to enroll)	

Any other unspecified LAW course numbered 550S and above may count as JD elective

# Sample Plan of Study

# Undergraduate course credits are quarter credits

	16	6	14-16		18-19		0
Language (103-level or higher)	4.0	) Language	3.0-4.0				
Non-U.S. History course	4.0	) Math	3.0-4.0	History electives	8.0		
UNIV H101	1.0	) HIST 102	4.0	U.S. History course	4.0		
HIST 101	4.0	ENGL 102	3.0	Math	3.0-4.0		
ENGL 101	3.0	CIVC 101	1.0	ENGL 103	3.0	VACATION	
First Year Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits

Second Ye	ar								
Fall	Credits	Winter	Credits	Spring	Credits		Summer	Credits	
HIST 296	4.(	) HIST 396	4.0	Non-U.S. History course		4.0	VACATION		
HIST 301	4.0	History of Science, Technology and Environmer course	, 1	Internationa Studies elective		3.0			
Science	3.0-4.0	) Humanities Fine arts elective	3.0	Social Science		3.0			
History course covering pre-1700 history	4.(	) Social Science	3.0	Humanities/ Fine arts elective		3.0			
		Science	3.0-4.0	History Elective		4.0			
	15-1	6	17-18			17			0
Third Year									
Fall	Credits	Winter	Credits	Spring	Credits		Summer	Credits	
HIST 490	4.0	) HIST 380	4.0	History Electives		8.0	VACATION		
UNIV H201	1.0	) HIST 491	4.0	Humanities Fine Arts Elective			Student transitions to First Year of Law School		
History Elective	4.0	) Humanities Fine arts elective	3.0	Diversity Elective		3.0			

	15	19	17	0
International Studies Elective	3.0			
Social Science elective	3.0 History Electives	8.0 Social Science Elective	3.0	

Total Credits 148-153

# Law School course credits are semester credits

# First Year Law course credits (22 semester credits) are counted toward the History BA.

Fall	Credits	Spring	Credits	
LAW 550S (Counts toward UG free elective)		4.0 LAW 555S (Counts toward UG free elective)		3.(
LAW 552S (Counts toward UG free elective)		4.0 LAW 556S (Counts toward UG free elective)		4.(
LAW 554S (Counts toward UG free elective)		4.0 LAW 558S		4.0
LAW 565S (Counts toward UG free elective)		3.0 LAW 566S		3.0
		15	·	14
Fifth Year				
Fall	Credits	Spring	Credits	
LAW 560S		4.0 LAW 830S		2.0
LAW Reqts/Electives		10.0 LAW Reqts/ Electives		12.0
		14		14
Sixth Year				
Fall	Credits	Spring	Credits	
LAW Reqts/Electives		14.0 LAW Reqts/		14.(
		Electives		
		14		14

# Juris Doctor (JD) / Business Administration (MBA)

# **Program Requirements**

### Required JD Courses

•		
LAW 550S	Torts	4.0
LAW 552S	Contracts	4.0
LAW 554S	Civil Procedure	4.0
LAW 555S	Legislation and Regulation	3.0
LAW 556S	Property	4.0
LAW 558S	Criminal Law	4.0
LAW 560S	Constitutional Law	4.0
LAW 565S	Legal Methods I	3.0
LAW 566S	Legal Methods II	3.0
LAW 830S	Professional Responsibility	3.0
One Upper-Leve	el Writing Course (See table below)	2.0-3.0
One Statutory C	ourse (See table below)	2.0-4.0
Co-op or Clinic		7.0-12.0
JD Electives *		24.0-32.0
Required MBA	Courses	
MGMT 530	Managing and Leading the Total Enterprise	2.0
MKTG 510	Marketing Strategy	2.0
STAT 510	Introduction to Statistics for Business Analytics	2.0
ACCT 510	Essentials of Financial Reporting	2.0
ORGB 640	Negotiations for Leaders	3.0
FIN 601	Corporate Financial Management	3.0
MGMT 510	Business Problem Solving	3.0
MGMT 520	Strategy Analysis	2.0
ECON 601	Managerial Economics	3.0
POM 510	Operations and Supply Chain Management	2.0
MGMT 770	MBA Capstone	2.0
MBA Electives *	•	15.0

 \* Unspecified LAW courses 550 and higher can be counted as electives.

\*\* Accounting (ACCT), Statistics (STAT), Economics (ECON), Finance (FIN), General Business (BUSN), International Business (INTB), Legal Studies (BLAW), Management (MGMT), Management Information Systems (MIS), Marketing (MKTG), Operations Management (OPM), Operations Research (OPR), Organizational Behavior (ORGB), Production Operations Management (POM), Sport Management (SMT) or Taxation (TAX), with course number range between 600-799.

#### Upper Level Writing (WUL) Courses

May also be use	d as electives once requirement is fulfilled.	
LAW 610S	Reproductive Rights Law	2.0-3.0
LAW 611S	Sex, Gender, & the Law	2.0-3.0
LAW 614S	Supreme Court Seminar	3.0
LAW 647S	The Rights of Children	2.0
LAW 656S	Justice Lawyering Sem	1.0-3.0
LAW 673S	Crime and Community	2.0
LAW 790S	Toxic Torts	2.0-3.0
LAW 791S	Regulating Patient Safety	2.0-3.0
LAW 793S	Mental Health Law	2.0-3.0
LAW 827S	Immigration Litigation	2.0

LAW 828S	International Business Transactions	2.0-3.0
LAW 832S	Contract Theory Seminar	2.0-3.0
LAW 836S	Legal History	2.0-3.0
LAW 838S	Foundations of Legal Analysis	2.0
LAW 840S	Literature and The Law Seminar	2.0-3.0
LAW 842S	Law and Mind Sciences	2.0-3.0
LAW 844S	Law and Social Movements	2.0-3.0
LAW 848S	Courts and Public Policy	2.0-3.0
LAW 882S	Litigation Drafting	2.0
LAW 884S	Contract Drafting	2.0
LAW 910S	Appellate Advocacy	2.0
LAW 920S	Drexel Law Review	1.0-6.0
LAW T880S	Special Topics in LAW	1.0-5.0

### Statutory Courses

May also be used as electives once requirement is fulfilled.

	•	
LAW 620S	Administrative Law	3.0-4.0
LAW 622S	Employment Discrimination	3.0
LAW 623S	Election Law	3.0-4.0
LAW 624S	Environmental Law	3.0
LAW 642S	Special Education Law	2.0-3.0
LAW 674S	Health Care Fraud and Abuse	2.0-3.0
LAW 675S	Federal Criminal Law	2.0-3.0
LAW 676S	White Collar Crime	2.0-3.0
LAW 700S	Business Organizations	3.0-4.0
LAW 701S	Federal Income Tax	3.0-4.0
LAW 702S	Enterprise Tax	3.0-4.0
LAW 706S	Secured Transactions	3.0
LAW 708S	Payment Systems	3.0
LAW 710S	Bankruptcy	3.0-4.0
LAW 711S	Sales	3.0
LAW 714S	Securities Regulation	3.0
LAW 740S	Trusts and Estates	3.0-4.0
LAW 760S	Copyright	3.0
LAW 764S	Trademarks & Unfair Competition	3.0
LAW 792S	Food and Drug Law	2.0-3.0
LAW 796S	Insurance Law	2.0-3.0
LAW 820S	Immigration Law	3.0-4.0
LAW 821S	European Union Law	2.0-3.0
LAW 826S	Refugee and Asylum Law	2.0-3.0

# Sample Plan of Study

First Year											
Fall	Credits	;				Spring	Credits				
LAW 550S		4.0				LAW 556S		4.0			
LAW 552S		4.0				LAW 558S		4.0			
LAW 554S		4.0				LAW 555S	;	3.0			
LAW 565S		3.0				LAW 566S	;	3.0			
		15						14			
Second Ye	ear										
Fall	Credits	;				Spring	Credits		Summer	Credits	5
LAW 560S		4.0				LAW 830S	;	3.0	LAW 931S		7.0
Statutory		4.0				Law	1	1.0	LAW 654S		2.0
Course						Electives					
Law		7.0									
Electives											
		15						14			9
Third Year											
Fall	Credits	;	Winter	Credits		Spring	Credits				
MGMT 530	)	2.0	FIN 601		3.0	ECON 601	:	3.0			
MKTG 510		2.0	MGMT 510		3.0	POM 510	:	2.0			

### 2 Juris Doctor (JD) / Business Administration (MBA)

STAT 510	2.0 MGMT 520	2.0 MGMT 770	2.0	
ACCT 510	2.0 MBA Electives	6.0 MBA Electives	6.0	
ORGB 640	3.0			
MBA Elective	3.0			
	14	14	13	
Fourth Yea	ar			
Fall	Credits			
Law Electives	12.0			
	12			
Total Cred	lits 120			

# Marketing BSBA / Strategic & Digital Communication MS

### **Program Requirements**

BSAN 160

### Bachelor of Science in Business Administration (BSBA) Degree

Requirements	nce in Business Administration (BOBA) Degree							
CIVC 101	Introduction to Civic Engagement	1.0						
COM 270 [WI]	Business 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	0.0						
ENGL 102	Composition and Rhetoric II: Advanced Research and	3.0						
	Evidence-Based Writing	5.0						
or ENGL 112	English Composition II	3.0						
ENGL 103	Composition and Rhetoric III: Themes and Genres							
or ENGL 113	English Composition III							
MATH 101	Introduction to Analysis I	4.0						
MATH 102	Introduction to Analysis II	4.0						
PHIL 105	Critical Reasoning	3.0						
PSY 101	General Psychology I	3.0						
UNIV B101	The Drexel Experience	1.0						
UNIV B201 [WI]	Career Management	1.0						
English literature e	elective ENGL 200 through ENGL 399	3.0						
Fine Arts elective		3.0						
Architecture (A Interior Design	the following subjects and course range from 100-499. ARCH), Art History (ARTH), Dance (DANC), Film Studies (FMST), n (INTR), Music (MUSC), Photography (PHTO), Visual Studies enwriting & Playwriting (SCRP),Theatre (THTR)							
History (HIST) ele	ctive	4.0						
Select two of the f	ollowing:	6.0						
BIO 100	Applied Cells, Genetics & Physiology							
or BIO 101	Applied Biological Diversity, Ecology & Evolution							
CHEM 151	Applied Chemistry							
PHYS 151	Applied Physics							
	7€lectricity and Motion							
	75 ight and Sound							
General Educatio		12.0						
Students select (1	2.0) credits of general education electives, with a minimum of h of the following four (4) categories.	12.0						
Diversity & Multicu								
Society and Cultur								
	the following subjects and course range from 100-499.							
Communicatio DIGM, FMVD,	s (GOT), Language (LANG) or Philosophy (PHIL)							
Social Science								
Anthropology	he following subjects and course range from 100-499. (ANTH), Criminology and Justice Studies (CJS), History (HIST), C), Political Science (PSCI), Psychology (PSY)							
Science								
	he following subjects and course range from 100-499. Computer Information Systems (INFO), Science, Technology and Society							
Additional Gener	al Education Electives							
Business Require	ements							
ACCT 115	Financial Accounting Foundations	4.0						
ACCT 116	Managerial Accounting Foundations	4.0						
BLAW 201	Business Law I	4.0						
DOANL 400								

Business Analytics and Data Visualization

4.0

BUSN 101	Foundations of Business I	4.0
BUSN 102	Foundations of Business II	4.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
FIN 301	Introduction to Finance	4.0
INTB 200	International Business	4.0
MGMT 450	Strategy and Competitive Advantage	4.0
MIS 200	Management Information Systems	4.0
MKTG 201	Introduction to Marketing Management	4.0
OPM 200	Operations Management	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
STAT 201	Introduction to Business Statistics	4.0
Select one of the fo	ollowing:	4.0
MGMT 260	Introduction to Entrepreneurship	
MGMT 370	For-Profit Business Consulting	
MGMT 371	Nonprofit Business Consulting	
MGMT 372	Startup Business Consulting	
MGMT 380	International Business Consulting	
ORGB 420	Negotiations and Conflict Resolution	
SMT 372	Sport Business Consulting	
STAT 202	Business Statistics II	
Marketing Major F		
MKTG 326	Marketing Insights	4.0
MKTG 356	Consumer Behavior	4.0
MKTG 380	Seminar in Marketing Strategy	4.0
Select six (6) of the	-	24.0
MKTG 321	Selling and Sales Management	
MKTG 322 MKTG 324	Advertising & Integrated Marketing Communications	
MKTG 324 MKTG 344	Marketing Channels and Distribution Systems Professional Personal Selling	
MKTG 344 MKTG 347	New Product Development	
MKTG 347 MKTG 348	Services Marketing	
MKTG 340 MKTG 351	Marketing for Non-Profit Organizations	
MKTG 355	Interactive Marketing	
MKTG 357	Global Marketing	
MKTG 362	Brand and Reputation Management	
MKTG 364	Marketing for New Ventures	
MKTG 365	Digital Marketing	
MKTG 366	Customer Analytics	
MKTG 367	Data-Driven Digital Marketing	
MKTG 368	Corporate Responsibility Management	
Free Electives		18.0
MS in Strategic &	Digital Communication Degree Requirements	
Required Core Co	burses	
COM 500	Reading & Research in Communication	3.0
COM 574	Organizational Communication in Project Management	3.0
COM 610	Theories of Communication and Persuasion	3.0
COM 613	Ethics for Professional Communication	3.0
COM 615	Media Environments in a Digital World	3.0
COM 651	Media and Communication Policy in a Digitized World	3.0
COM 698	Managing Communication Professional Identities in a Digital	3.0
	Age	40.0
SDC Program Ele		12.0
Choose four of the COM 516	Campaigns for Health and Environment	
COM 518	Communicating Health and Risk in a 'Fake News' World	
COM 518	Science Writing	
COM 525	Document Design and Usability	
COM 523	Modern Desktop Publishing	
COM 535	Digital Publishing	
COM 536	Strategic Social Media Communication	
COM 541	Foundations of Public Relations	

otal Credits		225.0
Fraduate Electiv	ves <sup>*</sup>	12.0
COM T680	Special Topics in Communication	
COM T580	Special Topics in Communication	
COM 1699	Independent Study in COM	
COM 1599	Independent Study in COM	
COM 673	Medical Journalism	
COM 670	Medical Writing	
COM 660	Investigative Journalism	
COM 614	Social Media Concepts that Matter	
COM 600	Graduate Seminar in Communication	
COM 586	Strategic International Communication	
COM 578	Focus Groups	
COM 577	Communication for Civic Engagement	
COM 576	Nonprofit Communications	
COM 575	Grant Writing	
COM 570	Technical, Science and Health Editing	
COM 563	Event Planning	
COM 562	International Negotiations	
COM 561	Fundamentals of Journalism & Newswriting	
COM 551	Creative Content Production	
COM 544	Media Relations in a Digital Age	
COM 543	Public Relations Planning	
COM 542	Public Relations Writing	

 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 can select up to 12.0 credits of graduate-level electives (500-799) in the following subject areas: (AADM, AAML, ACCT, BUSN, CCM, CHP, COM, CRTV, CW, DIGM, ECON, EDAM, EDHE, EDLT, EDUC, ENTP, ENVP, ENVS, EOH, HMP, HRM, LING, MGMT, MGMT, MKTG, MUSL, NPM, ORGB, PBHL, PLCY, PROJ, PRST, RMER, SCRP, SCTS, SMT, TVMN). Other graduate courses outside these areas might be taken pending approval from the graduate advisor or program director.

## Sample Plan of Study

4.0 COM 270

### 5 year, 1 coop

STAT 201

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BUSN 101	4.0	BUSN 102	4.0	ACCT 115	4.0	VACATION	
ECON 201	4.0	CIVC 101	1.0	BSAN 160	4.0		
ENGL 101 or 111	3.0	ECON 202	4.0	COOP 101 <sup>*</sup>	1.0		
MATH 101	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
UNIV B101	1.0	MATH 102	4.0	PSY 101	3.0		
				General Education Elective	3.0		
	16		16		18		0
Second Ye	ar						
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ACCT 116	4.0	BLAW 201	4.0	MIS 200	4.0	FIN 301	4.0

3.0 MKTG 201

4.0 MKTG 326

4.0

Fifth Year Fall (GR) Graduate Electives (GR) SDC Program Elective	Credits	6.0	Winter (GR) Graduate Elective (GR) SDC Program Elective	Credits	3.0	Spring COM 698 (GR) Graduate Elective	Credits	3.0 3.0			
Fall (GR) Graduate Electives	Credits	6.0	(GR) Graduate Elective	Credits	3.0	COM 698	Credits				
Fall (GR) Graduate	Credits		(GR) Graduate	Credits			Credits	3.0			
Fall	Credits			Credits			Credits	3,0			
	C		Minter	Creatility		Cuarlas	C				
		17			18			18			(
						Elective					_
						(GR) SDC Progam		3.0			
						COM 615		3.0			
						STAT 2	02				
			Elective								
			Program								
2 0 0 10		5.0	(GR) SDC		3.0						
COM 613		3.0	COM 651		3.0	MGMT	371				
Elective			Education								
(UG) MKTG		4.0	(UG) General		3.0	MGMT	2				
									Student		
Elective									Graduate		
General Education									classified as		
(UG)		3.0	UNIV B201		1.0	MGMT	260		Student		
						following:			Awarded		
(UG) Free Elective		3.0	MGMT 450		4.0	Select one of the		4.0	Undergrad Degree		
(110) 5		0.5	MONT 15-		1.5	Electives		1.0	Linda di		
MKTG 356		4.0	MKTG 380		4.0	(UG) Free		8.0	VACATION		
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
Fourth Yea	ar										
		18			15			0			;
COM 500		3.0									
MKTG Electives											
(UG)		8.0	COM 610		3.0						
			Electives								
1112 103		5.0	(UG) MKTG		0.0				50W 574		5.0
PHIL 105		30	Electives (UG)		8.0	EXPERIEN	UE .		EXPERIEN COM 574		3.0
ORGB 300		4.0	(UG) Free		4.0		CE.			~E	
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
Third Year											
		15			14			18			18
170, 01			175								
PHYS 1 170, or	151,		PHYS 1 170, or	51,							
CHEM			CHEM 1								
									Elective		
BIO 100 or 101	D		BIO 100 or 101	)		(UG) Free Elective		3.0	(UG) MKTG		4.(
						399 course					
following:			following:			- ENGL			Elective		
Select one of the		3.0	Select one of the		3.0	(UG) ENGL 200		3.0	(UG) Fine Arts		3.(
Elective									Elective		
(HIST)		4.0	INTB 200		4.0	OPM 200		4.0	General Education		3.0
			INTE 200		10	OPM 200		10	Gonoral		20

\* 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.

# Mechanical Engineering BSME / Materials Science & Engineering MSMSE

## **Program Requirements**

General Education	on/Liberal Studies 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	
HIST 285	Technology in Historical Perspective	4.0
PHIL 315	Engineering Ethics	3.0
UNIV E101	The Drexel Experience	1.0
General Education	n Requirements **	12.0
Mathematics Rec	juirements	
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0
MATH 210	Differential Equations	4.0
Physics Requirer	ments	
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Chemistry/Biolog	gy Requirements	
BIO 141	Essential Biology	4.5
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
Engineering Desi	ign Requirements	
ENGR 111	Introduction to Engineering Design & Data Analysis	3.0
ENGR 113	First-Year Engineering Design	3.0
ENGR 131	Introductory Programming for Engineers	3.0
or ENGR 132	Programming for Engineers	
Engineering Req	uirements	
ENGR 210	Introduction to Thermodynamics	3.0
Engineering Eco	nomics Requirements	
CIVE 240 [WI]	Engineering Economic Analysis	3.0
Materials Require	ements	
ENGR 220	Fundamentals of Materials	4.0
Mechanical Requ	irements	
MEM 201	Foundations of Computer Aided Design	3.0
MEM 202	Statics	3.0
MEM 220	Fluid Mechanics I	4.0
MEM 230	Mechanics of Materials I	4.0
MEM 238	Dynamics	4.0
MEM 255	Introduction to Controls	4.0
MEM 310	Thermodynamic Analysis I	4.0
MEM 311	Thermal Fluid Science Laboratory	2.0
MEM 331	Experimental Mechanics I	2.0
MEM 333	Mechanical Behavior of Materials	3.0

		10
MEM 345	Heat Transfer	4.0
MEM 351	Dynamic Systems Laboratory I	2.0
MEM 355	Performance Enhancement of Dynamic Systems	4.0
MEM 361	Engineering Reliability	3.0
MEM 391	Introduction to Engineering Design Methods	1.0
MEM 435	Introduction to Computer-Aided Design and Manufacturing	4.0
MEM 491 [WI]	Senior Design Project I	2.0
MEM 492 [WI]	Senior Design Project II	3.0
MEM 493 [WI]	Senior Design Project III	3.0
	tal Courses. Select four of the following: Fluid Dynamics I	12.0
MEM 320 MEM 330	Mechanics of Materials II	
MEM 410		
MEM 410	Thermodynamic Analysis II Introduction to Microfabrication	
MEM 423	Mechanics of Vibration	
MEM 423		
	Machine Design I	
MEM 437 MEM 440	Manufacturing Process I	
MEM 440	Thermal Systems Design	
	Micro-Based Control Systems I	
MEM 459	Control Applications of DSP Microprocessors	0.0
	ives (Any two MEM courses 300 level or higher.)	6.0
300 level or highe	Any 2 College of Engineering courses, including MEM courses, er.)	
MATE 510 ar coursework	nd MATE 512 count as 6.0 credits of COE Electives as shared	
Math/Science Ele ENVS.)	ectives (300+ level MATH, PHYS, BIO, CHEM, CHEC, and	6.0
Free Electives		6.0
	tional Concentration <sup>†</sup>	0.0
Aerospace Cond		
	es (15.0 credits) from the list below:	
MEM 320	Fluid Dynamics I	
MEM 320	Mechanics of Materials II	
MEM 373	Space Systems Engineering I	
MEM 373	Space Systems Engineering II	
MEM 403	Gas Turbines & Jet Propulsion	
MEM 400	Principles of Combustion I	
MEM 406	Principles of Combustion II	
MEM 400	Aerodynamics	
MEM 423	Mechanics of Vibration	
MEM 425	Aircraft Design & Performance	
MEM 425	Aerospace Structures	
MEM 420	Finite Element Methods	
MEM 427	Introduction to Composites I	
MEM 420	Introduction to Composites II	
MEM 451	Orbital Mechanics	
MEM 451	Aircraft Flight Dynamics & Control I	
MEM 453	• •	
	Aircarft Flight Dynamics & Control II Introduction to Robotics	
MEM 455		
MEM 459 Energy Concent	Control Applications of DSP Microprocessors	
AE 430	es (15.0 credits) from the list below: Control Systems for HVAC	
AE 430 CHE 431	Fundamentals of Solar Cells	
ECEP 354 ECEP 371	Energy Management Principles	
ECEP 371 ECEP 380	Introduction to Nuclear Engineering	
ECEP 380 ECEP 402	Introduction to Renewable Energy	
ECEP 402 ECEP 403	Theory of Nuclear Reactors	
ECEP 403 ECEP 406	Nuclear Power Plant Design & Operation Introduction to Radiation Health Principles	
ECEP 406 ECEP 411	Power Systems I	
ECEP 411 ECEP 422	Power Systems Po	
2021 422	Stor Distribution Automation and Colluit	

EC	CEP 480	Solar Energy Engineering	
M	EM 320	Fluid Dynamics I	
M	EM 330	Mechanics of Materials II	
M	EM 371	Introduction to Nuclear Engineering I	
M	EM 400	Internal Combustion Engines	
M	EM 402	Power Plant Design	
M	EM 403	Gas Turbines & Jet Propulsion	
	EM 405 MEM 406	Principles of Combustion I and Principles of Combustion II	
M	EM 410	Thermodynamic Analysis II	
	EM 413 MEM 414	HVAC Loads and HVAC Equipment	
M	EM 415	Fuel Cell Engines	
M	EM 445	Solar Energy Fundamentals	
	EM 446 MEM 447	Fundamentals of Plasmas I and Fundamentals of Plasmas II	
M	EM 448	Applications of Thermal Plasmas	
M	EM 449	Applications of Non-Thermal Plasmas	
Maste	er's Degree C	Courses	
Requi	red Core Cou	irses:	
MATE	510	Thermodynamics of Solids	3.0
MATE	512	Introduction to Solid State Materials	3.0
Four a	additional Sele	ected Core (SC) courses from the following:	12.0
M	ATE 501	Structure and Properties of Polymers	
M	ATE 507	Kinetics	
M	ATE 515	Experimental Technique in Materials	

Total Credits		228.5					
9.0 credits M	ATE 898 (MS thesis) or 9.0 credits of Technical Electives (TE).						
Thesis or Alternatives							
Graduate Techr	nical Electives <sup>††</sup>	18.0					
Any addition	al related courses if approved by the graduate advisor.						
MATE 661	MATE 661 Biomedical Materials I						
MATE 610	MATE 610 Mechanical Behavior of Solids						
MATE 563	MATE 563 Ceramics						
MATE 535	MATE 535 Numerical Engineering Methods						
MATE 515	MATE 515 Experimental Technique in Materials						

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext).
- \*\*\* If a student chooses to pursue a graduate thesis in place of senior design, they will need to replace the 8.0 undergraduate credits from MEM 491 [WI (http://catalog.drexel.edu/ programadmin/1109/)], MEM 492 [WI (http://catalog.drexel.edu/ programadmin/1109/)], MEM 493 [WI (http://catalog.drexel.edu/ programadmin/1109/)] with 8.0 credits from 400+ level MEM courses.
- <sup>†</sup> Students may choose to do a concentration in either Aerospace or Energy. Concentrations consist of 15.0 concentration credits, and do not add additional credits to the program.

<sup>+†</sup> Of the 18.0 technical elective credits, which may include up to 6.0 credits of MATE 897, at least 9.0 credits must be taken as Materials Science and Engineering (MATE) courses, while the rest may be taken within the College of Engineering, College of Arts and Sciences, or at other colleges if consistent with the student's plan of study (and given advance written approval by their advisor). At least 9.0 of these 18.0 technical elective credits. Any graduate-level course in a STEM field (Engineering, Physical Sciences, or Computing/Data), as approved by the MSE Graduate Advisor, excluding MATE 536 (Materials Seminar), MATE 503 (Introduction to Materials Engineering) and MATE 504 (Art of Being a Scientist).

### Sample Plan of Study

### 5 year, 3 coop Co-Terminal

	-	•								
First Year										
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
CHEM 101	3.5	CHEM 102		4.5	BIO 141	2	4.5	VACATION		
ENGL 101 or 111	3.0	CIVC 101 or COOP 101 <sup>*</sup>			COOP 101 or CIVC 101 <sup>*</sup>	1	1.0			
ENGR 111	3.0	ENGL 102 or 112			ENGL 103 or 113	3	3.0			
MATH 121		ENGR 131 or 132		3.0	ENGR 113	3	3.0			
UNIV E101	1.0	MATH 122		4.0	MATH 200	4	4.0			
		PHYS 101		4.0	PHYS 102	4	4.0			
	14.5		1	9.5		19	9.5			0
Second Ye	ar									
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
ENGR 220	4.0	ENGR 210			COOP EXPERIEN	ICE		COOP EXPERIEN	CE	
MATH 201	4.0	MATH 210		4.0						
MEM 202	3.0	MEM 201		3.0						
PHYS 201	4.0	MEM 238		4.0						
(UG) General Education Elective <sup>**</sup>		(UG) General Education Elective <sup>**</sup>		4.0						
	18			18			0			0
Third Year										
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
MEM 230	4.0	MEM 220			COOP EXPERIEN	ICE		COOP EXPERIEN	CE	
MEM 310	4.0	MEM 255			(GR) Graduate MATE Technical Elective	3	3.0			
PHIL 315	3.0	MEM 331		2.0						
(UG) General Education Elective	3.0	MEM 333		3.0						
(GR) Graduate Technical Elective	3.0	(GR) Graduate MATE Tech Elective		3.0						

				~ ~						
		(GR) Graduate SC Core Course		3.0						
	17	,		19			3			0
Fourth Year	r									
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
MEM 311	2.0	MEM 351		2.0	COOP EXPERIEN	CE		COOP EXPERIEN	ICE	
MEM 345	4.0	MEM 361			(GR) Graduate Tech Elective		3.0	(GR) Graduate Tech Elective		3.0
MEM 355	4.0	MEM 391		1.0						
MEM 435	4.0	(UG) MEM Fundamenta Courses	E	6.0						
(GR) Graduate MATE Tech Elective	3.0	MATE 510 (counts as UG COE Elective)		3.0						
(GR) Graduate SC Core Course	3.0	(GR) Graduate SC Core Course		3.0						
	20	)		18			3			3
Fifth Year										
	Credits	Winter	Credits		Spring	Credits				
CIVE 240		MEM 492		3.0	HIST 285		4.0			
MEM 491										
	2.0	(UG) General Education Elective <sup>**</sup>		2.0	MEM 493		3.0			
(UG) Free Elective		General Education		3.0	MEM 493 (UG) Free Elective		3.0			
(UG) Free	3.0	General Education Elective <sup>**</sup> (UG) Math/ Science		3.0 3.0	(UG) Free					
(UG) Free Elective (UG) Math/ Science	3.0	General Education Elective <sup>**</sup> (UG) Math/ Science elective (UG) MEM Open	al	3.0 3.0 3.0	(UG) Free Elective (UG) MEM Open	I ELECTI	3.0 3.0 3.0			
(UG) Free Elective (UG) Math/ Science Elective (UG) MEM Fundamenta	3.0 3.0 3.0 al	General Education Elective <sup>**</sup> (UG) Math/ Science elective (UG) MEM Open Elective (UG) MEM Fundamenta	al	3.0 3.0 3.0	(UG) Free Elective (UG) MEM Open Elective MATE 898 or	I ELECTI	3.0 3.0 3.0			
(UG) Free Elective (UG) Math/ Science Elective (UG) MEM Fundamenta Course MATE 898 or	3.0 3.0 al 3.0	General Education Elective (UG) Math/ Science elective (UG) MEM Open Elective (UG) MEM Fundamenta Course (Counts as UG COE		<ol> <li>3.0</li> <li>3.0</li> <li>3.0</li> <li>3.0</li> <li>3.0</li> </ol>	(UG) Free Elective (UG) MEM Open Elective MATE 898 or	I ELECTI	3.0 3.0 3.0			

Total Credits 228.5

 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.

\*\* General Education Electives (http://catalog.drexel.edu/undergraduate/ collegeofengineering/#generaleducationrequirementstext) \*\*\* Of the 18.0 technical elective credits, which may include up to 6.0 credits of MATE 897, at least 9.0 credits must be taken as Materials Science and Engineering (MATE) courses, while the rest may be taken within the College of Engineering, College of Arts and Sciences, or at other colleges if consistent with the student's plan of study (and given advance written approval by their advisor). At least 9.0 of these 18.0 technical elective credits. Any graduate-level course in a STEM field (Engineering, Physical Sciences, or Computing/Data), as approved by the MSE Graduate Advisor, excluding MATE 536 (Materials Seminar), MATE 503 (Introduction to Materials Engineering) and MATE 504 (Art of Being a Scientist).

# Mechanical Engineering BSME / Peace Engineering MS

### **Program Requirements**

#### General Education/Liberal Studies 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 3.0 Evidence-Based Writing or ENGL 112 English Composition II ENGL 103 Composition and Rhetoric III: Themes and Genres 3.0 or ENGL 113 English Composition III HIST 285 Technology in Historical Perspective 4.0 PHIL 315 Engineering Ethics 3.0 UNIV E101 The Drexel Experience 1.0 General Education Requirements 12.0 Mathematics Requirements MATH 121 Calculus I 4.0 **MATH 122** Calculus II 4.0 Multivariate Calculus MATH 200 4.0 MATH 201 Linear Algebra 4.0 **MATH 210** Differential Equations 4.0 **Physics Requirements** PHYS 101 Fundamentals of Physics I 4.0 Fundamentals of Physics II **PHYS 102** 4.0 PHYS 201 Fundamentals of Physics III 4.0 Chemistry/Biology Requirements BIO 141 Essential Biology 4.5 **CHEM 101** General Chemistry I 3.5 **CHEM 102** General Chemistry II 4.5 Engineering Design Requirements Introduction to Engineering Design & Data Analysis ENGR 111 3.0 ENGR 113 First-Year Engineering Design 3.0 ENGR 131 Introductory Programming for Engineers 3.0 or ENGR 132 Programming for Engineers **Engineering Requirements** ENGR 210 Introduction to Thermodynamics 3.0 **Engineering Economics Requirements** CIVE 240 [WI] Engineering Economic Analysis 3.0 Materials Requirements ENGR 220 Fundamentals of Materials 4.0 Mechanical Requirements Introduction to Engineering Design Methods **MEM 391** 1.0 **MEM 201** Foundations of Computer Aided Design 3.0 **MEM 202** Statics 3.0 MEM 220 Fluid Mechanics I 4.0 MEM 230 Mechanics of Materials I 4.0 **MEM 238** Dynamics 4.0 **MEM 255** Introduction to Controls 4.0 **MEM 310** Thermodynamic Analysis I 4.0 MEM 311 Thermal Fluid Science Laboratory 2.0 **MEM 331** Experimental Mechanics I 2.0 MEM 333 Mechanical Behavior of Materials 3.0 **MEM 345** Heat Transfer 4.0

MEM 351	Dynamic Systems Laboratory I	2.0
MEM 355	Performance Enhancement of Dynamic Systems	4.0
MEM 361	Engineering Reliability	3.0
MEM 435	Introduction to Computer-Aided Design and Manufacturing	4.0
MEM 491 [WI]	Senior Design Project I	2.0
MEM 492 [WI]	Senior Design Project II	3.0
MEM 493 [WI]	Senior Design Project III	3.0
	tal Courses. Select four of the following:	12.0
MEM 320	Fluid Dynamics I	
MEM 330	Mechanics of Materials II	
MEM 410	Thermodynamic Analysis II	
MEM 417	Introduction to Microfabrication	
MEM 423	Mechanics of Vibration	
MEM 431	Machine Design I	
MEM 437	Manufacturing Process I	
MEM 440	Thermal Systems Design	
MEM 458	Micro-Based Control Systems I	
MEM 459	Control Applications of DSP Microprocessors	
	ives (Any two MEM courses 300 level or higher.)	6.0
COE Electives (A 300 level or highe	<ul> <li>Any 2 College of Engineering courses, including MEM courses, er)</li> </ul>	
ENVE 750 ar coursework	ad SYSE 540 count as 6.0 credits of COE Electives as shared	
Math/Science Ele ENVS.)	ectives (300+ level MATH, PHYS, BIO, CHEM, CHEC, and	6.0
Free Electives		6.0
Electives or Opt	tional Concentration <sup>†</sup>	
Aerospace Con	centration	
Select five course	es from the list below:	
MEM 320	Fluid Dynamics I	
MEM 330	Mechanics of Materials II	
MEM 373	Space Systems Engineering I	
MEM 374	Space Systems Engineering II	
MEM 403	Gas Turbines & Jet Propulsion	
MEM 405	Principles of Combustion I	
MEM 406	Principles of Combustion II	
MEM 420	Aerodynamics	
MEM 423	Mechanics of Vibration	
MEM 425	Aircraft Design & Performance	
MEM 426	Aerospace Structures	
MEM 427	Finite Element Methods	
MEM 428	Introduction to Composites I	
MEM 429	Introduction to Composites II	
MEM 451	Orbital Mechanics	
MEM 453	Aircraft Flight Dynamics & Control I	
MEM 454	Aircarft Flight Dynamics & Control II	
MEM 455	Introduction to Robotics	
MEM 459	Control Applications of DSP Microprocessors	
Energy Concent	tration	
Select five course	es from the list below:	
AE 430	Control Systems for HVAC	
CHE 431	Fundamentals of Solar Cells	
ECEP 354	Energy Management Principles	
ECEP 371	Introduction to Nuclear Engineering	
ECEP 380	Introduction to Renewable Energy	
ECEP 402	Theory of Nuclear Reactors	
ECEP 403	Nuclear Power Plant Design & Operation	
ECEP 406	Introduction to Radiation Health Principles	
ECEP 411	Power Systems I	
ECEP 422	Power Distribution Automation and Control	
ECEP 480	Solar Energy Engineering	
MEM 320	Fluid Dynamics I	

MEM 330	Mechanics of Materials II	
MEM 371	Introduction to Nuclear Engineering I	
MEM 400	Internal Combustion Engines	
MEM 402	Power Plant Design	
MEM 403	Gas Turbines & Jet Propulsion	
MEM 405 & MEM 406	Principles of Combustion I and Principles of Combustion II	
MEM 410	Thermodynamic Analysis II	
MEM 413 & MEM 414	HVAC Loads and HVAC Equipment	
MEM 415	Fuel Cell Engines	
MEM 445	Solar Energy Fundamentals	
MEM 446 & MEM 447	Fundamentals of Plasmas I and Fundamentals of Plasmas II	
MEM 448	Applications of Thermal Plasmas	
MEM 449	Applications of Non-Thermal Plasmas	
Master's Degree	e Requirements	
Core Peacebuil	ding Requirements	12.0
PENG 501	Peace Engineering Seminar - Fall	
PENG 502	Peace Engineering Seminar - Winter	
PENG 503	Peace Engineering Seminar - Spring	
PENG 545	Introduction to Peacebuilding for Engineers	
PENG 550	Conflict Management for Engineers	
PENG 560	Peacebuilding Skills	
Core Engineeri	ng Requirements	9.0
ENVE 727	Risk Assessment	
PROJ 501	Introduction to Project Management	
SYSE 540	Systems Engineering for Peacebuilding	
Research Methe	ods	9.0
CAEE 501	Community-Based Design	
ENVE 750	Data-based Engineering Modeling	
SCTS 502	Research Methods	
Experiential Lea	arning	6.0
PENG 600	Peace Engineering Experiential Learning	
Social Dimensi	ons of Conflict Electives <sup>††</sup>	6.0
Technical Focu	6.0	

\* 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.

- \*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)
- \*\*\* If a student chooses to pursue a graduate thesis in place of senior design, they will need to replace the 8.0 undergraduate credits from MEM 491 [WI], MEM 492 [WI], MEM 493 [WI] with 8.0 credits from 400+ level MEM courses.
- <sup>†</sup> Students may choose to do a concentration in either Aerospace or Energy. Concentrations consist of 15.0 concentration credits and do not add additional credits to the program.

### <sup>††</sup> Social Dimensions of Conflict Electives

Students must complete a minimum of 6.0 credits, at the graduate level, from the following approved courses.

- Science, Technology and Society
  - electives: SCTS 501, SCTS 570, SCTS 571, SCTS 615, SCTS 620, SCTS 641, SCTS
- Politics electives: ENVP 552, PSCI 510, PSCI 553
- Education electives: EDGI 533, EDGI 536, EDGI 550

### **‡** Technical Focus Sequences

Students must complete one sequence of at least 2 courses (6.0 credits) from the following approved sequences.

- Systems Analysis: SYSE 688, SYSE 690, EGMT 660
- Software Development: CS 502, CS 575, CS 576
- Machine Learning and AI: CS 510, CS 613, CS 610
- Information Security: INFO 517, INFO 712, INFO 710
- · Database Management: INFO 605, INFO 606, INFO 607
- Information Retrieval: INFO 605, INFO 624, INFO 633
- Data Mining: INFO 605, INFO 634, INFO 633
- Web and Mobile Development: INFO 552, INFO 655
- Game Design: DIGM 505, DIGM 506
- Serious gaming: DIGM 530, DIGM 531
- Interactivity: DIGM 520, DIGM 521
- WASH: CIVE 564, CIVE 567, CIVE 561
- Power Systems and Distribution: ECEP 501, ECEP 502, ECEP 601

### Sample Plan of Study

EXPERIENCE

EXPERIENCE

### 5 year, 3 coop Co-Terminal

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	CHEM 102	4.	5 BIO 141	4.5	VACATION	
ENGL 101 or 111	3.0	COOP 101 or CIVC 101 <sup>*</sup>	1.0	O CIVC 101 or COOP 101 <sup>*</sup>	1.0		
ENGR 111	3.0	ENGL 102 or 112	3.	0 ENGL 103 or 113	3.0		
MATH 121	4.0	ENGR 131 or 132	3.	) ENGR 113	3.0		
UNIV 101	1.0	MATH 122	4.	0 MATH 200	4.0		
		PHYS 101	4.0	0 PHYS 102	4.0		
	14.5		19.	5	19.5		0
Second Ye	ar						
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIEN	CE	COOP EXPERIEN	CE	ENGR 220	4.0	ENGR 210	3.0
				MATH 201	4.0	MATH 210	4.0
				MEM 202	3.0	MEM 201	3.0
				PHYS 201	4.0	MEM 238	4.0
				(UG) General Education Requirement	**	(UG) Free Elective	3.0
						(UG) General Education Requirement	3.0
	C	1	(	0	18		20
Third Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP		COOP		HIST 285	4.0	MEM 220	4.0

(GR) Social Dimensions Elective <sup>†</sup>		3.0				MEM 230		4.0	MEM 255		4.0
						MEM 310		4.0	MEM 331		2.0
						PENG 545		3.0	MEM 333		3.0
						PHIL 315		3.0	PENG 550		3.0
									(GR) Social Dimensions Elective <sup>†</sup>		3.0
		3			0			18			19
Fourth Yea											
Fall	Credits		Winter	Credits		Spring	Credits			Credits	
COOP EXPERIEN	CE		COOP EXPERIEN	CE		MEM 311		2.0	MEM 351		2.0
PENG 600		3.0	PENG 600		3.0	MEM 345		4.0	MEM 361		3.0
						MEM 355		4.0	MEM 391		1.0
						MEM 435		4.0	(UG) MEM Fundamenta Electives		6.0
						PROJ 501		3.0	(GR) Technical Focus Courses <sup>††</sup>		6.0
						SYSE 540 (counts as UG COE Elective)		3.0			
		3			3			20			18
Fifth Year											
Fall	Credits		Winter	Credits		Spring	Credits				
CIVE 240		3.0	MEM 492***		3.0	MEM 493***		3.0			
MEM 491***		2.0	(UG) Math/ Science Elective		3.0	(UG) Free Elective		3.0			
(UG) General Education Requiremer	nt**	3.0	(UG) MEM Elective		3.0	(UG) General Education Requiremer	nt **	3.0			
(UG) Math/ Science		3.0	(UG) MEM Fundamenta Elective	£	3.0	(UG) MEM Elective		3.0			
Elective											
(UG) MEM Fundamenta Elective	al	3.0	ENVE 727		3.0	CAEE 501		3.0			
(UG) MEM Fundament	al		ENVE 727 PENG 502			CAEE 501 PENG 503		3.0			
(UG) MEM Fundamenta Elective ENVE 750 (counts as UG COE	al	3.0			1.0						
(UG) MEM Fundaments Elective ENVE 750 (counts as UG COE Elective)	al	3.0	PENG 502 SCTS 502		1.0	PENG 503 PENG 560		1.0			

Total Credits 231.5

 \* 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

\*\* General Education Requirements (http:// catalog.drexel.edu/undergraduate/collegeofengineering/ #generaleducationrequirementstext)

eligible to take COOP 001 in place of COOP 101.

\*\*\* If a student chooses to pursue a graduate thesis in place of senior design, they will need to replace the 8.0 undergraduate credits from MEM 491 [WI], MEM 492 [WI], MEM 493 [WI] with 8.0 credits from 400+ level MEM courses.

#### † Social Dimensions of Conflict Electives

Students must complete a minimum of 6.0 credits, at the graduate level, from the following approved courses.

- Science, Technology and Society
- electives: SCTS 501, SCTS 570, SCTS 571, SCTS 615, SCTS 620, SCTS 641, SCTS
- Politics electives: ENVP 552, PSCI 510, PSCI 553
- Education electives: EDGI 533, EDGI 536, EDGI 550

#### **††** Technical Focus Sequences

Students must complete one sequence of at least 2 courses (6.0 credits) from the following approved sequences.

- Systems Analysis: SYSE 688, SYSE 690, EGMT 660
- Software Development: CS 502, CS 575, CS 576
- Machine Learning and AI: CS 510, CS 613, CS 610
- Information Security: INFO 517, INFO 712, INFO 710
- Database Management: INFO 605, INFO 606, INFO 607
- Information Retrieval: INFO 605, INFO 624, INFO 633
- Data Mining: INFO 605, INFO 634, INFO 633
- Web and Mobile Development: INFO 552, INFO 655
- Game Design: DIGM 505, DIGM 506
- Serious gaming: DIGM 530, DIGM 531
- Interactivity: DIGM 520, DIGM 521
- WASH: CIVE 564, CIVE 567, CIVE 561
- Power Systems and Distribution: ECEP 501, ECEP 502, ECEP 601

## Nursing Leadership in Health Systems Management MSN / **Business Administration MBA**

### **Program Requirements**

### **MSN Requirements**

MSN Core Cours	ses	
NURS 500 [WI]	Confronting Issues in Contemporary Health Care Environments	3.0
NURS 502	Advanced Ethical Decision Making in Health Care	3.0
NURS 544	Quality and Safety in Healthcare	3.0
RSCH 503	Research Methods and Biostatistics	3.0
RSCH 504	Evaluation and Translation of Health Research	3.0
Major Courses		
PROJ 501	Introduction to Project Management	3.0
NUPR 663	Communication and Self-Awareness for Leadership	4.5
NUPR 664	The Economics and Business of Healthcare	4.5
NUPR 665	Managing Operations and Human Resources for Quality Outcomes of Care Delivery	4.5
Practicum Cours	Se	
NURS 666	Leadership in Health Systems Management Practicum ((6 Credits Shared))	6.0
MSN Electives		
MSN Electives (7	.5 total, 6 credits of which are satisfied by MBA Electives) **	1.5
MBA Requireme	nts	
ACCT 510	Essentials of Financial Reporting	2.0
BLAW 510	Analyzing Legal Options in Decision-Making	1.0
ECON 601	Managerial Economics	3.0
FIN 601	Corporate Financial Management	3.0
MGMT 510	Business Problem Solving	3.0
MGMT 520	Strategy Analysis	2.0
MGMT 530	Managing and Leading the Total Enterprise	2.0
MGMT 770	MBA Capstone	2.0
MKTG 510	Marketing Strategy	2.0
ORGB 511	Leading in Dynamic Environments: A Personal, Relational, and Strategic Approach	3.0
ORGB 520	Leading High-Performance Teams	1.0
POM 510	Operations and Supply Chain Management	2.0
STAT 510	Introduction to Statistics for Business Analytics	2.0
MBA Free Electiv	es (3 credits Satisfied by NURS 666 Practicum) $^{*}$	9.0
Concentration		6.0
Experiential Requ	irement (3 Credits Satisfied by NURS 666 Practicum)	
BUSN 615	Graduate Internship	
INTB 790	International Business Seminar and Residency	
MGMT 680	Leading for Innovation	
MGMT 715	Business Consulting	
MIS 652	Business Agility and IT	
ORGB 640	Negotiations for Leaders	
TAX 715	Tax Experiential Learning	
Total Credits		82.0

- MBA Electives include any courses in Accounting (ACCT), Statistics (STAT), Economics (ECON), Finance (FIN), General Business (BUSN), International Business (INTB), Legal Studies (BLAW), Management (MGMT), Management Information Systems (MIS), Marketing (MKTG), Operations Management (OPM), Operations Research (OPR), Organizational Behavior (ORGB), Production Operations Management (POM), Sport Management (SMT) or Taxation (TAX), with course number range between 500-799.
- \*\* MSN Electives include any course in Nursing (NURS, NUPR) or Interprofessional Studies (IPS) with course number ranging 500-699.

### Writing-Intensive Course Requirement

A [WI], Writing Intensive, next to a graduate course in this catalog indicates that the graduate course is a writing intensive course. The graduate course is a required course in your curriculum.

### Sample Plan of Study

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First Year (	Part-Tim	e)									
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ACCT 510		2.0	FIN 601		3.0	MGMT 530		2.0	MGMT 510		3.0
NURS 500		3.0	NURS 502		3.0	NURS 544		3.0	RSCH 503		3.0
		5			6			5			6
Second Ye	ar (Part-	Гim	e)								
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
MKTG 510		2.0	NUPR 663		4.5	NUPR 664		4.5	MBA Electives (Satisfies MSN Elective)		6.0
RSCH 504		3.0	MBA		3.0	STAT 510		2.0			
			Elective								
		5			7.5			6.5			6
Third Year	•	,									
Fall						Spring				Credits	
ORGB 511			MGMT 520			POM 510			NUPR 665		4.5
PROJ 501		3.0	MBA		3.0	MBA		3.0			
			Concentrati	(		Concentrati	(				
E		6			5			5			4.5
Fourth Yea	•		,	0							
			Winter								
BLAW 510			MGMT 770		2.0						
ECON 601		3.0	NURS 666 (Satisfies 3 Credits MBA Experiential and 3 Credits MBA Elective)		6.0						
ORGB 520		1.0									
MSN Elective		1.5									
		6.5			8						
Total Credi	te 92										

Total Credits 82

## Political Science BA / Law JD

### **Program Requirements**

#### General Education Requirements

General Educatio	n 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
UNIV H201	Looking Forward: Academics and Careers	1.0
Two Math courses		6.0
Two Science cours	ses*	6.0
Foundation Requ	irements	
Studies in Diversity	y electives	6.0
Three Consecutive	e Foreign Language courses (must complete level 201) **	12.0
Humanities/Fine A	rts electives	12.0
Social Science ele	ctives	12.0
International Studie	es electives	6.0
Core Political Sci	ence Requirements	
PSCI 110	American Government	4.0
PSCI 120	History of Political Thought	4.0
PSCI 140	Comparative Politics I	4.0
PSCI 150	International Politics	4.0
	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 Cou		16.0
Select four of the f		
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	
	Power in Protest: Social Movements in Comparative Perspective	
PSCI 330	Public Opinion & Propaganda	
PSCI 363	Constitutional Law II	
Political Science		32.0
Choose up to e	eight 200-level of above PSCI courses	
	filled by 22.0 semester credits from first-year law courses	33.0
(Law School Req		
Law School require	ed courses	
LAW 550S	Torts	3.0-5.0
LAW 552S	Contracts	3.0-5.0
LAW 554S	Civil Procedure	3.0-5.0
	Legislation and Regulation	3.0
LAW 555S		
	Property	3.0-5.0
LAW 556S		
LAW 555S LAW 556S LAW 558S LAW 560S	Property	3.0-5.0
LAW 556S LAW 558S	Property Criminal Law	3.0-5.0 3.0-5.0 3.0-5.0 2.0-4.0

LAW 830S	Professional Responsibility	2.0-3.0				
Electives and Menu Requirements including: 49.0-50.						
One Upper-	Level Writing Course (WUL). See list below.					
One Statuto	One Statutory Course. See list below.					
One Profess	sional Practice Course. See list below.					

- \* 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.

## Law School Electives and Menu Requirements:

Upper-level writing (WUL) courses may also be used as electives once requirement is fulfilled

LAW 610SReproductive Rights LawLAW 611SSex, Gender, & the LawLAW 641SSupreme Court SeminarLAW 647SThe Rights of ChildrenLAW 647SJustice Lawyering SemLAW 647SCrime and CommunityLAW 790SToxic TortsLAW 791SRegulating Patient SafetyLAW 793SMental Health LawLAW 827SImmigration LitigationLAW 828SIternational Business TransactionsLAW 828SLegal HistoryLAW 838SEgal HistoryLAW 838SEgal HistoryLAW 838SEgal AnalysisLAW 842SLaw and Mind SciencesLAW 842SLaw and Mind SciencesLAW 842SLaw and Mind SciencesLAW 842SLaw and Social MovementsLAW 842SLaw and Social MovementsLAW 842SSpecial Topics in LAWStatutory Courses (may also be used as electives once requirement is fulfilled):LAW 622SEmployment DiscriminationLAW 623SElection LawLAW 624SEnvironmental LawLAW 625SFederal CriminaLAW 700SBusiness OrganizationsLAW 701SFederal Criminal LawLAW 702SEnterprise TaxLAW 703SSecured TransactionsLAW 704STrusts and EstatesLAW 704SSecured TransactionsLAW 704SSecured TransactionsLAW 704SSecured TransactionsLAW 704SSecured TransactionsLAW 704SSecured TransactionsLAW 704STrusts a	requirement is full	
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LAW 711SSalesLAW 714SSecurities RegulationLAW 740STrusts and EstatesLAW 760SCopyrightLAW 764STrademarks & Unfair CompetitionLAW 792SFood and Drug LawLAW 796SInsurance LawLAW 820SImmigration LawLAW 821SEuropean Union LawLAW 826SRefugee and Asylum LawProfessional Practice Courses (may also be used as electives once requirement is		
LAW 714SSecurities RegulationLAW 740STrusts and EstatesLAW 760SCopyrightLAW 764STrademarks & Unfair CompetitionLAW 792SFood and Drug LawLAW 796SInsurance LawLAW 820SImmigration LawLAW 821SEuropean Union LawLAW 826SRefugee and Asylum LawProfessional Practice Courses (may also be used as electives once requirement is		
LAW 740S       Trusts and Estates         LAW 760S       Copyright         LAW 764S       Trademarks & Unfair Competition         LAW 792S       Food and Drug Law         LAW 796S       Insurance Law         LAW 820S       Immigration Law         LAW 821S       European Union Law         LAW 826S       Refugee and Asylum Law         Professional Practice Courses (may also be used as electives once requirement is		
LAW 760SCopyrightLAW 764STrademarks & Unfair CompetitionLAW 792SFood and Drug LawLAW 796SInsurance LawLAW 820SImmigration LawLAW 821SEuropean Union LawLAW 826SRefugee and Asylum LawProfessional Practice Courses (may also be used as electives once requirement is		-
LAW 764S       Trademarks & Unfair Competition         LAW 792S       Food and Drug Law         LAW 796S       Insurance Law         LAW 820S       Immigration Law         LAW 821S       European Union Law         LAW 826S       Refugee and Asylum Law         Professional Practice Courses (may also be used as electives once requirement is		
LAW 792SFood and Drug LawLAW 796SInsurance LawLAW 820SImmigration LawLAW 821SEuropean Union LawLAW 826SRefugee and Asylum LawProfessional Practice Courses (may also be used as electives once requirement is		
LAW 796S       Insurance Law         LAW 820S       Immigration Law         LAW 821S       European Union Law         LAW 826S       Refugee and Asylum Law         Professional Practice Courses (may also be used as electives once requirement is		
LAW 820S       Immigration Law         LAW 821S       European Union Law         LAW 826S       Refugee and Asylum Law         Professional Practice Courses (may also be used as electives once requirement is		
LAW 821S     European Union Law       LAW 826S     Refugee and Asylum Law       Professional Practice Courses (may also be used as electives once requirement is		
LAW 826S Refugee and Asylum Law Professional Practice Courses (may also be used as electives once requirement is		-
Professional Practice Courses (may also be used as electives once requirement is		
		ice Courses (may also be used as electives once requirement is

LAW 931S	Law Co-op
or LAW 6	54\$awyering Practice Seminar
LAW 933S	Co-op Intensive
or LAW 6	54 Lawyering Practice Seminar
LAW 941S	Criminal Litigation Clinic I
or LAW 94	14Sivil Litigation Clinic II
or LAW 6	56Sustice Lawyering Sem
LAW 943S	Civil Litigation Clinic I
or LAW 94	14 Civil Litigation Clinic II
or LAW 6	56 Justice Lawyering Sem
LAW 947S	Federal Litigation and Appeals Clinic
or LAW 94	48\$Federal Litigation and Appeals Clinic II
or LAW 6	56Sustice Lawyering Sem
LAW 950S	Community Lawyering Clinic I
or LAW 9	51 Community Lawyering Clinic II
or LAW 6	56 Justice Lawyering Sem
LAW 924S	Entrepreneurial Law Clinic
or LAW 6	53Sentrepreneurial Law Clinic Seminar
Free Electives	s (may require permission to enroll)
Any other uns	pecified LAW course numbered 550S and above may count as

Any other unspecified LAW course numbered 550S and above may count as JD elective  $% \left( {{\rm D}_{\rm A}} \right)$ 

## Sample Plan of Study

# Undergraduate course credits are quarter credits

#### First Year

riistieai											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
ENGL 101		3.0	ENGL 102		3.0	ENGL 103		3.0	VACATION		
or 111			or 112			or 113					
PSCI 110		4.0	PSCI 150		4.0	PSCI 131		4.0			
PSCI 140		4.0	PSCI 120		4.0	Math course		3.0			
UNIV H101		1.0	CIVC 101		1.0	Language course		4.0			
Language course		4.0	Language course		4.0	Social Science elective		3.0			
		16			16			17			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
PSCI 220		4.0	PSCI 229		4.0	PSCI 250		4.0	VACATION		
PSCI 231		4.0	PSCI 232		4.0	PSCI 363		4.0			
PSCI 310		4.0	Social Science elective		3.0	Social Science elective		3.0			
Math course		3.0	Diversity elective		3.0	Science course		3.0			
			Humanities elective		3.0	Humanities elective		3.0			
		15			17			17			0
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
PSCI 351		4.0	PSCI 240		4.0	PSCI 353		4.0	VACATION		
PSCI 363		4.0	PSCI 252		4.0	Science		3.0	Student transitions to First Year of Law School		
PSCI T380		4.0	PSCI 284		4.0	Humanities		3.0			

		Elevtive		
Elective		Studies		
Diversity	3.0 Humanities	3.0 International	3.0	
UNIV H201	1.0 Internationa Studies Elective	3.0 Social Science	3.0	

Total Credits 148

## Law School course credits are semester credits

First Year Law course credits (22 semester credits) are counted toward the Political Science BA.

Fourth Year				
Fall	Credits	Spring	Credits	
LAW 550S (Counts toward UG free elective)	4.	0 LAW 555S (Counts toward UG free elective)		3.0
LAW 552S (Counts toward UG free elective)	4.	0 LAW 556S (Counts toward UG free elective)		4.0
LAW 554S (Counts toward UG free elective)	4.	0 LAW 558S		4.0
LAW 565S (Counts toward UG free elective)	3.	0 LAW 566S		3.0
	1	5		14
Fifth Year				
Fall	Credits	Spring	Credits	
LAW 560S	4.	0 LAW 830S		2.0
Law Requirements/Electives	10.	0 Law Requirements Electives	ы	12.0
	1	4		14
Sixth Year				
Fall	Credits	Spring	Credits	
Law Requirements/Electives	14.	0 Law Requirements Electives	5/	14.0
	1	4		14

# Psychology BS / Law JD

### **Program Requirements**

### College Requirements

College Requirer	nents	
CIVC 101	Introduction to Civic Engagement	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	
Select one of the	following:	8.0
MATH 101 & MATH 102	Introduction to Analysis I and Introduction to Analysis II	
MATH 121 & MATH 122	Calculus I 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 (AN	TH) elective	3.0
English (ENGL) el	lectives, 200-level or above	6.0
History (HIST) ele	ctives	8.0
Philosophy (PHIL)	) elective	3.0
Political Science (	PSCI) elective	4.0
Sociology (SOC)	elective	3.0-4.0
	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	Electricity and Matters	
PHYS 170	Electricity and Motion	
PHYS 171	Computational Lab for Electricity and Motion	
PHYS 175 PHYS 176	Light and Sound	
Free electives	Computational Lab for Light and Sound	6.0
	autremente.	6.0
Departmental Re	ogy Requirements	
PSY 111	Pre-Professional General Psychology I	3.0
PSY 112	Pre-Professional General Psychology I	3.0
100-Level Requir		5.0
Select two of the f		6.0
PSY 120	Developmental Psychology	0.0
PSY 140	Approaches to Personality	
PSY 150	Introduction to Social Psychology	
Required Psycho		
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 370	Forensic Psychology	3.0
PSY 371	Law and Psychology	3.0
PSY 380	Psychological Testing and Assessment	3.0
Advanced Psycl	hology Electives	
Any non-required	PSY course at the 200-level or above.	18.0
Free electives ful	filled by 29 semester credits from first-year law courses	43.5
Law School Req	juirements	
LAW 550S	Torts	
LAW 552S	Contracts	
LAW 554S	Civil Procedure	
LAW 555S	Legislation and Regulation	
LAW 556S	Property	
LAW 558S	Criminal Law	
LAW 560S	Constitutional Law	
LAW 565S	Legal Methods I	
LAW 566S	Legal Methods II	
LAW 830S	Professional Responsibility	
Electives and Me	nu Requirements including:	49.0-50.0
One Upper-Lo	evel Writing Course (WUL)	
One Statutory	/ Course	
One Professi	onal Practice Course	

\* 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.

Upper-Level Writing (WUL) Courses (may also be used as elective once requirement is filled)

requirement is init	eu)	
LAW 610S	Reproductive Rights Law	2.0-3.0
LAW 611S	Sex, Gender, & the Law	2.0-3.0
LAW 614S	Supreme Court Seminar	3.0
LAW 647S	The Rights of Children	2.0
LAW 656S	Justice Lawyering Sem	1.0-3.0
LAW 673S	Crime and Community	2.0
LAW 790S	Toxic Torts	2.0-3.0
LAW 791S	Regulating Patient Safety	2.0-3.0
LAW 793S	Mental Health Law	2.0-3.0
LAW 827S	Immigration Litigation	2.0
LAW 828S	International Business Transactions	2.0-3.0
LAW 832S	Contract Theory Seminar	2.0-3.0
LAW 836S	Legal History	2.0-3.0
LAW 838S	Foundations of Legal Analysis	2.0
LAW 840S	Literature and The Law Seminar	2.0-3.0
LAW 842S	Law and Mind Sciences	2.0-3.0
LAW 844S	Law and Social Movements	2.0-3.0
LAW 848S	Courts and Public Policy	2.0-3.0
LAW 882S	Litigation Drafting	2.0
LAW 884S	Contract Drafting	2.0
LAW 910S	Appellate Advocacy	2.0
LAW 920S	Drexel Law Review	1.0-6.0
LAW T880S	Special Topics in LAW	1.0-5.0
Statutory Courses	s (may also be used as electives once requirement is filled)	
LAW 620S	Administrative Law	3.0-4.0
LAW 622S	Employment Discrimination	3.0
LAW 623S	Election Law	3.0-4.0
LAW 624S	Environmental Law	3.0
LAW 642S	Special Education Law	2.0-3.0
LAW 674S	Health Care Fraud and Abuse	2.0-3.0
LAW 675S	Federal Criminal Law	2.0-3.0

LAW 676S	White Collar Crime	2.0-3.0
LAW 678S	Juvenile Justice Law	2.0-3.0
LAW 700S	Business Organizations	3.0-4.0
LAW 701S	Federal Income Tax	3.0-4.0
LAW 702S	Enterprise Tax	3.0-4.0
LAW 706S	Secured Transactions	3.0
LAW 708S	Payment Systems	3.0
LAW 710S	Bankruptcy	3.0-4.0
LAW 711S	Sales	3.0
LAW 714S	Securities Regulation	3.0
LAW 740S	Trusts and Estates	3.0-4.0
LAW 760S	Copyright	3.0
LAW 764S	Trademarks & Unfair Competition	3.0
LAW 792S	Food and Drug Law	2.0-3.0
LAW 796S	Insurance Law	2.0-3.0
LAW 820S	Immigration Law	3.0-4.0
LAW 821S	European Union Law	2.0-3.0
LAW 826S	Refugee and Asylum Law	2.0-3.0
LAW 0203	Relugee and Asylum Law	2.0 0.0
	tice Courses (may also be used as electives once requirement is	2.0 0.0
Professional Prac	• •	7.0
Professional Prac fulfilled) LAW 924S	tice Courses (may also be used as electives once requirement is Entrepreneurial Law Clinic	
Professional Prac fulfilled) LAW 924S & LAW 653S LAW 931S	tice Courses (may also be used as electives once requirement is Entrepreneurial Law Clinic and Entrepreneurial Law Clinic Seminar Law Co-op	7.0
Professional Prac fulfilled) LAW 924S & LAW 953S LAW 931S & LAW 954S LAW 941S & LAW 942S	tice Courses (may also be used as electives once requirement is Entrepreneurial Law Clinic and Entrepreneurial Law Clinic Seminar Law Co-op and Lawyering Practice Seminar Criminal Litigation Clinic I and Criminal Litigation Clinic II	7.0 8.0-9.0
Professional Prac fulfilled) LAW 924S & LAW 653S LAW 931S & LAW 954S LAW 941S & LAW 942S & LAW 942S & LAW 943S & LAW 943S	tice Courses (may also be used as electives once requirement is Entrepreneurial Law Clinic and Entrepreneurial Law Clinic Seminar Law Co-op and Lawyering Practice Seminar Criminal Litigation Clinic I and Criminal Litigation Clinic II and Justice Lawyering Sem Civil Litigation Clinic I and Civil Litigation Clinic I	7.0 8.0-9.0 14.0-15.0
Professional Prac fulfilled) LAW 924S & LAW 653S LAW 931S & LAW 654S LAW 941S & LAW 942S & LAW 942S & LAW 943S & LAW 944S & LAW 944S & LAW 947S & LAW 947S & LAW 948S	<ul> <li>Entrepreneurial Law Clinic</li> <li>and Entrepreneurial Law Clinic Seminar</li> <li>Law Co-op</li> <li>and Lawyering Practice Seminar</li> <li>Criminal Litigation Clinic I</li> <li>and Criminal Litigation Clinic II</li> <li>and Justice Lawyering Sem</li> <li>Civil Litigation Clinic II</li> <li>and Justice Lawyering Sem</li> <li>Federal Litigation and Appeals Clinic</li> <li>and Federal Litigation and Appeals Clinic II</li> </ul>	7.0 8.0-9.0 14.0-15.0 14.0-15.0
Professional Prac fulfilled) LAW 924S & LAW 653S LAW 931S & LAW 654S LAW 941S & LAW 942S & LAW 942S & LAW 942S & LAW 943S & LAW 944S & LAW 944S & LAW 947S & LAW 947S & LAW 947S & LAW 950S & LAW 951S & LAW 951S & LAW 656S	<ul> <li>Entrepreneurial Law Clinic</li> <li>and Entrepreneurial Law Clinic Seminar</li> <li>Law Co-op</li> <li>and Lawyering Practice Seminar</li> <li>Criminal Litigation Clinic I</li> <li>and Justice Lawyering Sem</li> <li>Civil Litigation Clinic II</li> <li>and Justice Lawyering Sem</li> <li>Federal Litigation and Appeals Clinic</li> <li>and Justice Lawyering Sem</li> <li>Community Lawyering Clinic I</li> <li>and Community Lawyering Clinic II</li> </ul>	7.0 8.0-9.0 14.0-15.0 14.0-15.0 14.0-15.0

Any other unspecified LAW course numbered 550S and above may count as JD elective

## Sample Plan of Study

# Undergraduate course credits are quarter credits

#### First Year

Fall	Credits	٧	Winter	Credits		Spring	Credits		Summer	Credits
PSY 111	;	3.0 F	PSY 112		3.0	UNIV H201		1.0	VACATION	
UNIV H101	I '		PSY 120, I40, or 150		3.0	ENGL 103 or 113		3.0		
ENGL 101 or 111	:	3.0 C	CIVC 101		1.0	PSY 240		3.0		
MATH 121 or 101			MATH 102 or 122		4.0	PSY 120, 140, or 150		3.0		
Select one of the following:			ENGL 102 or 112		3.0	Anthropolog (ANTH) Elective	ау	3.0		
CHEM	1	c	Select one of the ollowing:		4.0	Fine Arts Elective		3.0		
BIO 10 & BIO 1	-		BIO 109 & BIO 1							
PHYS & PHYS			CHEM 1							

		PHYS 1 & PHYS								
	15	i		18			16			0
Second Ye	ar									
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
PSY 264	3.0	COM 230		3.0	PSY 280		3.0	VACATION		
PSY 290	3.0	PSY 265		3.0	PSY 360		3.0			
Psychology Elective	3.0	PSY 212		3.0	Psychology Elective		3.0			
Sociology (SOC) elective	3.0-4.0	9 PSY 371		3.0	English (ENGL) elective, 200-level or above		3.0			
Free Electives	3.0	English (ENGL) elective, 200-level or above		3.0	Psychology Elective		3.0			
	15-16	i		15			15			0
Third Year										
Fall	Credits	Winter	Credits		Spring	Credits		Summer	Credits	
PSY 325	3.0	PSY 330		3.0	Psychology Elective		3.0	VACATION		
PSY 380	3.0	9 PSY 370		3.0	Business Elective		4.0	Student transitions to First Year of Law School		
History Elective	4.0	PSCI Elective		4.0	History Elective		4.0			
Philosophy Elective	3.0	Psychology Elective		3.0	Free Elective		3.0			
		Psychology Elective		3.0						
	13	1		16			14			0

Total Credits 137-138

## Law School course credits are semester credits

First Year Law course credits (29 semester credits) are counted toward the Psychology BS.

Fourth Year				
Fall	Credits	Spring	Credits	
LAW 550S (Counts toward UG Free Elective)		4.0 LAW 555S (Counts toward UG Free Elective)		3.0
LAW 552S (Counts toward UG Free Elective)		4.0 LAW 556S (Counts toward UG Free Elective)		4.0
LAW 554S (Counts toward UG Free Elective)		4.0 LAW 558S (Counts toward UG Free Elective)		4.0
LAW 565S (Counts toward UG Free Elective)		3.0 LAW 566S (Counts toward UG Free Elective)		3.0
		15		14
Fifth Year				
Fall	Credits	Spring	Credits	
LAW 560S		4.0 LAW 830S		2.0

LAW Reqts/Electives	10.0 LAW Reqts/ 12.0 Electives
	14 14
Sixth Year	
Fall	Credits Spring Credits
LAW Reqts/Electives	14.0 LAW Reqts/ 14.0 Electives
	14 14

# Sociology BA / Law JD

### **Program Requirements**

General I	Education	Requirements
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General Educatio	on 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
UNIV H201	Looking Forward: Academics and Careers	1.0
Four Humanities C		12.0
Two Mathematics		6.0
Two Science Cour		6.0
	Foreign Language Courses	8.0
	Behavioral Science Electives	9.0
Two International		6.0
Two Studies in Div	•	6.0
Sociology Core R		3.0
SOC 101	Introduction to Sociology	
Required Major C		4.0
SOC 450	Capstone in Sociology	
Theory Sequence		8.0
	Classical Social Theory ([WI])	
	Contemporary Social Theory ([WI])	
Methods Sequen		8.0
SOC 241	Research Design: Qualitative Methods	
SOC 242	Research Design: Quantitative Methods	
Required Sociolo		40.0
and at least one m	of the following: (At least four must be at the 300 or 400 level; nust be at the 400-level.)	
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 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 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 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	
UG Free Electives		19.0
Additional Free El	ectives fulfilled by 22 semester credits from first-year law courses	33.0
Law School Requ		
LAW 550S	Torts	
LAW 552S	Contracts	
LAW 554S	Civil Procedure	
LAW 555S	Legislation and Regulation	
LAW 556S	Property	
LAW 558S	Criminal Law	
LAW 560S	Constitutional Law	
LAW 565S	Legal Methods I	
LAW 566S	Legal Methods II	
LAW 830S	Professional Responsibility	
Electives and Mer	u Requirements including:	49.0-50.0
One upper level w	riting course (WUL)	
One Statutory cou	rse	
One professional	practice course	
Upper level writing	g (WUL) courses (may also be used as electives once	
requirement is fulf		
LAW 610S	Reproductive Rights Law	2.0-3.0
LAW 611S	Sex, Gender, & the Law	3.0
LAW 614S	Supreme Court Seminar	3.0
LAW 647S	The Rights of Children	2.0
LAW 656S	Justice Lawyering Sem ((if full year paper))	1.0-3.0
LAW 673S	Crime and Community	2.0
LAW 790S	Toxic Torts	2.0
LAW 791S	Regulating Patient Safety	2.0
LAW 793S	Mental Health Law	3.0
LAW 827S	Immigration Litigation	2.0
LAW 828S	International Business Transactions	2.0-3.0
LAW 832S	Contract Theory Seminar	2.0-3.0
LAW 836S	Legal History	2.0-3.0
LAW 838S	Foundations of Legal Analysis	2.0
LAW 840S	Literature and The Law Seminar	2.0
LAW 842S	Law and Mind Sciences	2.0
LAW 844S	Law and Social Movements	3.0
LAW 848S	Courts and Public Policy	2.0-3.0
LAW 882S	Litigation Drafting	2.0
LAW 884S	Contract Drafting	2.0
LAW 910S	Appellate Advocacy	2.0
LAW 920S	Drexel Law Review ((if WUL option))	1.0-6.0
LAW T880S	Special Topics in LAW	1.0-5.0
	(may also be used as electives once requirement is fulfilled):	
LAW 620S	Administrative Law	4.0
LAW 622S	Employment Discrimination	3.0
LAW 623S	Election Law	3.0
LAW 624S	Environmental Law	3.0
LAW 642S	Special Education Law	2.0-3.0
LAW 674S	Health Care Fraud and Abuse	2.0
LAW 675S	Federal Criminal Law	2.0-3.0
LAW 676S	White Collar Crime	2.0-3.0
LAW 700S	Business Organizations	3.0-4.0
LAW 701S	Federal Income Tax	4.0
LAW 702S	Enterprise Tax	4.0
LAW 706S	Secured Transactions	3.0

LAW 708S	Payment Systems	3.0
LAW 710S	Bankruptcy	3.0-4.0
LAW 711S	Sales	3.0
LAW 714S	Securities Regulation	3.0
LAW 740S	Trusts and Estates	3.0
LAW 760S	Copyright	3.0
LAW 764S	Trademarks & Unfair Competition	3.0
LAW 792S	Food and Drug Law	3.0
LAW 796S	Insurance Law	2.0
LAW 820S	Immigration Law	3.0-4.0
LAW 821S	European Union Law	2.0-3.0
LAW 826S	Refugee and Asylum Law	2.0
Professional Pract fulfilled):	tice Courses (may also be used as electives once requirement is	
LAW 924S & LAW 653S	Entrepreneurial Law Clinic and Entrepreneurial Law Clinic Seminar	7.0
LAW 931S & LAW 654S	Law Co-op and Lawyering Practice Seminar	8.0-9.0
LAW 941S & LAW 942S & LAW 656S	Criminal Litigation Clinic I and Criminal Litigation Clinic II and Justice Lawyering Sem	14.0-15.0
LAW 943S & LAW 944S & LAW 656S	Civil Litigation Clinic I and Civil Litigation Clinic II and Justice Lawyering Sem	14.0-15.0
LAW 947S & LAW 948S & LAW 656S	Federal Litigation and Appeals Clinic and Federal Litigation and Appeals Clinic II and Justice Lawyering Sem	14.0-15.0
LAW 950S & LAW 951S & LAW 656S	Community Lawyering Clinic I and Community Lawyering Clinic II and Justice Lawyering Sem	14.0-15.0
Free Electives (ma	ay require permission to enroll)	
Any other unspeci elective	fied LAW courses numbered 550s and above may count as JD	

\* 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.

### Sample Plan of Study

# Undergraduate course credits are quarter credits

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 SOC 241	4.0	) Humanities Elective	3.0	)	
Foreign Language Course	4	4.0 Foreign Language Course	4.0	) Sociology Required Elective	4.0	)	
Mathematic Course	s (	3.0 Science Elective	3.0	) Social and Behavioral Science Elective	3.0	)	
Free Elective	;	3.0					
		17	15	5	16	5	0

Second Year										
Fall Cre	edits	Winter	Credits		Spring	Credits		Summer	Credits	
SOC 242	4.0	Diversity Studies Elective		3.0	SOC 355		4.0	VACATION		
Mathematic: Course	3.0	Free Elective			Free Elective		3.0			
Sociology Required Elective	4.0	Humanities Elective			Sociology Required Elective		4.0			
Sociology Required Elective	4.0	Science Elective			Social and Behavioral Science Elective		3.0			
		Sociology Required Elective			Social and Behavioral Science Elective		3.0			
Third Year	15			17			17			0
	edits	Winter	Credits					_		
					Spring	Credits		Summer	Credits	
SOC 356		SOC 450	Credits		Spring UNIV H201	Credits		Summer VACATION	Credits	
SOC 356 Free Elective	4.0		Credits	4.0 3.0		Credits	1.0 3.0		Credits	
Free	4.0 3.0	SOC 450 Humanities		4.0 3.0 3.0	UNIV H201 Free	Credits	1.0 3.0	VACATION Student transitions to first year of law	Credits	
Free Elective Humanities	4.0 3.0 3.0	SOC 450 Humanities Elective		4.0 3.0 3.0	UNIV H201 Free Elective Sociology Required 300/400	Credits	1.0 3.0	VACATION Student transitions to first year of law	Credits	
Free Elective Humanities Elective Internationa	4.0 3.0 3.0 3.0	SOC 450 Humanities Elective International Elective Sociology Required 300/400		<ul> <li>4.0</li> <li>3.0</li> <li>3.0</li> <li>4.0</li> <li>3.0</li> </ul>	UNIV H201 Free Elective Sociology Required 300/400 Elective Sociology Required 300/400	Credits	1.0 3.0 4.0	VACATION Student transitions to first year of law	Credits	

Total Credits 147

## Law School course credits are semester credits

First Year Law course credits (22 semester credits) are counted toward the Sociology BA.

Fall	Credits	Spring	Credits	
LAW 550S (Counts toward UG free elective)		4.0 LAW 555S (Counts toward UG free elective)		3.0
LAW 552S (Counts toward UG free elective)		4.0 LAW 556S (Counts toward UG free elective)		4.0
LAW 554S (Counts toward UG free elective)		4.0 LAW 558S		4.0
LAW 565S (Counts toward UG free elective)		3.0 LAW 566S		3.0
		15		14
Fifth Year				
Fall	Credits	Spring	Credits	
LAW 560S		4.0 LAW 830S		2.0
Law Requirements/Electives		10.0 Law Requirements Electives	Si	12.0
		14		14

#### Sixth Year

Fall	Credits	Spring	Credits	
Law Requirements/Electives	14	4.0 Law		14.0
		Requiremen	ts/	
		Electives		
		14		14

## **Teacher Education**, **English BS / Teaching** Learning and Curriculum MS

### **Degree Requirements**

5		
General Education	on Requirements	
ARTH 101	History of Art I	3.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	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	
ENVS 260	Environmental Science and Society	3.0
Select one Americ	an History course:	4.0
HIST 201	United States History to 1815	
HIST 202	United States History, 1815-1900	
HIST 203	United States History since 1900	
INFO 101	Introduction to Computing and Security Technology	3.0
LING 101	Introduction to Linguistics	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 131	Survey of the Universe	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
SOC 335	Sociology of Education	3.0
WRIT 225 [WI]	Creative Writing	3.0
WRIT 301 [WI]	Writing Poetry	3.0
UNIV T101	The Drexel Experience	1.0
Science Sequence	e .	6.0-8.0
Select one of the f	ollowing:	
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
or		
PHYS 170	Electricity and Motion	
PHYS 175	Light and Sound	
	nents (option to minor in English)	
ENGL 200 [WI]	Classical to Medieval Literature	3.0
ENGL 201	Renaissance to the Enlightenment	3.0
ENGL 204	Post-Colonial Literature	3.0
ENGL 205 [WI]	American Literature I	3.0
ENGL 206 [WI]	American Literature II	3.0
ENGL 211 [WI]	British Literature I	3.0
ENGL 212	British Literature II	3.0
ENGL 304	Young Adult Fiction	3.0
		0.0

Professional or Co	oncentration Electives	224.0-226
	Practitioner Capstone Course I	
or EDUT 780	Thesis Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3
	Practitioner Capstone Course I	
or EDUT 780	Thesis Capstone Course I	
EDUL 780	Lesson Study Capstone Course I	3
EDU 780	Capstone Research	3
MS in TLC Capsto	one Sequence	
or EDUC 804	Program Evaluation in Organizations	
or EDAM 705	School Law and Politics	
EDPO 620	Education Policy: Concepts, Issues, and Applications	3
Policy, Law & Org	anization Courses (Choose 2)	3
EDUC 609	Language & Culture in Education	3
EDUC 530	Advanced Techniques in Instruction & Assessment	3
EDUC 524	Current Research in Curriculum & Instruction	3
EDLT 532	Designing Virtual Communities for Staff Development - Non- Field Experience	3
EDAM 714	Instructional and Curriculum Leadership	3
MS in TLC Core		
EDUC 410 [WI]	Student Teaching	g
EDUC 409	Student Teaching Seminar I	9
Student Teaching		
EDUC 405	Senior Pedagogy Seminar	1
EDUC 365	Foundations in Instructing English Language Learners	3
EDUC 358	English Teaching Methods	3
EDUC 324	Current Research in Curriculum & Instruction	3
EDUC 322	Evaluation of Instruction	3
EDUC 316	Teaching in Urban Contexts	3
EDUC 312	Educational Policy, Law & Advocacy	3
EDUC 308	Creating a Positive Classroom Climate	3
EDUC 305 [WI]	Junior Pedagogy Seminar	1
EDUC 223	Teaching the Middle School Child	3
EDUC 216	Diversity and Today's Teacher	3
EDUC 205	Sophomore Pedagogy Seminar	1
EDUC 123	Adolescent Development	3
EDUC 113	Organizational Structure of Secondary Schools	3
EDUC 108	First Year Seminar: Designing Learning Spaces	1
EDUC 107	First Year Seminar: Exploring Pedagogies	. 1
EDUC 106	Perspective First Year Seminar: A Case of Schools and Cities	1
EDUC 101	Foundations in Education I: A Historical and Philosophical	3
EDLT 325	Design for Learning with Digital Media	3
EDEX 368	Literacy and Content Skill Development PK-12	3
EDEX 344	Inclusionary Practices for Exceptional Students	3
EDEX 142	Special Education Foundations: Referral and Assessment	3
Pedagogy Require		C
ENGL 355 [WI]	Women and Literature	3
ENGL 335	Mythology	3

### Sample Plan of Study

### 4 year, 1 co-op

#### First Year

Fall Credits Winter Credits Spring Credits Summer Credits CHEM 111 3.0-4.0 ARTH 101 3.0 EDEX 142 3.0 VACATION or PHYS 170

EDUC 101		3.0	CHEM 112 or PHYS 175	3.0	-4.0	EDUC 108		1.0			
EDUC 106		1.0	CIVC 101		1.0	EDUC 123		3.0			
ENGL 101 or 111			EDUC 107		1.0	ENGL 103 or 113		3.0			
MATH 171		3.0	EDUC 113			MATH 173		3.0			
PSY 101			ENGL 102 or 112			PHYS 131		3.0			
UNIV T101		1.0	MATH 172		3.0						
	17	7-18		17	·-18			16			0
Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP 101		1.0	EDUC 216		3.0	COM 230		3.0	ECON 201		4.0
EDEX 344		3.0	ENGL 201		3.0	EDEX 368		3.0	EDLT 325		3.0
ENGL 200		3.0	INFO 101		3.0	EDUC 308		3.0	EDUC 322		3.0
EDUC 205		1.0	LING 101		3.0	EDUC 305		1.0	HIST 201,		4.0
									202, or 203		
EDUC 223		3.0	NFS 100 & NFS 101		3.0	ENVS 260		3.0			
EDUC 365		3.0	WRIT 301		3.0						
WRIT 225		3.0									
Third Year		17			18			13			14
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP			COOP			EDUC 316		3.0	EDUC 312		3.0
EXPERIEN	CE		EXPERIEN	CE							
EDUC 358		3.0	ENGL 211		3.0	ENGL 304			EDUC 324		3.0
						PSY 320			ENGL 212		3.0
						SOC 335			ENGL 335		3.0
						(GR) MS Professiona Elective	ıl	3.0	(GR) MS Professiona Elective	al	3.0
		3			3			15			15
Fourth Yea			Minter	Credite		Casing	Credito		C	Credite	
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EDUC 409 ENGL 204			EDUC 410 ENGL 335			EDUC 405 ENGL 205			EDAM 705 EDUC 530		3.0
EDPO 620			EDLT 532			ENGL 205 ENGL 206			EDUC 530		3.0 3.0
or EDUC 804											
						ENGL 325		3.0			
						ENGL 325 MUSC 130		3.0 3.0			
						MUSC 130		3.0			
		15			15	MUSC 130 EDAM 714 Student converts to Grad status at the end of the Spring		3.0			9
Fifth Year		15			15	MUSC 130 EDAM 714 Student converts to Grad status at the end of the Spring		3.0			9
Fifth Year Fall	Credits		Winter	Credits		MUSC 130 EDAM 714 Student converts to Grad status at the end of the Spring	Credits	3.0			9
	Credits			Credits		MUSC 130 EDAM 714 Student converts to Grad status at the end of the Spring term	Credits	3.0			9
Fall	Credits	3.0	Winter EDUL 780, EDUT 780, or EDUP		3.0	MUSC 130 EDAM 714 Student converts to Grad status at the end of the Spring term Spring EDUL 781, EDUT 780, or EDUP		3.0 3.0			9

(GR) MS Professional Elective	3.0			
	9	6	6	

Total Credits 224-226

## **Teacher Education**, **Secondary Mathematics BS / Teaching, Learning,** and Curriculum MS

### Program Requirements

#### **General Education Requirements**

	•	
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
CS 150	Computer Science Principles	3.0
ECON 201	Principles of Microeconomics	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	
English elective co	ourse between 200-329	3.0
HIST 289	History of Science: Enlightenment to Modernity	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Mathematics Rec	quirements	
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 205	Survey of Geometry	3.0
MATH 210	Differential Equations	4.0
MATH 220 [WI]	Introduction to Mathematical Reasoning	3.0
MATH 221	Discrete Mathematics	3.0
MATH 311	Probability and Statistics I	4.0
MATH 312	Probability and Statistics II	4.0
MATH 331	Abstract Algebra I	4.0
Science Require	ments	
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
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
ENVS 260	Environmental Science and Society	3.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
Pedagogy Requi	rements	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0

EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
MTED 419	Teaching Secondary Mathematics	3.0
MTED 428	Cultural and Historical Significance of Mathematics	3.0
Student Teaching	g Experience	
EDUC 409	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
MS in TLC Core		
EDAM 714	Instructional and Curriculum Leadership	3.0
EDLT 532	Designing Virtual Communities for Staff Development - Non- Field Experience	3.0
EDUC 524	Current Research in Curriculum & Instruction	3.0
EDUC 530	Advanced Techniques in Instruction & Assessment	3.0
EDUC 609	Language & Culture in Education	3.0
Policy, Law & Org	ganization Courses (Choose 2)	3.0
EDPO 620	Education Policy: Concepts, Issues, and Applications	3.0
or EDAM 705	School Law and Politics	
or EDUC 804	Program Evaluation in Organizations	
MS in TLC Capst	one Sequence	
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
	Concentration Electives	15.0

### Sample Plan of Study 4 year, 1 co-op

#### First Year Fall Credits Winter Credits Spring Credits Summer Credits EDUC 101 3.0 CIVC 101 1.0 BIO 107 3.0 VACATION EDUC 106 1.0 EDUC 107 1.0 BIO 108 1.0 3.0 EDUC 113 3.0 EDEX 142 ENGL 101 3.0 or 111 4.0 ENGL 102 MATH 121 3.0 EDUC 108 1.0 or 112 4.0 EDUC 123 PSY 101 3.0 MATH 122 3.0 **UNIV 101** 1.0 PHIL 251 3.0 ENGL 103 3.0 or 113 MATH 123 4.0 0 15 15 18 Second Year Fall Credits Winter Credits Spring Credits Summer Credits COOP 101 1.0 ECON 201 4.0 CHEM 101 3.5 BIO 109 3.0

	ts 230	9			6			6			
(GR) MS Professiona Elective	I	3.0									
EDUC 609			(GR) MS Professiona Elective		3.0	(GR) MS Professiona Elective		3.0			
EDU 780		3.0	EDUL 780, EDUT 780, or EDUP 780		3.0	EDUL 781, EDUT 780, or EDUP 780		3.0			
Fall	Credits		Winter	Credits		Spring	Credits				
Fifth Year		16			16			17			9
		16			16	converts to Grad status at the end of the Spring term		17			g
						EDAM 714 Student		3.0			
						PSY 320		3.0			
						MATH 312		4.0			
EDPO 620, EDAM 705, or EDUC 804		3.0	EDLT 532		3.0	ENVS 260		3.0	EDUC 530		3.0
						- ENGL 395					
MATH 331			MATH 311			ENGL 200			EDUC 524		3.0
Fall EDUC 409	Credits		Winter EDUC 410	Credits		Spring EDUC 405	Credits		Summer EDAM 705	Credits	3.0
Fourth Yea							-		-		
		3			0			16			16
						Professiona	I	5.0	Professiona	ıl	0.0
						PHYS 101 (GR) MS			PHYS 102 (GR) MS		4.0
						MATH 220			MATH 221		3.0
MTED 419		3.0				EDUC 316		3.0	EDUC 324		3.0
Fall COOP EXPERIEN(			Winter COOP EXPERIENC	Credits		Spring EDLT 326	Credits		Summer EDUC 312	Credits	3.0
Third Year	Credits		14/1	One dite		Oraciana	Questite		0	One dite	
WATT 200		4.0 19			14		1	7.5		1	17.5
HIST 289 MATH 200		4.0 4.0				MATH 210		4.0	MTED 428		3.0
EDUC 365		3.0				MATH 205			EDUC 322		3.0
EDUC 223		3.0	or CS 150 MATH 201		4.0	EDUC 308		3.0	EDLT 325		3.0
EDUC 205		1.0	INFO 108		3.0	EDUC 305		1.0	CHEM 102		4.5
EDUC 205		1.0	INFO 108 or CS 150		3.0	EDUC 305		1.0	CHEM 102		4

## Teacher Education, Secondary Social Studies BS / Teaching, Learning and Curriculum MS

### **Program Requirements**

General Education	on Requirements	
ANTH 101	Introduction to Cultural Diversity	3.0
ANTH 110	Human Past: Anthropology and Prehistoric Archeology	3.0
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	
ENGL 205 [WI]	American Literature I	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
PSY 101	General Psychology I	3.0
PSY 150	Introduction to Social Psychology	3.0
PSY 320 [WI]	Educational Psychology	3.0
SOC 101	Introduction to Sociology	3.0
SOC 210	Race, Ethnicity and Social Inequality	4.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience	1.0
Social Studies Co	ontent Requirments:	
Select two:		8.0
HIST 161	Themes in World Civilization I	
HIST 162	Themes in World Civilization II	
HIST 163	Themes in World Civilization III	
HIST 201	United States History to 1815	4.0
HIST 202	United States History, 1815-1900	4.0
HIST 203	United States History since 1900	4.0
HIST 212	Themes in African-American History	4.0
HIST 214	United States Civil Rights Movement	4.0
HIST 275	History of Pennsylvania	3.0
PSCI 110	American Government	4.0
PSCI 140	Comparative Politics I	4.0
PSCI 150	International Politics	4.0
PSCI 220	Constitutional Law I	4.0
PSCI 240	Comparative Politics II	4.0
PSCI 375	Politics of Immigration	4.0
Pedagogy Requir	rements	
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusionary Practices for Exceptional Students	3.0
EDEX 368	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0

EDUC 107     First Year Seminar: Exploring Pedagogies       EDUC 108     First Year Seminar: Designing Learning Spaces       EDUC 112     Integrative Instruction: Focus on World Geography       EDUC 112     Integrative Instruction: Focus on World Geography       EDUC 123     Adolescent Development       EDUC 224     Sophomore Pedagogy Seminar       EDUC 235     Teaching the Middle School Child       EDUC 305 [WI]     Junior Pedagogy Seminar       EDUC 305 [WI]     Junior Pedagogy Seminar       EDUC 305 [WI]     Greating a Positive Classroom Climate       EDUC 305 [WI]     Teaching in Urban Contexts       EDUC 324     Evaluation of Instruction       EDUC 325     Foundations in Instruction English Language Learners       EDUC 345     Foundations in Instructing English Language Learners       EDUC 405     Senior Pedagogy Seminar       EDUC 405     Student Teaching Seminar I       EDUC 405     Student Teaching Seminar I       EDWC 409     Student Teaching Seminar I       EDMC 410 [WI]     Student Teaching Seminar I	3. 15.
EDUC 108First Year Seminar: Designing Laeming SpacesEDUC 112Integrative Instruction: Focus on World GeographyEDUC 113Organizational Structure of Secondary SchoolsEDUC 123Adolescent DevelopmentEDUC 205Sophomore Pedagogy SeminarEDUC 216Diversity and Today's TeacherEDUC 205Creating and Today's TeacherEDUC 305 [WI]Junior Pedagogy SeminarEDUC 308Creating a Positive Classroom ClimateEDUC 3015Teaching in Urban ContextsEDUC 324Evulation of InstructionEDUC 325Foundations in InstructionEDUC 326Secondary Social Studies MethodsEDUC 325Foundations in Instructing English Language LearnersEDUC 326Secondary Social Studies MethodsEDUC 325Foundations in Instructing English Language LearnersEDUC 409Student Teaching Seminar IEDUC 524Current Research in Curriculum LeadershipEDUC 530Advanced Techniques in InstructionEDUC 530Advanced Techniques in InstructionEDUC 540Current Research in Curriculum & InstructionEDUC 540Current Research in Curriculum & InstructionEDUC 540Current Research in Curriculum & InstructionEDUC 540Carpen ResearchEDUC 640Education Policy: Concepts, Issues, and ApplicationsEDUC 780Capston	3.
EDUC 108First Year Seminar: Designing Learning SpacesEDUC 112Integrative Instruction: Focus on World GeographyEDUC 113Organizational Structure of Secondary SchoolsEDUC 123Adolescent DevelopmentEDUC 205Sophomore Pedagogy SeminarEDUC 216Diversity and Today's TeacherEDUC 230Teaching the Middle School ChildEDUC 305 [WI]Junior Pedagogy SeminarEDUC 305 [WI]Educational Policy, Law & AdvocacyEDUC 312Evaluation of InstructionEDUC 324Current Research in Curriculum & InstructionEDUC 325Seondary Social Studies MethodsEDUC 326Foundations in Instructing English Language LearnersEDUC 405Senior Pedagogy SeminarStudent TeachingStudent TeachingMS in TLC CoreEDUC 409EDUC 409Student Teaching Seminar IEDUC 524Current Research in Curriculum LeadershipEDUC 530Advanced Techniques in InstructionEDUC 540Current Research in Curriculum & InstructionEDUC 540Current Research in Curriculum & AssessmentEDUC 540Current Research In Curriculum & AssessmentEDUC 540Education Policy: Concepts, Issues, and ApplicationsEDUC 609Language & Culture	3.
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EDUC 108       First Year Seminar: Designing Learning Spaces         EDUC 112       Integrative Instruction: Focus on World Geography         EDUC 113       Organizational Structure of Secondary Schools         EDUC 123       Adolescent Development         EDUC 205       Sophomore Pedagogy Seminar         EDUC 216       Diversity and Today's Teacher         EDUC 223       Teaching the Middle School Child	3.
EDUC 108       First Year Seminar: Designing Learning Spaces         EDUC 112       Integrative Instruction: Focus on World Geography         EDUC 113       Organizational Structure of Secondary Schools         EDUC 123       Adolescent Development         EDUC 205       Sophomore Pedagogy Seminar         EDUC 216       Diversity and Today's Teacher	1.
EDUC 108       First Year Seminar: Designing Learning Spaces         EDUC 112       Integrative Instruction: Focus on World Geography         EDUC 113       Organizational Structure of Secondary Schools         EDUC 123       Adolescent Development         EDUC 205       Sophomore Pedagogy Seminar	3.
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EDUC 108     First Year Seminar: Designing Learning Spaces       EDUC 112     Integrative Instruction: Focus on World Geography       EDUC 113     Organizational Structure of Secondary Schools	1.
EDUC 108         First Year Seminar: Designing Learning Spaces           EDUC 112         Integrative Instruction: Focus on World Geography	3.
EDUC 108 First Year Seminar: Designing Learning Spaces	3.
	3.
EDUC 107 First Year Seminar: Exploring Pedagogies	1.
	1.
EDUC 106 First Year Seminar: A Case of Schools and Cities	1.
EDUC 101 Foundations in Education I: A Historical and Philosophical Perspective	3.

## Sample Plan of Study 4 year, 1 co-op

First Year							
Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	) ANTH 101	3.0	ANTH 110	3.0	VACATION	
EDUC 106	1.0	0 CIVC 101	1.0	EDEX 142	3.0		
ENGL 101 or 111	3.0	) EDUC 107	1.0	EDUC 108	1.0		
MATH 171	3.0	EDUC 113	3.0	EDUC 123	3.0		
HIST 161	4.0	0 ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
PSY 101	3.0	) HIST 162 or 163	4.0	MATH 173	3.0		
UNIV T101	1.0	) MATH 172	3.0	)			
	18	3	18	1	16		0

Second Year
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Second Ye	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP 101		1.0	EDUC 216		3.0	EDEX 368		3.0	EDLT 325		3.0
EDEX 344		3.0	HIST 201		4.0	EDUC 305		1.0	EDUC 322		3.0
EDUC 112		3.0	HIST 214		4.0	EDUC 308		3.0	HIST 275		3.0
EDUC 205		1.0	PSCI 110		4.0	HIST 202		4.0	PSCI 375		4.0
EDUC 223		3.0	PSY 150		3.0	HIST 203		4.0	SOC 101		3.0
EDUC 365		3.0				PSCI 140		4.0			
		14			18			19			16
Third Year											
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
COOP			COOP			EDLT 326		3.0	EDUC 312		3.0
EXPERIEN	ICE		EXPERIEN	CE							
EDUC 356		3.0				EDUC 316		3.0	EDUC 324		3.0
						PSY 320		3.0	PSCI 150		4.0
						SOC 335			SOC 210		4.0
						(GR) MS			(GR) MS		3.0
						Professiona	d		Professiona	al	
						Elective			Elective		
		3			0			15			17
Fourth Yea	ar										
Fall	Credits		Winter	Credits		Spring	Credits		Summer	Credits	
EDUC 409		9.0	ECON 201		4.0	ECON 202		4.0	EDAM 705		3.0
PSCI 220		4.0	EDUC 410		9.0	EDUC 405		1.0	EDUC 530		3.0
EDPO 620 or EDUC 804		3.0	EDLT 532		3.0	HIST 212		4.0	EDUC 524		3.0
						PSCI 240		4.0			
						EDAM 714		3.0			
						Student converts to Grad status at the end of the Spring term					
		16			16			16			9
Fifth Year											
Fall	Credits		Winter	Credits		Spring	Credits				
EDU 780		3.0	EDUL 780, EDUT 780, or EDUP 780		3.0	EDUL 781		3.0			
EDUC 609		3.0	(GR) MS Professiona Elective		3.0	(GR) MS Professiona Elective		3.0			
(GR) MS Professiona Elective	al	3.0									
		9			6			6			
Total Crad											