DREXEL UNIVERSITY
Charles D. Close
School of Entrepreneurship

CATALOG
2022-2023

GRADUATE

DREXEL INSTITUTE

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The Charles D. Close School of Entrepreneurship

About the School

The Charles D. Close School of Entrepreneurship prepares students to develop their entrepreneurial mindset and either launch new ventures or become innovative change agents within corporate settings.

Taught by experienced, entrepreneurial faculty, The Close School's masters programs are built to supplement students' existing knowledge with an entrepreneurial mindset and provide the skills to launch a new venture or innovate within established companies. The Close School's programs provide experiential learning opportunites, collaborative work environments, and a world-class network of faculty. Courses in Close focus on professional, entrepreneurial characteristics that differentiate students within their fields, such as initiative, calculated risk-taking, value creation, adaptability, creativity, and problem-solving. With a broad definition of entrepreneurship encompassing more than the technical process of launching new companies, the school's curriculum emphasizes developing the entrepreneur as a person as well as teaching the process of entrepreneurship.

Additionally, Drexel's Baiada Institute for Entrepreneurship offers a new-venture incubator as well as physical and virtual resources, including mentoring, competitions, workshops, and individual physical space for students to embark on their next big idea. Enlightened by the entrepreneurial mindset, students graduate ready to develop a culture of innovation within their companies or launch new ventures into the world. The next generation of leadership begins here.

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Entrepreneurship and Innovation

Major: Entrepreneurship and Innovation
Degree Awarded: Master of Science (MS)
Calendar Type: Quarter
Minimum Required Credits: 45.0
Co-op Option: None
Classification of Instructional Programs (CIP) code: 52.0701
Standard Occupational Classification (SOC) code: 11-1011; 11-1021; 11-9199

About the Program

The Charles D. Close School of Entrepreneurship is founded on the principle that entrepreneurship encompasses more than starting a new venture. Entrepreneurship is a habit of mind and an attitude; a skill set applicable to pursuing innovation in both personal and career contexts; as well as an approach to life built around innovative thinking, calculated daring, and proactive behavior.

The MS in Entrepreneurship and Innovation is designed for recent graduates or working professionals who wish to increase their knowledge of and experiences in innovation and entrepreneurship. The MS focuses on developing the entrepreneurial mindset and the skills associated with new-venture creation and corporate innovation.

Additional Information

For more information about the MS in Entrepreneurship and Innovation, please contact Rita Berson (rk25@drexel.edu).

Degree Requirements

Required Courses

BLAW 646	Legal Issues in New Ventures	3.0
ENTP 501	Entrepreneurship Practice & Mindset	3.0
ENTP 515	Pitch It!	3.0
ENTP 540	Approaches to Entrepreneurship	3.0
ENTP 611	Learning from Failure	3.0
ENTP 621	Innovation & Ideation	3.0
ENTP 631	Building Internal & External Relationships	3.0
ENTP 660	Early Stage Venture Funding	3.0
ENTP 671	Life After Launch	3.0
MGMT 670	Business Ethics	3.0
Choose Your Entrepreneurial Path		6.0

Social Innovation		
ENTP 535	Social Entrepreneurship	
ENTP 601	Social and Sustainable Innovation	
Corporate Entrepreneurship		
ENTP 641	Innovation in Established Companies	
ENTP 681	The Startup Way: How to Drive Innovation in Entrepreneurial Companies	
New Venture Creation		
ENTP 651	Leading New Ventures	
ENTP 690	The Lean Launch	
Choose three of the following graduate electives, OR one from this list and two from other units (upon advisor approval):		
Electives		9.0
ENTP 545	International Entrepreneurship	
ENTP 555	Dynamics of the Family Firm	
ENTP 565	Franchising	
ENTP 575	Entrepreneurship in Education	
ENTP T580	Special Topics in Entrepreneurship	
ENTP T680	Special Topics in Entrepreneurship	
PLCY 507	Nonprofit Organizations	
Any alternate path course		
Total Credits		**45.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ENTP 501	3.0	ENTP 621	3.0	ENTP 671	3.0	Entrepreneurship Elective	3.0
ENTP 631	3.0	ENTP 611	3.0	Entrepreneurship Elective	3.0	Entrepreneurship Path Course	3.0
	6		**6**		**6**		**6**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits
ENTP 515	3.0	ENTP 660	3.0	BLAW 646	3.0
Entrepreneurship Path Course	3.0	MGMT 670	3.0	ENTP 540	3.0
				Entrepreneurship Elective	3.0
	6		**6**		**9**

Total Credits 45

Entrepreneurship and Innovation Faculty

Nick Bayer, BS *(Cornell)*. Adjunct Instructor.

Roy Carriker, PhD *(University of Connecticut)*. Teaching Professor.

Donna De Carolis, PhD *(Temple University) Founding Dean, Silverman Family Professor of Entrepreneurial Leadership*.

Michael Kurzeja, MBA *(Grantham University)*. Adjunct Instructor.

Roger Lee, MS *(Drexel University)*. Adjunct Teaching Professor.

Barrie Litzky, PhD *(Drexel University)*. Associate Professor.

Larissa Milne, MBA *(Drexel University)*. Adjunct Assistant Professor.

Dean Muser, BS *(Drexel University)*. Adjunct Instructor.

Ozlem Ogutveren-Gonul, PhD *(Gazi University, Ankara, Turkey)*. Assistant Teaching Professor. Entrepreneurship education, Entrepreneurial failure, Entrepreneurial mindset, Ideation, Social capital, Person-job fit, Person-organization fit, Social entrepreneurship.

Scott Quitel, JD, MBA *(Temple University)*. Associate Teaching Professor. Novel ecosystems; Ecological impacts of climate change, rising sea level, and saltwater intrusion; Water quality and aquatic ecosystem health; Organic, lightly structured education

Charles Sacco, MBA *(Drexel University) Associate Dean for Strategy and Innovation; Director of the Baiada Institute for Entrepreneurship*.

Damian Salas, MBA *(Drexel University) Associate Dean for Academic Partnerships*. Assistant Teaching Professor. Strategic Entrepreneurship; Entrepreneurial Growth; Human Capital Management

Zahed Subhan, PhD, JD/LLB (Law) *(University of Leeds (UK); London University)*. Teaching Professor. Marketing, Entrepreneurship, Innovation Management

Transdisciplinary Science, Computing, and Engineering Design

Major: Transdisciplinary Science, Computing, and Engineering Design
Degree Awarded: Master of Science (MS)
Calendar Type: Quarter
Minimum Required Credits: 45.0
Co-op Option: Available for full-time, on-campus master's-level students
Classification of Instructional Programs (CIP) code: 15.1502
Standard Occupational Classification (SOC) code: 17-2199

About the Program

New industries and product categories, such as wearable devices, consumer robotics, and the "Internet of Things," have emerged from a combination of new technologies as well as a human-centered approach to interaction with technology. More and more, companies pursuing these areas seek hybrid employees combining both technical and creative skills, capable of integrating and implementing advances across multiple disciplines to further innovation. The Transdisciplinary Science, Computing, and Engineering Design (TranSCEND) MS program aims to prepare students for these opportunities by combining graduate-level classes in science, engineering, and computing with hands-on, collaborative project-based courses focusing on the development of physical devices and artifacts. The curriculum includes a six-month graduate co-op experience to gain real-world experience with collaborative project development. Program participants will be able to engage with boundary-crossing research projects, such as advanced functional fabrics, performing arts technology, humanoid robotics, and learning technologies at Drexel's ExCITe (Expressive & Creative Interaction Technologies) Center.

Transdisciplinary work refers to a deeply collaborative process in which questions are approached through an integrated conceptual framework combining methods and approaches from different disciplines to illuminate problems and solutions in new ways. The TranSCEND program seeks to develop transdisciplinarity within individuals, equipping students with both the technical depth and the broader contextual experience to succeed in today's technology-driven industries.

The TranSCEND MS combines a strong foundation of technical knowledge with the creative, expressive, and collaborative exploration of new technology design. This intensive program emphasizes learning through world-ready projects and collaborative experiences including direct industry engagement through a graduate co-op. Core TranSCEND MS activities (courses, research opportunities, academic advising, and industry engagement) are structured around a transdisciplinary philosophy to enable a broader range of student-faculty and student-student collaborations than traditional graduate technical programs. These principles and practices are not only integrated through courses, but also through the interactions between students pursuing a diversity of projects.

Additional Information

For more information about the program, please visit the TranSCEND MS (https://drexel.edu/info/transcend/) webpage on the ExCITe Center website.

Jillian Reilly
Student Programs Coordinator, ExCITe Center
jmreilly@drexel.edu
215-895-6635

Admission Requirements

The TranSCEND MS program is an advanced and highly selective program of study. Successful applicants will have a baccalaureate degree in an engineering, computing, and/or scientific or closely related field, or substantial demonstrated facility in one of those fields (e.g., an undergraduate minor with significant project work). Candidates should have a minimum 3.0 undergraduate GPA.

Candidates may, at their option, submit a portfolio of prior work to be considered by program faculty and staff during the admissions process.

Degree Requirements

Required Courses

SCED 500	Graduate Proseminar	3.0
SCED 501	Collaborative Laboratory I	3.0
SCED 502	Collaborative Laboratory II	3.0
SCED 503	Collaborative Laboratory III	3.0
ENTP 690	The Lean Launch	3.0

Thesis

SCED 600	Masters Thesis Preparation	3.0
SCED 690	Masters Thesis Research	6.0
Core Electives		**9.0**
CS 501	Introduction to Programming	
DIGM 501	New Media: History, Theory and Methods	
DSRE 625	Technologies of Making	
ENTP 501	Entrepreneurship Practice & Mindset	
FASH 504	Materials Exploration	
INFO 540	Perspectives on Information Systems	
PSY 512	Cognitive Psychology	
SCED 521	Entertainment Technologies	
SCTS 501	Introduction to Science, Technology and Society	
Disciplinary Electives		**12.0**
ANIM 588	Spatial Data Capture	
CS 502	Data Structures and Algorithms	
CS 503	Systems Basics	
CS 510	Introduction to Artificial Intelligence	
CS 511	Robot Laboratory	
CS 530	Developing User Interfaces	
CS 537	Interactive Computer Graphics	
DIGM 508	Digital Cultural Heritage	
DSRE 620	Design Problem Solving	
DSRE 630	Data Visualization for Design Professionals	
ECES 558	Digital Signal Processing for Sound & Hearing	
ECES 559	Processing of the Human Voice	
ECES 660	Machine Listening and Music IR	
ENTP 535	Social Entrepreneurship	
EDLT 533	Designing Virtual Communities	
EDLT 811	Designing and Developing Multimedia Applications For Learning	
GMAP 547	Serious Games	
GMAP 548	Experimental Games	
INFO 608	Human-Computer Interaction	
INFO 690	Understanding Users: User Experience Research Methods	
INFO 691	Prototyping the User Experience	
PSY 600	Current Topics in Applied Cognitive and Brain Sciences	
PSY 611	Computer-Based Research Methods for Psychological Research	
SCED 510	Industry Collaborative	
SCTS 504	Science, Technology & Society Theories	
SCTS 584	Historiography of Science	
Total Credits		**45.0**

Sample Plan of Study

Full-time Plan of Study

NOTE: Any term with less than 4.5 credits will not be eligible for Financial Aid.

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
SCED 500	3.0	ENTP 690	3.0	SCED 503	3.0	COOP EXPERIENCE	
SCED 501	3.0	SCED 502	3.0	Electives	6.0	SCED 510	3.0
Elective	3.0	Elective	3.0				
	9		**9**		**9**		**3**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	
COOP EXPERIENCE		SCED 690	3.0	SCED 690	3.0	
SCED 600	3.0	Elective	3.0	Elective	3.0	
	3		**6**		**6**	

Total Credits 45

Part-time Plan of Study

NOTE: Any term with less than 4.5 credits will not be eligible for Financial Aid.

First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
SCED 500	3.0	ENTP 690	3.0	SCED 503	3.0	COOP EXPERIENCE	
SCED 501	3.0	SCED 502	3.0	Elective	3.0	Elective	3.0
						SCED 510	3.0
	6		**6**		**6**		**6**

Second Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		SCED 600	3.0	SCED 690	3.0	SCED 690	3.0
Electives	6.0	Elective	3.0	Elective	3.0		
	6		**6**		**6**		**3**

Total Credits 45

Transdisciplinary Science, Computing, and Engineering Design Faculty

Genevieve Dion, MFA *(University of the Arts) Director, Center for Functional Fabrics*. Associate Professor. Industrial designer, wearable artist, new materials technology research.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Youngmoo Kim, PhD *(MIT) Director, Expressive and Creative Interactive Technologies (ExCITe) Center*. Professor. Audio and music signal processing, voice analysis and synthesis, music information retrieval, machine learning.

Brian Smith, PhD *(Northwestern University) Senior Associate Dean of Academic Affairs*. Professor. Design of computer-based learning environments, computer science education, human-computer interaction, creativity and innovation; design sciences; informal/everyday learning.

Graduate Minor in Entrepreneurship and Innovation

About the Graduate Minor

The Entrepreneurship and Innovation graduate minor is designed to enrich a graduate student's program via rigorous and applied coursework in the area of entrepreneurship. The skills of entrepreneurial thinking and doing are applicable to students in every master's degree program, as these competencies resonate with student careers both in established companies or new ventures. Students will learn how to communicate complex ideas, evaluate opportunities, learn from failure, and implement innovations.

Program Requirements

ENTP 501	Entrepreneurship Practice & Mindset	3.0
ENTP 611	Learning from Failure	3.0
or ENTP 621	Innovation & Ideation	
ENTP 641	Innovation in Established Companies	3.0
ENTP 690	The Lean Launch	3.0
Total Credits		**12.0**

Additional Information

For more information about the Entrepreneurship and Innovation graduate minor, please contact Rita Berson at rk25@drexel.edu.

Certificate in Corporate Entrepreneurship

Certificate Level: Graduate
Admission Requirements: Bachelor's degree
Certificate Type: Post-Baccalaureate
Number of Credits to Completion: 9.0
Instructional Delivery: Online; Campus
Calendar Type: Quarter
Expected Time to Completion: 1 year

Financial Aid Eligibility: Not aid eligible
Classification of Instructional Program (CIP) Code: 52.0701
Standard Occupational Classification (SOC) Code: 11-1021

About the Program

The Corporate Entrepreneurship certificate program focuses on the practice and application of entrepreneurial skills within corporations. The program introduces the student to the role of a corporate entrepreneur as change agent. Corporate entrepreneurs will learn to develop relationships with internal and external stakeholders, apply innovation strategies in corporate settings and initiate and lead organizational development and change.

Admission Requirements

Admission requires a four-year bachelor's degree from a regionally accredited institution in the United States or an equivalent international institution. Applicants who have not received a degree in the United States are required to take a TOEFL.

Questions about this program?

If you have any questions or would like to speak with an advisor, please contact:

Kristen Hayes
Director of Strategic Partnerships
Charles D. Close School of Entrepreneurship
3230 Market Street
Philadelphia, PA 19104
Email: kh3223@drexel.edu

Program Requirements

Corporate Entrepreneurship

ENTP 631	Building Internal & External Relationships	3.0
ENTP 641	Innovation in Established Companies	3.0
ENTP 681	The Startup Way: How to Drive Innovation in Entrepreneurial Companies	3.0
Total Credits		**9.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits
ENTP 631	3.0	ENTP 641	3.0	ENTP 681	3.0
	3		**3**		**3**

Total Credits 9

Certificate in Foundations of Entrepreneurship I

Certificate Level: Graduate
Admission Requirements: Bachelor's degree
Certificate Type: Post-Baccalaureate
Number of Credits to Completion: 9.0
Instructional Delivery: Online; Campus
Calendar Type: Quarter
Expected Time to Completion: 1 year
Financial Aid Eligibility: Not aid eligible
Classification of Instructional Program (CIP) Code: 52.0701
Standard Occupational Classification (SOC) Code: 11-1021

About the Program

The Foundations of Entrepreneurship I certificate program focuses on building the entrepreneurial mindset and developing the individual as entrepreneur. The program introduces a range of foundational tools used by successful entrepreneurs in pursuit of opportunity, beginning with the individual as the cornerstone of enterprise, be it a proprietorship or growing a company.

Admission Requirements

Admission requires a four-year bachelor's degree from a regionally accredited institution in the United States or an equivalent international institution. Applicants who have not received a degree in the United States are required to take a TOEFL.

Questions about this program?

If you have any questions or would like to speak with an advisor, please contact:

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Philadelphia, PA 19104
Email: kh3223@drexel.edu

Program Requirements

Foundations of Entrepreneurship I

ENTP 501	Entrepreneurship Practice & Mindset	3.0
ENTP 515	Pitch It!	3.0
ENTP 671	Life After Launch	3.0
Total Credits		**9.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits
ENTP 501	3.0	ENTP 515	3.0	ENTP 671	3.0
	3		**3**		**3**

Total Credits 9

Certificate in Foundations of Entrepreneurship II

Certificate Level: Graduate
Admission Requirements: Bachelor's degree
Certificate Type: Post-Baccalaureate
Number of Credits to Completion: 9.0
Instructional Delivery: Online; Campus
Calendar Type: Quarter
Expected Time to Completion: 1 year
Financial Aid Eligibility: Not aid eligible
Classification of Instructional Program (CIP) Code: 52.0701
Standard Occupational Classification (SOC) Code: 11-1021

About the Program

The Foundations of Entrepreneurship II certificate program focuses on the practice and application of entrepreneurial skills. The program introduces a range of foundational tools used by successful entrepreneurs in pursuit of opportunity, such as using failure as a tool for future success, personal branding, and practicing ideation and design-thinking methodologies to generate novel and executable ideas.

Admission Requirements

Admission requires a four-year bachelor's degree from a regionally accredited institution in the United States or an equivalent international institution. Applicants who have not received a degree in the United States are required to take a TOEFL.

Questions about this program?

If you have any questions or would like to speak with an advisor, please contact:

Kristen Hayes
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Charles D. Close School of Entrepreneurship
3230 Market Street
Philadelphia, PA 19104
Email: kh3223@drexel.edu

Program Requirements

Foundations of Entrepreneurship II

ENTP 540	Approaches to Entrepreneurship	3.0
ENTP 611	Learning from Failure	3.0
ENTP 621	Innovation & Ideation	3.0
Total Credits		**9.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits
ENTP 611	3.0	ENTP 621	3.0	ENTP 540	3.0
	3		**3**		**3**

Total Credits 9

Certificate in New Venture Creation

Certificate Level: Graduate
Admission Requirements: Bachelor's degree
Certificate Type: Post-Baccalaureate
Number of Credits to Completion: 9.0
Instructional Delivery: Online; Campus
Calendar Type: Quarter
Expected Time to Completion: 1 year
Financial Aid Eligibility: Not aid eligible
Classification of Instructional Program (CIP) Code: 52.0701
Standard Occupational Classification (SOC) Code: 11-1021

About the Program

The New Venture Creation certificate program is designed for professionals who are interested in starting their own ventures, working for start-up companies, or preparing for self-employment. The program introduces concepts of new-venture leadership and building a successful start-up team, assessing funding needs and opportunities, and using the Lean Launch methodology.

Admission Requirements

Admission requires a four-year bachelor's degree from a regionally accredited institution in the United States or an equivalent international institution. Applicants who have not received a degree in the United States are required to take a TOEFL.

Questions about this program?

If you have any questions or would like to speak with an advisor, please contact:

Kristen Hayes
Director of Strategic Partnerships
Charles D. Close School of Entrepreneurship
3230 Market Street
Philadelphia, PA 19104
Email: kh3223@drexel.edu

Program Requirements

New Venture Creation

ENTP 651	Leading New Ventures	3.0
ENTP 660	Early Stage Venture Funding	3.0
ENTP 690	The Lean Launch	3.0
Total Credits		**9.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits
ENTP 651	3.0	ENTP 660	3.0	ENTP 690	3.0
	3		**3**		**3**

Total Credits 9

Certificate in Social Entrepreneurship

Certificate Level: Graduate
Admission Requirements: Bachelor's degree
Certificate Type: Post-Baccalaureate
Number of Credits to Completion: 9.0
Instructional Delivery: Online; Campus
Calendar Type: Quarter
Expected Time to Completion: 1 year
Financial Aid Eligibility: Not aid eligible
Classification of Instructional Program (CIP) Code: 52.0701
Standard Occupational Classification (SOC) Code: 11-1021

About the Program

The Social Entrepreneurship certificate program is designed for professionals who are interested in tackling critical social problems within their communities or around the world through building sustainable business models. The program focuses on defining the scope of social of problems and developing unique business models and social-impact measurements to create positive social change.

Admission Requirements

Admission requires a four-year bachelor's degree from a regionally accredited institution in the United States or an equivalent international institution. Applicants who have not received a degree in the United States are required to take a TOEFL.

Questions about this program?

If you have any questions or would like to speak with an advisor, please contact:

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Charles D. Close School of Entrepreneurship
3230 Market Street
Philadelphia, PA 19104
Email: kh3223@drexel.edu

Program Requirements

Social Entrepreneurship

ENTP 535	Social Entrepreneurship	3.0
ENTP 545	International Entrepreneurship	3.0
ENTP 601	Social and Sustainable Innovation	3.0
Total Credits		**9.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits
ENTP 535	3.0	ENTP 545	3.0	ENTP 601	3.0
	3		**3**		**3**

Total Credits 9

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