

# Fisheries and Marine Institute of Memorial University of Newfoundland



**MARINE INSTITUTE**



## Master of Technology Management Aquaculture Technology Option

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

# Program Description

The Marine Institute's new Master of Technology Management (Aquaculture), focuses on strategic planning, decision making, aquaculture technology management, as well as the structure and operation of technology-based organizations. The Program will help you harness the power of your expertise to stand out as an aquaculture management candidate in your organization and progress with your career. This online, course-based program provides a core of technology and business management courses together with elective options that offer opportunities to focus in particular areas. For more information and to apply, visit [www.mi.mun.ca/mtma](http://www.mi.mun.ca/mtma).

## 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 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.

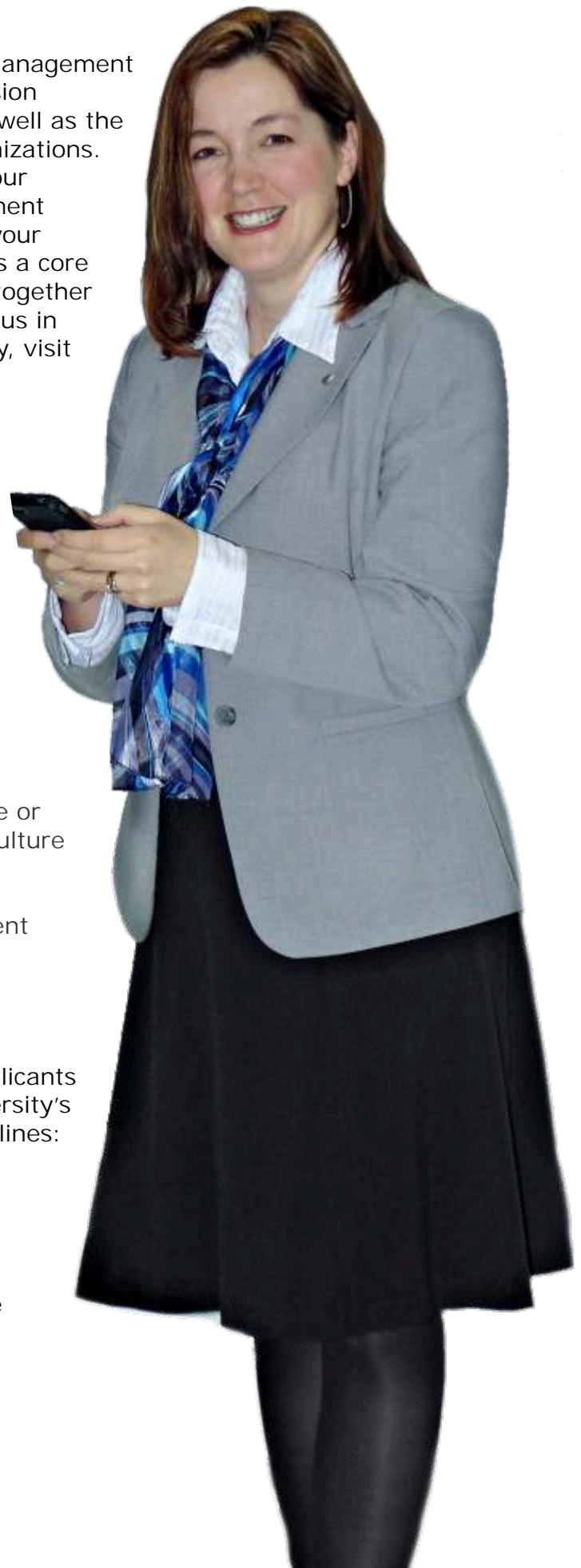
## How to Apply

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/>



# Program Overview

## Program Structure: Aquaculture 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)
  - Two courses from Category A
  - Two courses from Category B
  - Two courses from Category C
- Project in Aquaculture Technology Management (6 credit hours)

### Option 2

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

### 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 6037	Risk Analysis and Operations in the Engineering Technology Sector
MSTM 6039	Sustainability and Environmental Responsibility
MSTM 6056	Management of International Development

### Electives Category C

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 in Aquaculture Technology Management:

MSTM 6100	Project in Aquaculture Technology Management (6 credits hours)
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“Broaden your career perspectives ...

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

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# 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 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.

# Course Descriptions

## Category B Electives:

### 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 6056 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.

## Category C Electives:

### MSTM 6071 Management of Aquaculture Technology

This course will discuss management issues related to existing and innovative aquaculture technology, as the industry strives to improve production efficiencies and lessen environmental impact of farming operations. The participants will evaluate the operational, environmental, husbandry dynamics and economic considerations of aquaculture technology.

### MSTM 6072 Animal Husbandry Management

This course will discuss issues related to animal husbandry management strategies and Best Management Practices for farm operations, particularly related to feed, health and the environment. This will include case studies for open and closed intensive commercial culture of finfish and shellfish, as well as integrated farming systems.

### MSTM 6073 Aquaculture Environmental Management

This course is designed to provide an overview and understanding of the current issues in relation to aquaculture and environment management. It will provide an overview of the relevant science, environmental, policy and public awareness issues to enable the students to apply their knowledge in discussions and industry public relations.

### MSTM 6074 Aquaculture Site and Operational Assessment

This course is designed to provide an overview of the criteria for selecting a suitable aquaculture site and for assessing existing operations. Operational assessments will assess production efficiencies, management practice, environmental impacts and remediation, user conflict, economic considerations and the application of innovative technology. The course will focus on land-based and open-water sites, and systems for economically important cultured finfish and shellfish species.

### 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.

## Project Option:

### MSTM 6102 Project in Aquaculture 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 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 / thesis will be evaluated by two examiners.



# MASTER OF TECHNOLOGY MANAGEMENT

## Aquaculture Technology Option

	Project Option	Course Route
<b>Core Courses</b>	Complete 2	Complete 2
MSTM 6031 Overview of Technical Operations	X	X
MSTM 6032 Managing Technological Innovation	X	X
<b>Elective Courses: Category A</b>	Choose 2	Choose 2
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)		
<b>Elective Courses: Category B</b>	Choose 2	Choose 3
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 6039 Sustainability and Environmental Responsibility		
MSTM 6056 Management of International Development		
<b>Elective Courses: Category C</b>	Choose 2	Choose 3
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		
<b>Project in Aquaculture Technology Management</b>	Complete	
MSTM 6102 Project in Aquaculture Technology Management (6 credit hours)	X	

## Fees

Refer to the School of Graduate Studies for more information on program fees and payment schedules.  
[http://www.mun.ca/become/graduate/fees\\_funding/Graduate\\_Tuition.php](http://www.mun.ca/become/graduate/fees_funding/Graduate_Tuition.php)

# Faculty

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

## Dr. Laura C. Halfyard, MSc., PhD.

The School of Fisheries Chair of Aquaculture Programs, Dr. Laura Halfyard, holds a PhD. from the University of Stirling in Scotland in Aquaculture and Fisheries Management. Over the past 25 years, she has been involved in various finfish/shellfish research and commercial aquaculture activities, both nationally and internationally.

## Cyr Couturier, MSc.

The Memorial University Chair of the MSc Program, Cyr Couturier, has been directly involved in provincial, national and international aquaculture projects and management for commercial and developmental sectors. In the roles of aquaculture association director, president and aquaculture specialist, he has extensive shellfish and finfish management expertise.

## Keith Rideout, GDA, MMS.

Keith Rideout, the Coordinator of Programs for the School of Fisheries, has actively lead technology transfer and industrial education initiatives with the ever present goal being to improve farm management and operational efficiencies, particularly for the salmonid aquaculture sector. His expertise in both the wild fishery and aquaculture sectors provides an important perspective on a range of technical, economic, social, and environmental considerations.

## Dr. Christian Coronado, MSc., PhD.

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.

## Other Aquaculture Expertise

Involvement in the MTM (Aquaculture) Program for lectures, industrial management case studies, project supervision, etc., will also include: other Memorial University aquaculture faculty (e.g. Ocean Sciences Centre, Environmental Science, Biology); commercial industry partners; specialists within the provincial Department of Fisheries and Aquaculture, the federal Department of Fisheries and Oceans; various aquaculture associations; and national/international institutional partners.



# 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 and Program Information

### Dr. Christian Coronado, MSc., PhD.



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