Master of Engineering Innovation and Entrepreneurship

CURRICULUM

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DEGREE REQUIREMENTS		Credits
EI8004	Finding Validating Bus Opp	1
EI8005	Market Dev Fin Plan Start-Up	1
EI8006	New Venture Bus Strat Plan	1
EI8007	Lean Start Up Disc Practicum	1
EI8008	Lean Start Up Valid Practicum	1
EI8009	Lean Start Up Acq. Practicum	1
EI8010	Startup Feasibility Project	1
EI8011	The Commercialization Project	1
Two Engineering track Elective credits.		2

ELECTIVES		
EI8001	Biotechnology Start-Ups	1
EI8002	Energy Innov. Entrepreneurship	1
EI8003	Sustainable Entrepreneurship	1
BE8001	Foundations of Biomedical Eng	1
BE8002	Seminars in Biomedical Eng	1
BE8003	Directed Studies	1
CP8202	Advanced Software Engineering	1
DG8001	Foundations of Digital Media	1
DG8003	Interaction Design Digital Media	1
DG8004	Digital Media Entrepreneurship	1
DG8112	Physical Computing	1
ME8118	Info Sys Analysis & Design	1
MT8310	Special Topics Info Sys Mgmt	1
SA8901	Geospatial Data Analytics	1
DS8001	Des Algorithms and Programming	1
DS8003	Mgt of Big Data and Tools	1
DS8004	Data Mining and Presc Analytics	1

COURSE LISTING

EI8001 Biotechnology Start-Ups
This course is designed to provide would-be entrepreneurs with the context and tools to seek venture capital investment in healthcare start-up businesses and to better understand the unique model of this sector and the specific challenges that one might expect. The focus will be on biotechnology and also include information on medical technologies as well as the emerging field of healthcare IT, particularly as they differ from biotech. 1 Credit

EI8002 Energy Innovation & Entrepreneurship
We will explore drivers for innovation in Ontario's energy sector, the opportunities for new business, and the challenges of moving from the idea stage to the marketplace. Barriers and bridges to innovation and commercialization technological, financial, and regulatory will be explored through case studies, including lessons learned from guest lectures by business leaders in the Ontario energy sector. 1 Credit

EI8003 Sustainable Entrepreneurship
Introduce the closed-loop economy and the cradle-to-cradle framework of eco-effectiveness. Introduce the unifying governance corporate structure of the Benefit Corporation (B-Corp). Introduce within a unified framework of a sustainable enterprise, the basic tools of new "business" development, e.g. market research, stakeholder analysis, business model, etc. to formulate a concept initiation proposal and solution development plan. 1 Credit

EI8004 Finding & Validating Bus Opp New Venture
Introduction to entrepreneurial processes and behaviour. Enables the student to distinguish between ideas and business value creation. Facilitates students finding and validating business opportunities for new venture. Teach how to conduct market research and intellectual property assessment for the development of their technology based business idea. Uses the market research data and intellectual property to determine the source of their sustained competitive advantage. 1 Credit

EI8005 Market Dev & Fin Plan for Start-Up
Introduction to the 5 steps market development and testing and the 7 market research tools for the student to apply on their business idea. Understanding the financial dimension of new venture; understanding the nature of capital investment and role of banks and VC industry; understanding business and managerial accounting; appreciating operational and resource issues; understanding project management and how the innovation process may be managed. Prerequisite: EI8004 1 Credit

EI8006 New Venture Business Strategy & Plan
This course covers the fundamentals of "taking the opportunity to the next level" which depend on the entrepreneur's ability to communicate the opportunity concisely, in a way that will convince investors that the risk of investment is worth it. The lectures in this course will follow a process-based approach, in which students develop their ideas into business plans. The importance of writing an effective and concise business plan, as a foundation for the start-up cannot be underestimated. Prerequisite: EI8004 and EI8005 1 Credit

EI8007 Lean Start Up Cust. Disc. Practicum
Facilitates students refining their value proposition for the business idea they want to pursue. Assist in developing customer's interview script to conduct detailed testing of customer problems and product solution assumptions. Through primary market research the students will validate the product market fit for their new venture. Through market research with real customers the students will iteratively refine their business model canvas. Prerequisite: EI8004 Credit

EI8008 Lean Start Up Cust. Validation Practicum
This practicum will enable the students to shape the technology solution to be disruptive or sustainable market innovation. Facilitate the creation of technology proof-of-concept plan and the technology development processes to identify and assemble the key technical components. Facilitate testing of a proof-of-concept with lead customers to validate market product fit. Prerequisite: EI8005 and EI8007 1 Credit

EI8009 Lean Start Up Cust. Acquisition Practicum
This practicum covers the fundamentals of "taking the technology solution" to market which depend on the entrepreneur's ability to communicate the value proposition concisely, in a way that will convince customers (client) to want to acquire it. The lectures in this course will follow sales process-based approach, in which students develop their client sales proposal. The importance of writing an effective and concise sales plan, as a foundation for the go-to-market cannot be underestimated. Prerequisite: EI8008 1 Credit

EI8010 Startup Feasibility Project
The supervised project is a major component of the MEIE program and work on the project commences at the start of the academic program and continues throughout the remaining duration of the program. In teams, students are expected to apply the tools and skills from the related to finding and evaluating technology-based business ideas, building a team that can seize the opportunity and deciding the technical and business feasibility of the business opportunity.
Prerequisite: EI8005 and EI8006 Corequisites: EI8004 and EI8005 1 Credit

EI8011 The Commercialization Project
The supervised project is a major component of the MEIE program. The work on the project commences at the start of the third term of the academic program and continues for the remaining of the program. Working with mentors from the iBoost zone, the students will spend a substantial amount of their time working on their project at the iBoost Zone or other Ryerson Zones. Prerequisite: EI8005 and EI8006 Corequisites: EI8006 and EI8009 1 Credit

For course descriptions of non EI courses, go to the Program offering the course. BE – Biomedical Engineering CP – Computer Science DG – Digital Media DS – Data Science and Analytics ME – Mechanical and Industrial Engineering MT – Master of Science in Management SA – Spatial Analysis

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