

Marine Technology

Associate of Applied Science – 63 credits

Purpose: The Associate of Applied Science (AAS) degree in Marine Technology is designed with a four-fold purpose:

1. To prepare graduates for entry level positions relevant to the Commercial Fishing Industry and the Aquaculture industry.
2. To provide required training to youth license holders in Commercial Fishing as a vehicle to gain their adult Commercial Fishing license.
3. To respond to the growing need for additional training in both the Commercial Fishing industry and the expanding industry of land-based fish farming.
4. To provide persons interested in marine fisheries the opportunity to upgrade their skills and knowledge base for career advancement with a college degree and an avenue to work toward more advanced degrees.

Career Opportunities: Graduates of the program will be qualified for positions such as Commercial Fisherman, Aquaculture Technician, Marine Technician, and Marine Engine Specialist

Program Education Outcomes: Upon completion of the Associate of Applied Science degree in Marine Technology, the graduate is prepared to:

- Demonstrate an understanding of the environmental, scientific, ecological and practical theories of commercial fisheries and aquaculture systems.
- Apply critical thinking and problem-solving techniques to the various facets of the marine industry.
- Demonstrate interpersonal, written, and scientific and practical skills required for successful employment in the marine industries.
- Consistently exhibit ethical behavior and respect for a diverse community, applying services equitably to all people.
- Understand and apply knowledge concerning safety and conscientious stewardship of the environment.
- Be a responsible member of society and the workforce, applying knowledge skills and abilities, ultimately, for the betterment of one's local community.

AAS Commercial Fisheries/Marine Technology

63 Credit hours

Course #	Course Title	Credits
Semester 1		
BUS 110	Introduction to Business	3
ENG 101	College Composition	3
FYE 100	First Year Experience	1
MRT 105	Fisheries Fundamentals 1	3

MRT 110	Marine Maintenance and Operations I	4
TEC110	Safety	1
	Total	15
Semester 2		
MAT 106	College Mathematics for Technologies	3
MRT 106	Fisheries Fundamentals 2	3
MRT 107	Introduction to Fisheries and Aquaculture	4
MRT 112	Marine Maintenance and Operations II	4
WEL 109	Introduction to Welding	2
	Total	16
Semester 3		
ENG 107	Speech	3
HTY 122	History of Commercial Fishing in Maine	3
MAT elective	Math elective of MAT 112 or above	3
PHI 114	Environmental Ethics	3
MRT 201	Fisheries Conservation and Management	3
	Total	15
Semester 4		
	Fisheries and Aquaculture concentration	
BIO 112	Marine Biology	4
PSY 101	Introduction to Psychology	3
MRT 207	Advanced Fisheries and Aquaculture	4
MRT 210	Practicum	3
MRT 116	Basic Open Water Diving (SCUBA)	3
	Total	17
Semester 4		
	Vessel Operations and Maintenance Concentration	
BIO 112	Marine Biology	4
PSY 101	Introduction to Psychology	3
MRT 208	Advanced Marine Engine Systems	4
MRT 211	Practicum	3
MRT 115	USCG OUPV Captain's Course	3
	Total	17

Certificate Commercial Fisheries/Marine Technology

31 Credit hours

Course #	Course Title	Credits
Semester 1		
BUS 110	Introduction to Business	3
ENG 101	College Composition	3
FYE 100	First Year Experience	1
MRT 105	Fisheries Fundamentals 1	3
MRT 110	Marine Maintenance and Operations I	4
TEC110	Safety	1
	Total	15
Semester 2		
MAT 106	College Mathematics for Technologies	3
MRT 106	Fisheries Fundamentals 2	3
MRT 107	Introduction to Fisheries and Aquaculture	4
MRT 112	Marine Maintenance and Operations II	4
WEL 109	Introduction to Welding	2
	Total	16

BIO120 General Biology with Lab

4 credits

This course introduces students to the concepts and principles of the chemical basis of life; organic molecules; cell structure; function and structure of living organisms including nutrition, digestion, and circulation; regulation in organisms including hormonal, nervous systems, senses, muscles and movement. Prerequisite: C or better in high school biology.

BUS 110 Intro to Business

3 credits

This course will survey the business management functions found in modern organizational environs to provide a foundation for understanding the interrelations of the various facets of business organizations. (online)

ENG101 College Composition

3 credits

This course provides an introduction to academic writing. Students will study and practice standard rhetorical modes through frequent writing assignment and critical analysis of reading selections. This course emphasizes writing as a process of drafting, revising, rewriting, and proofreading. It also provides an introduction to information literacy. Students will study and practice locating, evaluating, integrating, and documenting sources in MLA style. Prerequisite: ENG 098 passed with a C or better or satisfactory scores on the reading and writing placement tests. The successful student will have basic skills in keyboarding and electronic document editing.

FYE100 First Year Experience**1 credits**

Students will actively and deliberately engage in the requirements of their transition into college. This seminar focuses on *how* to succeed. It will facilitate a strong start, empower with necessary skills and awareness, chart a path toward achievement of goals, and direct students toward supports as needed. Particular attention will be paid to navigating the college environment, expectations of the institution, individual learning style, career development, academic strategies, community building, time management and time theft. This is a pass/fail course.

HTY 122 History of Commercial Fishing in Maine**3 credits****To be designed.**

This course is designed to give a broad background in Maine history. Maine history is used as a microcosmic example to identify, clarify, and explain the problems and themes of national history. At the same time, students will become aware of the aspects of Maine's past that are unique to New England and to the state.

MAT106 College Mathematics for Technologies**3 credits**

This course reviews fractions, decimals, and percent. It covers integers, simple algebraic equations and formulas, ratio, proportion, geometric concepts, and right triangle trigonometry. This course emphasizes applied mathematics. Prerequisite: MAT091 passed with a C- or better or satisfactory scores on the skills assessment examination

PHI114 Environmental Ethics**3 credits**

This course will introduce students to the study of environmental ethics. Students will explore Western and Non-Western perspectives concerning the environment, deep ecology, social ecology, animal rights, biodiversity, ecofeminism, species preservation, economics and the environment, global justice, as well as sustainable society issues.

TEC 110 Safety**1 credit**

This course will study proper safety practices, habits, and attitudes in shop areas. This course is field specific and addresses safety concerns in the mechanical technologies.

WEL 109 Basic Welding**2 credits**

This course teaches basic arc welding, light MIG welding, and torch work.

MRT 105 Fisheries Fundamentals I**3 credits**

This Introductory level course is a study of basic marine language, commercial fishing and aquaculture systems, marine regulation, and management. The course is designed to introduce both commercial fishermen and non-commercial fishing students to Commercial fisheries and Aquaculture industries. The course provides a foundation for many of the other marine and non-marine courses provided in the commercial fisheries track and the aquaculture track. (online)

MRT 106 Fisheries Fundamentals II**3 credits**

This course designed to continue the framework created in Commercial Fisheries Fundamentals I; but will be covering topics such has a study of basic marine economics, commercial fishing advocacy, and deepen the understanding of marine regulation and management. (online)

MRT 107 Intro to Fisheries and Aquaculture Operations**4 credits**

This course will study hatchery operations, care of the catch, and gear used in commercial fisheries and includes multiple field experiences with various partners including Cooke Aqua, the Down East Institute and the Center for Aquaculture Research/UM. (under development)

MRT 110 Marine Maintenance and Operations I**4 credits**

This course covers the structural components of commercial fishing vessels and electrical and electronics systems. (under development)

MRT 112 Marine Maintenance and Operations II**4 credits**

This course covers marine engine systems, hydraulics, and fluid systems (pumps and recirc re: land-based aquaculture). (under development)

MRT 115 USCG OUPV Captain's Course**3 credits**

An OUPV license is an entry-level master's credential that allows mariners to operate power or sailing vessels up to 100 Tons in size, carrying no more than 6 paying passengers. This course will involve lectures and hands-on exercises in course content including: Rules of the Road, Deck General, Safety, Terrestrial Navigation, Charting, Emergency Response, Boat Handling, Seamanship, and Maritime Law. Upon successful completion of this course mariners will not have to test with the USCG and can immediately begin the application process with unlimited application support from Johnson Marine Services. (online and live lecture)

MRT 116 Basic Open Water Diving (SCUBA)**3 credits**

This is a three-step course with an online portion, a pool preparatory portion, and an open water dive portion. Start your SDI Open Water Scuba Diver course and master all the important academic information online or at your local dive shop. You can complete this phase through self-study, at your own pace, in the convenience of your home or office. All eLearning courses work on mobile and tablet devices too. For entry-level certification courses (as well as some continuing-education classes), the next step will be to complete your in-water skill-development training. This takes place in a swimming pool or similar body of confined water, under the supervision of an SDI Instructor. The final step is to complete the required number of SDI open-water training dives under the supervision of your SDI Instructor. Here you will apply what you have learned during your academic and skill-development sessions, while learning practical lessons that can only be gained through real-world experience in open water.

MRT 201 Marine Conservation and Management**3 Credits**

This course is designed to introduce and build on the concept of marine conservation and management used in the commercial fisheries and aquaculture Industries. This is also a continuation of the concepts introduced in Commercial Fisheries Fundamentals 1 and 2.

MRT 207 Advanced Fisheries and Aquaculture**4 Credits**

This course is designed to build upon the content in MRT 107 with a deeper dive into hatchery operations and functional differences of both off-shore and land-based operations with emphasis on water circulation and pump systems. Also covered are current and emerging environmental and biological issues including climate change, genetic factors, and environmental concerns.

MRT 208 Advanced Marine Engine Systems**4 Credits**

This course designed to continue the some of the framework Vessel Operation and Maintenance 1 and 2; but will be providing a much more in depth understanding of the marine systems that are used in both the commercial fisheries and aquaculture industries.

MRT 210 Practicum

3 credits

This field experience course provides hands on training to reinforce the learning objectives in MRT 107, 201, and 207. Placements will be with various industry and educational partners throughout the region.

MRT 211 Practicum

3 credits

This field experience course provides hands on training to reinforce the learning objectives in MRT 110, 112, and 208. Placements will be with various industry partners.