

Ocean and Naval Architectural Engineering

Memorial University's ocean and naval architectural engineering undergraduate program is rated one of the top programs of its kind in North America. It is the only one in the world with mandatory co-operative education. The program provides the comprehensive education needed in the design, operation and maintenance of ocean-going systems such as ships, floating structures, underwater vehicles and offshore platforms.

Graduates of the ocean and naval architectural engineering program will be able to implement academic knowledge and integrated co-operative education experiences in specialized marine environments. These environments include research and development, design, ship production, operations, offshore exploration and production, classification and regulation.

Co-operative Education Opportunities

Co-operative education experiences of students within the Department of Ocean and Naval Architectural Engineering have included a wide range of industries and opportunities all around the world, including Canada, Europe, the United States of America and Australia. Examples of what our students can provide to employers include:

Shipbuilding – assisting naval architects with design, construction, re-fit, shore based activities and maintenance of ocean-going vessels;

Vessel design – supporting engineers through design, structural analysis, hydrodynamic and stability assessments and performance evaluation;

Offshore oil and gas – assisting in the construction, design, operations and performance evaluation of offshore structures and related systems;

Classification – surveying and implementing design standards on vessels and offshore structures;

Research and development – conducting model testing, Arctic exploration, design standards development, and environmental and green technology development;

Ocean engineering – designing and troubleshooting of underwater vehicles and ocean equipment;

National defence – supporting designers, constructors, engineers and research operators in the field of national defence; and

Reliability and safety – assessing the safety and reliability of ocean-going vehicles, designing inspection and maintenance strategies.

Ocean and Naval Architectural Engineering Program Organizational Chart

Term	Fall	Winter	Spring
Year 1	Engineering One		
	Engineering Statics Introduction to Programming Engineering Graphics & Design Electric Circuits	Physics Chemistry Mathematics English Professional Development Seminars	Work Term 1* *If students complete engineering one requirements within first two terms.
Year 2	Academic Term 3 Ocean/Naval Design Ocean Engineering Hydrostatics Engineering Professionalism I Thermodynamics I Dynamics Calculus III	Work Term Work Term 1 Work Term 2	Academic Term 4 Resistance & Propulsion Marine Fluid Dynamics Mechanics of Solids for Marine Structures Marine Materials Ordinary Differential Equations I
Year 3	Work Term Work Term 1 Work Term 2 Work Term 3	Academic Term 5 Marine Propulsion Vector Calculus Intermediate Physical Oceanography Marine Vibrations Probability & Random Processes in Ocean Engineering	Work Term Work Term 2 Work Term 3 Work Term 4
Year 4	Academic Term 6 Ship Structures I Floating Ocean Structures Design Marine Engineering Systems Marine Cybernetics Dynamics of Ocean Vehicles	Work Term Work Term 3 Work Term 4 Work Term 5 (Optional)	Academic Term 7 Ocean Systems Design Ship Structures II Marine Hydrodynamics Manoeuvring of Ocean Vehicles One (1) technical elective
Year 5	Work Term Work Term 4 Work Term 5 (Optional) Work Term 6 (Optional)	Academic Term 8 Engineering Professionalism II Ocean & Naval Architectural Engineering Project Three (3) technical electives	

More information ...

Ocean Naval and Architectural Engineering
Departmental Office 709-864-2706
www.mun.ca/engineering/ona

Course specific information:

