MEMORIAL UNIVERSITY OF NEWFOUNDLAND
Academic Council of the School of Graduate Studies
Minutes, December 21, 2021

The regularly scheduled meeting of Academic Council, December 20, 2021, did not have a quorum, and therefore, the following items were distributed via email on December 21, 2021 for review.

It was moved by E. Pittman, and seconded by C. Walsh that the agenda items for this meeting be approved. The motion (21 yays)

CARRIED

Concerns were raised regarding agenda items 6iii. and 6iv., and satisfactory responses were received from the proponents for the INTE 7002 course, and the Computer Science all-course route program.

1.   Computer Science

Computer Science is proposing a new Master of Science, course-based route option, with revisions to section 28.10 of the University Calendar.

Calendar Entry:

28.10 Computer Science
- www.mun.ca/sgs/contacts/sgscontacts.php
- www.mun.ca/science
- www.mun.ca/computerscience
- www.mun.ca/become/graduate/apply/app_deadlines.php
- www.mun.ca/computerscience/grad/

The degrees of Master of Science and Doctor of Philosophy are offered in Computer Science.

28.10.1 Admission Requirements

Admission into a Master's program in Computer Science is restricted to students holding at least a Bachelor degree (major in Computer Science or Computer Engineering) with a minimum average of 75% overall, and/or an Upper second Class Upper or higher standing. When circumstances warrant, this requirement may be waived on the recommendation of the Head of the Department. Applicants should also refer to the **Qualifications for Admission** given under the **Regulations Governing the Degree of Master of Science** within the School of Graduate Studies section of the current Calendar. International applicants are ~~strongly~~ encouraged to submit results of the (general) Graduate Record Examination (GRE) test. Applicants may apply initially for Option 1 or Option 2 only; students may apply for Option 3 toward the end of their first semester of study.

28.10.2 Programs
28.10.2.1 Option 1 - Thesis Route
1. Students are required to complete a minimum of 15 credit hours in graduate program courses, 9 credit hours which are Computer Science courses as follows: COMP 690A/B and 6 additional ~~courses~~ credit hours in Computer Science (excluding COMP 601W and COMP 6999).
2. Full-time students are expected to complete their course work within their first year of studies. Part-time students are expected to complete their course work by the end of the seventh semester in their program.

3. Students must participate in the Research Forum at least once during their program. The Student Research Forum is organized by the Department of Computer Science and takes place ~~in the Winter term of~~ each academic year.
4. Each student is required to submit an acceptable thesis. The thesis project may involve a theoretical investigation and/or the development of an original, practical system. Each student is required to present a tentative outline of the student's proposed research to the Supervisor, with a copy to the Department Committee on Graduate Studies, by the end of the student's third semester in the program (sixth semester for part-time students). A fifteen--minute oral presentation of the proposal is to be scheduled and given within four weeks of the submission date.
5. Prior to submission of a thesis, normally in the last semester of the program, students are required to present a seminar on the thesis topic, methods employed, and research results.

28.10.2.2 Option 2 – Course-based Route

1. <u>Students are required to complete a minimum of 30 credit hours in graduate program courses, of which at least 21 credit hours must be in Computer Science, whereas the remaining 9 could be Computer Science courses, other courses related to computer science and included in the list of CS-approved elective courses maintained by the Graduate Studies Committee, available at www.mun.ca/computerscience/grad, or other courses previously approved by the Graduate Studies Committee, or its Chair.</u>

2. <u>Within the 30 credit hours requirement, students must take COMP 6999 (Master's Project).</u>

3. <u>Prior to graduation and as part of successfully completing COMP 6999, students are required to present a seminar on their project.</u>

28.10.2.2<u>3</u> Option ~~2~~<u>3</u> – Work<u>-</u>Term Route

1. ~~Students are required to complete a minimum of 24 credit hours in graduate program courses, of which at least 18 credit hours must be in Computer Science, whereas the remaining 6 should be related to computer science, and included in the list of elective courses maintained by the Graduate Studies Committee, or previously approved by the Graduate Studies Committee, or its Chair.~~
2. ~~Within this credit requirement, a student must take the following courses:~~
   ~~COMP 6999 (Master's Project)~~
   ~~One course in Software Engineering (COMP 6905)~~
   ~~One course in Algorithms (COMP 6901 or COMP 6902)~~
3. ~~Additionally students are required to complete one co-operative education work term (COMP 601W). The work term is a full-time, paid work experience with one employer and either a four or eight months in duration. The work term should start in the third semester of the program. The work term can be deferred to the fourth semester, but normally only in the event of an unsuccessful job search for the third semester.~~
4. ~~The dates for starting and finishing each work term are shown at~~ ~~www.mun.ca/coop~~.
5. ~~Students must successfully complete at least 12 credit hours (four courses) prior to beginning their work term. Students must have at least one required course remaining after their work term.~~
6. ~~Students will conduct job searches with an Academic Staff Member in Co-operative Education in cooperation with the Department of Computer Science. It is the student's responsibility to seek and obtain a work term placement and to communicate with all parties both within the University and beyond in a professional manner. Work term placements cannot be guaranteed by the Department of Computer Science or an Academic Staff Member in Co-operative Education, although every effort will be made to assist students in their job search. Work term placements obtained outside the job competition must be confirmed by letter from the employer and approved by the Head of Computer Science and by an Academic Staff Member in Co-operative Education on or before the first day of the work term. Work term placements may be outside Newfoundland and Labrador.~~

The work term route provides an opportunity for graduate computer science students to learn valuable practical skills while working in fields related to computer science. Students complete a full-time, paid work term (COMP 601W) of four or eight months with a single employer as an essential component of their academic program. There is no direct entry into this program. Students may apply for admission into Option 3-Work Term Route towards the end of their first semester in Option 1 – Thesis Route or Option 2 – Course-based Route.

1. **Admission Requirements**
    a. Admission to the work term route is limited, competitive, and selective.
    b. The primary criteria used in reaching decisions on applications for admission is academic performance, relevant experience and motivation. Students may be required to participate in an interview as part of the selection process.
    c. Applications are accepted each semester, approximately 4-5 months in advance of start of the work term. Students are informed of application deadlines by the Department of Computer Science.
    d. Students must have completed 12 credit hours of program courses prior to the start of the work term. Students must have at least one required course remaining after the work term.

2. **Program of Study**

    a. Students are required to complete a minimum of 24 credit hours in graduate program courses, of which at least 18 credit hours must be in Computer Science, whereas the remaining 6 should be either in Computer Science, related to computer science and included in the list of elective courses maintained by the Graduate Studies Committee, or previously approved by the Graduate Studies Committee, or its Chair.
    b. Within this credit requirement, a student must take the following courses:
        o COMP 6999 (Master's Project)
        o One course in Software Engineering (COMP 6905)
        o One course in Algorithms (COMP 6901, COMP 6902, or COMP 6981)
    c. Additionally, students are required to complete one co-operative education work term (COMP 601W). The work term is a full-time, four- or eight- months duration paid work experience with one employer.
    d. The work term job search takes place throughout the semester prior to the start of the intended work term. Students who are not successful in securing a work term job in their first search semester may continue their search for up to two additional semesters.
    e. Prior to graduation and as part of successfully completing COMP 6999 (Master's Project), students are required to present a seminar on their project.

3. Work Term

a. Students will conduct job searches with an Academic Staff Member in Co-operative Education in cooperation with the Department of Computer Science. It is the student's responsibility to seek and obtain a work term placement and to communicate with all parties both within the University and beyond in a professional manner. While the student's job search is supported by the Academic Staff Member in Co-operative Education, it is the student's responsibility to secure a work term placement. Work term placements are not guaranteed. Work term placements obtained outside the job competition must be confirmed by letter from the employer and approved by an Academic Staff Member in Co-operative Education on or before the first day of the work term.

b. Work terms start in January, May and September; the start and end dates are available at mun.ca/coop/.

c. Each work term placement will be supervised by the student's on-site workplace supervisor and the Academic Staff Member in Co-operative Education. The overall evaluation of the work term is the responsibility of the Academic Staff Member in Co-operative Education. The work term shall consist of two components:
   o On-the-job Student Performance as evaluated by the workplace supervisor and the Academic Staff Member in Co-operative Education.
   o Assignment(s) graded by the Academic Staff Member in Co-operative Education.

28.10.4~~3~~ Other Regulations

1. Students from either **Option 1 - Thesis Route** or **Option 2 - Course-Based Route** ~~/Project Route with Work Term~~ may request to transfer ~~between both options~~ to a different route once during their studies, ~~after at least two semesters~~ after completing 4 courses (12 credit hours) in the~~ir~~ original program upon admission to the School of Graduate Studies at Memorial.
2. All students are expected to take an active part in seminars and other aspects of the academic life of the Department of Computer Science.
3. Unless the work-term takes longer than one term, f~~F~~ull-time students are expected to complete all program requirements in two years. Part-time students are expected to complete all program requirements in four years.

28.10.4~~5~~ Courses

A selection of the following graduate courses will be offered to meet the requirements of students, as far as the resources of the Department will allow. Normally, students will be expected to complete their course work during the ~~fall~~ Fall and ~~winter~~ Winter. ~~Courses might not be offered in the spring semester.~~

- 601W Work Term
- 690A/B Research Methods in Computer Science
- 6758-6769 Special Topics in Computer Applications
- 6770-6790 Special Topics in Computer Science
- ~~690A/B Research Methods in Computer Science~~
- 6901 Applied Algorithms *(~~credit may be obtained for only one of~~ credit restricted with ~~6901 and~~ 6783)*
- 6902 Computational Complexity *(~~credit may be obtained for only one of~~ credit restricted with ~~6902 and~~ 6743)*
- 6903 Concurrent Computing
- 6904 Advanced Computer Architecture *(~~credit may be obtained for only one of~~ credit restricted with ~~6904 and~~ 6722)*
- 6905 Software Engineering *(~~credit may only be obtained for one of~~ credit restricted with~~6905 or~~ 6713)*
- 6906 Numerical Methods *(~~credit may only be obtained for one of~~ credit restricted with~~6906 or~~ 6731)*
- 6907 Data Mining Techniques and Methodologies *(~~credit may be obtained for only one of~~ credit restricted with~~6907 and~~ 6762)*
- 6908 Database Technology and Applications *(~~credit may be obtained for only one of~~ credit restricted with~~6908 and~~ 6751)*
- 6909 Fundamentals of Computer Graphics *(~~credit may be obtained for only one of~~ credit restricted with~~6909 or~~ 6752)*
- 6910 Services Computing, Semantic Web and Cloud Computing
- 6911 Bio-inspired Computing
- 6912 Autonomous Robotics *(~~credit may be obtained for only one of~~ credit restricted with~~6912 and~~ 6778)*

- 6913 Bioinformatics
- 6914 3D Modelling and Rendering
- 6915 Machine Learning
- 6916 Security and Privacy
- 6918 Digital Image Processing *(~~credit may be obtained for only one of~~ credit restricted with~~6918 or~~ 6756)*
- 6921 Syntax and Semantics of Programming Languages *(~~credit may be obtained for only one of~~ credit restricted with~~6921 or~~ 6711)*
- 6922 Compiling Methods *(~~credit may be obtained for only one of~~ credit restricted with~~6922 and~~ 6712)*
- 6924 Formal Grammars, Automata and Languages
- 6925 Advanced Operating Systems
- 6926 Performance Evaluation of Computer Systems *(~~credit may be obtained for only one of~~ credit restricted with 6726 ~~and~~)*
- 6928 Knowledge-Based Systems *(~~credit may be obtained for only one of~~ credit restricted with~~6928 or~~ 6755)*
- 6929 Advanced Computational Geometry *(~~credit may be obtained for only one of~~ credit restricted with~~6929 or~~ 6745)*
- 6930 Theory of Databases *(~~credit may be obtained for only one of~~ credit restricted with~~6930 or~~ 6742)*
- 6931 Matrix Computations and Applications *(~~credit may be obtained for only one of~~ credit restricted with~~6931, 6732,~~ ~~and CMSC 6910~~) (cross-listed with CMSC 6910)*
- 6932 Matrix Computations in Control *(~~credit may be obtained for only one of~~ credit restricted with~~6932 or~~ 6738)*
- 6933 Nonlinear and Linear Optimization *(cross-listed with Math~~ematics~~ 6202)*
- 6934 Introduction to Data Visualization *(~~credit may be obtained for only one of~~ credit restricted with~~6934 or~~ 6774)*
- 6980-6998 Special Topics in Computer Science
- 6999 Master's Project

2.   Earth Science 6120

The Department of Earth Sciences requests approval of the new course EASC 6120 'Kinematic modelling of plate tectonics', and revisions to sections 28.11.2.2. and 40.9.2.2 of the University Calendar.

Calendar Entry:

28.11.2.2 General Courses
- 6070 Quantitative Techniques in Mineralogy and Metamorphic Petrology
- 6105 Advanced Field Course in Applied Geophysics (may be offered in accelerated format)
- <u>6120 Kinematic modelling of plate tectonics</u>
- 6141 Rotation of the Earth
- 6142 Theory of Global Geodynamics
- 6152 Paleomagnetism
- 6171 Advanced Exploration Seismology
- 6172 Borehole Seismic
- 6175 Gravity and Magnetic Methods
- 6177 Mathematical Formulations of Seismic Wave Phenomena
- 6210 Genesis of Mineral Deposits
- 6320 Marine Geology
- 6400 Flow and Transport in Fractured Rock
- 6410 Advanced Engineering and Environmental Geology
- 6420 Deformation Mechanisms

- 6500 Stable Isotope Geochemistry
- 6510 Trace Element Geochemistry
- 6520 Methods in Advanced Research in Geochemistry
- 6540 Radiogenic Isotope Geochemistry
- 6550 Biogeochemistry
- 6600 Petroleum Geology
- 6740 Modern and Ancient Sedimentary Environments
- 6750 Sequence Strategraphy
- 6801 Palaeobiology of Early Animal Life
- 6820 Palynology and Paleobotany
- 6900-6999 Special Topics in Earth Sciences

40.9.2.2 General Courses

- 6070 Quantitative Techniques in Mineralogy and Metamorphic Petrology
- 6105 Advanced Field Course in Applied Geophysics (may be offered in accelerated format)
- 6120 Kinematic modelling of plate tectonics
- 6141 Rotation of the Earth
- 6142 Theory of Global Geodynamics
- 6152 Paleomagnetism
- 6171 Advanced Exploration Seismology
- 6172 Borehole Seismic
- 6175 Gravity and Magnetic Methods
- 6177 Mathematical Formulations of Seismic Wave Phenomena
- 6210 Genesis of Mineral Deposits
- 6320 Marine Geology
- 6400 Flow and Transport in Fractured Rock
- 6410 Advanced Engineering and Environmental Geology
- 6420 Deformation Mechanisms
- 6500 Stable Isotope Geochemistry
- 6510 Trace Element Geochemistry
- 6520 Methods in Advanced Research in Geochemistry
- 6540 Radiogenic Isotope Geochemistry
- 6550 Biogeochemistry
- 6600 Petroleum Geology
- 6740 Modern and Ancient Sedimentary Environments
- 6750 Sequence Stratigraphy
- 6801 Palaeobiology of Early Animal Life
- 6820 Palynology and Paleobotany
- 6900-6999 Special Topics in Earth Sciences

3.   Gender Studies

The Department of Gender Studies is requesting approval of revisions to section 18 of the University Calendar, which permits students under the project option to avail of the portfolio style thesis option; revises the project option credit hour requirements to align with exiting thesis option credit hour requirements; incoming Master of Gender Studies students will be assigned a supervisor than an academic advisor; and editorial changes to reflect current practice.
Calendar Entry:

18.2 Qualifications for Admission

1. Admission is limited and competitive. To be considered for admission, an applicant will normally hold an Honours Degree or equivalent, and will have a breadth of knowledge in Gender Studies satisfactory to the Graduate Studies Advisory Committee.
2. Applicants who do not have an adequate background in Gender Studies ~~my~~ may be required to complete ~~Gender Studies 3005 or Gender Studies 3025 or equivalent~~ Gender Studies 3005, Gender Studies 3025, Gender Studies 4000, or equivalent, normally with a grade of 75% or higher.

18.3 Program of Study

1. Upon admission, each graduate student in the thesis program will be assigned ~~an academic advisor for one year~~ a supervisor. The supervisory committee, formed prior to the development of the thesis, project, or internship proposal, will include either one or two supervisors. For students selecting the non-thesis option, one ~~S~~supervisor will be selected.
2. All students are required to complete Gender Studies 6000, 6100, and 6200.
3. ~~Three~~ 6 to 9 additional elective credit hours approved by the Graduate Studies Advisory Committee and the student's supervisor(s) will be required. These elective credit hours will comprise courses selected from graduate courses in cognate academic units, and/or Gender Studies 6300, and/or from the block of special topics courses in Gender Studies 6400-6420.
4. Each student will be required to give a public seminar on the student's thesis research, project, or internship after approval of the thesis, project, or internship proposal ~~has been approved~~ and before submission of the student's final ~~thesis/project/internship~~ thesis or project/internship report.

18.5 Project

1. Students for the Degree of Master of Gender Studies (project option) will be required to complete a minimum of ~~18~~ 15 credit hours. Students will also be required to complete a project, to be submitted as a portfolio style thesis.
2. The Master's project must be interdisciplinary in nature and aimed at linking theoretical and practical knowledge by recognizing and articulating a problem relevant to Gender Studies and by developing and justifying theoretical and practical approaches. The project report should consist of the project (e.g., a film or video; ~~a computer project;~~ a website; ~~a manual or guidebook;~~ a manual, guidebook, or other learning resource; ~~a kit of learning resources; photographs; audio or videotape,~~ digital, audio, or video files, etc.) as well as a literature-based rationale, theoretical basis, and justification for its use. The length of the written portion of the project should be ~~40-60 pages~~ 10,000-15,000 words. Regardless of the form that the project takes (e.g., a film or video~~) a computer project~~; a website; ~~a manual or guidebook;~~ a manual, guidebook, or other learning resource; a kit of learning resources; photographs; audio or videotape, digital, audio, or video files, etc.), there must be a written ~~project report~~ component.
3. A project proposal, approved by the student's supervisor, will be presented to the Graduate Studies Advisory Committee for its approval. The project proposal must normally be approved by the Graduate Studies Advisory Committee no later than the end of the student's third semester in the program.
4. The project will be evaluated in accordance with procedures outlined in General Regulation **Theses and Reports** of the School of Graduate Studies.

18.7 Courses

- 6000 Feminist Theory
- 6100 Feminist Epistemologies and Methodologies
- 6200 Graduate Seminar in Gender Studies

- 6300 Feminism as Community
- 6400-6420 Special Topics in Gender Studies

4.   INTE 7002

Special Topics Course INTE 7002 'Applied Behaviour Analysis' is part of the ID PhD program, and therefore, it requires Academic Council approval.

5.   INTE 7003

Special Topics Course INTE 7003 'Selected Topics in Health and Illness' is part of the ID PhD program, and therefore, it requires Academic Council approval.

6.   Master of Accounting Program

The proposed new Master of Accounting program in the Faculty of Business Administration was externally reviewed, and the report committee report, proponent's response, and proposal were distributed for review.

New Calendar Entry:

1.0 Regulations Governing the Degree of Master of Accounting

www.mun.ca/sgs/contacts/sgscontacts.php

www.business.mun.ca

www.mun.ca/become/graduate/apply/app_deadlines.php

The Degree of Master of Accounting (MAcc) is offered by full-time study only. These regulations must be read in conjunction with the **General Regulations** of the School of Graduate Studies of Memorial University of Newfoundland.

1.1 Qualifications for Admission

1. Admission is limited and competitive. To be eligible for consideration for admission to the Master of Accounting program, an applicant shall:
    a. normally hold at least a Bachelor's Degree, with a minimum 'B' standing, or second class standing from an institution recognized by Senate;
    b. demonstrate coverage of the CPA Competency Map at the 'Entry' level, and a minimum grade of 60% in each of the prerequisite courses (courses that meet the Entry level requirements of the CPA Competency Map) with a minimum overall average of 75% in the prerequisite courses.
2. An applicant who did not complete a Bachelor's degree at a recognized university where English is the primary language of instruction must normally complete either the:

a. Test of English as a Foreign Language (TOEFL) and achieve a paper-based score of 580 (or higher), computer-based score of 237 (or higher), or Internet based score of 92-93 (or higher); or
b. International English Language Testing System (IELTS) and achieve a score of 7 (or higher).

Information regarding the TOEFL is available from the Educational Testing Service at www.ets.org. IELTS information is available at www.ielts.org.

1.2 Deadlines for Applications

Applications and all supporting documents must be received no later than February 1 from applicants wishing to enter full-time studies in the Spring semester.

1.3 Procedure for Admission

1. Applications for admission to the MAcc program must be made on the appropriate form to the School of Graduate Studies.
2. The following documents must be submitted in support of the official application form:
   a. letters of appraisal from two referees, at least one of whom is capable of appraising the applicant's academic potential as a graduate student;
   b. official transcript from each university or other post-secondary institution previously attended (other than Memorial University of Newfoundland), to be sent directly by its Registrar (or equivalent officer) to the School of Graduate Studies. If not recorded on the transcript, official evidence of completion of undergraduate degree must also be submitted;
   c. the Faculty of Business Administration's Statement of Intent Form;
   d. the applicant's resume; and
   e. where applicable, an official TOEFL or IELTS score report to be forwarded directly by the educational testing service.
3. Admission shall be by the Dean of the School of Graduate Studies on the recommendation of the Faculty of Business Administration. Upon notification from the Dean of the School of Graduate Studies of acceptance into the MAcc program, an applicant must give written notice to the School of Graduate Studies of the intention to register. Such notice must be received by the Office of the Dean within 30 days of notification of acceptance, or three weeks prior to semester registration.

1.4 Program of Study

This program requires 30 credit-hours as specified below. Students admitted as full-time students must normally complete their degree requirements within four terms after the date of initial registration.

1.4.1 Intersession (7.5 credit-hours)

- Business 8601 Advanced Concepts I (3 credit hours)
- Business 8602 Advanced Concepts II (3 credit hours)
- Business 8603 Strategy for Professional Accountants (1.5 credit hours)

1.4.2 Summer Semester (7.5 credit-hours)

- Business 8604 Advanced Taxation (3 credit hours)
- Business 8605 Data Analytics for Professional Accountants (1.5 credit hours)
- Business 8606 Advanced Finance (3 credit hours)

1.4.3 Fall Semester (4.5 credit-hours)

- Business 8607 Professional Accounting Cases I (1.5 credit hours)
- Business 8608 Performance Management (3 credit hours)

1.4.4 Intersession (7.5 credit-hours)

- Business 8609 Advanced Assurance (3 credit hours)
- Business 8610 Advanced Integration I (3 credit hours)
- Business 8612 Professional Accounting Cases II (1.5 credit hours)

1.4.5 Summer Semester (3 credit-hours)

- Business 8611 Advanced Integration II (3 credit hours)

1.5 Evaluation

1. Credit towards the MAcc Degree will be granted only for those courses which have been approved as constituting part of the student's program of study and in which the student has obtained a mark of 70% or higher.
2. A student is required to withdraw from the MAcc program if the student has obtained less than a 70% in any course or has received a grade of FAL (fail) in any course within the Academic year.

7. Master of Maritime Management (MMM)

Master of Maritime Management program is requesting approval of revisions to section 23.2.4 of the University Calendar which removes two courses (MARI 6047 and MSTM 6051); adds new course MARI 6052 to the Maritime Management electives, and requires secondary changes to the Technology Management electives section of the calendar.

Calendar entry:

23.2.4.2 Elective Courses

Maritime Management Electives
MARI 6027 Coastal and Ocean Environmental Policies (*credit restricted with the former MSTM 6027*)
MARI 6043 Marine Law (*credit restricted with the former MSTM 6043*)
MARI 6044 Marine Environment Law and Pollution Control (*credit restricted with the former MSTM 6044*)
MARI 6045 Port Operations and Management (*credit restricted with the former MSTM 6045*)
MARI 6046 Information Systems in the Marine Environment (*credit restricted with the former MSTM 6046*)
MARI 6047 Maritime Security and Event Investigation (*credit restricted with the former MSTM 6047*)
MARI 6048 Emerging Issues in International Marine Transportation (*credit restricted with the former MSTM 6048*)
MARI 6049 Maritime Risk Analysis and Management (*credit restricted with the former MSTM 6049*)

MARI 6050 Maritime Health, Safety, Environment and Quality (*credit restricted with the former MSTM 6050*)
MARI 6051 International Maritime Compliance & Business Continuity Planning (*credit restricted with the former MSTM 6051*)
MARI 6052 Human Factors in Maritime Management

Technology Management Electives
TECH 6022 Communication and Conflict Resolution in a Technical Environment *(credit restricted with the former MSTM 6022*)
TECH 6023 Strategic Technology Management *(credit restricted with the former MSTM 6023)*
TECH 6030 Principles of Management for Engineering Technology Enterprises *(credit restricted with the former MSTM 6030)*
TECH 6034 Project Management in Engineering Technology Environments *(credit restricted with the former MSTM 6034)*
TECH 6039 Sustainability and Environmental Responsibility *(credit restricted with the former MSTM 6039)*
TECH 6052 Management of Intellectual Property (credit restricted with the former MSTM 6052)
TECH 6054 Technology Assessment *(credit restricted with the former MSTM 6054)*

Project in Maritime Management
MARI 6101 Project in Maritime Management (6 credit hours)

8.   Master of Technology Management

The Master of Technology Management program requests approval of revisions to section 39 of the calendar entry which clarifies and restructures the two routes available for each program option.

Calendar entry:

39.1 Administration
The Program will be administered by an Academic Director appointed by the Associate Vice-President (Marine Institute), Academic & Student Affairs, together with an Academic Advisory Committee.

An Academic Advisory Committee will be appointed by the Dean of Graduate Studies on recommendation of the Associate Vice-President (Marine Institute), Academic & Student Affairs. This committee will consist of the Academic Director as Chair, three members from the Marine Institute and two members from other academic units of the University, normally the Faculty of Business Administration and the Faculty of Engineering and Applied Science. Normally, all appointments will be for a period of three (3) years.

A Technical Advisory Committee consisting of a cross-section of members with professional expertise related to the technology sector, will provide regular feedback on program content, instruction, and future direction of the Program. Members of this Committee will be appointed by the Dean of Graduate Studies on recommendation of the Associate Vice-President (Marine Institute), Academic & Student Affairs. The Academic Director will be an ex officio member and Chair of the Technical Advisory Committee. Normally all appointments will be for a period of three (3) years.

39.2 Program

The Master of Technology Management (MTM) program provides a broad understanding of the structure and operation of organizations and the factors that influence business decisions in the context of technology-based organizations. It provides a technology management focus through the development of knowledge and understanding of the nature of technical operations and the factors that have an impact on their success, as well as the ability to apply these concepts within organizations.

The program consists of two Options:

- Engineering Technology and Applied Science Option
- Aquaculture Technology Option

Each program Option consists of two Routes:
- Course (30 credit hours of comprehensive course work).
- Project (30 credit hours of comprehensive course work that includes a 6 credit-hour capstone research project and report course)

The program is offered online. Students will typically register on a part-time basis.

39.2.1 Admission Requirements

Admission to the program is on a competitive basis.
1. To be considered for admission to the Engineering Technology and Applied Science Option an applicant will normally possess a second class or better undergraduate degree from a university of recognized standing and will normally have:
   - appropriate technology sector and business management course work; and
   - a minimum of two (2) years relevant employment experience.
2. 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.
3. In exceptional cases, applicants who have not completed an undergraduate degree, but who meet all other requirements, may be considered for admission. Preference will be given to those who have significant and relevant professional experience and have successfully completed several years of post-secondary studies. Applicants who do not meet normal admission requirements shall be required to complete, with a high level of achievement, certain undergraduate courses before being considered for admission.
4. Applicants who did not complete a baccalaureate or post-graduate degree at a recognized university where English is the primary language of instruction must normally complete either the:
   - Test of English as a Foreign language (TOEFL) and achieve a paper-based score of 580 (or higher), computer-based score of 237 (or higher), or Internet based score of 92-93 (or higher); or
   - International English Language Testing System (IELTS) and achieve a score of 7 (or higher).
     Information regarding the TOEFL is available from the Educational Testing Service at www.ets.org. IELTS information is available at www.ielts.org. It is noted that other equivalent tests acceptable to the School of Graduate Studies will also be considered.
5. Upon acceptance into the program, students will be admitted to one of the two Options: the Engineering Technology and Applied Science Option or the Aquaculture Technology Option. Students admitted to the Engineering Technology and Applied Science Option will initially be enrolled in the Course Route. Upon completion of a minimum of 3 program courses and a preparatory workshop module for the capstone research project and report course, a student, with permission of the Academic Director, may change to the Project Route.

39.2.2 Program of Study

39.2.2.1 Master of Technology Management - Engineering Technology and Applied Science Option

1. Students in the Master of Technology Management (Engineering Technology and Applied Science Option) shall be required to complete a minimum of either:
   a. 30 credit hours on a comprehensive course route. Course work includes three compulsory **Core Courses** (9 credit hours) and seven **Category A Electives** (21 credit hours).
   b. 30 credit hours on a comprehensive project route, including 24 credit hours of course work, a preparatory workshop module for the capstone research project and report course, and a 6 credit hour capstone research project and report course. Course work

includes three compulsory **Core Courses** (9 credit hours) and five **Category A Electives** (15 credit hours). Students on the project route will complete TECH 610A (zero credit hours) and TECH 610B (6 credit hours): Research Project in Technology Management). During TECH 610A/B, students will choose a topic in consultation with the Academic Director, find a research project supervisor, and 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.

2. Project Route
   a. Students on the Project Route must complete TECH 610A/B.
   b. Registration in TECH 610A/B requires a Course Change Form signed by the Academic Director.
   c. Student will normally complete TECH 610A/B in the last two terms of the program.
   d. Students must complete TECH 610A in no more than 1 term or they will be required to switch back to the Course Route to complete the program.
3. Special topics course registration requires a Course Change Form signed by the Academic Director.
4. Up to three relevant elective courses (9 credit hours) may be transferred from other graduate programs within the School of Graduate Studies or from other post-secondary institutions recognized by Senate, subject to the approval of the Dean of Graduate Studies on the recommendation of the Academic Director.
5. Students with full-time status may register for a maximum of 9 credit hours in any regular semester and a maximum of 6 credit hours in intersession or summer session.
6. Students with part-time status may register for a maximum of 6 credit hours in any regular semester and a maximum of 3 credit hours in intersession or summer session.
7. Students may register for an additional course in a semester or session with the permission of the Academic Director.

39.2.2.2 Master of Technology Management - Aquaculture Technology Option

1. Students in the Master of Technology Management (Aquaculture Technology Option) shall be required to complete a minimum of either:
   a. 24 credit hours of course work and a major project and report (6 credit hours). Course work includes three compulsory core courses (9 credit hours); and five elective courses (15 credit hours), of which at least 3 must be from **Category B Electives**. Students on the project route will complete MSTM 6102: Project in Aquaculture Technology Management (6 credit hours). During MSTM 6102 students will choose a topic In consultation with the Academic Director or designate and will work independently to carry out an In-depth study of a problem or application within the area of aquaculture technology management and fully document and present their findings. Preferably the problem will be directly related to a workplace situation.
   b. 30 credit hours on a comprehensive-course route. Course work includes three compulsory core courses (9 credit hours); and seven elective courses (21 credit hours), of which at least 3 must be from **Category B Electives**.
2. Up to three relevant elective courses (9 credit hours) may be transferred from other graduate programs within the School of Graduate Studies or from other post-secondary institutions recognized by Senate, subject to the approval of the Dean of Graduate Studies on the recommendation of the Academic Director.
3. Students with full-time status may register for a maximum of 9 credit hours in any regular semester and a maximum of 6 credit hours in intersession or summer session.
   Students with part-time status may register for a maximum of 6 credit hours in any regular semester and a maximum of 3 credit hours in intersession or summer session.
   Students may register for additional courses in a semester or session with the permission of the Academic Director of the Program.

39.2.3 Evaluation

1. Students in the Master of Technology Management program must obtain a grade of B or better in all program courses.
2. Students who receive a grade of less than B in any course will be permitted to remain in the program provided the course is repeated and passed with a grade of B or better. Alternatively, the student may, on the recommendation of the Academic Director, and with the approval of the Dean of Graduate Studies, substitute another graduate course. Only one course repetition or substitution will be permitted during the student's program after which the student shall be required to withdraw from the program.

39.2.4 Courses

39.2.4.1 Core Courses

- TECH 6031 Overview of Technical Operations (*credit restricted with the former MSTM 6031*)
- TECH 6032 Managing Technological Innovation (*credit restricted with the former MSTM 6032*)
- TECH 6054 Technology Assessment (*credit restricted with the former MSTM 6054*)

39.2.4.2 Elective Courses

Category A Electives
- MSTM 6056 Management of International Development
- TECH 6022 Communication and Conflict Resolution in a Technical Environment (*credit restricted with the former MSTM 6022*)
- TECH 6023 Strategic Technology Management (*credit restricted with the former MSTM 6023*)
- TECH 6030 Principles of Management for Engineering Technology Enterprises (*credit restricted with the former MSTM 6030*)
- TECH 6033 Quality Systems (*credit restricted with the former MSTM 6033*)
- TECH 6034 Project Management in Engineering Technology Environments (*credit restricted with the former MSTM 6034*)
- TECH 6035 Strategic Information Technology Management (*credit restricted with the former MSTM 6035*)
- TECH 6036 Supply Chain Management and Advanced Engineering Technology Operations (*credit restricted with the former MSTM 6036*)
- TECH 6037 Risk Management in the Engineering Technology Sector (*credit restricted with the former MSTM 6037*)
- TECH 6038 Manufacturing and Engineering Technology Management (*credit restricted with the former MSTM 6038*)
- TECH 6039 Sustainability and Environmental Responsibility (*credit restricted with the former MSTM 6039*)
- TECH 6052 Management of Intellectual Property (*credit restricted with the former MSTM 6052*)
- TECH 6053 Legal Implications of Technology Management (*prerequisite TECH 6032*)
- TECH 6055 Asset Integrity Management
- TECH 6057 Technology Enabling the Blue Economy
- TECH 6080-89 Special Topics in Technology Management

Category B Electives
- 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

39.2.4.3 Project Courses

- MSTM 6102 Project in Aquaculture Technology Management (*6 credit hours*)
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- TECH 610A Research Project in Technology Management (0 credit hours)

- TECH 610B Research Project in Technology Management (6 credit hours) (*credit restricted with TECH 6100 and the former MSTM 6100*)

REVISED CALENDAR REGULATIONS

39.1 Administration

The Program will be administered by an Academic Director appointed by the Associate Vice-President (Marine Institute), Academic & Student Affairs, together with an Academic Advisory Committee.

An Academic Advisory Committee will be appointed by the Dean of Graduate Studies on recommendation of the Associate Vice-President (Marine Institute), Academic & Student Affairs. This committee will consist of the Academic Director as Chair, three members from the Marine Institute and two members from other academic units of the University, normally the Faculty of Business Administration and the Faculty of Engineering and Applied Science. Normally, all appointments will be for a period of three (3) years.

A Technical Advisory Committee consisting of a cross-section of members with professional expertise related to the technology sector, will provide regular feedback on program content, instruction, and future direction of the Program. Members of this Committee will be appointed by the Dean of Graduate Studies on recommendation of the Associate Vice-President (Marine Institute), Academic & Student Affairs. The Academic Director will be an ex officio member and Chair of the Technical Advisory Committee. Normally all appointments will be for a period of three (3) years.

39.2 Program

The Master of Technology Management (MTM) program provides a broad understanding of the structure and operation of organizations and the factors that influence business decisions in the context of technology-based organizations. It provides a technology management focus through the development of knowledge and understanding of the nature of technical operations and the factors that have an impact on their success, as well as the ability to apply these concepts within organizations.

The program consists of two Options:
- Engineering Technology and Applied Science Option
- Aquaculture Technology Option

Each program Option consists of two Routes:
- Course (30 credit hours of comprehensive course work).
- Project (30 credit hours of comprehensive course work that includes a 6 credit-hour capstone research project and report course)

The program is offered online. Students will typically register on a part-time basis.

39.2.1 Admission Requirements

Admission to the program is on a competitive basis.
1. To be considered for admission to the Engineering Technology and Applied Science Option an applicant will normally possess a second class or better undergraduate degree from a university of recognized standing and will normally have:
   o appropriate technology sector and business management course work; and
   o a minimum of two (2) years relevant employment experience.
2. 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:
   o a post-graduate aquaculture credential or an aquaculture focus in their undergraduate degree; or significant professional experience in the aquaculture industry; and
   o a minimum of two (2) years relevant employment experience.
3. In exceptional cases, applicants who have not completed an undergraduate degree, but who meet all other requirements, may be considered for admission. Preference will be given to those who have significant and relevant professional experience and have successfully completed several years of post-secondary studies. Applicants who do not meet normal admission requirements shall

be required to complete, with a high level of achievement, certain undergraduate courses before being considered for admission.

4. Applicants who did not complete a baccalaureate or post-graduate degree at a recognized university where English is the primary language of instruction must normally complete either the:
    o Test of English as a Foreign language (TOEFL) and achieve a paper-based score of 580 (or higher), computer-based score of 237 (or higher), or Internet based score of 92-93 (or higher); or
    o International English Language Testing System (IELTS) and achieve a score of 7 (or higher).
      Information regarding the TOEFL is available from the Educational Testing Service at www.ets.org. IELTS information is available at www.ielts.org. It is noted that other equivalent tests acceptable to the School of Graduate Studies will also be considered.

5. Upon acceptance into the program, students will be admitted to one of the two Options: the Engineering Technology and Applied Science Option or the Aquaculture Technology Option. Students admitted to the Engineering Technology and Applied Science Option will initially be enrolled in the Course Route. Upon completion of a minimum of 3 program courses and a preparatory workshop module for the capstone research project and report course, a student, with permission of the Academic Director, may change to the Project Route.

39.2.2 Program of Study

39.2.2.1 Master of Technology Management - Engineering Technology and Applied Science Option

1. Students in the Master of Technology Management (Engineering Technology and Applied Science Option) shall be required to complete a minimum of either:
    a. 30 credit hours on a comprehensive course route. Course work includes three compulsory **Core Courses** (9 credit hours) and seven **Category A Electives** (21 credit hours).
    b. 30 credit hours on a comprehensive project route, including 24 credit hours of course work, a preparatory workshop module for the capstone research project and report course, and a 6 credit hour capstone research project and report course. Course work includes three compulsory **Core Courses** (9 credit hours) and five **Category A Electives** (15 credit hours). Students on the project route will complete TECH 610A (zero credit hours) and TECH 610B (6 credit hours): Research Project in Technology Management). During TECH 610A/B, students will choose a topic in consultation with the Academic Director, find a research project supervisor, and 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.

2. Project Route
    a. Students on the Project Route must complete TECH 610A/B.
    b. Registration in TECH 610A/B requires a Course Change Form signed by the Academic Director.
    c. Student will normally complete TECH 610A/B in the last two terms of the program.
    d. Students must complete TECH 610A in no more than 1 term or they will be required to switch back to the Course Route to complete the program.

3. Special topics course registration requires a Course Change Form signed by the Academic Director.

4. Up to three relevant elective courses (9 credit hours) may be transferred from other graduate programs within the School of Graduate Studies or from other post-secondary institutions recognized by Senate, subject to the approval of the Dean of Graduate Studies on the recommendation of the Academic Director.

5. Students with full-time status may register for a maximum of 9 credit hours in any regular semester and a maximum of 6 credit hours in intersession or summer session.

6. Students with part-time status may register for a maximum of 6 credit hours in any regular semester and a maximum of 3 credit hours in intersession or summer session.

7. Students may register for an additional course in a semester or session with the permission of the Academic Director.

39.2.2.2 Master of Technology Management - Aquaculture Technology Option

1. Students in the Master of Technology Management (Aquaculture Technology Option) shall be required to complete a minimum of either:
   a. 24 credit hours of course work and a major project and report (6 credit hours). Course work includes three compulsory core courses (9 credit hours); and five elective courses (15 credit hours), of which at least 3 must be from **Category B Electives**. Students on the project route will complete MSTM 6102: Project in Aquaculture Technology Management (6 credit hours). During MSTM 6102 students will choose a topic In consultation with the Academic Director or designate and will work independently to carry out an In-depth study of a problem or application within the area of aquaculture technology management and fully document and present their findings. Preferably the problem will be directly related to a workplace situation.
   b. 30 credit hours on a comprehensive-course route. Course work includes three compulsory core courses (9 credit hours); and seven elective courses (21 credit hours), of which at least 3 must be from **Category B Electives**.
2. Up to three relevant elective courses (9 credit hours) may be transferred from other graduate programs within the School of Graduate Studies or from other post-secondary institutions recognized by Senate, subject to the approval of the Dean of Graduate Studies on the recommendation of the Academic Director.
3. Students with full-time status may register for a maximum of 9 credit hours in any regular semester and a maximum of 6 credit hours in intersession or summer session.
   Students with part-time status may register for a maximum of 6 credit hours in any regular semester and a maximum of 3 credit hours in intersession or summer session.
   Students may register for additional courses in a semester or session with the permission of the Academic Director of the Program.

39.2.3 Evaluation

1. Students in the Master of Technology Management program must obtain a grade of B or better in all program courses.
2. Students who receive a grade of less than B in any course will be permitted to remain in the program provided the course is repeated and passed with a grade of B or better. Alternatively, the student may, on the recommendation of the Academic Director, and with the approval of the Dean of Graduate Studies, substitute another graduate course. Only one course repetition or substitution will be permitted during the student's program after which the student shall be required to withdraw from the program.

39.2.4 Courses
39.2.4.1 Core Courses

- TECH 6031 Overview of Technical Operations (*credit restricted with the former MSTM 6031*)
- TECH 6032 Managing Technological Innovation (*credit restricted with the former MSTM 6032*)
- TECH 6054 Technology Assessment (*credit restricted with the former MSTM 6054*)

39.2.4.2 Elective Courses

Category A Electives
- MSTM 6056 Management of International Development
- TECH 6022 Communication and Conflict Resolution in a Technical Environment (*credit restricted with the former MSTM 6022*)
- TECH 6023 Strategic Technology Management (*credit restricted with the former MSTM 6023*)
- TECH 6030 Principles of Management for Engineering Technology Enterprises (*credit restricted with the former MSTM 6030*)
- TECH 6033 Quality Systems (*credit restricted with the former MSTM 6033*)

- TECH 6034 Project Management in Engineering Technology Environments (*credit restricted with the former MSTM 6034*)
- TECH 6035 Strategic Information Technology Management (*credit restricted with the former MSTM 6035*)
- TECH 6036 Supply Chain Management and Advanced Engineering Technology Operations (*credit restricted with the former MSTM 6036*)
- TECH 6037 Risk Management in the Engineering Technology Sector (*credit restricted with the former MSTM 6037*)
- TECH 6038 Manufacturing and Engineering Technology Management (*credit restricted with the former MSTM 6038*)
- TECH 6039 Sustainability and Environmental Responsibility (*credit restricted with the former MSTM 6039*)
- TECH 6052 Management of Intellectual Property (*credit restricted with the former MSTM 6052*)
- TECH 6053 Legal Implications of Technology Management (*prerequisite TECH 6032*)
- TECH 6055 Asset Integrity Management
- TECH 6057 Technology Enabling the Blue Economy
- TECH 6080-89 Special Topics in Technology Management

Category B Electives
- 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

39.2.4.3 Project Courses

- MSTM 6102 Project in Aquaculture Technology Management (*6 credit hours*)
- TECH 610A Research Project in Technology Management (0 credit hours)
- TECH 610B Research Project in Technology Management (6 credit hours) (*credit restricted with TECH 6100 and the former MSTM 6100*)