

Fisheries and Marine Institute of  
Memorial University of Newfoundland



**MARINE INSTITUTE**



**Master of Technology Management**  
Engineering & Applied Science Technology Option

[www.mi.mun.ca/mtm](http://www.mi.mun.ca/mtm)

# Program Description

The Master of Technology Management Engineering and Applied Science Technology Option is an innovative program, the first of its kind in Canada. It provides professional development opportunities for busy, working professionals engaged in a variety of engineering technology and applied science disciplines. The Program provides the knowledge and skills necessary to effectively manage complex technical operations, deal with the challenges and dynamics of innovation-driven industries, and strategically consider issues encompassing the management of engineering technology. This Program is offered fully online, and applicants from the global community are invited to apply. For more information and to apply, visit [www.mi.mun.ca/mtm](http://www.mi.mun.ca/mtm).

## Program Objective

The Master of Technology Management program will provide you with strategic planning and decision making skills in the context of engineering and applied science technology-based organizations. You will gain insight into the nature, structure and operation of technical operations, and the factors that influence their success.

The Program enhances career development opportunities for entry-level managers or those looking to become managerial professionals in the field of engineering and applied science technology.



# Program Overview

## Program Structure: Engineering & Applied Science Technology Option

Participants will complete course work offered by the Fisheries and Marine Institute and the Faculty of Business Administration.

### Option 1

- Two core courses (6 credit hours)
- Six elective courses (18 credit hours)
  - Three courses from Category A
  - Three courses from Category B
- Project in Engineering Technology Management (6 credit hours)

### Option 2

- Two core courses (6 credit hours)
- Eight elective courses (24 credit hours)
  - Three courses from Category A
  - Five courses from Category B

### Core Courses

MSTM 6031 Overview of Technical Operations  
MSTM 6032 Managing Technological Innovation

### Electives Category A

BUSI 8104 Organizations: Behaviour and Structure  
BUSI 8106 Marketing  
BUSI 8107 Managing Ethics and Responsibility  
BUSI 8109 Accounting for Management  
BUSI 8204 Human Resource Management  
(Prerequisite: BUSI 8104)

### Electives Category B

MSTM 6022 Communication and Conflict Resolution in the Technical Environment  
MSTM 6023 Strategic Planning, Policy, Participation and Management of Engineering Technical Operations  
MSTM 6033 Quality Systems  
MSTM 6034 Project Management in the Offshore, Health, Fisheries and Engineering Technology Environments  
MSTM 6035 Information Technology Applications in the Health and Engineering Technology Environment  
MSTM 6036 Supply Chain Management and Advanced Engineering Technology Operations  
MSTM 6037 Risk Analysis and Operations in the Engineering Technology Sector  
MSTM 6038 Manufacturing and Engineering Technology Management  
MSTM 6039 Sustainability and Environmental Responsibility

### Project in Engineering and Applied Science Technology Management:

MSTM 6100 Project in Engineering and Applied Science Technology Management (6 credits hours)



“Broaden your career perspectives ...

Acquire the knowledge and skills that will allow you to become an effective manager.

”

# Course Descriptions

## Core Courses:

### MSTM 6031 Overview of Technical Operations

This course provides students with a management approach to the fundamental aspects of production and/or service delivery systems of organizations in concert with marketing, human resources, finance, and information systems. Students will review management decision making processes including day-to-day operating decisions such as inventory and quality control to long-term strategic decisions such as capacity and location planning.

### MSTM 6032 Managing Technological Innovation

This course provides students with an understanding of managerial practices and tools associated with technological innovation. The course focuses on process and implementation for both incremental and radical innovation and addresses strategic, organizational and managerial issues associated with new, established, small or large organizations.

## Category A Electives:

For full course descriptions, see the Faculty of Business Administration. [http://www.business.mun.ca/programs/graduate/mba\\_courses.php](http://www.business.mun.ca/programs/graduate/mba_courses.php)

BUSI 8104 Organizations: Behaviour and Structure  
BUSI 8106 Marketing  
BUSI 8107 Managing Ethics and Responsibility  
BUSI 8109 Accounting for Management  
BUSI 8204 Human Resource Management (PR BUSI 8104)

## Category B Electives:

### MSTM 6022 Communication and Conflict Resolution in a Technical Environment

This course provides participants with an understanding of the basic principles of conflict resolution, negotiation, and effective communication and interpersonal skills. The skills taught will enable students to diagnose, understand and accept a role in the negotiation and management of conflicts between individuals and groups in an organizational context; and to investigate and solve problems and manage conflicts within the workplace.

### MSTM 6023 Strategic Planning, Policy, Participation and Management in Technical Operations

This course is designed to give participants an understanding of the strategic planning and policy development needs and functions of an organization. The course will examine current concepts, approaches and, specifically, the critical role of managers and leaders in the areas of planning, policy development, problem solving and decision making. Strategic planning and policy development in the business must be led by managers who provide overall vision, coordination, decisions on allocation of resources, communication and ongoing commitment, evaluation and support.

### MSTM 6033 Quality Systems

The course provides students with an understanding of several key concepts related to quality management including TQM (total quality management); ISO 9000; the role of management; customer focus (internal and external); employee empowerment; and benchmarking. Continual improvement techniques and strategies including SPC (statistical process control); six sigma; Kaizen approach and CEDAC system will be explored. The contributions of various quality pioneers including Deming, Juran and Crosby will be discussed.

### MSTM 6034 Project Management in the Offshore, Health, Fisheries and Engineering Technology Environments

This course will include an overview of project management. It will include presentations, discussions, and case-based analysis around project planning and monitoring; resource planning, budgeting and cost controls; assessing and managing risks; managing team work; effective communications; quality control; and negotiations and contracts.

### MSTM 6035 Information Technology Applications in the Health and Engineering Technology Environments

This course introduces the importance of information technology in the successful operation of technology organizations. Students will be presented with managerial, informational and technological issues related to the management of IT, and with a framework to better manage them. Students will discuss the strategic applications of information technology.

# Course Descriptions

## Category B Electives:

### MSTM 6036 Supply Chain Management and Advanced Engineering Technology Operations

This course provides a comprehensive understanding of supply chain management including planning, management and measurement of customer demand, sourcing, operations and manufacturing, inventory, warehousing, transportation, and the effective application of technology to optimize supply chain performance. In addition, this course includes advanced technical operations topics including global sourcing and logistics, forecasting, lean systems, and resource, sales and operations planning.

### MSTM 6037 Risk Analysis and Operations in the Engineering Technology Sector

This course focuses on enterprise risk management methodologies and their application, including alignment with strategic objectives; risk identification and analysis; risk management tools; risk mitigation; and strategic emergency planning.

### MSTM 6038 Manufacturing and Engineering Technology Management

This course covers the organizational, strategic, and operational aspects of manufacturing. Production planning processes, resource allocation issues as well as analysis and operation of inventory systems will be discussed. Students will review design, management and improvement processes and exam available systems used to coordinate these processes, including the MRP (material requirements planning), JIT/Lean (just-in-time), and DBR (Drum-Buffer-Rope), also known as constraint-based planning.

### MSTM 6039 Sustainability and Environmental Responsibility

This course focuses on tools that can be applied within organizational strategies for sustainability and social responsibility. Students will examine case studies and identify opportunities for improvement through the use of environmental auditing, performance reporting, selection of indicators, environmental risk assessment, modeling and environmental accounting. The course will also address global issues such as climate change and carbon trading.

## Project Option:

### MSTM 6100 Project in Engineering and Applied Science Technology Management (6 credit hours).

Students will choose a topic in consultation with the Program Chair and Project Supervisor. Students will work independently to carry out an in-depth study of a problem or application within the area of technology management and fully document and present their findings. Preferably the problem will be directly related to a workplace situation. The resulting capstone paper will be evaluated by two examiners.

## Admission Requirements

Candidates must fulfill MUN's graduate studies admission requirements.

Admission to the Program is on a competitive basis. To be considered for admission to the Program an applicant will normally possess a second class or better undergraduate degree from a university of recognized standing and will normally have:

- A Memorial University Bachelor of Technology, Bachelor of Maritime Studies, or a comparable undergraduate degree with appropriate technology sector and business management course work;
- A minimum of two (2) years' relevant employment experience.

## How to Apply

Applications are accepted three times a year. Applicants should submit their application to Memorial University's School of Graduate Studies by the following deadlines:

Fall admission – June 30  
Winter admission – October 15  
Spring admission – February 15

Applications received after listed deadlines will be considered as time and resources permit.

For more information and to apply online, go to:  
<http://www.mun.ca/become/graduate/apply/>

# MASTER OF TECHNOLOGY MANAGEMENT

## Engineering & Applied Science Technology Option

Project Option

Course Route

Core Courses	Complete 2	Complete 2
MSTM 6031 Overview of Technical Operations	X	X
MSTM 6032 Managing Technological Innovation	X	X
Elective Courses: Category A	Choose 3	Choose 3
BUSI 8104 Organizations: Behaviour and Structure		
BUSI 8106 Marketing		
BUSI 8107 Managing Ethics and Responsibility		
BUSI 8109 Accounting for Management		
BUSI 8204 Human Resource Management (PR: BUSI 8104)		
Elective Courses: Category B	Choose 3	Choose 5
MSTM 6022 Communication and Conflict Resolution in a Technical Environment		
MSTM 6023 Strategic Planning, Policy, Participation and Management in Technical Operations		
MSTM 6033 Quality Systems		
MSTM 6034 Project Management in the Offshore, Health, Fisheries and Engineering Technology Environments		
MSTM 6035 Information Technology Applications in the Health and Engineering Technology Environments		
MSTM 6036 Supply Chain Management and Advanced Engineering Technology Operations		
MSTM 6037 Risk Analysis and Operations in the Engineering Technology Sector		
MSTM 6038 Manufacturing and Engineering Technology Management		
MSTM 6039 Sustainability and Environmental Responsibility		
Project in Engineering and Applied Science Technology Management	Complete	
MSTM 6100 Project in Engineering and Applied Science Technology Management	X	



# Faculty

Faculty members involved in the Master of Technology Management program are highly trained and qualified, and are committed to the Marine Institute and its mission. They are a dedicated group of professionals eager to share their knowledge and skills and extensive expertise and industrial experience.

The Academic Director, Dr. Christian Coronado, holds a PhD. from the Ecole Polytechnique de Montreal in Industrial Engineering with a specialization in Innovation and Technology Management. Prior to earning his Doctorate, Dr. Coronado served at several automotive original equipment manufacturers (OEMs) in diverse capacities for several years. Dr. Coronado has authored and co-authored a number of scientific publications, journals and book chapters.

## Program Delivery and Support

The overall structure of the program is course-based with courses offered online by the Fisheries and Marine Institute and the Faculty of Business Administration at Memorial University. Program delivery is fully supported by Distance Education, Learning and Teaching Support (DELTS). Desire-to-Learn (D2L) is used as the main content delivery method and provides a virtual classroom for each course in the Program.

Students can avail of all the services and support offered by the Marine Institute and Memorial University including access to the extensive University Library System resources and Help Desk support available through DELTS for technical issues related to D2L.

## Academic Director

**Dr. Christian Coronado, MSc., PhD.**

Academic Director  
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## Contact Information

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[www.mun.ca/become/graduate](http://www.mun.ca/become/graduate)

