

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 2023

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. Students acquire a complete education which will prepare them for the occupation of ship's Navigation Officer. The specialized competencies and work experience also provide students with the skills and knowledge necessary 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.

Practical Experience

All co-operative education programs at Georgian contain mandatory work term experiences aligned with program learning outcomes. Co-op work terms are designed to integrate academic learning with work experience, supporting the development of industry specific competencies and employability skills.

Georgian College holds membership with, and endeavours to follow, the co-operative education guidelines set out by the Co-operative Education and Work Integrated Learning Canada (CEWIL) and Experiential and Work-Integrated Ontario (EWO) as supported by the Ministry of Colleges and Universities.

Co-op is facilitated as a supported, competitive job search process. Students are required to complete a Co-op and Career Preparation course scheduled prior to their first co-op work term. Students engage in an active co-op job search that includes applying to positions posted by Co-op Consultants, and personal networking. Co-op work terms are scheduled according to a formal sequence that alternates academic and co-op semesters as shown in the program progression below.

Programs may have additional requirements such as a valid driver's license, strong communication skills, industry specific certifications, and ability to travel. Under exceptional circumstances, a student may be unable to complete the program progression as shown below. Please refer to Georgian College Academic Regulations for details.

International co-op work terms are supported and encouraged, when aligned with program requirements.

Further information on co-op services can be found at

www.GeorgianCollege.ca/co-op (<https://www.georgiancollege.ca/co-op/>)

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 Cooperative Education and Work Integrated Learning Canada (CEWIL Canada).

Program Progression

The following reflects the planned progression for full-time offerings of the program.

Fall Intake

- **Sem 1:** Fall 2023
- **Sem 2:** Winter 2024
- **Work Term 1:** Summer 2024
- **Sem 3:** Fall 2024
- **Sem 4:** Winter 2025
- **Work Term 2 (two terms):** Summer 2025 - Fall 2025
- **Sem 5:** Winter 2026

- **Sem 6:** Summer 2026
- **Work Term 3:** Fall 2026

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

Admission Requirements

- Ontario Secondary School Diploma (OSSD) or equivalent, or mature student status
- Grade 12 English (C or U)
- Any* Grade 12 Mathematics (C, M, or U)

* A minimum grade of 70% in Grade 12 MAP4C, Foundations for College Mathematics, is required.

Note: Applicants must provide a valid Transport Canada Marine Medical stating 'fit for sea service' or 'fit for sea service with limitations' prior to program start. In the case of an applicant with a certificate 'fit for sea service with limitations', the application will be reviewed. Failure to provide the certificate by the deadline may result in an offer of admission being revoked and withdrawal from courses.

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/academic-regulations/ (<https://www.georgiancollege.ca/admissions/academic-regulations/>)

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 for Prior Learning website for details: www.georgiancollege.ca/admissions/credit-transfer/ (<https://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 coop work terms 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 term and for certification as an officer, will be scheduled for students at an extra charge.

Every effort is made to arrange work terms; 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

39 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

The following reflects the planned course sequence for full-time offerings of the Fall intake of the program. Where more than one intake is offered contact the program co-ordinator for the program tracking.

Semester 1		Hours
Program Courses		
MARE 1014	Practical Seamanship	48
MARE 1016	Astronomy For Navigation	48
MARE 1026	Seamanship	48
MARE 1030	Coastal Navigation 1	96
MARE 1051	Radar Navigation	48
MATH 1037	Introduction to Marine Technology Navigation Mathematics	48
PHYS 3000	Physics	48
Hours		384
Semester 2		
Program Courses		
COMP 1003	Microcomputer Applications	42
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 1048	Electronic Positioning Systems	48
MARE 2029	Cargo Work 1	32
MATH 1038	Marine Technology Navigation Mathematics	48
Communications Course		
Select 1 course from the communications list during registration.		42
Hours		396
Semester 3		
Program Courses		
ELEC 2017	Marine Electricity Fundamentals	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
Communications Course		
Select 1 course from the communications list during registration.		42
Hours		346

Semester 4

Program Courses

MARE 2005	Transverse Stability	48
MARE 2022	Ocean Navigation 1	64
MARE 2030	Coastal Navigation 2	80
MENG 1017	Applied Mechanics	48
METE 2003	Meteorology 2	64
Hours		304

Semester 5

Program Courses

MARE 1007	Basic Engineering Knowledge	48
MARE 2026	Ocean Navigation 2	64
MARE 3030	Advanced Navigational Safety	32
MARE 3031	Navigational Systems and Instruments	80
MARE 3033	Cargo Work 2	48
MARE 3037	General Ship Knowledge 2	32
MARE 3052	Longitudinal Stability	64
Hours		368

Semester 6

Program Courses

MARE 2043	Advanced Engineering Knowledge for Navigation	48
MARE 3015	Shipmaster's Business	48
MARE 3053	Electronic Chart Display and Information System (ECDIS)	40
MARE 3054	Simulated Navigation	72
MARE 3055	Leadership and Teamwork	24
Hours		232

Total Hours **2030**

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.

Disclaimer: *The information in this document 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.*

Program outlines may be subject to change in response to emerging situations, in order to facilitate student achievement of the learning outcomes required for graduation. Components such as courses, progression, coop work terms, placements, internships and other requirements may be delivered differently than published.