

MARINE TECHNOLOGY - NAVIGATION

Program: MNAV

Credential: Ontario College Advanced Diploma, Co-op

Delivery: Full-time

Work Integrated Learning: 3 Co-op Work Terms

Length: 6 Semesters, plus 3 work terms

Duration: 3 Years

Effective: Fall 2019

Location: Owen Sound

Description

This program has been planned in co-operation with Transport Canada Marine Safety and Security (TCMSS) and Canada's shipping companies. It offers a complete education for those seeking employment as a ship's Navigation Officer. The specialized competencies and work experience also provide the graduate with opportunities for employment in government and in other marine-related industries.

Career Opportunities

Graduates of this program may find rewarding careers as ship's officers on board commercial vessels throughout Canada and the world. This three year co-operative cadet training program may lead to career advancement to senior ranks on board ship and to positions of leadership in the marine industry. Graduates are eligible to write examinations for the Transport Canada Watchkeeping Mate Certificate of Competency and can gain employment in domestic and international shipping industries.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. monitor and control compliance with legislation to ensure the safety of life at sea and protection of the marine environment;
2. safely and effectively function as a member of a large dynamic team, whose goal is to transport cargo in a safe and environmentally sustainable manner;
3. communicate and manage information in a variety of forms;
4. communicate effectively from ship to ship and ship to shore;
5. plan and conduct a sea passage;
6. determine and monitor the vessels position at all times;
7. maintain a safe navigational watch using modern and traditional navigation skills;
8. forecast weather and oceanographic conditions;
9. maneuver the ship safely and efficiently;
10. inspect the ship for defects and damage;
11. load, transport and discharge cargo to the order of the ship and cargo owner;
12. follow government requirements and maintain the seaworthiness of the ship;
13. apply "hands on" seamanship skills;
14. use modern technology in the performance of shipboard duties and be able to adapt to changes in technology;
15. practice and develop effective, basic management skills

16. apply basic entrepreneurial strategies to identify and respond to new opportunities.

Practical Experience

Co-operative Education is a mandatory component of all Co-op programs at Georgian College; it has been designed as a process by which students integrate their academic education with work experience related to their programs of study. This integration affects much more than simply earning a salary, including the adjustment to the work environment and the development of professionalism. It also reinforces skills and theory learned during academic semesters, develops professional contacts, job knowledge and career path, improves human relations and communication skills, and promotes personal maturity and financial independence.

Students are requested to register, attend and participate in their scheduled co-operative education classes. These classes are scheduled for all first year students and are expected to be completed in order for students to proceed successfully to their first co-op work experiences. To ensure students are eligible to proceed onto any co-op work experience, students should refer to Promotional Status and Eligibility for Co-op as outlined in the College Calendar. Co-op policies and procedures can be located on our website:

www.georgiancollege.ca/student-services/co-op-and-career-services/students-tab/ (<http://www.georgiancollege.ca/student-services/co-op-and-career-services/students-tab/>)

Georgian College follows the Co-operative Education guidelines set out by the Canadian Association for Co-operative Education (CAFCE) and Education at Work Ontario (EWO) by supporting the learning outcomes designed for the program specific graduate profile and curriculum as set out by the Ministry of Advanced Education and Skills Development.

External Recognition

TCMSS has recognized this program as an approved cadet training program meeting the requirements of TP5562 Nautical Cadet Training Program.

This program is accredited by the Canadian Association for Co-operative Education.

The Program Progression

Fall Intake

- **Sem 1:** Fall 2019
- **Sem 2:** Winter 2020
- **Work Term 1:** Summer 2020
- **Sem 3:** Fall 2020
- **Sem 4:** Winter 2021
- **Work Term 2 (two terms):** Summer 2021 - Fall 2021
- **Sem 5:** Winter 2022
- **Sem 6:** Summer 2022
- **Work Term 3:** Fall 2022

Articulation

A number of articulation agreements have been negotiated with universities and other institutions across Canada, North America and internationally. These agreements are assessed, revised and

updated on a regular basis. Please contact the program co-ordinator for specific details if you are interested in pursuing such an option. Additional information can be found on our website at <http://www.georgiancollege.ca/admissions/credit-transfer/>

Admission Requirements

OSSD or equivalent with

- Grade 12 English (C or U)
- Grade 12 Mathematics (C or U)

Note: Applicants must provide a valid Transport Canada Marine Medical stating 'fit for sea service' or 'fit for sea service with limitations'. In the case of an applicant with a certificate 'fit for sea service with limitations', the application will be reviewed for admission.

Mature students, non-secondary school applicants (19 years or older), and home school applicants may also be considered for admission. Eligibility may be met by applicants who have taken equivalent courses, upgrading, completed their GED, and equivalency testing. For complete details refer to: www.georgiancollege.ca/admissions/policies-procedures/ (<http://www.georgiancollege.ca/admissions/policies-procedures/>)

Applicants who have taken courses from a recognized and accredited post-secondary institution and/or have relevant life/learning experience may also be considered for admission; refer to the Credit Transfer Centre website for details:

www.georgiancollege.ca/admissions/credit-transfer/ (<http://www.georgiancollege.ca/admissions/credit-transfer/>)

Additional Information

Co-operative Work Term Requirements

This is a fully integrated co-operative education program, wherein the cadet will participate in semesters of academic study at the Owen Sound Campus interspersed with work term placements on board ships. Hence, undergraduates are involved in work activities directly related to their educational objectives. TCMSS requires twelve months of Co-op sea service.

Marine Emergency Duties training, which is required before a cadet may proceed to the shipboard work placement and for certification as an officer, will be scheduled for students at an extra charge.

Every effort is made to arrange work term placements; however, cadets must qualify for such and no guarantee of placement can be made.

Canadian flagged ships only accept Canadian Citizens or Permanent Residents for employment. International students are encouraged to investigate Co-op opportunities prior to commencing studies. Cadets may be subjected to adverse environmental conditions while on board ship (noise, dirt, dust, confined quarters and heavy lifting). Anyone with known allergies should consult with the Co-op department.

International applicants must sign a letter to acknowledge that Transport Canada does not issue Marine Certificates of Competency (Marine Licence) to non-Canadians.

Eligibility to enter the U.S.

Although not an admission requirement, all shipping companies, whether Canadian or foreign, which have vessels trading in U.S. ports require that all their shipboard personnel be eligible to legally enter the U.S.

Graduation Requirements

- 40 Program Courses
- 2 Communications Courses
- 3 Co-op Work Terms

Graduation Eligibility

To graduate from this program, the passing weighted average for promotion through each semester, from year to year, and to graduate is 60%. Additionally, a student must attain a minimum of 50% or a letter grade of P (Pass) or S (Satisfactory) in each course in each semester unless otherwise stated on the course outline.

Program Tracking

Semester 1		Hours
Program Courses		
MARE 1007	Basic Engineering Knowledge	48
MARE 1014	Practical Seamanship	48
MARE 1016	Astronomy For Navigation	48
MARE 1026	Seamanship	48
MARE 1030	Coastal Navigation 1	96
MATH 1018	Introduction to Technical Mathematics	42
MARE 1049	Radar Navigation	32
Hours		362
Semester 2		
Program Courses		
MARE 1018	Navigational Safety 1	48
MARE 1019	Introduction to Ship Master's Business	48
MARE 1021	Ship Construction	64
MARE 1024	Global Marine Distress and Safety System Part 1	24
MARE 1047	On Board Training Preparation	48
MARE 1048	Electronic Positioning Systems	48
MATH 1019	Technical Mathematics	42
Communications Course		
Select 1 course from the communications list during registration.		42
Hours		364
Semester 3		
Program Courses		
ELEC 2017	Marine Electricity Fundamentals	64
MARE 2022	Ocean Navigation 1	64
MARE 2028	Navigational Safety 2	32
MARE 2039	Radar and Automatic Radar Plotting Aids	48
MARE 2040	Advanced Seamanship	32
MARE 2041	Signals and Communications	16
MARE 2042	General Ship Knowledge 1	48
METE 2004	Meteorology 1	64
Hours		368
Semester 4		
Program Courses		
MARE 2005	Transverse Stability	48
MARE 2029	Cargo Work 1	32
MARE 2030	Coastal Navigation 2	80
MARE 2043	Advanced Engineering Knowledge for Navigation	48
MENG 1017	Applied Mechanics	48
METE 2003	Meteorology 2	64

Communications Course	
Select 1 course from the communications list during registration.	42
Hours	362

Semester 5

Program Courses	
MARE 2026 Ocean Navigaton 2	64
MARE 3030 Advanced Navigational Safety	32
MARE 3031 Navigational Systems and Instruments	80
MARE 3033 Cargo Work 2	48
MARE 3036 Electronic Chart Display and Information System (ECDIS)	48
MARE 3037 General Ship Knowledge 2	32
MARE 3038 Bridge Resource Management and Leadership Training	32
MATH 2007 Spherical Mathematics	48
Hours	384

Semester 6

Program Courses	
MARE 3015 Shipmaster's Business	48
MARE 3025 Longitudinal Stability	64
MARE 3039 Simulated Navigation	64
PHYS 3000 Physics	48
Hours	224
Total Hours	2064

Co-op Work Terms		Hours
COOP 1033 Marine Navigation Work Term 1 (occurs after Semester 2)		840
COOP 2031 Marine Navigation Work Term 2 (occurs after Semester 4)		1680
COOP 3012 Marine Nav Co-op Work Term 3 (occurs after Semester 6)		400
Hours		2920
Total Hours		2920

Graduation Window

Students unable to adhere to the program duration of three years (as stated above) may take a maximum of six years to complete their credential. After this time, students must be re-admitted into the program, and follow the curriculum in place at the time of re-admission.

Information contained in College documents respecting programs is correct at the time of publication. Academic content of programs and courses is revised on an ongoing basis to ensure relevance to changing educational objectives and employment market needs. The college reserves the right to add or delete programs, options, courses, timetables or campus locations subject to sufficient enrolment, and the availability of courses.