TECHNOLOGY MANAGEMENT
(AQUACULTURE TECHNOLOGY)

MASTER’S DEGREE (ONLINE)
Master the strategic planning, decision-making and technology management skills needed for leading senior-level positions in aquaculture organizations.
PROGRAM DESCRIPTION

The Marine Institute’s Master of Technology Management (Aquaculture Technology) focuses on strategic planning, decision making, aquaculture technology management, as well as the structure and operation of technology-based organizations. This online program will help you harness the power of your expertise to stand out as an aquaculture managerial candidate in your organization and advance in your career.

This online, course-based program provides a core of technology courses together with elective options that offer opportunities to focus in a variety of aquaculture technology areas.

For more information and to apply, visit www.mi.mun.ca/mtma.
PROGRAM STRUCTURE

Participants will complete course work offered by the Fisheries and Marine Institute, Memorial University.

OPTION 1
- Two core courses (6 credit hours)
- Six elective courses (18 credit hours)
  - At least one from Category A
  - At least three from Category B
- Project in Aquaculture Technology Management (6 credit hours)

OPTION 2
- Two core courses (6 credit hours)
- Eight elective courses (24 credit hours)
  - At least one from Category A
  - At least three from Category B

CORE COURSES
- MSTM 6031: Overview of Technical Operations
- MSTM 6032: Managing Technological Innovation

ELECTIVES CATEGORY A
- 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 6037: Risk Analysis and Operations in the Engineering Technology Sector
- MSTM 6059: Sustainability and Environmental Responsibility
- MSTM 6052: Management of Intellectual Property
- MSTM 6056: Management of International Development

ELECTIVES CATEGORY B
- MSTM 6071: Management of Aquaculture Technology
- MSTM 6072: Animal Husbandry Management
- MSTM 6073: Aquaculture Environmental Management
- MSTM 6074: Aquaculture Site and Operational Assessment
- MSTM 6075: Aquaculture Engineering Technology Management

PROJECT OPTION
- MSTM 6102: Project in Aquaculture Technology Management (6 credit hours)

ADMISSION

REQUIREMENTS

Admission to the Program is on a competitive basis.

Applicants must meet Memorial University School of Graduate Studies’ admission requirements.

In addition, to be considered for admission to the Aquaculture Technology Option an applicant will normally possess a second class or better undergraduate degree from a university of recognized standing and will normally have:

- A post-graduate aquaculture credential or an aquaculture focus in their undergraduate degree; or significant professional experience in the aquaculture industry; and
- A minimum of two (2) years relevant employment experience.

HOW TO APPLY

Applicants should submit their application to Memorial University’s School of Graduate Studies by the following deadlines:

- FALL ADMISSION (SEPTEMBER) – MAY 15
- WINTER ADMISSION (JANUARY) – SEPTEMBER 15

For more information and to apply online, go to www.mun.ca/become/graduate/apply.
COURSE DESCRIPTIONS

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 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.

MSTM 6033 - QUALITY SYSTEMS
This 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. Continued 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 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 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.

MSTM 6052 - MANAGEMENT OF INTELLECTUAL PROPERTY
Intellectual Property (IP), as a strategic corporate asset has become a key factor in modern knowledge-based organizations. This course will consider the Intellectual Property tools necessary to effectively protect IP. Furthermore, this course will discuss the best strategies and approaches for value creation through the use of Intellectual Property Rights.

MSTM 6067 - PROJECT IN AQUACULTURE TECHNOLOGY MANAGEMENT (4 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 an area of aquaculture management, and will fully document and present their findings. Preferably the problem will be directly related to a relevant, ongoing issue in a specific aquaculture sector. The resulting major report will be evaluated by two examiners.

MSTM 6075 - AQUACULTURE ENGINEERING TECHNOLOGY MANAGEMENT
This course is designed to provide an understanding of engineering principles as they apply to aquaculture technology and system management. This course will focus on the physical-biological parameters of the aquatic environment and how they impact the cultured species. In addition, the engineering implications of the facility infrastructure will be assessed, particularly as they impact both the cultured organisms and ease of system management.

MSTM 6076 - MANAGEMENT OF INTERNATIONAL DEVELOPMENT
This course will involve the students in discussions and case studies related to international development activities that aim to improve the livelihoods of the poor and/or under-represented in developing countries. It will consider types of funding agencies, proposal development, needs assessments, project management strategies, sustainable resource management, human resource development, consideration of the impacts on the host or target group as well as their developing country, change management strategies, communication strategies, and other relevant topics.

MSTM 6077 - AQUACULTURE TECHNOLOGY MANAGEMENT
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 6079 - INTERNATIONAL DEVELOPMENT
This course will include an overview of 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 6080 - 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 6082 - 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.
## COURSE SELECTION CHART

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<tr>
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<th>PROJECT OPTION (8 COURSES + PROJECT)</th>
<th>COURSE ROUTE (10 COURSES)</th>
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<tr>
<td>MSTM 6031</td>
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<td>DO NOT COMPLETE</td>
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### PROGRAM DELIVERY AND SUPPORT

The overall structure of the program is course-based with courses offered online by the Fisheries and Marine Institute of Memorial University. This is fully supported by Centre for Innovation in Teaching and Learning (CITL). Brightspace 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 to Help Desk support available through CITL for technical issues related to Brightspace.

### ABOUT THE MARINE INSTITUTE

As a campus of Memorial University of Newfoundland, the Fisheries and Marine Institute is Canada’s most comprehensive centre for education, training, applied research and industrial support for the ocean industries. Located on the edge of the Atlantic Ocean, we are one of the most respected centres of marine learning and applied research in the world.

The Marine Institute provides more than 20 industry-driven programs ranging from technical certificates to master’s degrees. In addition to undergraduate and graduate degrees, the Institute offers advanced diplomas, diplomas of technology and technical certificates.

Students enjoy a learning environment where small class sizes are the rule, hands on instruction is a way of life and competitive tuition rates put an internationally-recognized education well within reach.

The Institute also runs a variety of short courses and industrial response programs. All programs and courses are designed to provide students with knowledge and skills required for success in the workforce.

The Institute has three Schools — the School of Fisheries, the School of Maritime Studies and the School of Ocean Technology — and within these Schools a number of specialized centres and units.

These centres and units lead the Institute, both nationally and internationally, in applied research and technology transfer and in the provision of training to a variety of industry clients.
CONTACT INFORMATION

GRADUATE STUDENT RECRUITMENT OFFICER
Division of Academic and Student Affairs
Fisheries and Marine Institute of
Memorial University of Newfoundland

Telephone: 709.778.0395
Toll-free: 1.800.563.5799, ext. 0395

recruitment@mi.mun.ca
www.mi.mun.ca/mtma
www.mun.ca/become/graduate

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