

New Graduate Program

Program Description

The Master of Science in Innovation and Technological Entrepreneurship consists of ten courses (30 credits), including 4 core courses (12 credits), 4 elective courses (12 credits, 6 of which must be in Engineering and/or Science) and a 2 course (6 credit) practicum. Each student will participate in the development and delivery of a team capstone project (through the 2 course practicum) which will be reviewed by an external professional panel. Proposed course titles are presented below in Table 1.

Table 1. Courses in MS ITE Program

Requirements	Courses	Department
Program Core 12 Credits 4 courses	64.650 - Innovation & Emerging Technology 62.630 - Market Research for Entrepreneurs 61.640 - Financing Innovation & Tech. Ventures 66.630 - New Product Development	Entrepreneurship Marketing Finance/Accounting Management
Program Electives 12 Credits 4 Courses (2 Eng. Or Sci.)	66.635 - Project Management or 22.576 - Engineering Project Management 64.655 - Corporate Entrepreneurship 66.640 - Managing Entrepreneurial Teams 26.590 - Intellectual Property 26.537 - Business Law for Engineers •Special Topics Additional electives with Dept. approval	Op. & Info. Systems Mech. Engineering Entrepreneurship Management Plastics Engineering Plastics Engineering
Program Capstone 6 Credits 2 Courses	64.680 - Practicum I New Venture Planning 64.681 - Practicum II New Venture Implementation	Management Management

Target Audience

The Program will be offered to engineering, science and select business graduates as a 5th-year program (the University's Plus-One program) and to working professionals with an appropriate undergraduate degree in business, science, technology or engineering.

Contact Persons

College of Management, Graduate Programs Office

978-934-2848 or Entrepreneurship@uml.edu

Admissions Requirements

Working Professionals

Admissions to the program will be determined based on an overall review of the following applicant materials: undergraduate degree and performance in science, engineering or business (other areas will be considered if the applicant demonstrates significant work experience in a technical field), GMAT or GRE score, three letters of recommendation (professional and academic) and a letter describing the applicant's professional goals and how earning a MS will assist in their professional development. For applicants from non-English speaking countries, a minimum score on the Test of English as a Foreign Language (TOEFL) of 600 (paper-based) or 100 (Internet-based) must be obtained.

Plus-One Program (formerly the Accelerated Bachelor's to Master's Program)

The Plus-One Program option offered by the College of Management is an accelerated program offered to encourage outstanding undergraduate students in engineering, science and business to continue study at the graduate level. Undergraduate students in these majors (i.e., science, engineering or business), who have a GPA of 3.00 or better at the end of their junior year must apply for this program before they complete their undergraduate graduation requirements. Students who plan to apply to this program must meet with the M.S. program advisor by their junior year to discuss any additional course requirements.

General eligibility guidelines for admissions to a UML Accelerated Bachelor's to Master's Programs can be found online at

http://www.uml.edu/catalog/graduate/degree_requirement/bachelors_masters.htm .

Course Descriptions

Core Courses

64.650 *Innovation and Emerging Technologies (3 credits)*

This course examines technological innovation and its relationship to value-creation and business strategy. Emphasis is placed on emerging scientific and technical innovations and the opportunities and challenges they present to both existing businesses and new venture entrepreneurs. The overall goal of this course is to help you to understand, appreciate and learn to manage the technology innovation process. Students examine innovation strategies, planning models, evaluation models, licensing and the commercialization process required to launch new businesses around innovative products and technologies.

62.630 *Market Research for Entrepreneurs (3 credits)*

In this course students will learn and apply various marketing research techniques that will enable them to succeed as entrepreneurs. Some of the topics we will cover include: assessing customer needs, estimating market demand, deciding the features of the proposed product/service and the price that would be most attractive to their target market etc. The course will provide students with an overview of key marketing concepts, an understanding of the statistical methodology behind the market research techniques and practical application of the techniques via cases and projects.

61.640 *Financing Innovation and Technology Ventures (3 credits)*

This course focuses on strategies for financing innovation and new technology ventures both within a firm and on a stand-alone basis. Topics covered will include: different types of business organizations; different sources of funding including internal sources and external source such as angel investors, venture capitalists, etc.; short-term and long-term financial planning and forecasting; business valuation; term sheet negotiation and exit strategies including mergers and acquisitions and IPOs. Each aspect of the course will be covered within the context of a business plan and venture life-cycle.

66.630 *New Product Development (3 credits)*

This course will enable students to understand the complexities involved in new innovation and technology-based product development. Through examples and exercises, students will be exposed to such topics as creative problem solving, customer/suppliers/partners involvements and inputs processes, integration among all functions, building and managing cross functional teams, rapid prototyping and development, creating a learning organization and measurements.

Elective Courses

66.635 *Project Management (3 credits)*

This course will focus on managing innovation and technology projects and the critical role that a project manager plays in successful execution. Topics included in the course are: project planning, deliverables, managing quality, change management, documentation, communication, risks management, project team and human resource management approaches and creating and managing expectations.

64.655 *Corporate Entrepreneurship (3 credits)*

This course focuses on entrepreneurship in established companies. Corporate Entrepreneurship (CE) is a process by which companies adopt a conscious strategy to encourage creativity, innovation, outside-the-box thinking, experimentation and risk taking. As a result, companies promoting and implementing CE strive for competitive advantages in rapidly changing global markets. The course will cover components of CE, developing & implementing CE strategies and managing CE.

66.640 *Building & Managing Entrepreneurial Teams (3 credits)*

A critical element of success in the launch of new products, services and companies is the composition and experience of the team members. This course examines the composition, development and lifecycle of entrepreneurial teams within the context of startups and existing corporations. Students will develop an understanding of the need for diverse experiences and skills among team members along with an understanding of how teams change as entrepreneurial processes progress. A particular emphasis will be placed on improving students communications and collaboration skills in a cross-functional team context. Students will also explore evolving open collaborative approaches employed by companies to accelerate innovations by using customers, suppliers, partners and other organizations outside the four walls of a company.

64.688 *Special Topics in Entrepreneurship & Innovation (3 credits)*

Topics of current interest in Entrepreneurship, Innovation and Technology Management. Subject matter to be announced in advance.

Engineering Electives

26.537 *Business Law for Engineers (3 credits)*

Employment agreements, including ethical work considerations, non-compete provisions, trade secrets, assignment of rights to inventions; contracts including types, terms, warranties, risk of loss, remedies of breach; legal aspects of product design, prototyping and testing; materials, product & equipment defects and liability; intellectual property including patents, trade secrets, trademarks, copyright, accounting for intellectual property, licensing; business torts, damages & remedies including environmental pollution, conversion, breach of contract, injunctions.

22.576 *Engineering Project Management (3 credits)*

Skills are developed enabling engineers to be effective decision makers and technical leaders in an environment where technology management, business operations and strategies for contract compliance are critical to achieving competitive advantage. Elements of the Project Planning and Control System are presented along with analytical methods important for maintaining Projects on schedule and within budget.

26.590 *Survey of Intellectual Property (3 credits)*

A review of patents, trademarks, copyrights and their application for protection of technology in the plastics industry. Other topics to be considered will be employee rights/non-competition agreements, foreign patent protection and technology licensing.

Capstone Experience

64.680 *Practicum I – New Venture Planning (3 credits)*

64.681 *Practicum II – New Venture Implementation (3 credits)*

These two practicum courses focus on technology commercialization, business planning and initial incubation of an early-stage business by project teams; and, development of an investment proposal to launch a new business. Students will be working hands-on to explore, identify and analyze the path “from Idea to Market” for technology and research projects. They will evaluate selected technology and research projects for commercial applications, explore different options available to productize & introduce to market, and, where appropriate, complete a new venture business plan, and potentially launch or participate in launching a new business. The course will be offered as a continuous course over two consecutive semesters, requiring students to work on these commercialization projects. Each Team will be assigned to a faculty who will guide them throughout the practicum experience.