

# ADVANCED MARINE TECHNOLOGY (AS)

## Program Overview Associate in Science Degree



The Marine Technology department offers associate degrees in Marine Technology and Advanced Marine Technology and a Certificate in Marine Technology. Theory and practical training in marine mechanics, marine business concepts, marine electricity, and marine systems installation, repair and service are the thrust of the program. Hands-on practical skills in installation, service, and repairs to mechanical, electrical, electronic, and hydraulic systems utilized by both recreational and commercial vessels are stressed throughout the curriculum to reinforce the in-depth theory classes. In addition, marine business procedures are taught using computerized learning methods with marine-specific software.

The Advanced Marine Technology degree program offers an additional term of study in some of the more advanced electronics and computer controls common in the industry today.

Graduates of the associate degree program are skilled technicians ready for entry-level positions in such areas as marina/boatyard operations, vessel manufacturing, engine repair, support services for commercial vessels, engine room staff aboard commercial vessels, marine electronics installation, and marine wholesale/retail product sales.

After completing some prerequisites, graduates of this program are eligible to continue on for a Bachelor of Science Degree in Business Management with an Automotive Service/Transportation Management (MGTT) concentration.

## Accreditation Status

NEIT's Marine Technology program is an ABYC (American Boat and Yacht Council) Marine League of Schools member. The Marine League of Schools is comprised of post-secondary schools offering marine trade programs that provide ABYC standards-based educational programming. The Marine Technology program is conditionally accredited by the:



Marine Trades Accreditation Program  
ABYC Foundation  
613 Third Street  
Annapolis, MD 21146  
410-990-4460, ext. 200  
MTAPs@abycinc.org.

## Curriculum

Course	Title	Quarter Credit Hours
<b>Term I</b>		
MT 105	Introduction to Marine Technology	2
MT 116	Introduction to Engine Theory	3
MT 117	Introduction to Engine Lab	1
MT 118	Introduction to Electricity Fundamentals	3
MT 119	Introduction to Electricity Fundamentals Lab	1
OSH 010	OSHA Construction Safety & Health	2
<b>Quarter Credit Hours</b>		<b>12</b>
<b>Term II</b>		
MT 120	Advanced Marine Electricity and Electronics Installation	7
MT 127	Marine Engine Applications	3
Choose one of the following (depending upon Math Placement):		4-5
MA 105	Basic College Math with Lab	
MA 110	Introduction to College Math	
MA 200	Applied Math for Business	
<b>Quarter Credit Hours</b>		<b>14-15</b>
<b>Term III</b>		
MT 138	Outboard Engine Overhaul and Systems Diagnosis	8
WEL 110	OFC/OAW, Electric Welding and Cutting	3
EN 106	Service Industry Communications	5
<b>Quarter Credit Hours</b>		<b>16</b>

**Term IV**

MT 215	Fuel Systems Theory and Introduction to EFI Applications	5
MT 216	Marine Drive Systems Theory and Service	5
WEL 151	Industrial Welding I (SMAW)	3
Elective	100-200 Level Humanities (or Arts/Foreign Language) Core	4
<b>Quarter Credit Hours</b>		<b>17</b>

**Term V**

MT 217	Diesel Engine Service and Maintenance	4
MT 218	Marine Systems	3
MT 261	Fiberglass Fabrication and Repair	3
MT 263	Forklift Safety & Operations	1
SS 236	Small Business and the Law	4
EN 100	Introduction to College Writing	4
<b>Quarter Credit Hours</b>		<b>19</b>

**Term VI**

MT 258	Elements of Marine Surveying	2
PHY 126	Applied Physics & Lab (MA/SCI Core) <sup>1</sup>	4
Elective	100-200 Level Humanities (or Arts/Foreign Language) Core	4
Choose one of the following:		3
MT 254	Marina and Boatyard Management	
MT 262	Advanced Composites and Fabrication	
Choose one of the following options:		4
MT 255	Marine Industry Internship	
AH 114	Refrigeration Systems Fundamentals	
MGM 130	Accounting Fundamentals	
<b>Quarter Credit Hours</b>		<b>17</b>

**Term VII**

MT 272	Advanced Marine Diesel Service and Maintenance	5
MT 276	Advanced Marine Propulsion Systems	4
MT 277	Advanced Marine Gasoline EFI and Emissions	3
<b>Quarter Credit Hours</b>		<b>12</b>
<b>Total Quarter Credit Hours</b>		<b>107-108</b>

<sup>1</sup> Liberal Arts Core.

## Legend

C = Number of lecture hours per week

L = Number of laboratory hours per week

T = Total Quarter Credit Hours where each lecture hour per week is one credit, every 2-4 laboratory hours are one credit depending on the expected amount of pre- or post-lab work.

All associate degree students are required to take 32 credits of liberal arts and math/science courses as selected from the liberal arts core. See the course descriptions section of this catalog for a list of the core area courses. Students who place out of MA 105 Basic College Math with Lab/MA 110 Introduction to College Math must still take 32 credits of core courses.

*\*For students intending to enroll in the bachelor's program in Business Management upon completion of the associate degree program.*

Subject to change.

## Program Mission, Goals, and Outcomes

### Program Mission

The mission of the Marine Technology program (MT) is to train entry-level technicians for employment in the marine field as well-rounded electrical and mechanical diagnostic technicians. Through the use of practical lab exercises and classroom experiences the student will gain knowledge in electrical theory, outboard engine repair, marine gas and diesel inboard repair, transmissions, and navigation. Students will be well versed in ABYC standards through the use and reference to the standards manual throughout their program. Through participation in both lab and classroom experiences the successful student will gain the knowledge and experience necessary to be awarded an Associate in Science degree.

### Program Goals

1. The MT program will provide the students with the necessary experiences to become employed in a marine repair and/or manufacturing facility.
2. The MT program will provide the students with an exposure to the ABYC standards employed in the field of marine vessel construction and repair.
3. The MT program will strive to instill in the students a professional work ethic.
4. The MT program will provide the students with the knowledge of workplace hazards and safe working practices to be used when working around the waterfront or in the presence of travel-lifts and other hoisting equipment.

### Program Outcomes

Students successfully completing the Marine Technology program will be able to:

1. Perform basic marine engine installation, diagnostics, tune ups, and repairs using the appropriate industry required service literature.
2. Properly perform electrical installations, and troubleshoot, diagnose, and repair electrical devices according to ABYC standards and Industry related service literature.
3. Properly remove service, reinstall, align, and adjust marine drive systems and controls.
4. Properly create repair estimates, repair orders, and marina service records required for the successful operation of a marine business.
5. Demonstrate and understand environmental laws, Clean Marina protocols and EPA requirements associated with working in the marine industry for both fresh and saltwater areas.

## Q&A and Technical Standards

### Questions & Answers

#### 1. When do my classes meet?

Day Classes: Technical classes normally meet for at least three hours a day for up to five days a week. Classes normally begin in the early morning (7:45 a.m.), late morning (usually 11:25 a.m.), or mid-afternoon. A technical time slot may vary from term to term.

Evening Classes: Technical classes meet on the average of three nights a week, although there may be times when they will meet four nights a week. Classes normally begin at 5:45 p.m.

In addition, to achieve your associate degree, you will take a total of approximately eight liberal arts courses, which will be scheduled around your technical schedule over the course of your entire program. Each liberal arts course meets approximately four hours per week. Liberal arts courses are offered days, evenings, and Saturdays.

At the beginning of each term you will receive a detailed schedule giving the exact time and location of all your classes. The College requires that all students be prepared to take classes and receive services at any of NEIT's locations where the appropriate classes and services are offered.

When a regularly scheduled class falls on a day which is an NEIT observed holiday (Columbus Day, Veterans Day, Martin Luther King, Jr. Day, and Memorial Day), an alternate class will be scheduled as a make up for that class. The make up class may fall on a Friday. It is the student's responsibility to take note of when and where classes are offered.

## 2. How large will my classes be?

The average size for a class is about 20 to 25 students; however, larger and smaller classes occur from time to time.

## 3. How much time will I spend in lab?

Almost half of your technical courses consist of laboratory work. In order for you to get the most out of your laboratory experiences, you will first receive a thorough explanation of the theory behind your lab work.

## 4. Where do my classes meet?

Students should be prepared to attend classes at any of NEIT's classroom facilities: either at the Post Road, Access Road, or East Greenwich campus.

## 5. I have not earned my high school diploma or GED: can I enroll in an Associate Degree Program?

A candidate for admission to an associate degree program must have a high school diploma, have earned a recognized equivalency diploma (GED), or meet the federal home school requirements.

## 6. How long should it take me to complete my program?

To complete your degree requirements in the shortest possible time, you should take the courses outlined in the prescribed curriculum. For a typical six-term curriculum, a student may complete the requirements in as little as 18 months.

To complete all your degree requirements in the shortest time, you should take at least one liberal arts course each term. Students who need more time to complete their curriculum may postpone some of the liberal arts courses until after the completion of the technical requirements. Students are provided up to two additional terms of study to complete the liberal arts requirements without any additional tuition assessment fee. During these additional terms of study, students are required to pay all applicable fees.

Students may also elect to complete some of their liberal arts requirements during Intersession, a five-week term scheduled between Spring and Summer Terms. Students will not be assessed any additional tuition for liberal arts courses taken during the Intersession but may be assessed applicable fees.

Students wishing to extend the number of terms needed to complete the required technical courses in their curriculum will be assessed additional tuition and fees.

## 7. Is NEIT accredited?

NEIT is accredited by the New England Commission of Higher Education. Accreditation by NECHE is recognized by the federal government and entitles NEIT to participate in federal financial aid programs. Some academic departments have specialized professional accreditations in addition to accreditation by NECHE. For more information on accreditation, see NEIT's catalog.

## 8. Can I transfer the credits that I earn at NEIT to another college?

The transferability of a course is always up to the institution to which the student is transferring. Students interested in the transferability of their credits should contact the Office of Teaching and Learning for further information.

## 9. Can I transfer credits earned at another college to NEIT?

Transfer credit for appropriate courses taken at an accredited institution will be considered upon receipt of an official transcript for any program, biology, science, and mathematics courses in which the student has earned a "C" or above within the past three years and for English or humanities courses in which the student has earned a "C" or above within the last ten years. An official transcript from the other institution must be received before the end of the first week of the term for transfer credit to be granted for courses to be taken during that term. Students will receive a tuition reduction for the approved technical courses based on the program rate and will be applied against the final technical term of the curriculum's tuition amount. No tuition credit is provided for courses which are not a part of the technical curriculum.

## 10. What is the "Feinstein Enriching America" Program?

New England Institute of Technology is the proud recipient of a grant from the Feinstein Foundation. To satisfy the terms of the grant, the university has developed a one-credit community enrichment course which includes hands-on community enrichment projects. The course can be taken for a few hours per term, spread over several terms. Students who are already engaged in community enrichment on their own may be able to count that service towards course credit.

## 11. How many credits do I need to acquire my Financial Aid?

In order to be eligible for the maximum financial aid award, you need to maintain at least 12 credits per academic term.

## 12. What does my program cost?

The cost of your program will be as outlined in your enrollment agreement, along with your cost for books and other course materials. Students who decide to take more terms than the enrollment agreement describes to complete the technical courses in their curriculum will be subject to additional fees and possible additional tuition costs. Students who elect to take the technical portion of the degree requirements at a rate faster than the rate prescribed in the curriculum and the enrollment agreement will be assessed additional tuition.

Students who require prerequisite courses will incur additional tuition and fees above those outlined in their enrollment agreement.

If a student elects to take a course(s) outside of the prescribed curriculum, additional tuition and fees will be assessed.

Remember, students who withdraw and re-enter, one time only, pay the tuition rate that was in effect for them at the time of their last day of attendance for up to one year from their last day of attendance. Second

re-entrees and beyond pay the tuition rate in effect at the time they re-enter. The most economical way for you to complete your college degree is to begin your program now and continue your studies straight through for the six terms necessary to complete your degree requirements.

### 13. What kind of employment assistance does NEIT offer?

The Career Services Office assists NEIT students and graduates in all aspects of the job search, including resume writing, interviewing skills, and developing a job search strategy. Upon completion of their program, graduates may submit a resume to the Career Services Office to be circulated to employers for employment opportunities in their fields. Employers regularly contact us about our graduates. In addition, our Career Services Office contacts employers to develop job leads. A strong relationship with employers exists as a result of our training students to meet the needs of industry for over fifty years. No school can, and NEIT does not, guarantee to its graduates employment or a specific starting salary.

### 14. Where will job opportunities exist?

Graduates have obtained employment in the local area. However, one of the most exciting aspects of this program is the ability to look nationally for employment opportunities.

### 15. What kind of jobs will I be qualified to look for?

Generally, jobs will exist in the marine/repair service and sales aspect of Marine Industries. The U.S. Department of Labor Occupational Handbook predicts that job opportunities in the marine industry will grow at a faster than average rate with the greatest potential in the newer technologies such as marine electronics and electrical systems. Competition for jobs will be keen and requirements will increasingly emphasize and applicant's training and education. The job best suited to you will depend upon your individual strengths and interests.

### 16. Is there any state or federal licensing required in my field?

No license is required for any of the careers which you will be preparing to enter. The Marine Technology program is not designed to prepare a student for a licensure exam.

### 17. What is the difference between the Marine Technology (MT) and the Advanced Marine Technology (ADMT) programs?

MT and ADMT have a different number of terms. MT is a six-term program and ADMT is a seven-term program. The additional seventh term includes study of the more advanced electronics and computer controls common in the industry.

### 18. Will I be required to wear special clothing?

Yes. Each student is required to purchase and wear uniform shirts. In addition, proper tan work pants must be worn (no jeans, sweatpants, nylon pants, shorts, tattered, too tight or oversized pants). Students must have purchased their uniforms and be wearing them to class and lab by the end of the third week of classes. Students who have not purchased their uniforms and/or who do not wear their uniforms will not be allowed to attend class after the third week of classes. Also, proper footwear such as good quality work boots are to be worn at all times. No sneakers, sandals or soft type footwear, shorts and tee shirts are allowed at any time.

### 19. Where can I purchase a uniform and what kind of uniform do I need?

Students may purchase items for their uniforms online at Alexander's Uniforms <http://aucorporateapparel.com/>. At the site's homepage, click "New England Institute of Technology" from either the icon or the left tab, then select your department from the list. All items are priced to include

a discount. If you have any questions, contact Wendy Magnette via email at [wmagnette@alexandersuniforms.com](mailto:wmagnette@alexandersuniforms.com) or at 401-654-6500.

*The required uniforms include:*

Required Uniform	Size/Pricing
Navy Shirt w/ Screen Printing	S-5X (Contact Alexander's Uniforms for current pricing.)
Navy Work Pants	waist: 28-52 (Contact Alexander's Uniforms for current pricing.)

You may also purchase your uniform items at Alexander's Uniforms at one of their three locations (recommended if you are unsure of the size): 1) Rhode Island: Marshall's Plaza, 1 Lambert Lind Highway, Warwick RI 02886, 860-889-7744, 401-654-6500; 2) Connecticut: 77 Salem Turnpike, Norwich, CT 06360, 781-762-1449; 3) Massachusetts: 500 Providence Highway, Norwood MA 02062. A Student ID is needed to ensure you receive your discount at checkout.

### 20. Will I be required to wear any special safety equipment?

Yes, eye and ear protection must be worn when performing special tasks or in areas that require them. Students are responsible for the purchasing of proper eye protection and must be carried on them at all times. Eye protection must be worn at all times in the automotive labs. Ear protection is supplied by the College. Also, as a safety precaution, work shoes or boots must be properly laced and tied at all times, shirts must be worn tucked in pants, and no rings, watches, earrings, nose rings and or dangling jewelry is allowed during lab or shop conditions.

## Technical Standards

These technical standards set forth by the Automotive/Auto body and Marine Technology Departments, establish the essential qualities considered necessary for students admitted to these programs to achieve the knowledge, skills and competencies to enter these fields. The successful student must possess the following skills and abilities or be able to demonstrate that they can complete the requirements of the program with or without reasonable accommodation, using some other combination of skills and abilities.

### Cognitive Ability:

- Ability to obtain a score of 3 or higher on a ten point scale mechanical reasoning test.
- Ability to read and understand warning labels associated with various hazardous chemicals.
- Ability to learn, remember and recall detailed information and to use it for problem solving.
- Ability to deal with materials and problems such as organizing or reorganizing information.
- Ability to use abstractions in specific concrete situations.
- Ability to break information into its component parts.
- Ability to understand spatial relationships.
- Possession of basic math skills through addition, subtraction, multiplication and division of whole numbers and fractions using both the U.S. and Metric systems of measurement.
- Ability to perform tasks by observing demonstrations.
- Ability to perform tasks by following written instructions.

- Ability to perform tasks following verbal instructions.
- Possession of basic keyboarding skills and knowledge of computer programs.

- For students entering October 2024 or later
- For students entering October 2023 to September 2024
- For students entering October 2022 to September 2023

### **Communications Skills:**

- Ability to communicate effectively with faculty and students.
- Ability to demonstrate and use the knowledge acquired during the classroom training process and in the lab setting.

### **Adaptive Ability:**

- Ability to maintain emotional stability and the maturity necessary to interact with other members of the faculty and students in a responsible manner.

### **Physical Ability:**

- An ability to work in a standing, sitting, squatting, kneeling, or lying position.
- An ability to lift, lower, push, and pull using both arms and legs.
- Ability to lift objects weighing up to 35 pounds.
- Ability to stand on a hard surface, usually concrete, for 4-6 hours at a time.
- Sufficient upper body strength to carry 20 pounds.
- Sufficient strength and agility to lift equipment and move large pieces of equipment independently.
- Sufficient strength and agility to grasp and maintain tension for long periods of time.
- Ability to wear and tolerate ear plugs, safety glasses and other protective equipment.
- Ability to perform learned skills, independently, with accuracy and completeness within reasonable time frames in accordance with procedures.

### **Manual Ability:**

- Ability to manipulate wrenches, screwdrivers, and other tools.
- Sufficient motor function and sensory abilities to participate effectively in the classroom laboratory.
- Sufficient manual dexterity and motor coordination to coordinate hands, eyes and fingers in the operation of tools and other equipment.

### **Sensory Ability:**

#### **Visual**

- Visual ability, with or without correction, to enable the student to differentiate automotive tools and instruments, wires, and components.
- Acute enough to read small print.
- Acute enough to read small numbers on precision measuring instruments.

#### **Auditory**

- Acute enough to hear and understand words spoken by others in an environment with a high level of noise in the background (such as, but not limited to: airguns, engine noises, drills, radios etc.).

## **Degree Progress Checklist**

### **Advanced Marine Technology - AS**

#### **Degree Progress Checklists**