MAINE MARITIME ACADEMY

UNDERGRADUATE CATALOG
ACADEMIC YEAR 2020-2021

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Introduction

Note: This is the official 2020-21 Undergraduate Catalog for Maine Maritime Academy. The information contained in this PDF is current as of October 19, 2020. Updates made between October 19, 2020 - July 31, 2021 will be reflected in the online catalog at mainemaritime.edu/undergraduate-catalog. Archived copies are available in the Academic Dean's office, the Nutting Memorial Library, and online.

Published by Maine Maritime Academy, Castine, Maine 04420
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Vision Statement

The vision of Maine Maritime Academy is to provide the best marine and related education of any small college.

Mission Statement

The mission of Maine Maritime Academy is to provide a quality education focused on marine and related programs. The curriculum will empower students to take on leadership roles, encourage rigorous self-discipline, promote curiosity, and provide graduates with the skills, ethics, and knowledge needed to succeed in the global economy.

Institutional Objectives

Upon completion of a degree, students should, at the appropriate level:

1. Demonstrate competency in written and spoken English.
2. Apply the scientific method.
3. Apply fundamental concepts in mathematics.
4. Be technologically proficient.
5. Develop a global perspective of the humanities and social sciences.
6. Gather, analyze, and interpret information.
7. Demonstrate competency in their major.
8. Explore and experience career paths in their program of study.
9. Demonstrate and inspire ethical behavior.
10. Develop skills to motivate others to achieve a common goal.
11. Recognize environmental consequences of individual and professional decisions.

Students attaining these objectives will have the fundamental skills to support continued curiosity and life-long learning.

Accreditation

Maine Maritime Academy is accredited by the New England Commission of Higher Education (formerly the Commission on Institutions of Higher Education of the New England Association of Schools and Colleges, Inc. [NEASC]), 3 Burlington Woods Drive, Suite 100, Burlington, MA 01803-4514; telephone 781-425-7785, E-Mail: info@neche.org.

The Marine Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org.

The Power Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org.

The Marine Systems Engineering program (Non-License and License Track) is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Qualified by the International Convention on Standards of Training, Certification and Watchkeeping.

The following programs are approved by the United States Coast Guard (USCG) and meet international Standards for Training, Certification, and Watchkeeping (STCW): Marine Transportation Operations, Vessel Operations and Technology, Small Vessel Operations, Marine Engineering Operations, Marine Engineering Technology, Marine Systems Engineering – License Track. The United States Coast Guard National Maritime Center can be reached at 100 Forbes Drive, Martinsburg, WV 25404.

The following programs are approved by the United States Coast Guard (USCG) as meeting the requirements for eligibility to take the following USCG license examinations: Marine Engineering Operations, USCG 3rd Assistant Engineer License, Unlimited Horsepower, Steam or Motor, Any Ocean; Marine Engineering Technology, USCG 3rd Assistant Engineer License, Unlimited Horsepower, Steam or Motor, Any Ocean; Marine Systems Engineering – License Track, USCG 3rd Assistant Engineer License, Unlimited Horsepower, Steam or Motor, Any Ocean; Marine Transportation Operations, USCG 3rd Mate License, Unlimited Tonnage, Any Ocean; Vessel Operations and Technology, USCG 500-ton or 1,600-ton Mate, Near Coastal or Ocean, depending upon sea time; Small Vessel Operations, USCG 200-ton Mate, Near Coastal (up to 200 miles).

Maine Maritime Academy also holds membership in the Council for the Advancement and Support of Education, the Downeast College Consortium, the International Association of Maritime Universities, and the Maine Higher Education Council. The Academy is authorized under federal law to enroll non-immigrant alien students.

It is the policy of Maine Maritime Academy to provide equal opportunity and treatment to all students, employees, and applicants in all areas of the Academy. No person shall be discriminated against because of race, religion, color, gender, age, sexual orientation, national origin, disability, or veteran's status.

Maine Maritime Academy subscribes to the principles and policies encompassed by the Uniform Campus Crime Reporting Act. A general overview of campus safety and security issues is made available to all students and employees. (https://mainemaritime.edu/campus-safety)

An audited Financial Statement is produced following the end of each fiscal year. For a copy, please request one by writing to the Maine Maritime Academy, Vice President for Financial & Institutional Services.

The Academy reserves the right to make changes in its rules, regulations, procedures, degree requirements, and fees. Current Maine Maritime Academy policies are maintained at https://mymma.mma.edu/Pages/MMA-Policies.

A Brief History of Maine Maritime Academy

For generations, Maine has owned a worldwide reputation for the skills of its shipbuilders and sea captains, and for leadership in every aspect of maritime affairs. It was in Maine that the first English ship built in America, the *Virginia*, was launched in 1607 and Mainers continue to build and sail vessels ranging from custom yachts to warships. Windjammers, fishing fleets, and America's Cup defenders have all been part of Maine's seafaring tradition.

An institution devoted to nautical training in Maine was first proposed in the 1930s. Educational and civic leaders throughout the state—led by Senator Ralph Leavitt of Portland—prompted the creation of Maine Maritime Academy by an act of the 90th Maine Legislature on March 21, 1941. The original class of 29 students reported on October 9 of that year to Rear Admiral Douglas Dismukes, USN, a veteran of World War I who came out of retirement to head the fledgling school. Classes met on the campus of the Eastern State Normal School and students were lodged at Castine's Pentagöet Inn. The *Mattie*, a schooner out of Camden, Maine, served as the first training ship.

World War II required a rapid build-up of the U.S. Merchant Marine, with a critical need for trained deck and engineering officers. The Academy met that challenge, graduating its first class in 1943 and producing more than 300 officers who served at sea during the war. Three gave their lives in service to the nation, and many others were wounded in action.

In the post-war era, the program expanded from the original concept to a three-year course of study, and in 1960, to a four-year, Bachelor of Science degree program. In the 1960s and 70s, Rear Admiral Edward Rodgers, USMS, led a multi-million dollar development program culminating in full membership in the New England Association of Schools and Colleges.

The Academy now offers two undergraduate degrees in academic courses of study in four maritime-related fields: engineering; international business and logistics; marine sciences; and marine transportation. The Graduate Studies program offers Master of Science degrees in international logistics management, and master's & commander. Many Academy students prepare for careers as officers in the U.S. Merchant Marine and the U.S. armed forces. Some earn degrees in association with Bath Iron Works, in Bath, Maine or The Landing School in Arundel, Maine. The college is consistently recognized for providing a high-value education by organizations such as the Brookings Institution, U.S. News and World Report, and Money Magazine. In 2019, a Georgetown University Center on Education and the Workforce report, "Ranking ROI Of 4,500 US Colleges And Universities," placed Maine Maritime Academy among the top 10 schools, outscoring Harvard.

The year 2016 marked the 75th anniversary of the founding of Maine Maritime Academy.

Academic degrees and areas of study include:

Associate of Science

- Small Vessel Operations
- Ship Design[1]
- Ship Production[1]
- Small Craft Design[2]

[1] Available only to employees of General Dynamics Corporation's Bath Iron Works Shipyard in Bath, Maine.
[2] Joint degree program with The Landing School of Boatbuilding and Design in Kennebunkport, Maine.

Bachelor of Science

- Coastal & Marine Environmental Science
- Interdisciplinary Studies
- International Business and Logistics
- Marine Biology
- Marine Engineering Operations[3]
- Marine Engineering Technology[3]
- Marine Systems Engineering (Non-License Track)
- Marine Systems Engineering (License Track)[3]
- Marine Transportation Operations[3]
- Oceanography
- Power Engineering Operations
- Power Engineering Technology
- Vessel Operations and Technology

[3] These majors may lead to a U.S. Coast Guard unlimited license and require participation in the Regiment of Midshipmen. See the catalog section entitled Student Life for information on the Regiment.

Master of Science

- International Logistics Management
- Maritime Management

Maine Maritime Academy has Articulation Agreements and Memoranda of Understanding for student and faculty exchanges at the following institutions, with date of agreement provided:

- The Landing School of Boatbuilding and Design (USA) – March 2007

The Campus

Maine Maritime Academy's 35-acre, 17-building campus occupies the tip of a peninsula at the head of majestic Penobscot Bay, close to Acadia National Park, Deer Isle, and other notable Maine attractions.

Settled in 1613 and named for the French nobleman and trader, Baron de St. Castin, Castine is rich in history, natural beauty, and maritime tradition. Castine is a small coastal village of 7.9 square miles, yet it is only 38 miles south of Bangor, the state's third largest city and the site of an international airport. The year-round population of Castine of roughly 1,300 includes 950 college students attending Maine Maritime Academy. With summer residents, and visitors by land and sea, the population doubles from Memorial Day to Labor Day.

Specialized laboratories — including state-of-the-art simulators — bring lessons of the classroom to life. Advanced teaching facilities include research vessels, marine science labs, power plant and navigation simulators, a 1,200 hp diesel engine, a liquid cargo system simulator, wet lab, multi-media lecture halls, and classrooms with wireless access for laptop computing.

There is no substitute for the practical experience students gain in cooperative education programs. Whether at the helm or in the engine room of the Academy's 500-foot training ship *State of Maine*, in laboratory or industrial settings, students experience the world of work as part of the MMA program. Each spring the training vessel sails on a two-month cruise to domestic and foreign ports, as first- and third-year students enrolled in unlimited U.S. Coast Guard license programs apply what they have learned on campus. Sophomores are assigned to merchant ships in the Cadet Shipping Program for a minimum of 60 days for engine students and 90 days for deck students. Students in other majors also benefit from summer co-op experiences in Maine and other states, and from science and technical internships aboard research vessels and on land.

The college fleet of nearly 60 vessels also includes the tug *Pentagoet* used in the only on-campus tug and barge program in the nation. The *Capt. Susan J. Clark*, a 70-foot, twin screw, crew-boat style vessel serves as the primary navigation training vessel for the Thompson School of Marine Transportation. The vessel is equipped with a complete Furuno navigation package at each student station, including radar, ARPA, electronic chart, electronic compass, and fathometer. The research vessel *Friendship*, equipped with side-scan sonar, a remotely operated vehicle, and a wide array of modern oceanographic instrumentation, serves the Marine Science program. The schooner *Bowdoin*, a National Historic Landmark and Maine's Official Vessel, has taken MMA students on voyages as far north as Labrador and Greenland. Dozens of small sailboats, including Lasers, Mercuries, and 420s, for racing or recreational use, fill the Academy waterfront.

Nutting Memorial Library serves Maine Maritime Academy's students, faculty and staff and local area residents. Located in Platz Hall, the Library is open nearly 90 hours per week. Its three levels offer a variety of work and study spaces, and students can access the library's computer lab and study lounge 24 hours a day with their MMA ID cards.

The Harold Alfond Student Center houses dining facilities and dining services offices, conference rooms, classrooms, the Waypoint Snack Bar, the campus post office, a multi-media lecture hall, and the Student Government Association office.

Dismukes Hall houses offices for the Registrar, STCW services, faculty administration assistant, Kennaday Planetarium, faculty offices, classrooms, and laboratories for science, logistics, writing, and mathematics, and the electronic navigation simulator.

Leavitt Hall houses Robert S. Walker Admissions and Financial Aid Center, administrative and faculty offices, information technology offices, College Relations, Delano Auditorium, Conference Office, conference rooms, and guest rooms.

Capt. Quick Alumni Hall contains the career services and cooperative education offices.

ABS Center for Engineering, Science and Research contains classrooms and laboratories, and faculty offices.

Pilot House is the center for the Loeb-Sullivan School of International Business and Logistics and its administration.

Margaret Chase Smith Building houses a gymnasium, locker rooms, and offices for coaches.

Oakey Logan Alexander Physical Education Center contains a field house with basketball, tennis, and volleyball courts, a climbing wall, the Cary W. Bok Swimming Pool, racquetball and handball courts, fitness and weight training equipment, the facilities office, and workshops.

Harold Alfond Athletic Complex consists of athletic and recreational facilities, including Ritchie Field with its all-weather in-filled synthetic turf.

The Bath Iron Works Center for Advanced Technology contains a navigation and shiphandling simulator, CAD lab and power plant simulator, small-scale operating steam plant, an electrical power lab, and a multi-media lecture hall for humanities instruction.

Rodgers Hall houses classrooms, the machine shop, and engineering laboratories, as well as classrooms and laboratories serving the Corning School of Ocean Studies.

Andrews Hall features a flow through seawater system and aquaria for biological research, and engineering and marine transportation lab space.

Payson Hall includes classrooms, engineering laboratories, and boat repair and maintenance facilities.

Perkins House contains faculty offices.

The Commons provides apartments for undergraduate students (21 years old and over).

Curtis Residence Hall is the major residential complex on campus and includes a bookstore, Dean of Student Services and Residential Life offices, Commandant's offices, student health services, counseling services, student lounge and recreational area, and student activities office.

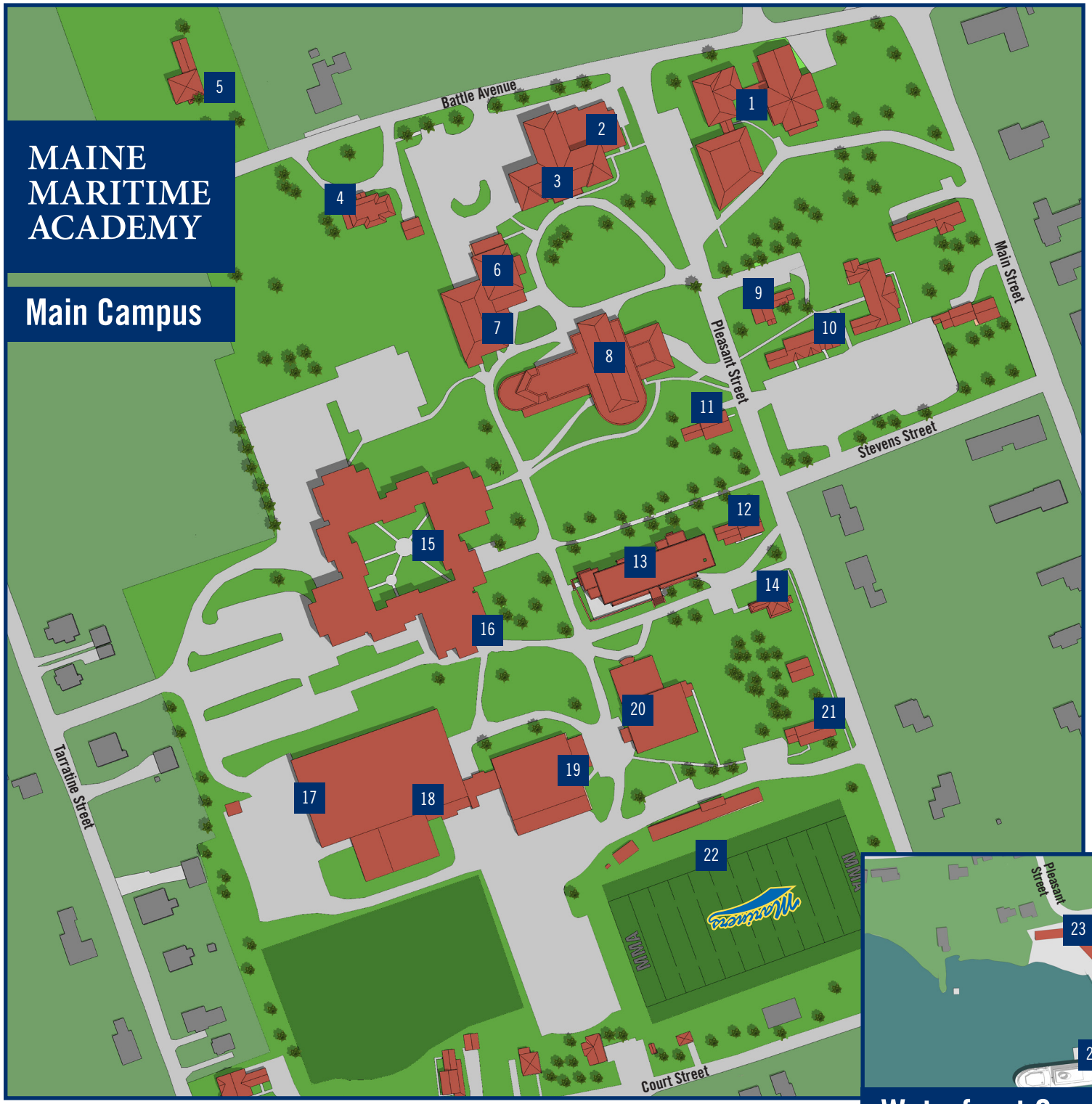
Dirigo House provides offices for the Corning School of Ocean Studies and other faculty.

Abbott House serves as the residence of the president of Maine Maritime Academy.

Wyman House contains Development, Alumni Relations and serves as a venue for hosting alumni and other social functions.

Buoy House is the Center for Student Success, which contains the Writing Center, Accessibility Services/ADA office, quiet testing rooms, and tutoring areas.

Windlass House contains the Campus Safety Office and faculty offices.



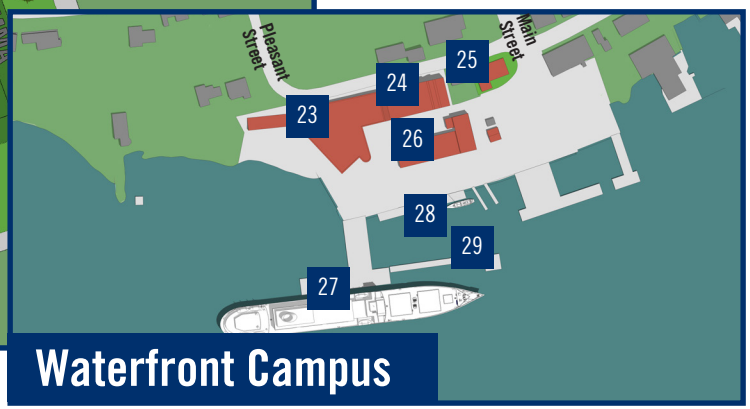
LOCATION KEY

Main Campus

1. Dismukes Hall: Classrooms, Labs, Faculty Offices
2. Delano Auditorium
3. Leavitt Hall: Robert S. Walker Admissions & Financial Aid Center, Administrative Offices, Guest Rooms
4. Wyman House: Alumni & Advancement Offices
5. Abbott House: President's Residence
6. Captain Quick Alumni Hall: Career Services & Continuing Education
7. Platz Hall: Nutting Memorial Library
8. The Harold Alfond Student Center: Dining, Conference Rooms, Staff Offices, Classrooms
9. Pilot House: Loeb-Sullivan School of International Business & Logistics
10. The Commons: Residential Complex
11. Perkins House: Faculty Offices
12. Windlass House: Campus Safety & Faculty Offices
13. ABS Center for Engineering, Science, and Research: Classrooms, Labs, Faculty Offices
14. Buoy House: Center for Student Success
15. Curtis Residence Hall: Residential Complex
16. Campus Bookstore
17. Public Works & Central Receiving
18. Oakey Logan Alexander Physical Education Center
19. Margaret Chase Smith Building
20. Bath Iron Works Center for Advanced Technology: Classrooms, Labs, Faculty Offices
21. U.S. Navy ROTC
22. Ritchie Field

Waterfront Campus

23. Payson Hall: Classrooms, Labs, Faculty Offices
24. Rodgers Hall: Classrooms, Labs, Faculty Offices
25. Dirigo House: Faculty Offices
26. Andrews Hall: Classrooms, Labs, Faculty Offices
27. Training Ship State of Maine
28. Schooner Bowdoin
29. Tug Pentagoet



Castine, Maine 04420 | 800-464-6565 | mainemaritime.edu

For the health and wellbeing of our community, the Maine Maritime Academy campus and vessels (ashore and afloat) are smoke- and tobacco-free.

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Student Life

Maine Maritime Academy is committed to the belief that learning takes place both in and out of the classroom. Accordingly, the college is structured to maximize the potential for such learning.

Maine Maritime Academy has an average student population on its Castine campus of 950 full-time undergraduate students. In addition to these students, approximately 100 students are enrolled in the A.S. degree program at Bath Iron Works.

A special feature of student life at Maine Maritime is the mix of students who live a traditional college lifestyle and those who participate in the Regiment of Midshipmen. Although students who become midshipmen wear military-style uniforms, Maine Maritime is not a military academy, and there is no military obligation after graduation. Traditional and regimented students live in the same residence hall, attend many of the same classes, and are eligible to participate in all campus clubs, activities, and athletics.

Students are often active in the Castine community. MMA students have opportunities to volunteer for the local fire department, the Adams (Elementary) School, sports clinics for local youth, and the Blue Hill Heritage Trust, are among the many options. The local churches, clubs, and historical society welcome students and provide an opportunity to become a part of a small but vibrant community. Bangor and Ellsworth, both about 55 minutes away by automobile, are the closest cities. Acadia National Park is just over an hour's drive away, and ski areas are two hours distant.

The Regiment of Midshipmen

All candidates for a U.S. Coast Guard unlimited license as a Third Mate or Third Assistant Engineer are required to be members of the Regiment of Midshipmen. The majors leading to an unlimited license, and thus requiring regimental participation, are Marine Transportation Operations, Marine Systems Engineering (License Track), Marine Engineering Technology, and Marine Engineering Operations. For all other majors, membership in the Regiment is an optional but valuable experience that can help students to build job-related skills regardless of career path.

Although modeled after Navy and Coast Guard traditions, the purpose of the Regiment is not to produce military officers, but to provide leadership and management training for students desiring careers as licensed U.S. Merchant Marine officers as well as for those pursuing the fields of science, engineering, and business. The Regiment encompasses a structured training environment where students develop time management skills and self-confidence, enhance their personal value system, and are instilled with the Regiment's core values of honor, loyalty, and devotion to duty. Students seeking their U.S. Coast Guard unlimited license must meet the requirements governing physical condition, citizenship, and prior preparation, as outlined in the Admissions section.

The Regiment is a leadership program with a disciplined lifestyle designed to positively affect all aspects of a student's life at Maine Maritime Academy. Members wear military style uniforms,

learn professional customs and courtesies, and become familiar with shipboard life within a few days of reporting for first-year orientation. This rigorous lifestyle is challenging and rewarding particularly as students learn principles of followership as they develop their own leadership style; all while building lifelong friendships with their new peers. Over the four years, midshipmen are given more and more responsibility until, as seniors, they comprise the bulk of regimental leadership positions.

During the academic year, academics receive first priority alongside fulfilling requirements related to their U.S. Coast Guard License and preparing to sail aboard Academy and commercial vessels. Although busy, Midshipmen do have ample time for personal study and research, recreational activities including varsity and club sports and campus clubs. Many students find time to volunteer with local organizations. Weekends are usually free, unless the student is assigned to a watch or a maintenance responsibility aboard the training ship. Immediately following the first- and third-year spring semesters, cadets in the license programs participate in a 70-day training cruise* aboard a dedicated maritime academy training vessel. These are exciting times as the students cruise the Caribbean or European waters, making several ports of call while receiving hands-on training in all aspects of ship operation. During the summer following the sophomore year, cadets in these programs are assigned to merchant vessels* to further familiarize them with shipboard procedures.

*Students not in good academic standing (Academic Probation or Warning status) may be required to delay their assignments to the freshmen or junior cruises aboard the T.S. State of Maine, or as cadets aboard merchant vessels, until they are in good academic standing.

Extracurricular Activities

Many campus events take place throughout the year, including movies, lectures, dances and other events, providing a full range of cultural involvement for the entire community. More than 30 organizations operate on campus, under the jurisdiction of Student Government. Some of these groups include:

- Alpha Phi Omega (co-ed community service fraternity)
- Campus Activities Board (CAB)
- Outdoor Adventure Club
- Rugby Club
- Sexuality and Gender Awareness (SAGA)
- Schooner Crew
- Snowboard and Ski Club
- Society of Naval Architects and Marine Engineers (SNAME)
- Society of Women Engineers (SWE)
- Student Business Logistics Association (SBLA)
- Students Living in Christ Everyday (SLICE)
- Ultimate Frisbee
- Woodsman Club
- Yoga Club

Student Housing

MMA has a residency requirement. All undergraduate students at MMA are required to live on campus with certain exceptions. Students who are married, have lived on campus for six semesters or more, are 21 years of age or older by August 31 for the Fall semester or December 31 for the Spring semester (24 for first year Regimental Students), or are military veterans with two years of service and an honorable discharge, are eligible to apply to live off campus. Exceptions to this residential policy require the approval of the Dean of Student Services. Housing in and around Castine is limited.

Students provide their own telephone, computer, pillows, towels, and linen. Card-operated washers and dryers are available on each floor of the Curtis Hall residence complex. Residents are expected to have their own insurance (see section on Personal Property). Deductions from a deposit are made for damages beyond normal wear and tear, if deemed appropriate. See the catalog section entitled "Affording MMA" for more information regarding security deposits.

Non-degree students are not normally eligible to live on-campus unless enrolled in at least twelve credit hours of study.

Student Health

Student Health Services on the MMA campus is located in Curtis Hall (207-326-2295, or ext. 2295; or 207-326-2305, or ext. 2305). The health center is staffed Monday through Friday from 7:00 a.m. to 3:00 p.m. There is no fee for students to see the medical staff in Health Services. A fee may be charged to the student account for some supplies and medications that are provided to the student. After hours and on weekends, emergency care can be initiated by calling the MMA Safety Office (207-326-2479, or ext. 2479). Ambulance service is available and healthcare providers are located in emergency rooms in local hospitals. During the training cruise, medical staff are aboard the ship.

All students are required to show proof of medical insurance coverage upon admission to the college, and each subsequent fall. Students must maintain insurance coverage throughout their stay at MMA and are responsible for informing the college of any changes in coverage. Students who are not covered by family or individual medical insurance will be required to purchase the Academy's medical insurance (see section in Insurance Information).

Maine Maritime Academy requires that all students be immunized in accordance with 20-A MRSA Chapt. 223 Sub. Chapt. 2 § 6359. This Maine law states that any person born after 1956 who attends school full time or who is a candidate for a degree, diploma, or graduate certificate must be immunized against the following diseases:

- Diphtheria/pertussis/tetanus (five doses)
- Adult tetanus/diphtheria booster within the last ten years
- Measles, mumps, rubella (MMR), 2 doses, one after 12 months of age and a second dose at least 1 month later

- Poliomyelitis (4 doses of OPV with the first one being six weeks after birth or 4 doses of IPV administered the same.)
- Varicella (chicken pox), 1 dose for all children entering kindergarten or documented history of the disease.

In addition to the above State requirements, Maine Maritime Academy also requires entering students to have proof of the following immunizations and tests:

- Hepatitis A (one shot with a booster in six months)
- Hepatitis B (one shot with a booster in one month and a second booster in five months)
- Meningitis
- Mantoux test for tuberculosis (PPD) within the last year

Students may also provide copies of laboratory evidence of immunity (titers) to satisfy their immunization requirements for MMR, Hep A, Hep B and varicella. A student is exempt from immunizations if they have documentation from a physician that immunization against one or more diseases is medically inadvisable, or the student/guardian states in writing an opposition to immunization because of a sincere religious belief or philosophical reason. Students who choose one of these exemptions and do not provide proof of immunity will be excluded from taking classes or participating in activities during the danger period (15-23 days) if an outbreak of one of the above infectious diseases occurs. Due to changes in Maine state law, these exemptions will no longer be allowed after the 2020/2021 academic year.

To demonstrate adequate immunization against each disease, a student must present a certificate of immunization from the physician, nurse, public health official, or school provider who administered the immunization. The proof must specify the immunizing agent and the date it was administered. School health records are usually accepted to meet these requirements. A letter from a doctor is not acceptable. If immunization cannot be determined, re-immunization is required.

Before a student can register at MMA, he or she must have a physical exam on file on MMA's physical exam form. The student's personal healthcare provider can perform the exam.

The Academy Counselor (207-326-2419, or ext. 2419) provides professional personal counseling for students and serves as the Substance Abuse Prevention Education Coordinator. Services of the Academy Counselor are provided free of charge to students.

Accommodations for Disabilities

The Academy complies with all relevant federal and state legislation regarding accommodation for disability. Students needing accommodations should contact the Accessibility Service office (207-326-2489, or ext. 2489).

Orientation and Regimental Training Program

Prior to the start of classes, all new students to MMA are required to attend an orientation session, a program designed to familiarize students with the facilities, programs, and organization of the college and to ease the transition into college life. Additionally, members of the Regiment will complete Regimental Preparatory Training. The program includes a period of training in the traditions of the Academy, as a preparation for the rigorous life of a midshipman.

Student Affairs Policies

Automobiles

Due to the small size of the campus, and the limited parking available, first year students are not eligible to have a vehicle. All students, staff, and faculty are encouraged to walk to and from class and other activities. All MMA faculty, staff and students who are eligible to park their vehicle on Campus, at the Waterfront or in the Penobscot lot during the academic year must register their vehicle and properly display a current MMA parking permit at all times. Individuals may register for permits online at http://mainemaritime.edu/campus-safety/parking-management/. Permits may be picked up at Campus Safety (Windlass House), after the permit has been ordered.

Student Permits On-Campus (Curtis Hall and Commons): Permits are issued on a first-come, first-serve basis for $150.00. *First year students may not have a vehicle on campus and are prohibited from purchasing a parking permit.*

Commuter Students: Students who live off-campus may purchase a Commuter Parking permit for $50.00. Purchasing a Commuter Parking permit does not guarantee a parking space. If all of the commuter parking spaces are full, students are encouraged to park on Pleasant Street, Main Street or at the Fort George Parking lot.

Penobscot Lot: This is on off-campus parking lot located on Route 199 in Penobscot Maine. The lot is used to accommodate vehicles of students unable to purchase Student or Commons permits due to limited parking availability on campus. There is no charge for this lot, but all vehicles must be registered with Campus Safety and display a permit to be parked here.

***A shuttle, run by Student Services to the Penobscot Lot is available on Friday afternoons and Sunday evenings. Students are required to contact the front desk of Curtis Hall (326-2137) in advance to schedule a shuttle ride. Campus Safety may suspend the shuttle due to hazardous roads/weather conditions.

Personal Property

The Academy cannot assume responsibility for loss or damage to personal property through fire, theft, or other causes. Persons desiring such protection should purchase an appropriate insurance policy.

Uniforms

Upon entering MMA, all regimental students are required to purchase uniforms (normally at the bookstore) to be worn only as authorized by the Commandant of Midshipmen. Uniforms and equipment become the property of the student and may not be returned to the Academy. Non-regimental students are not subject to a uniform requirement.

Vacations

Vacations are usually scheduled around Thanksgiving, Christmas, early March, and during the summer. Our residence hall and dining facilities close over academic year breaks. Midshipmen receiving federal incentive payments should be aware that federal regulations specify limits on medical leave, leaves of absence, and vacations in order to continue to receive such payment. Current regulations are available at the Academy.

Athletics

The Varsity Athletic Program offers the highly-skilled and competitive student-athlete an opportunity to excel in their chosen sport(s), while learning the valuable life lessons attained through team and individual competition.

The Academy sponsors intercollegiate competition in men's and women's basketball, cross country, lacrosse, sailing, soccer and swimming; men's football and golf; women's volleyball.

MMA's teams function under the rules of the National Collegiate Athletic Association Division III, with the exception of sailing competing under the rules of the Intercollegiate Sailing Coaches Association (ISCA). The North Atlantic Conference is the Mariner's primary athletic conference with football competing in the New England Men's and Women's Athletic Conference and swimming competing in the New England Intercollegiate Swimming and Diving Association.

Club sports are available for students interested in informal competition against other colleges. Club teams include men's and women's rugby and wrestling.

Career Services

Career Services works with students throughout their college experience to develop the skills, ethics and knowledge necessary to succeed in the global economy.

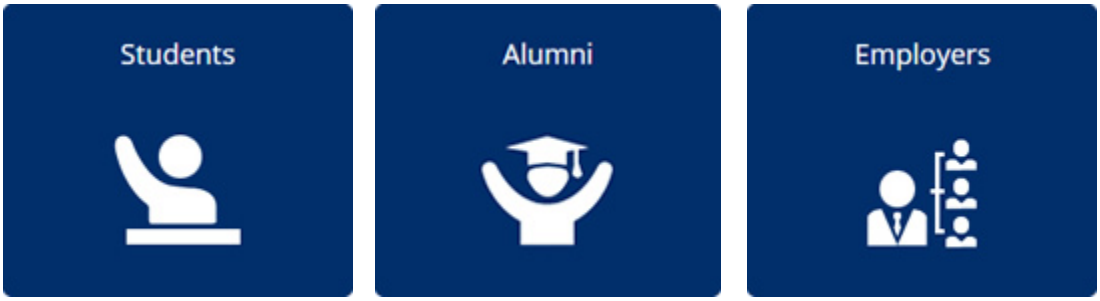
| Building a Network of Opportunity

Through events and one-on-one conversations, we can support your professional goals. Visit us in Quick Hall or call our office for more information on the following Career Services resources.

| Career Center

Through MMA's online Career Center portal, students and alumni can find employment resources including résumé advice, job search tips, and career-related events.

Employers can connect with students by posting jobs, arranging on-campus recruiting visits, and signing up for career fairs.



Field Experience Programs

Career Services works directly with students, faculty, and industry leaders to coordinate field experiences that support the undergraduate curriculum, contribute to personal growth and professional competency, and serve our partners in industry.

Employers are encouraged to contact our office to learn more about hosting students in field experience positions.

Learn More

Career Fairs

There are two career fairs each year held in October and March respectively. These events attract companies and alumni from across the country who are eager to discuss employment and field experience opportunities with our students.

In 2018, Maine Maritime welcomed representatives from over 90 companies, including ConocoPhillips, General Dynamics, NextEra Energy, PepsiCo, and The Jackson Laboratory.

More information for students on the MMA mobile app and in the Career Center portal. Information for employers can be found in the Career Center portal.

careercenter.mma.edu

On Campus Recruiting

Many companies schedule on campus recruiting visits to deliver informational presentations and conduct interviews of students interested in full-time employment and/or field experiences. On campus company visit schedule can be found on the MMA mobile app and online at careercenter.mma.edu.

Employers can schedule a visit by registering through the Career Center portal.

careercenter.mma.edu

Career Skills and Development

Career Services works with students and alumni offering guest speakers and workshops to help them create a dynamic résumé, develop professional etiquette, fine-tune interview and business networking skills, and learn to use social media responsibly.

As students progress through their college experience, they will interact with our office through their field experience coordination, cadet shipping program, company visits, career fair, and careercenter.mma.edu.

careercenter.mma.edu

| Career Outcomes

MMA graduates are committed to their industry, know the value of hard work, and understand what it means to be professional. The job placement rate for MMA graduates regularly exceeds 90% within 90 days of graduation and MMA alumni are recognized around the world for excellence in leadership and integrity.

Industry Employers

Many companies employ graduates from MMA, including:

- American Bureau of Shipping
- Boeing
- Chevron Corporation
- ConocoPhillips
- ExxonMobil
- General Dynamics
- Kiewit Corporation
- Military Sealift Command
- Moran Towing
- PepsiCo
- Siemens

- Tesla, Inc.
- The Jackson Laboratory
- Transocean
- U.S. Navy

We extend an open invitation to all students and alumni to visit us in Captain Quick Hall. We look forward to working with you!

Library Services

Nutting Memorial Library is dedicated to supporting the teaching, learning, and research activities of the Maine Maritime Academy community. We empower patrons to access, evaluate, apply, and create information by maintaining quality collections, a welcoming environment, and a knowledgeable staff.

The library serves the Academy's students, faculty and staff and is also open to the public. When classes are in session, it is open nearly 90 hours per week. The library's three levels offer a variety of work and study environments, including a quiet study area on the upper level. Additionally, students can access the library's computer lab and study lounge 24 hours a day with their MMA ID cards.

The library's web site serves as a portal to its resources, which include thousands of electronic scholarly and professional journals and newspapers and over 100,000 academic ebooks. Academy users can access the majority of these electronic resources from off campus using their MMA login and password. The library's physical holdings include more than 70,000 books and approximately 2,000 videos, as well as print periodicals and nautical charts. The library's collections are particularly strong in the areas of maritime studies, marine technology, international business, and nautical history.

The library is a member of Minerva, which provides patrons access to a shared catalog of over six million items from more than sixty Maine libraries. Academy patrons also have free access to interlibrary loan services, including the statewide MaineCat catalog of over two million books. Delivery of books from off campus generally takes 5-10 days; articles requested via interlibrary loan are typically available within 3-5 business days.

We strive to ensure that all required course texts (as well as many recommended course materials) are available on Course Reserve at the library's front desk. Students can present their MMA ID card in order to use Reserve materials, which are available for in-library use for a period of two hours.

The library serves as a selective U.S. government documents depository, emphasizing maritime, engineering, oceanographic, and business publications. Links to online government information are found on the library's web site. As a depository for the National Geospatial Intelligence Agency and the National Ocean Survey, the library houses more than 5,300 maps and charts of the world and of the territorial waters of the U.S.

Computers can be found on all levels of the library, and printing, scanning, and faxing services are available on the main level. Also located on the main level is the library's One Button Studio, which offers user-friendly, high-quality video recording and can be reserved online.

The library frequently offers special events and educational programs, and library staff provide classroom instruction in information literacy and research skills. We welcome suggestions from our patrons regarding possible additions to our resources and services.

For more information, please visit our website or contact library@mma.edu.

Naval Service Commissioning Programs

Naval Reserve Officers Training Corps

The Naval Reserve Officers Training Corps (NROTC) program is designed to train and educate highly qualified students for commissioning and active service as unrestricted line officers in the U.S. Navy and the U.S. Marine Corps. To be eligible for this program, a student must:

1. Be a U.S. citizen
2. Be at least 17, but less than 27 years of age at graduation
3. Be physically qualified
4. Possess satisfactory records of academic ability and moral integrity
5. Demonstrate those characteristics desired of a Naval Officer
6. Have no moral reservation or personal convictions that prevents the bearing of arms

The NROTC Scholarship Program offers the following benefits: all tuition and fees paid, a book allowance ($375 per semester), a uniform allowance, and a per month subsistence allowance during the school year, (Freshman: $250; Sophomore: $300; Junior: $350; Senior: $400). Additionally, National Scholarship winners who attend Maine Maritime Academy are provided free room and board or a stipend of $1,000 per semester in lieu of room and board if not residing in the campus dormitory. Scholarship Program graduates receive commissions in the Navy or Marine Corps. Navy are required to serve on active duty for a minimum of five years. Marine Corps are required to serve a minimum of four years. High school students may apply for the NROTC National Scholarship Program anytime between the spring semester of their junior year and the fall semester of their senior year. Because the total number of scholarships given varies each academic year, early application is strongly recommended for this highly competitive program.

The NROTC College Program allows students to participate in the NROTC program without a scholarship. College program students are welcome to apply for the national scholarship during their first semester at school, to receive a 3-year scholarship with the same benefits as outlined above. At the end of freshman and sophomore year, 3-year and 2-year sideload scholarships are also available respectively, that provide full tuition coverage as well as the subsistence allowance

outlined above. Should students not receive a scholarship after their sophomore year, they are eligible for Advanced Standing, which will still result in a commission upon graduation and a 3-year service commitment.

For more information about the NROTC National Scholarship or College Programs, contact your local Navy Recruiting Office. Further information on NROTC programs and application forms can also be obtained at https://www.nrotc.navy.mil/ or by calling 1-800-NAV-ROTC.

For information about the NROTC Program at Maine Maritime Academy, Human Resources Assistant, NROTC Unit, Maine Maritime Academy, P.O. Box 137, Castine, ME 04421-0137, (207) 326-2465, or email mmanrotc@mma.edu. Also, visit the MMA NROTC home page at http://mainemaritime.edu/nrotc.

Strategic Sealift Midshipman Program

The Strategic Sealift Midshipman Program (SSMP), formerly the Merchant Marine Reserve (MMR), is an excellent way to assist you in meeting the financial obligations of your college education. The SSMP is designed to train and educate highly qualified students for commissioning and reserve duty service as officers in the U.S. Navy Reserve (USNR).

To be eligible for this program, a student must:

1. Be a U.S. citizen
2. Be at least 17 but less than 25 years of age (upon enrollment at MMA)
3. Be physically qualified
4. Have a satisfactory record of academic ability and moral integrity
5. Demonstrate those characteristics desired of a Naval Officer
6. Have no moral reservation or personal conviction that prevents the bearing of arms
7. Be enrolled in a Bachelor of Science Degree Program leading to a U.S. Coast Guard Unlimited License:

Marine Engineering Operations
Marine Engineering Technology
Marine Systems Engineering – License Track
Marine Transportation Operations

Students who meet the qualifications above may apply for Midshipman status in the SSMP and apply to participate in the U.S. Maritime Administration's Student Incentive Payment (SIP) Program. If selected, students are eligible to receive up to $32,000 during their time at school. The SIP Program requires students to obtain a Coast Guard Unlimited License and to apply for, and accept if offered, a Reserve officer commission in the U.S. Navy Reserves. A student who receives SIP incurs an obligation to serve as an employee in the maritime or maritime-related industry, and in times of national emergency, to serve as a Naval Officer aboard a U.S.-flagged merchant vessel.

The program requirements are as follows:

1. Prior to arriving at MMA, apply for the SIP Program and Midshipman status in the U.S. Navy Reserve
2. Complete a physical examination to verify eligibility (at Department of Defense expense)
3. Students must agree in writing to apply for, and accept if offered, a United States Navy Reserve commission
4. The application process takes up to two months and must be complete prior to the end of the first semester in order to be eligible for SIP during the Freshman year
5. Continuation in the program is based on continued eligibility (i.e. Minimum GPA 2.5 with satisfactory participation in SSMP program)

Required Courses

NV101 Introduction to Naval Science (Freshman Year)
NV222 Strategic Sealift Officer Course (Sophomore or Junior Year)
NV 402 Leadership and Ethics (Senior Year)
NV100 Naval Science Lab (Each semester in the program)

Minimum Obligation After Graduation
1. Complete a minimum of two weeks of active duty each year for a total of six years, in a merchant marine related billet, with pay and travel/food reimbursement
2. At least 150 days of sailing employment using one's U.S. Coast Guard License every calendar year for three years and maintain Coast Guard license for three additional years (First 6 of 8 year obligation)
3. Remain in the Inactive Reserve (with no other obligations) for an additional two years (Last 2 of 8 year obligation)

For information about the SSMP, USNR, and SIP Programs at Maine Maritime Academy, contact Commanding Officer, NROTC Unit, Maine Maritime Academy, (207) 326-2352, email mmanrotc@mma.edu.

Admissions

Maine Maritime Academy seeks academically qualified and motivated students interested in earning a bachelor's degree in Marine Engineering Operations, Marine Engineering Technology, Marine Systems Engineering, Marine Transportation Operations, Vessel Operations and Technology, Power Engineering Operations, Power Engineering Technology, Oceanography, Marine Biology, Coastal and Marine Environmental Science, International Business and Logistics, Interdisciplinary Studies; or an associate's degree in Small Craft Design, Small Craft Systems, or Small Vessel Operations. Applicants shall demonstrate ability and potential through their academic transcripts, extracurricular activities or work recommendations, and standardized tests.

MMA offers Early Action (EA) for admissions to applicants who submit all application materials by November 30 and will be notified of the application decision by February 1.

Regular Decision application materials must be submitted by March 1 and applicants will be notified of the application decision by April 1.

Applicants requesting Spring enrollment should complete the Early Action Common Application. Once submitted they should send a request to the Director of Admissions and Enrollment Management requesting consideration. Spring enrollment is generally difficult, however it is possible.

MMA is an exclusive member of the Common Application and the application will be available August 1. Visit the Admissions site at www.mainemaritime.edu to apply. There is a $50 application fee.

As early as possible after the initial submission of the completed Common Application form, the following items must be forwarded to the Director of Admissions and Enrollment Management:

1. A high school transcript including courses scheduled for the senior year (for those applying as a First Time Freshman). Applicants who have attended another post-secondary institution please refer to the Transfer Student section.
2. A letter of recommendation from your guidance/college counselor or another high school official.
3. Results of either the College Entrance Examination Board SAT or the American College Testing Program (ACT). MMA will superscore across multiple tests and both SAT's and ACT's.

Minimum academic requirements for undergraduate admissions consideration include:

MMA Major	English & Composition	Algebra I & II	Geometry	Advanced Math	Lab Biology, Chemistry, Physics	Foreign Language
Coastal and Marine Environmental Science	4 (years)	2	1	1*	2 of 3	2 desired
International Business & Logistics	4	2	1	1*	2 of 3	2 desired
Interdisciplinary Studies	4	2	1	1*	2 of 3	2 desired
Marine Biology	4	2	1	1*	2 of 3	2 desired
Marine Engineering Operations	4	2	1	1*	2 of 3	
Marine Engineering Technology	4	2	1	1*	2 of 3 (Physics preferred)	2 desired
Marine Systems Engineering	4	2	1	1**	2 of 3 (Physics preferred)	2 desired
Marine Transportation Operations	4	2	1	1*	2 of 3	2 desired
Oceanography	4	2	1	1*	2 of 3	2 desired
Power Engineering Operations	4	2	1	1*	2 of 3	
Power Engineering Technology	4	2	1	1*	2 of 3 (Physics preferred)	2 desired
Small Craft Design	4	2	1	1*	2 of 3	
Small Craft Systems	4	2	1	1*	2 of 3	
Small Vessel Operations	4	2	1	1*	2 of 3	
Vessel Operations & Technology	4	2	1	1*	2 of 3	

* Advanced Math – Trigonometry, Functions/Trigonometry (FST), Precalculus, or Calculus. ***Statistics is not considered.***
** Marine Systems Engineering requires pre-calculus or calculus.

Offer of Admission

All offers of admissions are extended with the understanding that records of academic achievement and personal conduct will remain at least at the same level as when the application

for admission was reviewed. Maine Maritime Academy reserves the right to rescind any offer of admission if it is determined that subsequent academic performance and/or personal behavior are deemed substandard or unacceptable.

Waitlist Policy

Maine Maritime Academy strives to meet its academic enrollment goals each year. The college's Office of Admissions acts on applications on a rolling basis until the goals for enrollment are met for the selected academic major or for the entire incoming class.

The college maintains a waitlist for those candidates who meet admission criteria, yet apply or deposit after program or enrollment capacity has been met. These candidates may:

- defer their application to the succeeding fall, or
- complete their application to determine acceptability to a waitlist for the coming fall, or
- request to change to another major that is still accepting applications.

In the event that the yield falls short of projections, Maine Maritime Academy will select students from the waitlist to fill vacancies in the academic program or incoming class. For more information, visit https://mainemaritime.edu/admissions/undergraduate-admissions/waitlist-faq/.

Fraudulent Reporting

Applicants must provide accurate and complete information on all application documents. Intentional omission or falsification of information during the application process will result in the immediate rejection of the application. Application misrepresentation includes, but is not limited to: (1) false, omitted, or misleading information on the application, medical or immunization forms or financial aid disclosures, (2) fake, forged, or altered transcripts, standardized test scores, or letters of recommendation.

Interview

Interviews are **NOT** part of the application process. The Admissions Office offers multiple types of visiting opportunities which include an overview presentation by an Admissions Counselor. These visits typically begin at 10:15 AM on most Mondays thru Fridays throughout the year. Please refer to the online Admissions Calendar for availability and to schedule. Maine Maritime Academy reserves the right to solicit confidential opinions from secondary school officials concerning a student's potential for success at MMA, both in the classroom and in our unique social environment.

Visiting

A visit to the Academy is strongly encouraged. Appointments to visit should be scheduled well in advance. With prior notice, the Admissions Office can provide on-campus overnight accommodations without charge for the applicant and his or her family. Email admissions@mma.edu to request accommodations, space is limited.

Admissions offers three Open Houses each year, two during the Fall semester and one in the Spring. The Spring Open House offers an Accepted Students breakout session. You can register for Open Houses and all visits online.

Transfer Students

Transfer students will be considered for advanced standing on the quality of their credentials. Applicants must present an official transcript of work completed at accredited colleges or universities; only courses with grades of C or better will be considered for transfer. The amount of transfer credit awarded will depend on the application of the courses to MMA's curriculum and will be evaluated by the Admissions and Registrar's Offices.

As early as possible after the initial submission of the Common Application Transfer form, the following items must be forwarded to the Director of Admissions and Enrollment Management: a high school transcript which includes graduation date (or GED), an official transcript which includes any current courses in progress at any post-secondary institutions attended, at least one letter of recommendation from a college professor or school official, official SAT or ACT scores, and a resume. Maine Maritime Academy reserves the right to solicit confidential opinions from school officials concerning a student's potential for success at MMA, both in the classroom and in our unique social environment.

Students who have been dismissed or resigned from the US Merchant Marine Academy, US Air Force Academy, US Military Academy, US Naval Academy, or a state maritime academy for improper conduct or pending disciplinary action shall not be eligible for admission to Maine Maritime Academy. Students who have been disenrolled for academic or resigned for reasons other than improper conduct or pending disciplinary action shall be provided an opportunity to apply for admissions at MMA. Along with all materials needed as a transfer student, they must also submit a letter from their previous Commandant staff, addressing their conduct (they left in good standing) and should provide copies of all shipboard training, STCW competencies and any other pertinent information.

Please note that it may not be possible to satisfy the unique academic requirements of the bachelor of science program in less than three years at Maine Maritime Academy. Transfer students are urged to email the Director of Admissions and Enrollment Management to discuss their specific situation.

Because of scheduling and prerequisite requirements, Maine Maritime Academy cannot guarantee transfer students that all courses will be available in the sequence desired for graduation in an accelerated (less than 4 years) program. Every effort will be made to accommodate transfer students, but first priority in scheduling courses will be for the standard 4 year BS degree. See the Academic Policies section for Priority for Course Registration.

For more information on transferring credits, see the Degree Requirements information in the Academic Program section.

International Applicants

In addition to completing the Maine Maritime Academy application, international students must have all non-U.S. diplomas, certificates, licenses, and transcripts evaluated by an approved clearinghouse. This clearinghouse verifies international transcripts for:

1. authenticity
2. grade and course equivalency
3. transfer credits awarded

Maine Maritime Academy recognizes the members of the National Association of Credential Evaluation Services (http://naces.org/members.html) for international transcript evaluation services.

An application for evaluation is available through their respective on-line service. This service does require a fee. The fee varies depending on which service you choose and what type of evaluation you request. Maine Maritime Academy requests prospective international students do an undergraduate course-by-course breakdown of credits, a calculation of credit hours, and a verification of authenticity.

The Test of English as a Foreign Language (TOEFL) http://www.ets.org/toefl or International English Language Testing System (IELTS) http://www.ielts.org/ is required of all international applicants whose native language is not English. An email request may be submitted to the Director of Admissions and Enrollment Management for written approval to use SAT or ACT scores in place of the TOEFL or IELTS.

Minimum TOEFL score required for admissions consideration: 550 on the paper-based test (PBT), 215 on the computer-based test (CBT), or an 80 on the internet-based test (IBT).

In lieu of the TOEFL, a student may submit the IELTS. Only the academic format is acceptable and a minimum score of 6.5 is required.

The TOEFL/IELTS requirement may be waived if the applicant is currently enrolled in full-time studies in the United States and will have completed two academic years of coursework in the United States immediately prior to enrolling at Maine Maritime Academy. These students must submit either SAT or ACT scores.

The TOEFL/IELTS requirement is waived for non-native English-speaking applicants who have received an undergraduate or graduate degree from an institution where English is the language of instruction. These students must submit either SAT or ACT scores.

International applicants must certify that sufficient funding is available to cover MMA fees, books, supplies, tuition and living expenses for the entire duration of their enrollment. International students must complete and submit the Financial Statement of Ability to Pay form found on their admissions portal. Unfortunately, international students are ineligible for any form

of federal financial assistance while enrolled, however they are eligible for institutional merit aid.

Advanced Placement, CLEP and JST

The college grants credit for appropriate courses through the Advanced Placement Examination of the College Entrance Examination Board. Transfer credit may also be obtained through the College Level Examination Program (CLEP) and the Joint Service Transcript (JST) system. Only official documentation will be used for credit evaluation.

Certified Birth Certificates

Prior to arriving on campus, enrolling students must submit a certified copy of their birth certificates with raised seal. This may be obtained from the town or city clerk of birthplace or from the respective state division of vital statistics. Birth certificates will be kept in the students academic file in the Registrar's Office. They are used throughout the students time at MMA for licensing, certificates, the TWIC process and for passport renewals. They are returned to the students after graduation.

Social Security Number

Maine Maritime Academy is committed to ensuring the privacy and confidentiality of student records and will not disclose the Social Security Number (SSN) for any purpose without the expressed written consent of the student, except as mandated by law.

Applicants are not required to include their Social Security Number on the application for admission but voluntary submission will minimize delays associated with other requested services within our campus administration. The number is used for (1) verifying student records, (2) identifying the student for purpose of financial aid eligibility, disbursement of financial aid loans, and other debts payable to the institution, (3) compliance with state and federal reporting requirements, (4) U.S. Coast Guard licensing, (5) background checks for security sensitive co-operatives, and (6) citizenship related documents. Students can upload a copy of their Social Security Card to their admissions portal.

Physical Examination

A physical examination is required for all regardless of major. Paper copies of the *Medical Evaluation & Physical Examination Form* are found in the students acceptance packet. The form fill *Medical Evaluation & Physical Examination Form* can also be found on their admissions portal. The examination should be conducted by the applicant's family physician, and the completed medical forms returned by the physician to the Director of Admissions and Enrollment Management. These results will be reviewed initially by the College's medical staff.

Immunization

A paper copy of the *Immunization Form* will also be contained in the students acceptance packet, and can also be found on their admissions portal. Questions regarding exemptions can be directed to the Student Health Services Department or the Director of Admissions and Enrollment Management.

Criminal History

The Common Application will ask all prospective students to supply disciplinary and criminal history information. Have you ever been found responsible for a disciplinary violation at any education institution you have attended from the 9th grade (or the international equivalent) forward, whether related to academic misconduct or behavioral misconduct, that resulted in a disciplinary action? Have you ever been adjudicated guilty or convicted or a misdemeanor or felony? These questions will not be used in the evaluation process of the applicant. With strict licensing requirements and certifications in all majors, detailed information will allow Maine Maritime Academy to assist prospective students early in the admissions process to ensure they can meet all curriculum, license, certification requirements and will be able to find relevant employment after graduation.

More information can be found at https://www.dco.uscg.mil/nmc/security-check/ and any questions can be sent to the Director of Admissions and Enrollment Management.

Personal Computing Requirement

All entering students are required to bring a laptop computer. Prior to enrolling, students will be provided with information regarding the specifications for their computers and any purchase/lease plans that may be available. The Cost of Attendance for Maine Maritime Academy does include a Laptop fee, however you are not required to buy a laptop from MMA or purchase a new laptop if your current laptop meets the specifications.

Applicants for U. S. Coast Guard License

Applicants for the U.S. Coast Guard unlimited license program as a Third Mate or Third Assistant Engineer must meet the requirements governing physical condition, citizenship, and prior preparation. These requirements cannot be waived unless special permission is obtained from the appropriate federal office or agency.

Except by special condition, applicants desiring a US Coast Guard license must meet the following requirements:

1. A student must be a high school graduate or must have earned an equivalency certificate.
2. A student must be a citizen of the United States.
3. Applicants must meet the physical requirements established by the United States Coast Guard for an unrestricted license as a ship's officer. They are as follows

Height: no limitation prescribed
Weight: proportional to height and age

Vision/Mate: For an original license as mate, the applicant must have correctable vision to at least 20/40 in each eye, and uncorrected vision of at least 20/200 in each eye. The color sense must be determined to be satisfactory when tested by any of the following methods:

a. Pseudoisochromatic Plates (Dvorine, 2nd edition: AOC; revised edition or AOC-ERR; Ishihara 16-, 24-, or 38- plate editions)
b. Eldridge-Green Color Perception Lantern
c. Farnsworth Lantern
d. Keystone Orthoscope
e. Keystone Telebinocular
f. SAMCTT (School of Aviation Medicine Color Threshold Tester)
g. Titmus Optical Vision Tester
h. Williams Lantern

Vision/Engineer: For an original license as engineer, the applicant must have correctable vision of at least 20/50 in each eye and uncorrected vision of at least 20/200 in each eye. Applicants need only to have the ability to distinguish the colors red, green, blue, and yellow. A waiver will be required for those students seeking a USCG license whose vision is between 20/200 and 20/800. Questions concerning the waiver process should be directed to the Academy's Director of Health Services at (207-326-2295, or ext. 2295).

General Health: Applicants for the license programs must be free of any disease or constitutional defect that would compromise shipboard safety while at sea. Contact the Academy's Student Health Services Office for clarification of specific disorders that may disqualify a student from a license program.

Applicants who applied for an NROTC scholarship or for admission to a service academy may request the Department of Defense Medical Review Board to forward a copy of their complete physical examination report to Maine Maritime Academy. The student should advise the Maine Maritime Academy Admissions Office that a physical report will be forwarded. In rare cases, candidates accepted for NROTC scholarships may not be fully qualified for the maritime license program.

An applicant accepted into a USCG license program will be required to complete another physical examination on campus during his/her senior year prior to taking the USCG exam.

Drug Testing

All students enrolled in undergraduate degree programs at Maine Maritime Academy are required to participate in the random drug testing program. Maritime Academy complies with Title 46 Code of Federal Regulations 16.230 mandating periodic, random, pre-employment, post-incident, and reasonable cause drug testing for all students and employees whose position require this testing. All students and employees, who act as part of the crew of any Academy

vessel, both documented and undocumented, shall be subject to the policy. Federal law requires periodic or random drug testing of students prior to training cruises, cadet shipping, or taking of a US Coast Guard physical examination. Additionally, since drug testing and "zero-tolerance" policies have become a fact of life in the industries in which most of our students will be working, as co-op students and as employees, it is the Academy's policy that any student pursuing an Academy Cooperative Education Experience (COOP) must participate in the random and pre-employment drug testing program. Additionally, any students who are in a disciplinary status for any violation of our drug or drug testing policies may be subject to increased random drug testing.

Readmission Policy

When considering a return to Maine Maritime Academy, it is important to understand that former students may have a difficult time gaining readmission. Our stringent academic requirements, specialized training and enrollment limits cause scheduling issues that impact many areas, including the advancement of enrolled students who are successfully progressing through their program of study.

Your resignation or failure to meet established academic or disciplinary standards has raised serious concerns as to your ability to complete MMA's rigorous program. Even if you complete all the requirements for readmission, you may not be the strongest candidate competing for a vacancy within your major. Admission authorized by the Academic Board will be subject to space availability in the class for which admission is sought.

Favorable consideration will be based upon evaluation of the reasons for previous separation, evidence of improved academic standing, improved conduct, and increased personal maturity and willingness to accept responsibility for one's actions.

All former students who have resigned, been disenrolled, or not been enrolled for two consecutive academic semesters, and who wish to apply for readmission, must submit an on-line **application for readmission** to the Director of Admissions and Enrollment Management. The application will be considered by the Readmission Board which will recommend decisions to the Provost. Further information about the readmission process is available from the Provost's office or the Admissions office.

Students may be readmitted at the start of the fall semester, the spring semester, annual training cruise, cadet shipping, or cooperative education; however, a student planning to re-enter for a summer program may need to meet prerequisites and attend training sessions on campus and thus should consult with the office overseeing the summer program regarding such requirements. An **application for readmission** **and all supporting documents (see below)** must be received by MMA Admissions Office by the following dates for consideration:

- Fall semester – May 1
- Spring semester/Summer Term – October 15

The application must be accompanied by such additional information as required by the Director of Admissions and Enrollment Management to establish justification for favorable consideration. **It is the applicant's responsibility to ensure all required items are received by the Office of Admissions by the close of business EST by the deadline.**

Applying for readmission requires:

1. a completed **application for readmission** and $50 fee prior to the deadlines stated above;
2. a letter of intent noting why you wish to return to Maine Maritime Academy and a brief description of what you've been doing since you left;
3. a typed resume to include a description of what you have done during your absence. Include, for example, employment, schools attended, courses taken;
4. Two (2) letters of recommendation from a current or recent faculty member or employer; *
5. an official transcript from each school attended since last enrolled at MMA;
6. confirmation from MMA's Business office that you are in satisfactory financial standing with the Academy.

NOTE: Disciplinary suspensions may need to provide additional documentation as outlined in their suspension letter.

Forward all materials to:
Director of Admissions and Enrollment Management
Maine Maritime Academy
Leavitt Hall
Castine, ME 04420

* These items must be submitted directly to the Admissions Office by the person writing the letter of recommendation, must be on letterhead, and can be emailed to admissions@mma.edu. The letters cannot be forwarded by the applicant.

Students seeking readmission will be required to participate in a conference call with the Readmission Board at the time the application is reviewed. Once the application is complete, the Admissions Office will contact you with specific arrangements concerning your conference call.

Special Circumstances

- Students seeking readmission who wish to change their major may indicate the desired new major on the application for readmission. Approval of major change will be considered on a space available basis. If approved, this procedure eliminates the need for the student to complete a Change of Major request after enrollment.
- Students who have attended other institutions of higher learning since their last enrollment at MMA must have an official transcript from each institution attended submitted directly to the Director of Admissions and Enrollment Management. These transcripts must be received and satisfactory performance must be indicated before approval for registration will be granted. **Failure to report any schools attended will**

result in your application not being accepted. In cases where the courses are in progress and transcripts will not be available in time, a progress report from the course instructor(s) must be submitted. If readmitted, a student may request a transcript review to determine whether courses completed at other institutions can be transferred to MMA.

- Students who have been suspended as a consequence of disciplinary infractions may only be considered for readmission after a period of documented exemplary good conduct. A student who has withdrawn with judicial action pending must resolve the disciplinary issue prior to applying for readmission.
- Students who have been disenrolled for academic failure will be considered only upon evidence of improved academic potential.
- Students who resign from the Maine Maritime Academy/Bath Iron Works Associate Degree programs are not subject to this policy and should consult their agreement regarding readmission.

MMA will try to meet the returning students' course selection requests. However, pre-registration by currently enrolled students may result in desired courses being at capacity. Maine Maritime Academy cannot guarantee on-campus housing for readmitted students.

Upon Readmission

A $250 enrollment deposit is required of all returning students to reserve their position in the class. Failure to submit the deposit by the appropriate date may result in loss of place.

All students must submit an updated medical evaluation and physical examination form to the Director of Admissions and Enrollment Management. Depending on how long you have been out of school, you may be required to have additional immunizations. Should you have additional questions regarding your immunizations, e-mail HealthServices@mma.edu. You must satisfy all medical and immunization requirements prior to registration.

Readmission Board

Applications for readmission by students who have been disenrolled for academic reasons, resigned, took an extended medical leave, or were involuntarily withdrawn are reviewed by the Readmission Board which is generally composed of members of the Academic Board. Several staff serve in ex-officio roles on the board, such as a the Director of Residence Life and Student Activities. The Dean of Faculty serves as chair.

Applications for readmission by students who were suspended for judicial reasons are reviewed by a subset of the Readmission Board, called the Judicial Readmission Board, composed of:

- Dean of Student Services (serves as chair)
- Commandant
- Student-Athlete Affairs Coordinator
- Department Chair (of student being heard)
- Dean of Faculty

The College Counselor attends the hearings as an ex-officio member.

Leave of Absence

Students may be granted a leave of absence (LOA) for financial or personal reasons not related to academic or disciplinary issues. A leave of absence for a specific period of time — not to exceed one year — will be granted by the Registrar upon the endorsement of the Dean of Faculty and, for Regimental students, the Commandant of Midshipmen. A LOA for medical reasons will require clearance from health services or counseling as part of the readmissions application process.

Requests to return from a leave of absence can be made through the Director of Admissions and Enrollment Management by completing the Application for Readmission.

Students may return to MMA at the start of the fall semester, the spring semester, annual training cruise, cadet shipping, or cooperative education. The request to return must be completed by the following dates for consideration:

- Fall semester – July 1
- Spring semester/Summer Term – October 15

When considering a return to Maine Maritime Academy, it is important to understand that former students may have a difficult time gaining readmission. Our stringent academic requirements, specialized training and enrollment limits cause scheduling issues that impact many areas, including the advancement of enrolled students who are successfully progressing through their program of study.

Returning students who have successfully completed the readmission process must register with the Registrar's office. In order to do so, they must be accepted, pay their deposit, and have contacted all necessary offices on campus prior to their return. The following dates apply:

- Students returning for the Fall term can register in July. After August 1 a $100 Late Registration Fee will apply.
- Students returning for the Spring term can register between December 1 and December 10. After December 10 a $100 Late Registration Fee will apply.

Affording MMA

The decision to attend college requires both a personal and financial commitment. Maine Maritime Academy believes that this important undertaking should not be constrained by financial considerations. The college strives to make a Maine Maritime Academy education affordable to all qualified applicants and enrolled students whenever possible.

More than seventy percent of our students currently receive need-based financial aid. Federal, State, and campus-based programs are available to help defray the cost of education. The typical length of matriculation for on-campus, residential students is 4 or 5 years for a B.S. degree, 2 years for an A.S. degree, and 1 year for a M.S. degree. Maine Maritime Academy achieves a graduation rate for all first-time B.S. students of 69% , graduating within six years (4 year average based on 2010-2013 cohort years) and as reported to the Integrated Post-Secondary Education Data System / IPEDS (Graduation Rates 2018-19 Survey). Over 90% of MMA students enrolled in the unlimited license programs successfully pass the U.S. Coast Guard license exam by graduation.

Based on the graduating class of 2019, the average student indebtedness was $56,897.

Any enrolled student who qualifies for aid will receive it to the extent that funds are available. The amount of the award is dependent upon financial need and, therefore, reflects the family's or individual's financial circumstances. Maine Maritime Academy treats all such information as confidential.

In general, you are eligible for undergraduate financial aid at Maine Maritime Academy if you:

1. Are a U.S. citizen or an eligible non-citizen
2. Are making satisfactory academic progress as defined in the catalog
3. Are not in default on a prior loan or do not owe a refund on a grant or scholarship
4. Registered with the Selective Service (males only)
5. Demonstrate financial need.

Federal, State, and campus aid is awarded on the basis of need. Need is the difference between your costs (tuition, room, board, books, supplies, and personal expenses) and the amount that you and your family are expected to pay as determined by a standard formula established by Congress and regulated by the Department of Education. This amount is called the Expected Family Contribution (EFC). Thus, COST – EFC = NEED. The basis for determining the expected family contribution at Maine Maritime Academy is the Free Application for Federal Student Aid (FAFSA), provided by the U.S. Department of Education.

Students applying for financial assistance should submit a FAFSA to the Federal Student Aid Programs Office as soon as possible after October 1. Applications are available from your high school guidance office or Maine Maritime Academy, or online at www.fafsa.ed.gov. Re-application for financial aid is required for each academic year that the student wishes to be considered for financial assistance. Parent and student tax returns and a verification worksheet may be required. Call or email the Financial Aid Office with any questions regarding the financial aid process (207) 326-2205. The Financial Aid Office is located in Leavitt Hall.

Sources of Aid

Private Scholarships

Private organizations offer financial assistance to thousands of qualified individuals each year. High schools, community organizations, professional associations, businesses, and industries frequently offer scholarships to students. Some are based on need or scholastic achievement, but many are not. High school guidance counselors and public libraries have lists of organizations offering these scholarships, and there are several free scholarship search sites on the Internet.

State Scholarships

Most states administer scholarship programs. Check with your guidance counselor to find out how to apply for these funds. State administered awards are generally designed to help full-time, undergraduate students working toward their first degree, and who have financial need. In many state programs, only the FAFSA is required.

Federal Financial Aid Programs

Supplemental Educational Opportunity Grants (SEOG) are awarded by the college to undergraduate students who demonstrate extraordinary financial need. The award is issued first-come, first-serve based on need. Funds are limited.

Students with demonstrated financial need who are awarded Federal College Work-Study funds may work up to 20 hours each week, on campus or in community service, during the academic year. Specific work schedules are arranged around class time. Work-Study awards generally range from $500 to $1,500 per year. Students will be paid at least minimum wage. Pay range is determined by the student's supervisor.

Students may become eligible for the Federal Pell Grant by completing the FAFSA each year until the completion of the bachelor's degree. Award amounts vary each year and are determined by the Department of Education.

Stafford Loans (subsidized) are available to students with verified need enrolled in a degree-seeking program. Loan funds are disbursed in two payments. A student with demonstrated need who is enrolled on at least a half-time basis is eligible for the following Stafford Loan amounts: $3,500 in the first academic year of an undergraduate program; $4,500 in the second year; and $5,500 per academic year thereafter until successful completion of an undergraduate degree. The lifetime maximum Stafford Loan amount is $23,000 for undergraduates; graduate students demonstrating financial need may borrow up to a maximum amount of $138,000, including loans received at the undergraduate level. Unsubsidized Stafford Loans, may require interest payments while the student is in college, are available in the same amounts for students who do not qualify for the Stafford loan (determined by the FAFSA). Graduate students are eligible for $20,500 in unsubsidized stafford funds per year. Undergraduate students are eligible for $2000 in unsubsidized stafford funds per year.

A variety of parent and other alternative loans are available. Contact the Financial Aid Office for specific recommendations.

Veteran's Tuition Benefits at MMA

Veterans

Maine Maritime Academy will charge in-state tuition rates to all current and former members of the US Armed Forces who were honorably discharged, regardless of whether or not they are receiving benefits and without regard to their date of discharge.

Veterans' Dependents

Effective July 1, 2017, an individual who is a "covered individual" as defined in 38 U.S.C. § 3679(c)* will be assessed in-state tuition rates at Maine Maritime Academy. Further, once the in-state tuition rate is applied to the eligible individual, it shall remain in effect until the individual completes their academic program, even after GI Bill® benefits have been exhausted, transferred, or are otherwise expired.

A "covered individual" is defined as:

- A veteran who lives in the state in which the institution of higher learning is located (regardless of his/her formal state of residence) and enrolls in the school within three years of discharge or release from a period of active duty service of 90 days or more.
- A spouse or child using transferred Post-9/11 GI Bill® Benefits (38 U.S.C. § 3319) who lives in the state in which the institution of higher learning is located (regardless of his/her formal state of residence) and enrolls in the school within 3 years of the transferor's discharge or release from a period of active duty service of 90 days or more.
- Any student as described above will continue with the benefit while he or she remains continuously enrolled at MMA (other than during regularly scheduled breaks between courses, semesters, or terms). The person must have enrolled at MMA prior to the expiration of the three year period following discharge or release as described above and must be using educational benefits under either chapter 31 or chapter 33 of title 38, U.S.C.
- Anyone using transferred Post-9/11 GI Bill® benefits (38 U.S.C. § 3319) who lives in Maine while attending MMA (regardless of his/her formal state of residence) and the transferor is a member of the uniformed service who is serving on active duty.
- A spouse or child using benefits under the Marine Gunnery Sergeant John David Fry Scholarship who lives in the state in which the institution of higher learning is located (regardless of his/her formal state of residence).

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at https://www.benefits.va.gov/gibill.

Please contact the Registrar's Office at 207-326-2441 or laura.nason@mma.edu for information regarding necessary documentation to confirm your status as a "covered individual", a Veteran,

or an active duty service member, to apply for Yellow Ribbon Program benefits, or if there are additional questions.

Yellow Ribbon Program Participation

MMA has 5 scholarships for non-Maine resident students who have had 100% of benefits transferred to them from a spouse or parent Veteran that has been discharged for more than 3 years prior to the first date of the Dependent's enrollment at MMA. These are offered on a first come, first served basis and provide an additional scholarship equivalent to the difference between the In State tuition rate and the spouse's or dependent's Out of State or Regional Tuition rate after the Yellow Ribbon Program payment has been received by MMA for that student. http://www.benefits.va.gov/gibill/yellow_ribbon.asp

Tuition Waivers

Veteran's Dependent Waiver

Per Maine law, tuition, mandatory fees and lab fees will be waived for eligible orphans, widows & widowers of veterans as well as spouses and children of veterans who are disabled, missing in action, (most often referred to as Chapter 35 benefits eligibility). Initial eligibility is determined by the Veterans Affairs Office of the State of Maine. Students must be enrolled in an associate's, bachelor's or master's degree program. The tuition waiver may be reduced by an amount necessary to ensure that the value of this waiver, combined with all other grants and benefits received by the student, does not exceed the total cost of education. See MRSA, Title 37-B, Section 505, as amended 2008, P.L. c.521 for details.

Institutional Scholarship, Grant, and Loan Programs

Limited institutional scholarships, grants, and loan programs are available through the generosity of friends and alumni of Maine Maritime Academy, each with criteria developed by donors and awarded annually to students with financial need; academic progress also may be taken into consideration. In order to be considered for such funds, a student must submit a FAFSA by February 1 and submit the MMA Scholarship Application Form by February 1. Recipients will be expected to write thank you notes to the donors.

Monthly Payment Program

The Academy has an agreement with Nelnet Campus Commerce which offers a monthly payment plan. Nelnet Campus Commerce offers a 10-month plan with equal payments due July 1 – April 1. This plan can be used to cover all MMA costs or to supplement final costs after financial aid. Nelnet Campus Commerce offers a 10-month plan in coordination with loans as well, for those who want to lower their monthly payments. Information is sent directly to entering first year students from Nelnet Campus Commerce, or contact the Business Office at (207-326-2243) for details. The Nelnet Campus Commerce website is mycollegepaymentplan.com for those who would like to sign up on line.

NROTC College and Scholarship Programs

The Naval Reserve Officer Training Corps (NROTC) Program is divided into two major categories of students, those who are on Navy scholarship (Scholarship Program) and those who are not (College Program). Four-year Navy or Marine Corps ROTC scholarships are awarded to prospective first-year college students annually by the Naval Service Training Command on a competitive basis nationwide. These scholarships provide full tuition, fees, a $375 book allowance, uniforms, and a $250-$400 subsistence allowance per month depending on the year of the student. Four-year NROTC national scholarship awardees who attend Maine Maritime Academy receive either free room and board while living in Curtis Hall or a $1,000 stipend per semester if living off campus.

NROTC students who are not on scholarship are enrolled in the NROTC College Program. College Program students receive uniforms and books for Naval Science courses for the entire time they are enrolled, and a subsistence allowance of $350 per month during the junior year and $400 per month during the senior year if selected for Advanced Standing. College Program students may compete for scholarships during their first three years at college. If selected for scholarship, College Program students will receive the same benefits as four-year national scholarship recipients, but not the room and board gratuity from MMA. The length of these scholarships (3 or 2 years) is dependent on when the student is selected for the scholarship. College Program students incur no obligation to the Navy until they begin their junior year or are awarded and accept a scholarship.

NROTC graduates are eligible for active duty commissions in the Navy or Marine Corps. Please refer to the section on Naval Service Commissioning Programs in this catalog for more information. Accepting a NROTC scholarship after accepting standard financial aid may result in an adjustment of financial aid funds.

Strategic Sealift Midshipman Program/U.S. Navy Reserve Program

All physically qualified Maine Maritime Academy students enrolled in the U.S. Coast Guard unlimited license program, and who are between the ages of 17 and 25, are eligible to compete for this reserve program. The Maritime Administration provides a Student Incentive Payment (SIP) with the following parameters:

If enrolled as a freshman: $2,000 per semester for freshman and sophomore years, $6,000 per semester for junior and senior years.
If enrolled as a sophomore: $4,000 per semester for sophomore year, and $6,000 per semester for junior and senior years.
If enrolled as a junior: $8,000 per semester for junior and senior years.

Midshipmen status requires acceptance of U.S. Navy Reserve enlisted status while participating in the SSMP. Midshipmen who accept SIP are obligated to apply for and accept, if offered, a commission in the U.S. Navy Reserve.

Please see the section on Naval Service Commissioning Programs in this catalog for more information.

These funds are considered a resource and are expected to be used for educational funding. Financial aid awards may need to be revised after a student accepts the SSMP agreement.

Regular Student Wage and Off-Campus Employment Programs

Students who do not receive funds under the Federal College Work-Study program may seek employment on campus up to 20 hours each week during the academic year. On campus employment for regular student wages is limited. A website is available where jobs are posted on a regular basis. (http://studentjobs.mma.edu/)

Financial Aid Policies

Independent Student Status

To qualify for independent status, a student must be able to meet the Department of Education Criteria for Independency.

If a student answers yes to any one of the following questions, the student IS automatically independent. If the student answers No to all of the following questions, the student is NOT independent:

1. Will you be 24 years of age prior to January 1 of the academic year you are going to enter college?
2. Will you be working on a Masters Degree?
3. Are you married?
4. Do you have dependent children that receive more than half of their support from you?
5. Do you have dependents (other than your children or spouse) who live with you and who receive more than half of their support from you?
6. Are you a veteran of the U.S. Armed Forces? (Served two years of active duty?) A DD-214 will be required.
7. Are you currently serving on active duty in the U.S. Armed Forces for purposes other than training?
8. At any time since you turned 13, were both your parents deceased, were you in foster care or were you a dependent or ward of the court?
9. Are you or were you an emancipated minor as determined by a court in your state of legal residence?
10. Are you or were you in legal guardianship as determined by a court in your state of legal residence?
11. At any time on or after July 1, 2017, did your high school or school district homeless liaison determine that you were an unaccompanied youth who was homeless?

12. At any time on or after July 1, 2017, did the director of an emergency shelter or transitional housing program funded by the U.S. Department of Housing and Urban Development determine that you were an unaccompanied youth who was homeless?
13. At any time on or after July 1, 2017, did the director of a runaway or homeless youth basic center or transitional living program determine that you were an unaccompanied youth who was homeless or were self-supporting and at risk of being homeless?

Documentation may be required for any yes answers.

The Director of Financial Aid, using professional judgment, may consider a student with documented unusual circumstances as independent. A parent's unwillingness to contribute to his/her child's education is not grounds for independent status.

Falsification

Parents and students must supply accurate and complete information on all financial aid applications. Willful falsification or omission of information is a criminal offense punishable under Maine and federal laws. Intentional omission or falsification may result in withdrawal of all financial assistance or repayment of any assistance granted by the Academy's Financial Aid Office.

Director of Financial Aid Discretion

In some cases, the Director of Financial Aid may adjust the expected family contribution derived from the federal methodology system if the officer has documented reason to believe that the original contribution calculated does not accurately reflect the student's or parents' current ability to contribute to the cost of attendance. This is called a Request for Review and will require full documentation.

Financial Aid and Satisfactory Academic Progress Policy

Students attending Maine Maritime Academy and receiving financial assistance are expected to maintain academic progress towards a degree. The Satisfactory Academic Progress Policy is in compliance with Federal Student Aid Regulations.

What is Satisfactory Academic Progress (SAP) Policy?

Federal financial aid regulations require financial aid recipients to make progress toward earning their degree, stay above specific GPA minimums and to complete the degree within a maximum time-frame. You can lose eligibility if you are not doing well in your classes and/or frequently withdraw from classes and/or if it is taking you a very long time to earn your degree. If you are not meeting the minimum standards, even if you are allowed by our academic dean to continue your enrollment, you will have to do so without the benefit of financial aid.

What is Expected?

Your progress is measured at the end of the spring semester. If you are not making satisfactory progress, you will be notified, with a letter, from the Financial Aid Office, regarding the loss of your eligibility for financial aid effective the following semester or for the semester in which you have applied for aid.

The Expectations are:

Qualitative Measurement

Degree seeking students are required to maintain a cumulative grade point average based on the number of credits earned.

Credits Earned	Minimum GPA
0-24	1.80
25-48	1.90
49+	2.00

Quantitative Measurement

Degree seeking students are required to complete a specific percentage of credits that are attempted.

Credits Attempted	Percentage Earned
1-24	50%
25-54	55%
55-84	62%

Maximum Time Frame – Cumulative Credit Hours Limit

The maximum time frame allowed for you to complete your degree is defined as 150% of the credits need for your degree. Attempting more than 150% of the credits needed without completing your degree will result in you failing to meet the academic progress standards. For example, you enroll in a degree program that requires 120 credits, you can attempt up to 180 and remain in compliance with this policy. If more than 180 hours are attempted, the stands of the policy are no longer being met.

Transfer Students

If a student earned credits at a previous institution(s) that will be accepted toward his/her degree, those accepted hours will be included as attempted and completed hours for the purposed of satisfactory progress.

Attempted Hours

For the purpose of this policy attempted hours include: withdrawals, audited classes, incompletes, repeats, failed classes and classes taken for credit.

Appeal Process
Students have the right to appeal a financial aid decision if they believe they have special circumstances that have impacted their academic progress. Students may submit the SAP Appeal Form, along with supporting documentation to the Financial Aid Office, Leavitt Hall, Castine, ME 04420.

Tuition and Fees

Tuition

Tuition rates normally are established each February for the next academic year by the Board of Trustees. Students who graduate from MMA with a bachelor's degree are eligible for the MMA Alumni Advantage tuition discount toward one of two Master of Science degrees offered at MMA. Click here for more additional information.

For the Fall semester of 2020, undergraduate tuition is as follows:

$5,515 In-State
$8,275 New England Regional*
$12,705 Out-of-State

Click here for a complete cost of attendance worksheet.

Course Overload Fees:

$370/credit In-State
$560/credit New England Regional*
$845/credit Out-of-State

*The Academy is a member of the New England Regional Student Program (NERSP), and, therefore, eligible students from New England states that do not have similar academic programs pay the Maine in-state tuition rate plus 50 percent. Residents of Puerto Rico also are eligible.

Under the NERSP, the following MMA majors are available to students from the states indicated:

- Marine Biology: CT
- Marine Biology/Small Vessel Operations: CT, MA, NH, RI, VT
- Oceanography: CT, MA, NH, VT
- Oceanography/Small Vessel Operations: CT, MA, NH, RI, VT
- Vessel Operations & Technology: CT, MA, NH, RI, VT
- Small Vessel Operations: CT, MA, NH, RI, VT
- Power Engineering Operations: CT, NH, RI, VT
- Power Engineering Technology: CT, NH, RI, VT
- International Business & Logistics: CT, NH, RI, VT

- Interdisciplinary Studies: CT
- Marine Systems Engineering (Non-License Track): CT, MA, NH, RI, VT
- Coastal & Marine Environmental Science: CT, MA, NH, RI, VT
- Coastal & Marine Environmental Science/Small Vessel Operations: CT, MA, NH, RI, VT

Students from Connecticut, Rhode Island, New Hampshire, Vermont, and Puerto Rico who enroll in one of the following four majors qualify for in-state tuition rates. These four majors lead to a U.S. Coast Guard unlimited license and require membership in the Regiment of Midshipmen. An Admissions Office representative can determine if a student qualifies for these majors. See the catalog section on Student Life for more information on the Regiment of Midshipmen and the section on Admissions for the requirements for applicants to the U.S. Coast Guard license program.

- Marine Transportation Operations
- Marine Systems Engineering (License Track)
- Marine Engineering Operations
- Marine Engineering Technology

Students who seek to qualify for in-state tuition can find the Academy's residency policy here.

Room and Board

Room fees are based on double occupancy. Single rooms may be requested through the Student Affairs Office. Requests will be granted only when double occupancy is not required by the Academy to satisfy housing demands. A student will not be charged the single room rate if the student has not applied for a single room and has followed proper procedures but is assigned a single room for the convenience of the Academy.

Students who qualify for off-campus living may cancel the reservation for a room in Curtis Hall by making written application to the Associate Director of Student Services no later than two weeks after the beginning of each semester. Those students who cancel the reservation will be billed a $200, $400, or $600 fee and/or charged on a pro-rated basis.

The Academy reserves the option to place three students in a room in Curtis Hall during the fall and spring semesters. Students will receive an adjustment in room rates at the end of the semester based upon the amount of time that triple occupancy occurred.

All resident students who pay a room fee are required to participate in a board plan. Board fees are billed each semester. Three meal plan options are available. There is a fourth plan that is available for commuter students only. The dining room is open to all resident students during meal hours on an unlimited basis.

In those cases where a medical professional recommends a special diet for a student, an individualized dietary accommodation plan may be appropriate; for more information contact the Accessibility Services office.

Non-resident students may gain access to the dining room by paying an individual meal charge at the door or may purchase a meal card using the "point" system.

Room and board charges (as of the Fall semester 2020) for students living on campus are as follows:

- $5,360 All on-campus students with a meal plan.

(Optional) Board Plan for commuter students only:

- $1060

Fees for Academic Year 2020-2021:

The following annual fees are required of all students:

Application Fee: (charged only once, unless reapplying)	$50
Administrative Fee:	$722
Student Life Fee:	$230
Enrollment Deposit:	$250
Technology Fee:	$1,136
Recreation Fee:	$206
Energy Fee:	$600
Medical Services Fee:	$134

The following fees may be required annually, or at specific course registration time:

Unlimited License Program Participation	$7,500
Cruise Participation, T.S. State of Maine (eligible, non-license track students)	$7,500
Cruise Participation, VOT	$1,800
Late Registration Fee	$100
VOT/SVO Majors Fee	$1,074
Marine Biology and Oceanography Majors Fee	$952
Co-op Educational Experience	$1,074
Leadership Development Program Fee	$400
Medical Insurance*	$2,183

*All matriculating undergraduate and graduate students are required to be enrolled in a medical insurance plan. Each student must provide proof of insurance and/or participate in the Academy-sponsored medical insurance plan. A brochure outlining the various benefits of this plan is

mailed to all matriculating students with the fall term bill in July. Students should note that the rejection deadline is August 15 in order to have the charge removed from the bill. Students and/or their families are responsible for notifying Health Services of any changes. These processes are all done through the portal.

In addition to the fees listed above, the Academy charges certain fees relating to students' specific courses. A complete schedule of fees is available in Room 212, Leavitt Hall. Current examples include the following:

Bridge Simulator Lab Fee (per credit hour)	$180
Tug/Barge Operations Course Fee	$1,565
Fire Training	$780
Physics and Chemistry Courses Lab Fee	$330
Welding and Machine Tool Ops. Courses Lab Fee	$385
Skin & Scuba Diving Course Fee	$460
NS499 License Prep Course Fee	$165

U.S. Coast Guard User Fees

Students pursuing a U.S. Coast Guard license are advised that the Coast Guard charges user fees for life boat exams, license application evaluations, and documents (i.e., license and Merchant Mariner's documents). These fees are not included in the aforementioned tuition and fees requirements and are paid directly to the Coast Guard as required.

TWIC Card Fee

TWIC (Transportation Workers Identification Credential) cards are required of all students in the unlimited license program to participate in training cruises and cadet shipping, and for some other students for some cooperative assignments. Arrangements for obtaining a TWIC card are made through the Registrar's Office early in the fall of the freshman year. Individuals wishing to obtain their TWIC card on campus will need to pay a processing fee of $35.25 to the Maine Maritime Academy, Cashier's Office or the charge may be placed on their student account.

Summary of Additional Requirements and Fees Students May Encounter

U.S. Passport fee by mail (renewing or replacing only)	$110
U.S. Passport fee in person (required for first time applicants)	$135
U.S. Passport Photos	$15-$20
TWIC	$125.25
Merchant Mariner Credential	$140.00
USCG License Issuance Fee	$145-$255

Deposits

Deposit

An enrollment deposit of $250 is required of all degree seeking students upon their acceptance. This deposit is applied as a credit on the first bill. This deposit is refundable if Admissions is notified of the candidate's decision to withdraw their acceptance on or before May 1st.

Payment and Refund Policies

Payment Schedule

In determining the amount due each semester, the student may subtract any scholarships, loans, grants, or payment plans under which payments are made directly to the Academy by the sponsoring organization and for which the Academy had been notified in writing of the student's eligibility and acceptance.

It is the policy of Maine Maritime Academy that all expenses, including tuition, fees, room, board, and deposits are due and are to be paid by each student on or before the dates shown in the following schedule:

Semester	Payment Due Date
Fall Semester	Tuition deposit upon acceptance or May 1
Fall Semester	August 1
Spring Semester	December 15

Payments sent by mail should be mailed at least five business days in advance of the due date to assure receipt on or before the due date. Those choosing to pay by Direct Debit (a.k.a. ACH or Electronic Check) from a checking or savings account at no additional cost or those choosing to pay by Mastercard, VISA, Discover, or American Express (with a 2.75% fee added to credit card transactions) may do so by signing onto the portal and clicking "Make a Payment". This takes you to the secure website of CashNet, the company which processes these types of payments on behalf of Maine Maritime Academy.

As part of the formal registration process each semester, student accounts must be paid in full, or satisfactory arrangements to make payments must be approved by the Finance Office, before students enter classes at the beginning of a new semester. Failure to follow this process may result in an additional registration fee. Students with unresolved outstanding balances may be disqualified from participation in all academic and non-academic activities and may be prevented from entering the residence hall or utilizing their meal cards.

Late Payment Fees

The college may charge interest on all unpaid accounts beyond a 30-day grace period at the rate of one percent per month or 12 percent per annum.

Students who disenroll with an unpaid balance are responsible for making payment arrangements with the Finance Office upon departure. Additional collection charges may be assessed if a satisfactory plan is not met monthly, or if turned over to an outside collection agency.

Student Accounts

Upon payment of the enrollment deposit, an account is established in the Finance Office for the student, using the student's name and an assigned number as the account identification. All checks should show the student's name and identification number on the face of the check in order to assure proper credit to the student's account. Normally, students will receive an itemized statement of account in July for the fall semester and in December for the spring semester. Students are encouraged to check their billing details on the portal on a regular basis especially for changes in charges or credits.

If for any reason a student account is overpaid, any excess may be refunded upon written request or may be left on account for the next semester. All refunds will be paid by check within 10-14 days following a request.

Payment Plans

Parents and students who prefer to pay for their educational expenses in monthly installments may want to consider a payment plan with Nelnet Campus Commerce available for students of Maine Maritime Academy. This payment plan can be accessed at mycollegepaymentplan.com. Refer to the section entitled Extended Payment Program under Sources of Aid.

Veterans and ROTC Students

Veterans and ROTC students who receive allowances directly from the government are responsible for payment of their fees and charges on the same basis as other students. Maine Maritime Academy administers this policy in compliance with 38 USC 3679(e).

Withdrawal

Students withdrawing from the Academy must complete the formal withdrawal procedure as prescribed by the Vice President for Academic Affairs. Failure to follow the prescribed procedures, especially at the end of a semester, may result in additional charges until the student is officially disenrolled.

Refund Policy

Students who voluntarily withdraw from the Academy are entitled to a refund of tuition, fees, and room and board charges, according to the following schedule:

First Year Students:

- After beginning of orientation (but prior to beginning of classes): 100 percent of tuition and fees, plus 95 percent of room and board.

All Students:

- Withdrawal within first day of classes up to end of second week: 90 percent of tuition, room and board;
- Withdrawal during third or fourth week: 50 percent of tuition, room and board;
- Withdrawal during fifth or sixth week: 25 percent of tuition, room and board;
- Withdrawal during seventh (of a 12 week semester) week or beyond: No refund.

*Refund policy is subject to change without publication.

The same percentages will be used for returning private or Academy financial aid. No fees are refunded after the first day of classes; the exception to this is summer co-op charges. Students who are suspended or dismissed after the start of a semester are not entitled to any refund. The Department of Education mandates the return of federal financial aid for Title IV recipients. This refund policy does not pertain to withdrawal from any class(es) after the add/drop period. It only applies to students voluntarily withdrawing entirely from Maine Maritime Academy.

Treatment of Title IV Aid When a Student Withdraws

The law specifies how Maine Maritime Academy must determine the amount of Title IV program assistance that you earn if you withdraw from school. The Title IV programs that are covered by this law are Federal Pell Grants, Iraq and Afghanistan Service Grants, TEACH Grants, Direct Loans, Direct PLUS Loans, Federal Supplemental Educational Opportunity Grants (FSEOGs), and Federal Perkins Loans.

Though your aid is posted to your account at the start of each period, you earn the funds as you complete the period. If you withdraw during your period of enrollment, the amount of Title IV program assistance that you have earned up to that point is determined by a specific formula. If you received (or your school or parent received on your behalf) less assistance than the amount that you earned, you may be able to receive those additional funds. If you received more assistance than you earned, the excess funds must be returned by the school and/or you.

The amount of assistance that you have earned is determined on a pro rata basis. For example, if you completed 30% of your period of enrollment, you earn 30% of the assistance you were originally scheduled to receive. Once you have completed more than 60% of the period of enrollment, you earn all the assistance that you were scheduled to receive for that period.

If you did not receive all of the funds that you earned, you may be due a post-withdrawal disbursement. If your post-withdrawal disbursement includes loan funds, your school must get your permission before it can disburse them. You may choose to decline some or all of the loan funds so that you don't incur additional debt. Your school may automatically use all or a portion of your post-withdrawal disbursement of grant funds for tuition, fees, and room and board charges (as contracted with the school). The school needs your permission to use the post-withdrawal grant disbursement for all other institutional charges. If you do not give your permission (some schools ask for this when you enroll), you will be offered the funds. However, it may be in your best interest to allow the school to keep the funds to reduce your debt at the school.

There are some Title IV funds that were scheduled to receive that cannot be disbursed to you once you withdraw because of other eligibility requirements. For example, if you are a first-time, first-year undergraduate student and you have not completed the first 30 days of your program before you withdraw, you will not receive any Direct Loan funds that you would have received had you remained enrolled past the 30th day.

If you receive (or your school or parent receive on your behalf) excess Title IV program funds that must be returned, the Academy must return a portion of the excess equal to the lesser of:

1. your institutional charges multiplied by the unearned percentage of your funds, or
2. the entire amount of excess funds

The school must return this amount even if it didn't keep this amount of your Title IV program funds.

If your school is not required to return all of the excess funds, you must return the remaining amount.

For any loan funds that you must return, you (or your parent for a Direct PLUS Loan) repay in accordance with the terms of the promissory note. That is, you make scheduled payments to the holder of the loan over a period of time.

Any amount of unearned grant funds that you must return is called an overpayment. The maximum amount of a grant overpayment that you must repay is half of the grant funds you received or were scheduled to receive. You do not have to repay a grant overpayment if the original amount of the overpayment is $50 or less. You must make arrangements with your school or the Department of Education to return the unearned grant funds.

The requirements for Title IV program funds when you withdraw are separate from any refund policy that your school may have. Therefore, you may still owe funds to the Academy to cover unpaid institutional charges. The Academy may also charge you for any Title IV program funds that the school was required to return. If you don't already know your school's refund policy, please see above. The Academy's Registrar's office can also provide you with the requirements and procedures for officially withdrawing from school.

If you have any questions about your Title IV program funds, you can call the Federal Student Aid Information Center at 1-800-4-FEDAID (1-800-433-3243). TTY users may call 1-800-730-8913. Information is also available on Student Aid on the Web at www.studentaid.ed.gov.

Special Refunds

Refunds of up to 100 percent of tuition, room, board, and fees may be granted in exceptional circumstances. Such special refunds are subject to approval by the President.

Planning a Total Budget

In anticipating total costs of attending Maine Maritime Academy, be certain to add funds to cover books, transportation, spending money, and clothing. First-year students also should plan for the required laptop computer and uniforms (if applicable); clothing for regimental students costs approximately $2,316 in the first year, $800 in the second year and $400 in the third year.

The Undergraduate Academic Program

Majors

The Academy offers the following baccalaureate degree academic majors at its Castine campus:

- Coastal and Marine Environmental Science
- Coastal and Marine Environmental Science/Small Vessel Operations
- Interdisciplinary Studies
- International Business and Logistics
- Marine Biology
- Marine Biology/Small Vessel Operations
- Marine Engineering Operations*
- Marine Engineering Technology*
- Marine Systems Engineering* (License Track)
- Marine Systems Engineering (Non-License Track)
- Marine Transportation Operations*
- Maritime Technology**
- Oceanography
- Oceanography/Small Vessel Operations
- Power Engineering Operations
- Power Engineering Technology
- Vessel Operations and Technology

The Academy offers the following associate degree academic majors at its Castine campus:

- Small Craft Design***
- Small Craft Systems***
- Small Vessel Operations

*These majors lead to a U.S. Coast Guard unlimited license and require participation in the Regiment of Midshipmen. See the catalog section entitled Student Life for information on the Regiment.

**This major is only available to alumni who demonstrate eligibility. This is not for matriculation.

***Small Craft Design and Small Craft Systems are offered as Associate Degree Programs by Maine Maritime Academy in association with The Landing School of Boatbuilding and Design in Kennebunkport, Maine. Residence at Maine Maritime Academy is required for the first year at Castine and at The Landing School in Kennebunkport for the second year of the program.

Undeclared Major

This option of an undeclared major is only available for the Spring term and is designed primarily for transfer students. The following semester, students must declare a major and select courses in consultation with an advisor to meet the requirements of a declared major. Students may enroll as non-declared for one semester only.

MMA/General Dynamics Corporation Programs

In addition to the fifteen undergraduate majors listed above, two other majors leading to an Associate of Science degree are offered to employees of General Dynamics Corporation at Bath Iron Works Shipyard:

Bath Iron Works Shipyard

Two Associate of Science majors, Ship Design and Ship Production, are offered via a satellite program for apprentices of General Dynamics Corporation's Bath Iron Works Shipyard in Bath, Maine. In these programs, courses are offered on-site in Bath. These majors are administered by the Engineering Department at MMA.

Selecting a Major and Changing Majors

It is necessary to select an academic major prior to registering for the fall semester of the first year. Thereafter, it is possible to change a major after consultation with appropriate academic advisors and the respective program coordinator, as may be necessary. A change of major must be approved by the faculty coordinator of the new major and may be restricted by the student's academic performance as well as the capacity of the new program. Students who request a change in major must meet Academy and programmatic requirements that are in place. A change of major requires careful scheduling and may necessitate attending summer classes or additional semesters to complete all required courses. If a circumstance arises which in the opinion of the student or the Vice President for Academic Affairs causes undue hardship on the student or the school in fulfilling the obligations created by a situation such as those addressed here, it may be resolved by the Vice President for Academic Affairs in consultation with the student, the

student's advisor and/or the Department Chair involved. Students changing majors are subject to the Priority for Course Registration of the Academic Policies chapter and may not be on "track".

During the fall semester of the first year, baccalaureate candidates in U.S. Coast Guard unlimited license programs take courses in both nautical science and marine engineering to gain insight into both fields of study. Upon the successful completion of the spring semester of the first year, these students register for the annual cruise aboard Maine Maritime Academy's training ship or are assigned to another academy training ship.

Minor Programs and Concentrations

In addition to the academic majors offered at Maine Maritime Academy, all Departments offer opportunities for specializations in one or more areas of study. Students are encouraged to participate in one or more of these programs and decide on a minor or concentration as early as possible in order to meet the necessary requirements for their targeted graduation date. Registration materials and academic requirements for minor programs and concentrations can be obtained from the Registrar, faculty program advisors, and the Academic Policies section of this catalog.

Academic Policies

Advising & Registration

Responsibilities

The student is responsible to fulfill all academic requirements to achieve his or her selected academic major. The faculty and staff are responsible for advising and facilitating the student's effort.

Academic Advising

Academic advising is the process by which faculty and staff advisors provide information and advice to assigned student advisees. The purpose is for advisors to assist students in making decisions that will result in the completion of their degree programs in the most effective way. This process is an important part of the college education at Maine Maritime Academy. A successful academic advising program is dependent upon the shared commitment of students, faculty, staff, and administration.

Students are responsible for scheduling, preparing for, and keeping advising appointments; collecting appropriate information; knowing the basic requirements for their individual degree program and college policies; and making their own final decisions along with taking responsibility for the results.

Advisors are responsible for having a thorough knowledge of the degree requirements for the program in which their advisees are enrolled and college policies and procedures that affect their advisees. Advisors should also be aware of what career opportunities graduates have and of the other advising and counseling resources available at the college. Advisors may need to contact advisees to schedule meetings, particularly new advisees and those who are having academic problems. Advisors are expected to be available to students on a regular basis, monitor their advisees' progress, assist in considering options, and make referrals to other sources of help.

The Administration of the college will support academic advisors by providing clear and accurate information on policies, procedures, resources and programs. The college is committed to helping advisors develop effective advising skills, to evaluate the advising system, and to make improvements where needed. Further, the college acknowledges the time requirements for effective advising and the important contribution advisors make through appropriate recognition and reward.

Priority for Course Registration

Maine Maritime Academy works to ensure that all students who are admitted to our academic programs can register for the required courses necessary to complete their academic programs in a timely manner (2, 4, or 5 year degree programs). In instances where students have failed courses, transferred from another institution, deviated from the recommended sequence, elected dual majors or taken a leave of absence, it may not be possible to provide all required courses in a two, four or five year time frame. Registration for non-required courses cannot be guaranteed because of possible schedule conflicts and enrollment limits. The Registrar will build a course schedule that provides students who are on track with all of their required courses and will meet the elective requests of as many students as possible. The following guidelines will be used in the registration process:

- First priority for course enrollment will be for students who are on track and for whom the course is required.
- Second priority will be for students who require the course but are off track because of transfer or failures.
- Third priority will be for students wishing to take a course as an elective.
- Within the above guidelines, registration priority will be given in the following order:
    - Scheel scholars
    - Seniors
    - Juniors
    - Sophomores
    - First Year
- Students dropped from an elective because of enrollment limits in one term will be put on a waiting list and given priority for enrollment in subsequent terms subject to the priorities and order listed above.

The above priorities apply to course or waiting list registration only during the official registration weeks. Courses added during the add/drop period will be on a first-come, first-served basis and dependent upon space availability.

Prerequisites

Prerequisites for courses may be waived by consent of the instructor and the designated department chair, unless the catalog specifically states that the prerequisite may not be waived. A minimum grade may be included as part of each prerequisite.

Credit Hour

A credit hour is one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester per hour of credit. Students should expect to spend at least an equivalent amount of work as required above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

Maximum Credit Hour Loads

Students wishing to register for credit hour overloads in any semester may do so in conformity with the following:

1. A student on academic probation may register for only 16 credit hours in any semester.
2. A student in good standing may take no more than three additional credit hours above those required in the semester in question.
3. A student on the Dean's List in the previous semester may take up to six additional credit hours above those required for the semester in question.
4. Exceptions to the above are subject to the discretion of the student's program advisor and the Department Chair of the student's major, or in the case of students on probation, approval must be sought from the Dean of Faculty.

Students enrolling in more than 18 credit hours not normally required by their major in a semester will incur an additional credit hour fee as described under Tuition and Fees in the Affording MMA section.

Electives

General Education Elective: Any course in the disciplines of humanities, mathematics, science or social science. Students must meet all prerequisites.

Technical Elective: Any course in which a body of knowledge or technique is specifically applied to a discipline or profession and for which the student meets all prerequisites.

Free Elective: Any course not required in one's major that does not contain a body of knowledge substantially similar to a course already taken or required, and for which the student meets all prerequisites. In any case, such a course should represent a progressive expansion of knowledge for the student.

Department Elective: Any course in the department in which the major resides, not required for the student's major and for which the student meets all prerequisites.

Business Elective: Any Management (MA) or Logistics (LO) course for which the student meets all prerequisites.

Social Science Elective: Any social science course not specifically required in the student's major and for which the student meets all prerequisites.

Humanities Elective: Any humanities course not specifically required by the student's major and for which the student meets all prerequisites.

Subject to maximum credit hour limits, students are encouraged to take extra electives. Students who have completed all scheduled elective requirements may take extra electives on a satisfactory/unsatisfactory basis if desired. Such satisfactory/unsatisfactory electives will not count toward the elective requirements; be used for credit in a minor program; be computed in the GPA; or be included as part of the minimum credit hours for graduation.

Adding and Dropping Courses

The add/drop period is the week prior to classes beginning and the first week of both the fall and spring semesters and the first two days of summer classes. This no-penalty period is an opportunity for students to add or drop courses. Courses dropped after the add/drop period of any semester are subject to withdrawal procedures. Financial refunds are not provided for course withdrawals. Add/drop arrangements are initiated by completing a form provided by the Registrar, and obtaining approvals as indicated on the form.

Changing Majors

A request for a Change of Major will be considered by the Dean of Faculty with deadlines for applications in mid-October and mid-March.

Attendance Policy

Students are expected to adhere to the attendance policy of faculty members as expressed in the course syllabus. Maine Maritime Academy courses in which there is STCW embedded material require attendance as stipulated in the course syllabus. The course instructor will maintain attendance records. Any missed course material or content must be made up to the satisfaction of the course instructor to ensure embedded course requirements are met. The instructor may request departmental review if the student cannot complete the requirement by the end of the semester.

Grades

Grades with their quality points are reported as described below. The grade point average (GPA) is determined by multiplying the quality points by the credit hours attempted for each course,

then summing these products for all courses and dividing by the total credit hours attempted, including those courses with failing grades.

Quality Points

A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0 Failure (no credit received).
S	Satisfactory completion of a course. Not included in the computation of grade point average (GPA) but credit hours are applicable toward graduation requirements.
U	Unsatisfactory completion of a course. No quality points for computation of GPA and no assignment of credit hours.
W	Withdrawal from a course after the add/drop period, but before the seven calendar days following the midpoint of the course. Withdrawal from a half-semester course will be possible only within the first two weeks of the course. Withdrawal from a course may be initiated by either the student or instructor.
I	Incomplete may be given at the discretion of the instructor and with the approval of the Vice President for Academic Affairs if a student, because of an incapacitating illness or exceptional circumstances beyond their control, fails to take a final examination or to complete a major assignment. In the absence of special circumstances, a student who receives an incomplete when grades are recorded will receive a failing grade for the course unless the deficiency is rectified within two weeks of the conclusion of the semester.
AUDIT	Course taken for no credit.

Students may initiate withdrawal from a course prior to the seventh calendar day following the midpoint of the course by obtaining the appropriate form from the Registrar and complying with the instructions stated thereon.

Faculty may assign withdrawal grades in a course after the add/drop period, but before the seventh calendar day following the midpoint of the semester. The faculty member will contact the student in question seven calendar days in advance of taking this action and inform the student that they are in jeopardy of being withdrawn. At this time, alternatives to withdrawal will

be discussed. If a faculty member decides that it is in the best interest of the student and/or the Academy to withdraw a student from a course, the faculty member will send the withdrawal grade in writing to the Registrar via the Dean of Faculty with a copy to the student. An appropriate short statement about why the student is being withdrawn from the course will be included in this written notification.

Students may retake courses to replace a grade, provided the course is retaken at the Academy. The grade of the succeeding course replaces the original grade in the calculation of the cumulative point average, but both grades appear on the transcript.

Grades from other colleges are not used in the computation of the grade point average, although course credit is granted as described under the Transfer Credit section (in the Degree Requirements section).

Any changes in grades submitted to the Registrar must be approved by the Dean of Faculty.

Late Withdrawals

Late withdrawals will be approved only under extreme, documented circumstances. Requesting a late withdrawal due to a low grade in the class, lack of interest in the subject matter, a different learning style from that of the classroom professor, or a change of major/requirements are not reasons that will be honored.

If a student believes that extraordinary circumstances require withdrawing from a class after the deadline, the student must complete the following steps:

- Write a letter or provide other communication fully specifying the reasons for the withdrawal.
- Gather supporting documentation (physical report, court documents, hospital documents, counselor report etc.)
- Meet with the academic advisor who will complete and sign a Withdrawal request form.
- Meet with the dean of faculty for a signature on the request form.
- Submit the signed form, along with the letter and documentation, to the Registrar.

Academic Appeal Procedure

A student may appeal decisions made by faculty members involving grades, coursework and exams, and course attendance policies. The procedure outlined below is intended to assure a fair and equal adjudication of student complaints which are not already covered under other policies and procedures, and which are strictly academic in nature.

Students must first bring their concern to the faculty member responsible for grading the academic work in question. If that conversation does not lead to a satisfactory resolution, the student may appeal to the appropriate Department Chair. A student who continues to feel a complaint has not been satisfactorily resolved may ask to be heard by the Dean of Faculty. The student must submit their case to the Dean in writing. The Dean of Faculty will convene an

informal hearing with the student, the faculty member, and the Department Chair and/or program coordinator if appropriate. Following the hearing, the Dean of Faculty will convey their decision to all parties in writing. The Dean's decision is final and will not be appealed to higher administration.

Confidentiality of Student Records

Upon written request, students, former students, and graduates are authorized access to records of their attendance, performance, and scholastic achievement. This policy is in keeping with the Family Educational Rights and Privacy Act of 1974 as amended. The regulations are available to interested persons upon request to the Registrar and, as an official part of Academy rules and regulations, are located on the internal portal under MMA Policies. Any individual whose rights have been infringed upon may appeal to the President of the Academy or directly to the Secretary of Education, Washington, D.C.

Release of Information

Unless specifically requested in writing not to do so, the Academy reserves the right to publish directory information as defined by the Family Educational Rights and Privacy Act of 1974 as amended. Such information, relating to students and student activities at Maine Maritime, includes a student's name, address, date and place of birth, participation in athletics or other student activities, class schedule, degrees, awards, and other similar information.

Official Transcripts

For a nominal fee, transcripts are available through the Registrar's Office. Official copies of a student's transcript are sent directly to colleges, employers, and other agencies upon the written request of a student or graduate. Matriculating students may obtain copies of their transcripts without the official seal of the Academy for their personal use. No official transcript will be issued until all financial obligations with the Academy have been met. In the case of loans, financial obligations must be in satisfactory status with the Finance Office in order for a transcript to be released.

Student Classifications

Full-time Student

A full-time student must meet the stated admission requirements for the undergraduate program for which they are applying; register for 12 or more credit hours each semester; register for a specific degree program; and comply with all Academy policies which apply to their degree program.

Part-time Student

A part-time student is one who registers for fewer than 12 credit hours per semester while meeting the stated admission requirements for the undergraduate program for which they are applying and who registers for a specific degree program. A part-time student must also comply with the established Academy policies which apply to their degree program.

Probationary Student

A probationary student is one who has been admitted to the Academy under the condition that they successfully complete stated special admissions requirements.

Non-Degree Student

A non-degree student is one who is not registered for a degree program at the Academy. Non-degree students must apply for admission to the Academy through the Admissions Office. Appropriate supporting documentation (copy of high school diploma, transcripts, etc.) will be required unless waived by the Vice President for Academic Affairs or their designee. Acceptance is based on academic preparation, potential for success, and course availability. Current MMA full- and part-time students have priority in course enrollment. Non-degree students are not entitled to MMA student services. A non-degree student can apply a maximum of 30 Maine Maritime Academy credit hours toward the Academy's Bachelor of Science degree and 15 credits toward the Associate of Science degree.

Mathematics Placement of Incoming Students

Members of the math faculty and the admissions staff jointly review each incoming student's admissions file to determine the most appropriate placement point in the math sequence. The student's proposed major, prior math history, and SAT and/or ACT scores are all considered. The recommendation on initial placement can be modified if approved by the student's advisor or program coordinator. In the case where a student transfers in credit for a math course or has appropriate Advance Placement Test scores, the transfer credit and AP score will take precedence.

Engineering Department students in the Bachelor of Science majors should note that MS110 Technical Calculus I or MS150 Calculus I is a prerequisite to the normal course offerings in the fall of the second year.

Student-Athletes Academic Eligibility

In order for a student-athlete to be academically eligible for competition at Maine Maritime Academy, they must be enrolled full-time (minimum of 12 credit hours), be in good academic standing, and maintaining satisfactory progress towards their degree. To be considered "in good academic standing", the student-athlete must meet one of the above criteria: either their overall Cumulative GPA exceeds the minimum requirements, or the student must meet or exceed the minimum requirements in the semester prior to their season of competition.

To determine the eligibility for fall athletes, including Student-Athletes for football, cross-country, soccer, golf, and volleyball, the spring semester from the previous academic year will be used.

To determine the eligibility for spring athletes, including lacrosse, the fall semester of that same academic year will be used.

Basketball spans two semesters, so to determine the eligibility for the fall portion of the student's schedule, the spring semester of the previous academic year will be used. To determine the eligibility for the spring portion of the student's schedule, the fall semester, from the same academic year will be used.

In some cases a student may have faced unique and/or difficult circumstances, which played a role in not meeting either requirement. Students who fail to meet either requirement may appeal. They must submit a letter to the Director of Athletics 1) outlining the issues; 2) addressing why remaining a member of an intercollegiate team will be beneficial to their development; and 3) how this involvement will aid in their academic success. If the appeal is approved by the Director of Athletics, the appeal is then sent to the Vice President for Academic Affairs for final review. The Vice President for Academic Affairs can approve or deny this appeal.

Non-Returning Students

In order to have an orderly manner in which to administrate the status of students who elect not to return to the Academy from semester-to-semester, the following policy will be followed:

1. Students who do not pre-register will be placed in a non-returning status and the date of separation will be the last day of their activity in the current semester/cruise period.
2. Students who pre-register but who do not show up for classes in the next semester will be involuntarily separated as of the end of add/drop that semester, or upon written confirmation of non-attendance, whichever occurs first.
3. Students who do not pre-register, but who attend the Academy in the next semester/cruise period, will be allowed to matriculate on a space-available basis and will be billed the appropriate late fees as published in the Affording MMA section of this catalog.

Academic Standing for Undergraduate Degree Candidates

All students must establish a minimum cumulative grade point average, as defined below, to remain in good academic standing and to assure class progression. All students (including first-year students) not attaining these standards will be placed on academic warning or academic probation, and may be ineligible for cruise/co-ops, or may be disenrolled.

The minimum cumulative grade point averages to remain in good academic standing and to assure continuance at the Academy are:

- For the first 18 credit hours attempted: 1.60
- For 19-36 credits attempted: 1.80
- For 37-54 credits attempted: 1.90
- Thereafter: a minimum of 2.00

Notes:

1. Small Craft Design and Small Craft Systems require a 2.00 at the end of the first year of study. Students in the BIW curriculum must achieve a 2.41 (equivalent to 80 out of 100) or above each trimester of study.
2. *A minimum cumulative grade point average of 2.00 and a minimum core grade point average of 2.25 in some majors are required for graduation. A higher minimum acceptable semester and/or cumulative GPA may be established by individual departments or academic programs. Core courses are listed under the curriculum for each major where appropriate.*
3. Each student must fulfill the required Academy and programmatic hours to demonstrate reasonable progress towards graduation as determined by the Academic Board. All undergraduate students must have at least a 2.00 grade point average and, if required by their major, a core course grade point average of 2.25, at the start of their fifth semester at the Academy in order to be considered as making satisfactory progress toward their degree. Students who do not meet these criteria will be classified as not making progress toward their degree.

Satisfactory Academic Progress

In addition to the GPA requirements outlined above, students must complete a minimum of 67 percent of coursework attempted. Units attempted or total enrollment terms may not exceed 150 percent of the published length of the program.

Academic progress will be evaluated annually, or every term for those students on academic probation. Completion rate will be determined from the listing on the transcript of credit earned and credits attempted, for both the term and cumulative. Credits earned off campus and transferred in will be included in the total attempted. Courses in which a grade of "W" is recorded will be included in the total credits attempted. Semesters in which a Leave of Absence is granted will not be included in the calculations.

When cumulative completion rate falls below 67 percent or whenever two successive (fall/spring) term completion rates fall below 67 percent, the student will be disenrolled from MMA.

Review of student records for progress will be included in the standard end-of-semester review currently conducted by the Registrar. Records that are flagged will be passed to the Provost by the Academic Review Board. The Provost will assess the record with the Registrar to determine if the student has failed to meet the published standard.

Dean's List

A Dean's List will be prepared at the close of the fall and spring semesters of each academic year. This will identify those full-time students whose semester GPA is not less than 3.3 and whose records indicate no course grade below C for the semester.

Students at Risk Policy

Students at risk are defined as all students currently on academic probation. A student at risk will:

- Be required to meet with an assigned "special" advisor once a week and meet regularly with their academic advisor
- Be allowed to register for only 16 credit hours of course work per semester
- Be required to successfully retake all required courses they failed
- Be required to retake all courses required as part of their major in which they received a grade of "D"
- Be removed from the "at risk" category upon obtaining a cumulative GPA of 2.0 or higher

Academic Board

The Dean of Faculty chairs the Academic Board composed of the chairs of the Arts and Sciences, Engineering, International Business and Logistics, Ocean Studies, Marine Transportation, and Naval Science departments; one faculty member elected by the Faculty Senate; the Dean of Student Services; the Commandant; and the directors of Accessibility Services, Athletics, and Admissions.

Sitting as advisory members are the Registrar, and the directors of Financial Aid and Residential Life & Student Activities.

All students' records will be reviewed for satisfactory academic progress at the close of each semester. An automated report will be generated using the standards listed above and identifying students to be placed in one of the following statuses:

- Academic Warning
- Core Warning
- Probation
- Academic Disenrollment

The Dean of Faculty will consult with a subcommittee of the Academic Board and will review those students not meeting the minimal standards for continued enrollment and approve those listed for disenrollment. Students disenrolled will be notified and informed that they may appeal the decision to the Academic Board which will be chaired by the Dean of Faculty. To appeal a disenrolled decision, the students will be required to write an appeal letter and explain any extenuating circumstances that contributed to their poor performance, explain what steps they

have or will take to correct the situation, and explain how they plan to meet the academic requirements, including participation in the PFD advising program. The Academic Board will review all appeals and their decision will be final. The Dean of Faculty votes in a tie.

Special Academic Categories

Students who fail to meet established academic standards may be subject to one of the following administrative actions:

Academic Warning and Core Warning

The mildest form of sanction issued by the Academic Board is an academic warning. Students will be placed in a warning status when their overall academic performance or core GPA performance does not meet minimum standards. Being placed on warning constitutes an official cautioning by the Academic Board that the student's performance must improve or stronger sanctions will be imposed. Students remaining on either academic or core warning (or a combination of both) for two consecutive semesters will be judged as making unsatisfactory progress and will be placed on academic probation.

Academic Probation

Students on academic probation are considered "students at risk" and in a conditional status. Academic probation may also jeopardize the student's financial aid status. While on academic probation, students must meet weekly with their "special advisor" and are encouraged to consult with their faculty advisor to ensure that satisfactory progress is made toward correction of academic deficiencies. Their academic standing is evaluated at the conclusion of the semester in which they were placed on probation. Normally, remaining on academic probation for two consecutive semesters without significant improvement will result in a recommendation for academic disenrollment.

Academic Disenrolled

Students not meeting the established academic criteria in regard to the minimum grade point average and failing to make satisfactory progress toward their degree may be disenrolled. Students who have been disenrolled for academic reasons may appeal this decision to the Academic Board.

Academic Activity While Academically Disenrolled

Students who are suspended or disenrolled from the Academy are not allowed to enroll in courses at the college. However, in unusual circumstances and with approval of the Vice President for Academic Affairs, students may be allowed to participate in some academic work at the Academy. Courses taken in this status will usually be allowed so that a student may demonstrate an ability to academically perform in a particular area(s) that is/are not normally taught in other institutions, or to repeat a course(s) under close scrutiny that may have previously caused particular difficulty. Such students will be matriculated as "Non-Degree Students."

Grades earned in such work will count toward a degree only with specific approval of the Vice President for Academic Affairs upon consultation with the Department Chair appropriate to the student's major.

Courses taken at another college or university will be considered for transfer credit by the Academic Board at the time of a student's request to be readmitted. Students who are considering such work should check with the Registrar to ensure compatibility with the Academy curriculum.

Degree Requirements

To be eligible for the Bachelor of Science or Associate of Science Degree from Maine Maritime Academy, a candidate must complete all courses of the major program, including specified elective courses, with a cumulative grade point average of not less than 2.00. Specific major programs may additionally require a grade point average of 2.25 in designated core courses in each program. In addition, candidates in the four majors leading to a US Coast Guard (USCG) unlimited license are required to successfully complete the professional USCG examination and satisfactorily participate in the Regiment of Midshipmen. (See below for 200 Ton License Exam Policy.)

The various major programs have differing credit requirements, which are described in detail in the Curricula section of this catalog. It is the responsibility of the student to demonstrate completion of all requirements and to enroll in the prescribed courses. All degrees will be awarded through action of the Board of Trustees.

The graduation date appearing on the student transcript and diploma will be one of the following as applicable:

1. The scheduled commencement date for students who have completed all degree requirements by the end of the spring semester;
2. The day following the submission of a passing grade in the Junior Cruise (CR303) or other required summer co-op experience in the case of those seniors who have completed all other requirements;
3. The end of the fall semester for all other students. Students who graduate at this time will have their class standing based on and be considered part of the class graduating in the next scheduled spring commencement. This will not, however, preclude license-program students obtaining Coast Guard licenses upon completion of all degree requirements even if the graduation date occurs at a later time.

Valedictorian Selection Criteria

The title of valedictorian has long been used to designate an individual who has achieved the highest academic excellence. MMA will select one valedictorian annually. The following procedures assure an acceptable degree of commonality in the selection of valedictorians.

The major considerations for selection of a college valedictorian are the factors which establish the student with the highest level of academic performance. All students in the graduating class will be evaluated for this honor. Calculation will be completed after the Fall semester grades are posted for the academic year of graduation.

The sole criterion used to select the valedictorian is the GPA earned at Maine Maritime Academy. Transfer students may be considered; in this case, all but 30 credits of the GPA must be calculated using MMA credits.

In the event that two or more students have an identical GPA, the following factors will be considered by the Provost in the selection of a college valedictorian:

1. Number and quality of transfer credit (if one of the students being considered has transfer credit).
2. Number of courses repeated.
3. Number of credits earned by examination, as well as level of achievement on such credits (i.e., CLEP scores).
4. Breadth of educational experience.

Degree Honors

Significant scholastic achievement in the undergraduate programs will be recognized by appropriate endorsement of the degree diploma in the following categories:

Summa Cum Laude:	3.75 – 4.00 GPA
Magna Cum Laude:	3.50 – 3.74 GPA
Cum Laude:	3.30 – 3.49 GPA

200 Ton License Exam Policy

The Mate 200 ton license exam is administered by Maine Maritime Academy in the spring semester of the sophomore year of the Small Vessel Operations (SVO) program (the "exam cycle"). Successful completion of this exam is a requirement for any student pursuing the Mate 200 ton license and the Able Seaman Limited credential.

Students will be allowed up to three attempts to pass each module of the exam during the annual exam cycle. If a student fails three attempts at one or more modules, he/she will be required to wait a minimum of 30 days before retesting, and must retake the entire exam. To do this, the student must wait until the exam is given again the following year, or arrange a Special Make-up Exam for a fee. That fee structure is described below. Unless there are extenuating circumstances, if all exams are not completed during the exam cycle, the entire exam must be retaken.

The Vessel Operations and Technology (VOT) Mate 500/1600 ton program is designed in a 2 + 2 format. Therefore all candidates for the Mate 500/1600 ton USCG license must complete the requirements of the Mate 200 ton license as described above.

A student may pursue the SVO Associate's degree, or the VOT Bachelor's degree, without completing the 200 ton license exam. The exam is required only for those who are pursuing the actual license.

Fee structure for a Special Make-up Exam:

The Special Make-up Exam may be given at a mutually agreed time on campus. It would be completed over two days (or more as agreed by all concerned) on a schedule such as this:

- Day One: Chartwork (3 1/2 hours), Nav. General (1 hour), Deck Safety (1 hour). Total 5 1/2 hours for Day One.
- Day Two: Deck General (3 hours), Rules (2 hours). Total 5 hours for Day Two.

If successfully completed in this time frame, the fee would be $350.

If any retakes of the Special Make-up Exams are required, they would cost an additional fee of $35/hour of actual time required. Three attempts at each section are allowed. If the student fails three attempts at any section, the process repeats after a 30 day waiting period.

Credit for Life Experience

"Life Experience Credit" is credit for learning that individuals have acquired that has not been transcribed as a result of completed coursework in a college or university. The experience is evaluated at MMA to determine whether or not it is comparable in rigor, content and outcomes with coursework taught at MMA. If such learning is deemed comparable, the student may receive credit for the experience.

Assessment of life experience is a process accomplished by assessment of a portfolio prepared by the student. Students who wish to make a case for life experience begin initially by contacting the Vice President for Academic Affair's office. It is there that the screening process begins. If it is determined that the student is a candidate for life experience, the student is advised how to describe, organize and document his/her materials to create a case for life experience. Subsequently, the student makes an appointment with the appropriate Department Chair to discuss these materials. The Department Chair decides whether the student's prior learning experience warrants referral and further consideration by a faculty evaluator.

For four-year students, a maximum of 16 credits may be earned in the life experience program; for two-year students a total of 8 credit hours may be earned for life experience. Credits may be applied toward an undergraduate degree or licensure. Upon approval of the Vice President for Academic Affairs, the applicant's transcript will be marked to show credit hours earned, with a notation that the credit hours were earned for life experience. A fee equivalent to one-half the

regular charge per credit hour will be assessed for life experience credits. Note: These credits do not fill the residency requirements for the degree.

Study Abroad

The Academy has agreements with several other colleges and universities for study abroad. Students may inquire into this possibility from their respective Department Chairs through their advisors. Program possibilities vary from major to major. All such arrangements must be approved by the student's major department and the Vice President for Academic Affairs.

Transfer Credits

To transfer academic credits to an undergraduate program, students who are applying for admission to the Academy, or those who are already enrolled at the Academy, must provide a copy of a student transcript or equivalent official record. They may be asked to provide a copy of the college catalog where the course(s) were taken and the name of the course textbook(s).

In accordance with federal regulations, Third Officer U.S. Coast Guard license students must be in training for a minimum of three years. Accordingly, except in unusual circumstances, transfer students or those expecting advanced placement in those majors must spend a minimum of this time in training.

All transfer students must complete all of their respective departmental degree requirements, and, spend at least their last scheduled academic year at the Academy as full-time students in residence. This does not apply to students in the Maine Maritime Academy/Bath Iron Works apprentice program, the Small Craft Design, Small Craft Systems programs, and the joint degree program with Dokuz Eylül University. In addition, candidates for the USCG Third Officer licenses must complete CR303 (Junior Cruise) while enrolled at the Academy, unless this requirement is waived in writing by the appropriate Senior Training Officer and the Vice President for Academic Affairs. A minimum of 50 percent of Business and Logistics credit hours required for the International Business and Logistics academic major must be earned at Maine Maritime Academy.

The following criteria must be met before credits can be transferred:

1. The course(s) must be relevant to the student's major or elective program at Maine Maritime Academy and preferably equivalent to a specific undergraduate course.
2. For a course to be accepted for transfer credit, student performance must be equivalent to a grade of "C" or better from an accredited college or university, or from an approved military program (submit form DD-295, "Application for the Evaluation of Educational Experiences During Military Service").
3. Transfer credits submitted from foreign colleges and universities will only be considered after they have been evaluated by a professional analyst. An Admissions Officer will provide assistance in identifying an analyst, but the student is responsible for all arrangements and related costs.

Credit for any course(s) taken at an accredited college or university may be transferred subject to items 1 and 2. However, these credits are not used in calculating the student's GPA at the Academy, nor can these credits be used to by-pass the minimum residency requirement established by the Academy.

Any transfer of credit situations not covered in this policy will be determined by the Vice President for Academic Affairs in consultation with the appropriate Department Chair.

Academic Year

The Academy's academic year comprises three sessions: the fall semester extends from September through December, approximately; the spring semester January through April, approximately; and the summer session, May through August, approximately. For exact dates of the Academy's annual calendar, contact the Office of the Registrar or visit mainemaritime.edu.

Practical Experience

An integral part of all Maine Maritime majors is the practical knowledge that students gain by actual work experience. A major component of all MMA programs is learning by doing. The approach to experiential learning or cooperative education varies from major to major and may include at-sea experience on training or commercial ships, Ocean Studies cruises aboard research vessels, VOT/SVO training aboard the tug Pentagoet and the schooner Bowdoin, Power Engineering Technology training in operating power plants, International Business and Logistics experience in businesses, companies and logistics providers, and design engineering experience for Marine Systems Engineering students.

Guidelines

The following guidelines apply to all MMA students seeking work experience related to their studies:

1. Each cooperative education experience is an academic course. All academic policies of the college that apply to on-campus courses also apply to off-campus practical experience courses.
2. Students planning to co-op must have their practical experience plans approved by the Faculty Co-op Coordinator of their program or their Department Chair prior to registering for the course.
3. Students must register for their practical experience course with the Registrar to receive academic credit.
4. Matriculating students in good academic standing who have satisfactorily completed the required course prerequisites and have the approval of their Faculty Co-op Coordinator or Department Chair are eligible to participate.
5. Students will be considered for practical experience positions with a particular company based upon the employer's specific needs or requirements. In competitive hiring situations, the employer's choice is the final determining employment factor.

6. Students have the responsibility of finding their own housing when employers do not offer it.
7. Maine Maritime Academy is under no obligation to refer or assist students who voluntarily withdraw from consideration or who refuse a job at an approved co-op site.
8. The college and its representatives follow all equal employment opportunity guidelines in assisting students to find appropriate jobs to gain practical experience.
9. A pre-employment drug test through the Academy's Student Health Services will be required of all students before they participate in a co-op experience.

Marine Practical Training Programs

Candidates for a Third Officer U. S. Coast Guard unlimited license are required to complete the following practical training programs to be eligible for graduation. They must be in training a minimum of three years according to Federal Regulation.

1. Ship Laboratory (maintenance) and watch standing
2. Two cruises aboard a training ship (at least 135 days total)
3. The Cadet Shipping Program (minimum of 60 days for engine cadets; minimum of 90 days for deck cadets)
4. The Fire Training Program
5. Lifeboat Training
6. All Regimental requirements
7. All Standards of Training, Certification, and Watchkeeping (STCW) required courses

Students majoring in the five-year Marine Systems Engineering program will be allowed to sit for the license exams, if otherwise eligible, at the end of the first semester of the fourth year of their program.

Federal legislation provides that to be eligible for graduation, state maritime students enrolled in the four-year (and five-year) unlimited license majors must have passed the examination for Third Mate or Third Assistant Engineer.

Watch Standing and Ship Laboratory

During non-cruise periods, students in the Regiment are expected to satisfy the watch standing requirements of the Academy. Students are also required to participate in the Ship Laboratory Program to maintain the training vessel and to gain practical shipboard experience.

Training Ship Cruises

Training cruises aboard a training ship are scheduled annually. Students in majors leading to U.S. Coast Guard Third Assistant Engineer/Third Mate licenses are required to participate in these training cruises during the first and third years. Students in non-license majors may elect to do the First Year Cruise as long as they meet the prerequisites listed in the course description for First Year Cruise, and subject to discretion of the Commandant. A U.S. passport and TWIC card are required in order to go on cruises.

For unlimited license students, successful completion of these training cruises, including a sea project and STCW assessments for each cruise, is required for graduation. Four credit hours are awarded for each successfully completed cruise. Cruises aboard the training ships are designed to develop practical skills required of a Third Mate or a Third Assistant Engineer. These skills are developed through watch standing, operating and maintaining the ship, and adapting to life aboard. Successful completion of the first-year cruise is a prerequisite to participation in Cadet Shipping in the sophomore year. Failure of the junior-year cruise must be made up at the completion of the senior year. Students who repeat either cruise will be charged for room, board, and cruise fee.

Requirement to Complete License Exams

Federal legislation requires that to be eligible for graduation, students enrolled in the four-year and five-year unlimited license majors must have passed the examination for Third Mate or Third Assistant Engineer.

US Coast Guard Certifications and License Requirements

Successful completion of the Marine Practical Training Programs and specific courses as prescribed for unlimited license program majors satisfies the prerequisites for U.S. Coast Guard licenses. Training certificates will only be issued to cadets who complete a U.S. Coast Guard approved academic program. This is consistent with academy approval letters issued by the U.S. Coast Guard which indicate that cadets are not entitled to the various endorsements approved under the program, unless the cadets "successfully completes the entire program." These include:

- Basic Safety Training
- Basic and Advanced Firefighting Training
- USCG Lifeboat Endorsement
- USCG Radar Observer Certification and ARPA
- FCC and GMDSS Certification
- STCW 2010 (Standards of Training Certification and Watch Keeping)

Cadet Shipping Program

During the summer after the sophomore year, in lieu of a cruise aboard a training ship, USCG license students may be assigned to merchant vessels as cadets for further familiarization in shipboard procedures.

In addition to the practical experience gained, students have the opportunity to visit ports of call in the United States and foreign countries. In several cases, students have circumnavigated the globe. Many students find this experience to be a major advantage in finding employment following graduation. It should be pointed out that many students on Cadet Shipping assignments received cadet wage and reimbursement for travel expenses, but compensation for cadet shipping cannot be guaranteed. For engine cadets, a minimum of 60 days is required for this training, which is credited toward the sea service required for an original license in the Merchant Marine. For deck cadets, a minimum of 90 days is required to meet sea-time requirements.

Maine Maritime Academy was the first state maritime academy to incorporate this popular program into its curriculum. It now includes an extensive preparation program aimed at maximizing the learning experience in the real world of shipping. Because of the popularity of the Cadet Shipping program, some of the other state academies have adopted it, with the result being increased competition for available cadet billets. Accordingly, availability of a billet for every student cannot be guaranteed. Any student who does not receive a billet may be assigned to a training ship for cadet shipping.

Each student must submit a satisfactory Sea Project, Cadet Shipping Report, Ship's Officer's Evaluation Report, and evidence of sea time to be awarded course credits. Successful completion of the Cadet Shipping program, or sophomore Cadet Shipping on a training ship, is required to be eligible for the junior cruise. Any student failing the Cadet Shipping Program will be required to make up cruise credit by participating in a second Cadet Shipping assignment, if offered, or aboard the Academy training ship.

Lifeboatman Exam

Maine Maritime Academy is authorized by the United States Coast Guard to administer the lifeboatman examination. The comprehensive 70-question, multiple choice examination covers the topics of lifeboats, life rafts, safety and survival at sea.

This examination:

1. Is required for all USCG license program students.
2. Is normally scheduled early in the second semester of the students' first year.
3. Requires successful completion of NS101 (Nautical Science) as a prerequisite.
4. Requires the student to register for USCG3 (lifeboatman exam) from their academic plan when registering for spring courses.
5. Is required in order to participate in CD103 (First Year Cruise-Deck) or CE103 (First Year Cruise-Engine).

Students failing the examination will need to contact the STCW office to sign up for a makeup exam.

Regimental Requirements

Part of the training requirements imposed by federal legislation is the wearing of uniforms and a demerit discipline system. Successful adherence to these requirements as defined in the Regimental Manual is required for graduation. The mission of the Regiment is to help prepare men and women for successful careers as officers in the Maritime Service as well as for careers in science, business, and industry by providing them with leadership and management opportunities in a structured training environment.

The Academic Division

The mission of the Academic Division is to provide career-oriented educational programs that foster professional success.

The Academic Division is made up of six academic departments which function as administrative units for the organization of faculty and curriculum, and four departments providing academic support services. Academic programs are designed and managed by a faculty from diverse academic backgrounds and from industrial positions in engineering, ship operations, marine sciences, maritime management, and small vessel design and operation. The faculty is augmented by part-time personnel plus visiting professors from industry and from domestic and foreign universities. In addition to their teaching assignments, faculty members serve as academic advisors and participate in a variety of academic pursuits such as research and consulting.

Arts and Sciences

Professors Batt (Chair), Lapham, Loomis (Dean of Faculty), Lorenz, Polojärvi, L. Raikes, Skwiot; Associate Professors Avery, Boal, Ciampa, Simmons, Taub, Willmann; Assistant Professors Kenter, Kingsbury, Moser, Nyberg, VanSpronsen; Instructors Stwertka; Adjunct Faculty Allaby, E. Boucher, Case, Delicata, Dyer-Drinkwater, Herlihy, Leaverton, M. O'Donnell, S. O'Donnell, Oxman, K. Raikes, Rankin, Ravan, Robinson, Turok; Emeritus Professors Biggie, Forbes (Dean Emeritus), Fricke, Hudson, Schaab.

Mission and Program Outcomes:

The mission of the Arts and Sciences Department is to provide the liberal arts component of the students' baccalaureate education while guiding them with these program outcomes to:

- think critically and analytically
- write and speak effectively
- understand the global and environmental context of human actions
- develop and apply knowledge of mathematical and scientific reasoning
- develop and communicate sound, informed opinions among conflicting perspectives
- identify problems and to propose solutions
- solve problems as members of a team
- appreciate and respect diversity
- reason and act ethically

The Department of Arts and Sciences offers one major in Interdisciplinary Studies which leads to a Bachelor of Science degree.

Minor programs are offered in the areas of humanities and social science, mathematics, and physical science.

The Department of Arts and Sciences offers courses required of all students and elective courses in various academic disciplines. Courses are offered in the fields of mathematics, computer science, physics, political science, psychology, English composition, literature, management communications, geography, history, humanities, and ship's medicine.

Interdisciplinary Studies Major

The Interdisciplinary Studies Major offers students the opportunity to earn a Bachelor of Science degree by integrating substantive course material selected from two or three existing majors. This baccalaureate option is designed to attract highly motivated students who wish to coordinate offerings from multiple departments. Potential students selecting this path may be those interested in maritime studies, but who do not intend to be licensed professional mariners, ocean scientists, practicing engineers, or logisticians. Students are likely to be interested in changing careers or enhancing credentials for an existing career. To ensure acceptable standards within the major, students are required to work with an assigned faculty committee from the departments of the selected areas of study.

1. A student electing this major will be required to:
   A. Apply to MMA and, if accepted, be assigned to the major's coordinator.
   B. Submit a proposal statement that outlines the academic/career oriented goal and courses of interest that will form the foundation of the curriculum plan.
   C. Develop a curriculum plan with the faculty advisor who will outline the proposed sequence of courses and prerequisites to meet the degree requirements.
2. Approval of application and admittance to this major will be conducted by a committee consisting of:
   A. At least two faculty members representing the curriculum areas in the proposed plan.
   B. A faculty member recommended by the program coordinator and appointed by the Dean of Faculty to serve as that student's academic advisor.
3. Curriculum requirements include:
   A. Minimum credit hours for BS degree – 120 credit hours
   B. General Education, BS minimum requirements (41 credit hours)
   I. Humanities
   II. Social Sciences
   III. Math and Natural Sciences
   C. Curriculum plan that integrates choices from TWO existing majors consisting of introductory to advanced level courses (approximately 34 credit hours in each of two areas, 68 total) OR
   D. Curriculum plan that integrates choices from THREE existing majors consisting of introductory to advanced level courses (approximately 24 credit hours in each of three areas – 72 total).

Engineering

Professors Coté, Fleck, Flood, D. Read, Reed, Skaves, Wlodkowski (Chair), Young; Associate Professors Burton, McCann, W. Sarnacki, Stewart; Assistant Professors Allen, Alley-Ferreira, Christian, Harman, Hersom, Legel, Lewis, Moroney, Olivari, L. Read, B. Sarnacki, Starbird,

Wallace; Instructor Gourmelon, Markley, Stefanski, Walker; Lecturer Tefft; Adjunct Faculty Andrews, Armstrong, Cameron, Coppedge, Ferden, Harmon, Valles, Wardell; Bath Satellite Campus adjunct faculty Dorr; Emeritus Professors Alexander, Giffin, Haghkerdar, C. Herrick, G. Herrick, Kimball, Libby, Small.

A technical person in the early 21st century can expect to work in several distinct careers over the course of a 40-year working life. To prepare our graduates for these careers, engineering programs at Maine Maritime are designed to promote versatility and life-long learning.

The mission of the Department of Engineering is to provide the technical content of a range of broad-based majors relating to engineering of marine/mechanical and/or industrial power systems, as well as elective courses open to all Academy students. The Department of Engineering offers coordinated curricula at the Bachelor's degree level in engineering design, engineering technology, and engineering operations on our Castine campus. Classroom studies are closely coordinated with laboratories and practical experience. To view programmatic objectives, please go to your desired major in Curricula.

The Department of Engineering offers five majors leading to a Bachelor of Science degree and two leading to an Associate of Science degree (available only to employees of General Dynamics Corporation's Bath Iron Works Shipyard in Bath, Maine). Minor programs are offered by this department in the areas of Industrial Powerplant Technology, Marine Engineering Operations, Naval Architecture, and Technical Science.

Each of the baccalaureate programs includes a core program of humanities, mathematics, natural and social sciences, and written and oral communications, providing the student with the broad background necessary for a professional career and future professional growth. Each program includes co-op segments, and some majors, as listed below, require students to be members of the Regiment of Midshipmen. Departmental electives include welding, machine tool operations, electronics, and electrical power, marine and shore-based steam and diesel powerplants, gas turbines, technical and engineering sciences, and technical communications.

B.S. Majors

- Marine Engineering Operations*
- Marine Engineering Technology*
- Marine Systems Engineering (License Track)*
- Marine Systems Engineering (Non-License Track)
- Power Engineering Operations
- Power Engineering Technology

*These three majors lead to a U.S. Coast Guard unlimited license and require participation in the Regiment of Midshipmen. See the catalog section entitled Student Life for information on the Regiment. Students successfully completing any of the five on-campus major programs receive the Bachelor of Science degree and, if physically qualified, may test for a federal or state license.

A.S. Majors

- Ship Design
- Ship Production

Maine Maritime Academy, in conjunction with Bath Iron Works (BIW), offers an Associate of Science degree via a satellite program in Bath, Maine, for apprentices of General Dynamics Corporation's BIW Shipyard. The Engineering Department administers this degree program, with majors in either Ship Design or Ship Production. Within the Ship Design major are five areas of concentration: Electrical, Hull Outfit, Heat, Ventilation and Air Conditioning (HVAC), Piping, and Structural. Within the Ship Production major are 12 areas of concentration: Laboratory Technician, Machinist, Maintenance, Maintenance Electrician, Marine Electrician, Nondestructive Test Technician, Outside Machinist, Pipefitter, Ship Carpenter, Structural Fitter, Tinsmith, and Welder. Both academic programs are four years in length and are offered only at our Bath location. Students enrolling in these programs must be employed by Bath Iron Works and meet Maine Maritime Academy entrance requirements; it is possible for a student, once in one of the programs, to continue as an MMA student after terminating employment with the company.

International Business and Logistics (IBL)

Professors Schatz, Shaughnessy; Associate Professor Jain; Assistant Professors Langford (Chair), Scheuchzer, Sorich.

By graduation, students in the Loeb-Sullivan School of International Business & Logistics should:

- demonstrate competence, confidence, and professionalism, and in core business-functional areas;
- develop competence, confidence, and professionalism through in-depth knowledge of logistics concepts and processes;
- effectively gather, analyze and communicate complex data and information;
- conduct themselves in a professional, socially responsible and ethical manner in life and diverse business environments;
- be able to critically evaluate the challenges of domestic and international business and logistics and apply hands-on solutions that contribute to the future.

The Loeb-Sullivan School of International Business and Logistics offers a Bachelor of Science degree in International Business and Logistics (IBL). The unique IBL undergraduate program focuses on global logistics while delivering a solid business education in core business functional areas. Graduates of the program develop leadership skills through education and training that develops knowledge and competence, instills confidence, and creates professionalism for business. The program encourages and supports innovative thinking, corporate social responsibility, and hands-on experience. Specialized courses that deal with the challenges of logistics in domestic and global supply chains constitute the unique program. Experiential

learning is a significant component of the program and includes voluntary internships and a mandatory cooperative education program.

The foundation of the Loeb-Sullivan School of International Business and Logistics is a broad education in basic business functions. Foundational coursework includes accounting, economics, business law, international business law, marketing, and organizational behavior. Built on that foundation is a curriculum that blends a critical evaluation and in-depth knowledge of logistics operations. For example, specific logistics coursework may include freight transportation, production & operations management, logistics information systems, logistics strategy, and international logistics. We develop our students to see patterns and trends, identify opportunities, and effectively communicate a plan to achieve success.

The Loeb-Sullivan School also offers an undergraduate minor in business and Master's of Science degrees in two different majors. The online graduate program is ideal for any professional who is working full-time and is able to complete courses in a part-time format. The Online, asynchronous program can be completed in as few as 18-months yet no more than four years. Students in the Online graduate degree program earn a Master of Science in International Logistics Management. The Online ILM program is also used for the two-year Master's & Commander program (M&C), which bestows an MS in Maritime Management major. The M&C student will also complete undergraduate work on campus to enable testing for the USCG 200-ton near-coastal mate's license.

Furthermore, each program offers unique tuition discounts to MMA alumni. The Online Masters of Science degree in International Logistics Management Alumni Advantage allows MMA alums to complete the MS-ILM at a discounted per credit hour rate. Please refer to the Graduate Program Financial Information for the discounted rate. Additionally, students in any of the Master's degree program are eligible to receive the International Association of Maritime and Port Executives (IAMPE) Marine Port Manager Certification. For additional information, please visit the Graduate School at **http://ibl.mainemaritime.edu**.

Marine Transportation

Professors Asyali, Chase, Parrott (Chair), Pundt, Teel; Associate Professors Cole, Miller, Slazas, Tarrant; Assistant Professors Allard, Eadie, Jergenson, Leach, Norwood, Rappaport, Walsh; Instructor Parker; Adjunct Faculty Eddy, Haddock; Emeritus Professors Eley, Weeks.

Marine Transportation Operations and Vessel Operations and Technology Program Outcomes

MTO and VOT graduates will have the ability to:

- Understand traditional and modern seamanship skills
- Safely and correctly apply seamanship skills
- Understand the topic of terrestrial and celestial navigation
- Correctly calculate terrestrial and celestial navigation problems
- Recognize and demonstrate the skills associated with leadership and command

- Write and speak effectively
- Function well on teams within a diverse environment
- Demonstrate effective and appropriate problem solving and critical thinking

The mission of the Marine Transportation Department is to teach, mentor, train, assess, and nurture the natural curiosity of our students in their quest to become successful professionals in the maritime industry; to provide them with the desire and the skill to improve their knowledge in their chosen field; to help them to be leaders in their field, through academic study, technical knowledge, strong ethics, and hands on hard work so that they leave every vessel, job, company or institution a better place for those who follow; to foster an appreciation of family and community and encourage involvement in each.

The Marine Transportation Department offers two majors at the Bachelor's degree level and three majors at the Associate's degree level:

1. Marine Transportation Operation, BS**. Normally a four year course of study leading to a Bachelor's degree and a Merchant Marine License as Third Mate, Unlimited Tonnage. Participation in the Regiment is a requirement of this degree.
2. Vessel Operations and Technology, BS**. Normally a four year course of study leading to a Bachelor's degree and a Merchant Marine License as Mate, 500 Ton or 1600 Ton. Regimental participation is not required.
3. Small Vessel Operation, AS**. Normally a two year course of study leading to an Associate's degree and a Merchant Marine License as Mate, 200 Ton, Near Coastal. Regimental participation is not required.
4. Small Craft Design, AS. A two year collaborative program offered between Maine Maritime Academy and The Landing School of Boatbuilding and Design. Students in the Small Craft Design program must apply and be accepted to both Maine Maritime Academy and The Landing School*. Students are required to complete one full year in residence at Maine Maritime Academy and a full-immersion 10 month course at The Landing School. The Landing School is located in Kennebunkport, Maine.
5. Small Craft Systems, AS. A two year collaborative program offered between Maine Maritime Academy and The Landing School of Boatbuilding and Design. Students in the Small Craft Systems program must apply and be accepted to both Maine Maritime Academy and The Landing School*. Students are required to complete one full year in residence at Maine Maritime Academy and a full-immersion 10 month course at The Landing School. The Landing School is located in Kennebunkport, Maine.

*The Landing School of Boatbuilding and Design is accredited by the Accrediting Commission of Career Schools & Colleges of Technology (ACCSCT). The Associate's degree is granted by Maine Maritime Academy.

**Various other certifications as required by national and international regulations are covered in these degrees as well. These majors meet the applicable International Standards for Training, Certification and Watchkeeping (STCW).

Summer sessions are required for all majors in this department. Training cruises and cooperative work experiences are an integral part of a student's education. The college organizes the various summer sessions and assists in all aspects of planning to ensure a successful summer learning experience.

Minor programs in Marine Transportation Operations and Small Vessel Operations are also offered by this department, as well as a Concentration in Sail Training.

Naval Science

Faculty: CAPT Kearns (Chair), CDR Pierce, LT Gray, Capt Motsay, GySgt Cruz, QMC Davis.

Naval and Marine Corps officers are commissioned from Maine Maritime Academy in two categories — active duty through the Naval Service Reserve Officers Training Corps (NROTC) program and inactive duty reservists through the Strategic Sealift Midshipman Program (SSMP). NROTC program graduates continue on to assignments in Naval Aviation, Surface Warfare, Submarine Warfare, Special Warfare, or the U.S. Marine Corps. The SSMP program is designed to ensure the United States has a strong Merchant Marine to serve as a naval auxiliary in time of national emergency. Each of the two commissioning programs has its own academic and military service requirements commensurate with the amount of support and training received. Both programs require completion of certain Naval Science courses which are taught by the active duty officers assigned to the Department of Naval Science. A minor program in Naval Science is offered by this department.

Ocean Studies

Professors Boucher, Cleveland, Sahl, Verde; Associate Professor Friedman, Muhlin (Chair); Assistant Professors Baer, Pratt, Whitney; Instructor O'Malley; Visiting Professor Whittaker; Emeritus Professor Barlow.

In the Corning School of Ocean Studies students should, by graduation demonstrate competence with:

- Fundamental concepts and processes in the ocean environment
- Functional understanding of the nature of science and the scientific method
- Scientific technical skills including field and lab techniques, protocols, and the use of instrumentation
- Scientific analytical skills and understanding/interpreting diverse types of scientific information and problem solving
- Communicating science to diverse audiences and in different modes
- The role of science in the broader context of society and ethics
- One's own role as a professional scientist in the context of career development and society

The Department of Ocean Studies offers three majors leading to a Bachelor of Science degree: Coastal and Marine Environmental Science, Marine Biology and Oceanography. A minor

program in Oceanography and a concentration in Marine Biology are offered by this department. The department also offers three dual major programs in which students earn a Bachelor of Science degree in either Coastal and Marine Environmental Science, Marine Biology or Oceanography combined with the Small Vessel Operations curriculum. This five-year dual major meets the applicable USCG requirements, for a USCG license as mate of vessels not more than 200 tons.

The Coastal and Marine Environmental Science major will train students to work in the interdisciplinary field of coastal and marine environmental science. Students will learn and have experiences in the physical, chemical, geological, and life sciences, with a focus on the coastal and marine environment, and the role of humans within these environments. Graduates may pursue graduate education, as well as careers in environmental consulting, fisheries, aquaculture, policy, and public education.

The Marine Biology major focuses its training and experiences on the biological component of Ocean Studies. This major provides instruction in essential biology courses (biology, ecology, physiology, cell biology, and genetics) as well as more specialized topics relevant to marine organisms. Graduates of this program may pursue graduate education as well as careers in fisheries, aquaculture, environmental management, consulting, medicine, and public education.

The Oceanography major prepares students in the field of marine science, with an emphasis on problem solving and decision making in an ocean setting. This broad-based marine science curriculum encompasses the study of chemistry, biology, physics, geology, writing and communications, computer science, mathematics, humanities, and social sciences. Graduates of the program may pursue employment in the various fields of ocean sciences (resource management, aquaculture, research, environmental protection, science education, or oceanography) or graduate education.

Participation in the Regiment is optional when enrolled in these programs. Students in non-license majors may elect to participate in First Year Cruise as long as they meet the prerequisites listed in the course description for First Year Cruise, and are subject to the Priority for Registration Policies. A passport and TWIC (transportation worker identification credential) card are required to go on cruises.

Physical Education Requirement

Adjunct Instructors: Schroder.

The Department of Athletics offers a variety of courses in physical education and coaches varsity athletic teams in Men's and Women's Basketball, Men's and Women's Cross Country, Men's Golf, Football, Men's and Women's Lacrosse, Men's and Women's Soccer, and Women's Volleyball.

The physical education curriculum consists of courses focused on developing an understanding of physical activity and its contribution to the individual and society. Developing a positive attitude toward leading a healthy lifestyle and increased wellness will be a priority for all

courses. Varsity athletes may satisfy up to a total of 1.5 credit hour in Physical Education for participating in their sport. Athletes will receive 0.5 credits for successfully completing a full season of competition. In addition, members of the NROTC program may earn 0.5 credit per year for successfully completing each year in the NROTC program. Students who participate in the Regiment will earn one credit of PE after the completion of the first year of their program and passing the mandatory fitness examination. The programs which lead to an unlimited license require students to participate in the Regiment. Those program academic plans have been adjusted to reflect one less credit of PE in their academic plans. Any physical education requirement will be established and managed by each individual academic department.

Curricula

The following curricula list the required courses of the major programs. To be eligible for graduation, all courses must be either successfully completed at the Academy or completed by transfer from an accredited college, as approved by the Registrar.

Arts and Sciences

- Interdisciplinary Studies

Engineering Majors

The Department of Engineering offers six majors leading to a Bachelor of Science degree and two leading to an Associate of Science degree via a satellite program in Bath, Maine, for apprentices of General Dynamics Corporation's Bath Iron Works Shipyard.

- Marine Engineering Operations
- Marine Engineering Technology
- Marine Systems Engineering (License Track)
- Marine Systems Engineering (Non-License Track)
- Power Engineering Operations
- Power Engineering Technology
- Ship Design
- Ship Production

International Business and Logistics Major

- International Business and Logistics

Marine Transportation Majors

The William F. Thompson School of Marine Transportation offers five majors. The Marine Transportation Operations major and Vessel Operations and Technology major offers to a Bachelor of Science degree. The Small Vessel Operations major offers an Associate of Science degree. The Small Craft Design and Small Craft Systems majors offer an Associate of Science

degree, and require students to spend one year at the Castine campus of Maine Maritime Academy and one year in residence at The Landing School of Boat Building and Design in Kennebunkport, Maine.

- Marine Transportation Operations
- Vessel Operations and Technology
    - Maritime Management and 200 Ton Limited License*
- Small Vessel Operations
- Small Craft Design
- Small Craft Systems

* A 2 year program is available at the graduate level for qualified applicants intending to pursue the 200 Ton Limited License simultaneously with the M.S. degree in Global Logistics & Maritime Management. Please contact the graduate school for more information.

Maritime Technology Major

- Maritime Technology*

*Program is for alumni who can demonstrate eligibility. It is not for matriculating students.

Ocean Studies Majors

The Corning School of Ocean Studies offers six majors that lead to a Bachelor of Science Degree.

- Coastal and Marine Environmental Science
- Coastal and Marine Environmental Science/Small Vessel Operations (dual major)
- Marine Biology
- Marine Biology/Small Vessel Operations (dual major)
- Oceanography
- Oceanography/Small Vessel Operations (dual major)

Interdisciplinary Studies

- A student electing this major will be required to:
    - Apply to MMA and, if accepted, be assigned to the Interdisciplinary Studies' coordinator.
    - Submit a proposal statement that outlines the academic/career oriented goal and courses of interest that will form the foundation of the curriculum plan.
    - Develop a curriculum plan with the faculty advisor who will propose a sequence of courses and prerequisites to meet the degree requirements.
- Approval of application and admittance to this major will be conducted by a committee consisting of:

    - At least two faculty members representing the curriculum areas in the proposed plan.
    - A faculty member recommended by the program coordinator and appointed by the Academic Dean to serve as that student's academic advisor.
- Curriculum requirements include:
    - Minimum credit hours for BS degree – 120 credit hours
    - General Education, BS minimum requirements (41 credit hours)
        - Humanities
        - Social Sciences
        - Math and Natural Sciences
    - Curriculum plan that integrates choices from TWO existing majors consisting of introductory to advanced level courses (approximately 34 credit hours in each of two areas, 68 total) OR
    - Curriculum plan that integrates choices from THREE existing majors consisting of introductory to advanced level courses (approximately 24 credit hours in each of three areas – 72 total).

The following tables outline the course options for a student in Interdisciplinary Studies.

General Education recommendations:

Composition	3 credit hours
Humanities I, II	6
Hum/SS Electives	9
Lab Science	4
Math to Calc I	4
Computer Science	3
Advanced Writing	3
Physical Education	2
Electives*	
Gen. Ed Subtotal	34
Plus Electives	18 or 14 credit hours*

*In addition to the general education requirements, students will be required to choose free electives to bring the total credit hours to at least 120. Therefore, in a program that focuses on 2 areas of study, a student needs to take 18 credit hours in electives, and in a program with 3 areas of study, a student needs to take 14 credit hours in electives.

Interdisciplinary Studies

20+ credit packages (integrates choices from three existing majors)

International Business & Logistics Options:

A. Logistics Management Package

EC102 Microeconomics	3
HC232 Management Communication	3
LO201 Business Logistics	3
LO213 Freight Transportation	3
LO334 Global Purchasing and Material Handling	3
LO432 Strategic Supply Chain Management	3
MA101 Introduction to Business & Supply Chain Management	3
MA111 Financial Accounting	3
Total credits:	24

B. Business Management Package

EC102 Microeconomics	3
HC232 Management Communication	3
MA101 Introduction to Business & Supply Chain Management	3
MA111 Financial Accounting	3
MA222 Marketing Management	3
MA342 International Human Resource Management	3
MA304 International Business	3
MS253 Statistics for Business and Management	3
Total credits:	24

Marine Studies Options:

A. Marine Biology Package

BI101 General Biology I	4
BI102 General Biology II	4
BI201 Ecology	4
BI210 Marine Zoology	4
BI220 Marine Botany OR	4
BI322 Marine Ecology OR	4
BI306 Ichthyology OR any 300 Level Biology Course	4
OS101 Intro. to Oceanography and Env. Science	4

Total credits:	24

B. Marine Chemistry Package

CH210 Chemistry I	4
CH220 Chemistry II	4
CH310 Introduction to Organic Chemistry	4
CH401 Environmental Chemistry	3
CH402 Environmental Sampling Analysis	2
OS101 Intro. to Oceanography and Env. Science	4
OS212 Chemical Oceanography	3
Total credits:	24

C. Marine Geology Package

CH210 Chemistry I	4
CH220 Chemistry II	4
OS101 Intro. to Oceanography and Env. Science	4
OS204 Physical Geology	4
OS211 Geological Oceanography	4
OS212 Chemical Oceanography	3
Total credits:	23

Engineering Options:

A. Marine Engineering Operations

EG101 Fundamentals of Engineering Operations	3
EG261 Steam Generators I	3
EG292 Diesel Power I	3
EG321 Steam Turbines I	3
ET211 Thermodynamics I	3
ET371 Electrical Power I	3
PLUS ANY TWO OF THE FOLLOWING:	
ET201 Fluid Power	3
EG252 Machine Tool Operations I	2.5
EG243 Welding	2
EG372 Electrical Power II	3
EG392 Diesel Power II	3
EG431 Gas Turbines	3

Total credits:	22.5-24

B. Industrial Powerplant Technology

EG101 Fundamentals of Engineering Operations	3
ET211 Thermodynamics I OR	3
ES251 Engineering Thermodynamics I	3
ET202 Statics and Dynamics	4
ET201 Fluid Power	3
ET498 PET Capstone I	4
ET499 PET Capstone II	5
PLUS ANY ONE OF THE FOLLOWING:	
ET377 Engineering Economics	3
ET378 Computer Applications for Power	3
EG382 Steam Power Systems I	3
Total credits:	25

C. Technical Science

CS150 Structured Problem Solving with Computers	3
ET211 Thermodynamics I OR	3
ES251 Engineering Thermodynamics I	3
ET202 Statics & Dynamics	4
ET220 Dynamics	3
ET230 Strength of Materials	3
ET201 Fluid Power	3
PLUS ANY TWO OF THE FOLLOWING:	
NS102 Ships Structure	3
NS301 Stability	3
ES245 Engineering Fluid Mechanics	3
ET212 Thermodynamics II OR	3
ES352 Engineering Thermodynamics II	3
ET377 Engineering Economics	3
Total credits:	25

Marine Transportation Options:

ANY FOUR OF THE FOLLOWING:	
NS101 Introduction to Nautical Science	2
NS131 Introduction to Marine Transportation	3
NS132 Small Craft Technology	3
NS135 Small Craft Construction	3
NS122 Cargo I	3
PLUS ANY THREE OF THE FOLLOWING:	
NS271 & NS272 Terrestrial Navigation I & Lab	4
NS262 Navigation Rules I	3
NS292 Electronic Navigation	3
NS282 Celestial Navigation I	3
NS221 Meteorology	3
NS382 Celestial Navigation II	3
NS461 Casualty Analysis	3
NS232 Marine Systems	3
PLUS ANY ONE OF THE FOLLOWING:	
NS342 Workboat Operations	3
NS345 Shiphandling	3
NS341 Auxiliary Sail Vessel Operations	3
Total credits	23-25

30+ credit packages (integrates choices from two existing majors)

International Business & Logistics Options:

A. Logistics Management Package

EC102 Microeconomics	3
HC232 Management Communication	3
LO201 Business Logistics	3
LO213 Freight Transportation	3
LO334 Global Purchasing and Material Handling	3
LO311 Logistics Information System	3
LO422 International Logistics	3
LO432 Strategic Supply Chain Management	3
MA101 Introduction to Business & Supply Chain Management	3
MA111 Financial Accounting	3
MA312 Production and Operations Management	3
Total credits:	33

B. Business Management package

EC102 Microeconomics	3
HC232 Management Communication	3
MA101 Introduction to Business & Supply Chain Management	3
MA111 Financial Accounting	3
MA222 Marketing Management	3
MA242 Managerial Accounting	3
MA243 Financial Management	3
MA342 International Human Resource Management	3
MA304 International Business	3
MA422 International Business Law	3
MS253 Statistics for Business and Management	3
Total credits:	33

Marine Studies Options:

A. Marine Biology Package

BI101 General Biology I	4
BI102 General Biology II	4
BI201 Ecology	4
BI210 Marine Zoology	4
CH210 Chemistry I	4
CH220 Chemistry II	4
OS101 Intro. to Oceanography and Env. Science	4
BI322 Marine Ecology OR	3
BI220 Marine Botany OR	4
BI306 Ichthyology	4
Total credits:	31-32

B. Marine Chemistry Package

CH210 Chemistry I	4
CH220 Chemistry II	4
CH310 Introduction to Organic Chemistry	4
CH401 Environmental Chemistry	3
CH402 Environmental Sampling Analysis	3

OS101 Introduction to Marine Science	4
OS212 Chemical Oceanography	3
Dept. Elective	4
Dept. Elective	4
Total credits:	33

C. Marine Geology Package

CH210 Chemistry I	4
CH220 Chemistry II	4
OS101 Intro. to Oceanography and Env. Science	4
OS204 Physical Geology	4
OS211 Geological Oceanography	3
OS212 Chemical Oceanography	3
OS307 Sedimentology	4
Dept. Elective	4
Dept. Elective	3
Total credits:	33

Engineering Options:

A. Marine Engineering Operations

EG101 Fundamentals of Engineering Operations	2
PS102 Technical Physics I	4
ET201 Fluid Power	3
ET211 Thermodynamics I	3
EG243 Welding	2
EG252 Machine Tool Operation I	2.5
EG261 Steam Generators I	3
EG292 Diesel Power I	3
EG321 Steam Turbines I	3
ET371 Electrical Power I	3
EG392 Diesel Power II	3
EG431 Gas Turbines	3
Total credits:	34.5

B. Industrial Powerplant Technology

EG101 Fundamentals of Engineering Operations	2

PS102 Technical Physics I	4
ET202 Statics and Dynamics	4
ET201 Fluid Power	3
ET211 Thermodynamics I OR	3
ES251 Engineering Thermodynamics I	3
ET371 Electrical Power I	4
ET377 Engineering Economics	3
ET378 Computer Applications for Power	3
EG382 Steam Power Systems I	3
ET498 PET Capstone I	4
ET499 PET Capstone II	5
Total credits:	38

C. Technical Science

NS102 Ship Structure	3
CS150 Structured Problem Solving with Computers	3
ET201 Fluid Power	3
ET202 Statics and Dynamics	4
ET211 Thermodynamics I OR	3
ES251 Engineering Thermodynamics I	3
ET212 Thermodynamics II OR	3
ES352 Engineering Thermodynamics II	3
ET220 Dynamics	3
ET230 Strength of Materials	3
ES245 Engineering Fluid Mechanics	3
NS301 Stability	3
ET362 Nature and Properties of Materials	3
ET377 Engineering Economics	3
Total credits:	37

Marine Transportation Options:

ANY FOUR OF THE FOLLOWING:	
NS101 Introduction to Nautical Science	2
NS122 Cargo I	3

NS131 Introduction to Marine Transportation	3
NS132 Small Craft Technology	3
NS135 Small Craft Construction	3
ANY SEVEN OF THE FOLLOWING:	
NS271 & NS272 Terrestrial Navigation I & Lab	4
NS221 Meteorology	3
NS262 Navigation Rules I	3
NS282 Celestial Navigation I	3
NS292 Electronic Navigation	3
NS382 Celestial Navigation II	3
NS461 Casualty Analysis	3
NS232 Marine Systems	3
ANY ONE OF THE FOLLOWING:	
NS301 Stability	3
NS341 Auxiliary Sail Vessel Operations	3
NS342 Workboat Operations	3
NS345 Shiphandling	3
ANY TWO MTO OR VOT MAJOR COURSES NOT OTHERWISE DESCRIBED IN THE PACKAGE LISTED ABOVE.	
Total credits:	41-43

Marine Engineering Operations

The Marine Engineering Operations program is concerned primarily with the operation and maintenance of marine and industrial steam and diesel power plants and with related electrical and refrigeration plants. Classroom studies are closely coordinated with practical experience aboard ship and in laboratories. Successful completion of the program leads to the Bachelor of Science degree and, after passing a federal examination, a Third Assistant Engineer's license. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the B.S. degree, graduating students are required to have a minimum grade point average of 2.25 in the MEO program core courses. For the MEO program, core courses are defined as courses with the prefixes CE, CR, EG, ET, MS, NA, and PS. Students majoring in this program may enroll in any of the minor programs offered at the college. Graduates of this program are eligible to apply for a Maine Third Class Stationary Power Plant Operator's license. Graduates are employed by shipping firms throughout the world, and by power generation and energy production companies.

The **Objectives** of the Marine Engineering Operations major are as follows:

1. Versatile marine operations engineers with the technical and managerial skills necessary to enter a variety of different careers in the field of marine engineering in the areas of operations, maintenance, and manufacturing.
2. Marine operations engineers with competencies in analytical thinking, problem solving, teamwork, communications, and with the ability, and hands-on experience, to apply these skills to support design applications and to solve existing and emerging problems.
3. Marine operations engineers who recognize the need for, and who have the ability to, remain current in their chosen field. This will include understanding professional ethics, knowledge of contemporary issues, potential environmental issues pertaining to power plant operations and the pursuit of lifelong learning.

The **Outcomes** of the Marine Engineering Technology major are as follows:
Marine Engineering Operations graduates will have these characteristics:

1. The ability to apply basic knowledge of mathematics, science and engineering principles to solve technical problems associated with marine equipment, systems, and vehicles.
2. A thorough understanding of the current technologies used in the operation, maintenance, analysis, and management of modern marine power plants and associated marine auxiliary equipment and systems.
3. The ability to identify and solve technical problems with applications in the principles of fluid mechanics, hydrostatic stability, and energy systems to marine equipment systems and vehicles.
4. The ability to use computational methods, computers, and modern technical tools in professional practice.
5. The ability to support the design of a system, component, or process appropriate to marine engineering operations.
6. The ability to function effectively on teams and within a diverse environment.

7. The ability to communicate effectively through oral, written, visual, and graphical methods, and demonstrating proficiency in the use of design manuals and material/equipment specifications.
8. Recognition of the need for self-improvement through continuing education and the ability to engage in lifelong learning.
9. Understanding of professionalism and ethics and associated responsibilities.
10. Knowledge of contemporary issues, environmental impact and industry regulations applicable to marine engineering and understanding of the impact of engineering and/or technical solutions within a global perspective.

Notes:

- Each first-year student must pass PE114.

Additional requirements for graduation:

- Complete practical training and regimental requirements as published.
- Pass both practical and written portions of USCG lifeboatman examination and the USCG Third Assistant Engineer's examination.
- Complete sea time requirements as required for the USCG license.
- Core classes within the MEO Program have STCW competencies within the course, and students are required to achieve a minimum of 70% grade to obtain credit for these competencies.

The following table outlines the normal sequence of courses taken by students majoring in Marine Engineering Operations:

2020/Fall – Undergraduate/Bachelor of Science/Marine Engineering Operations

Major Requirements

Credits : 139.50 Min | 141.50 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 8 Min | 8 Max Credits : 15.00 Min | 15.00 Max

Course	Name	Credits
EG101	Fundamentals of Engineering Operations	2.00
ET101	Graphics	3.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00
NS101	Introduction to Nautical Science	2.00

PD101	Personal Development I		0.50
PE114	Ocean Survival		0.50
USCG1	USCG Fire Fighting		0.00
		Total :	15.00

First Year Sem1 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

First Year Semester 2

Courses : 10 Min | 10 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
HC220	Humanities I	3.00
MS110	Technical Calculus I	4.00
MT12	Maintenance – First Year	0.00
NA152	Ship Structure & Stability	3.00
PD102	Personal Development I	0.50
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
VPDSD	Vessel Person. w/ Desig. Security Duties	0.00
	Total :	17.50

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CE103	First Year Cruise – Engine	4.00
	Total :	4.00

Sophomore Semester 1

Courses : 7 Min | 7 Max Credits : 16.50 Min | 16.50 Max

Course	Name	Credits
EG261	Steam Generators I	3.00
EG292	Diesel Power I	3.00
ET201	Fluid Power	3.00
HC230	Humanities II	3.00
MT21E	Maintenance Sophomore Engine	0.00
PD201	Personal Development II	0.50
PS201	Technical Physics II	4.00

		Total :	16.50

Sophomore Semester 2

Courses : 7 Min | 7 Max Credits : 18.00 Min | 18.00 Max

Course	Name	Credits
EG234	Power Equipment Lab	2.00
EG252	Machine Tool Operations I	2.50
EG392	Diesel Power II	3.00
ET211	Thermodynamics I	3.00
ET371	Electrical Power I	4.00
ET452	Technical Communications	3.00
PD202	Personal Development II	0.50
	Total :	18.00

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CE203	Cadet Shipping Engine	4.00
	Total :	4.00

Junior Semester 1

Courses : 5 Min | 5 Max Credits : 10.50 Min | 10.50 Max

Course	Name	Credits
EG243	Welding	2.00
EG321	Steam Turbines I	3.00
EG351	Machine Tool Operations II	2.50
EG372	Electrical Power II	3.00
PD301	Personal Development III	0.00
	Total :	10.50

Junior Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Junior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	

PY%	Any PY Course

Junior Semester 2

Courses : 5 Min | 5 Max Credits : 10.00 Min | 10.00 Max

Course	Name		Credits
CH101	Chemical Principles		4.00
EG382	Steam Power Systems I		3.00
EG431	Gas Turbines		3.00
MT32E	Maintenance Junior Engine		0.00
PD302	Personal Development III		0.00
		Total :	10.00

Junior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name		Credits
CE303	Junior Cruise Engine		4.00
		Total :	4.00

Senior Semester 1

Courses : 6 Min | 6 Max Credits : 11.50 Min | 11.50 Max

Course	Name		Credits
EG350	Environmental Regulation & Compliance		3.00
EG481	Marine Refrigeration & Air Conditioning		2.50
ET401	Automation and Control		3.00
ET432	Power Control Electronics		3.00
MT41E	Maintenance Senior Engine		0.00
PD401	Personal Development IV		0.00
		Total :	11.50

Senior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Semester 2

Courses : 4 Min | 4 Max Credits : 9.00 Min | 9.00 Max

Course	Name		Credits
EG422	Steam Power Systems II		3.00
ET377	Engineering Economics		3.00
MD310	Medical Care Provider		3.00
PD402	Personal Development IV		0.00
		Total :	9.00

Senior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem2 Tech Elective

Courses : 1 Min | 1 Max Credits : 1.00 Min | 3.00 Max

Course	Name	Credits
EG%	Any EG Course	
ES%	Any ES Course	
ET%	Any ET Course	
NA%	Any NA Course	

Senior Sem2 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GE%	Any GE Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO%	Any PO Course	
PY%	Any PY Course	

Marine Engineering Technology

The Marine Engineering Technology program includes all of the practical shipboard work and most of the required courses of the Marine Engineering Operations program with additional required courses in mathematics, writing and communications, and technical sciences. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the B.S. degree, graduating students are required to have a minimum grade point average of 2.25 in the MET program core courses. For the MET program, core courses are defined as courses with the prefixes CE, CR, EG, ET, MS, NA, and PS. The program provides the graduate with a background for work in many areas of the maritime industry, both at sea and ashore, as well as in non-maritime industries such as public utilities and manufacturing. Successful completion of this major leads to the same degree and licenses as the Operations program, with additional eligibility to sit for the Fundamentals of Engineering Examination. Graduates are employed at sea and ashore throughout the world.

The **Objectives** of the Marine Engineering Technology major are as follows:

Three to five years after receiving their MMA Marine Engineering Technology Bachelor of Science degree, typical MET graduates are expected to be:

1. Versatile engineering technologists with the technical and managerial skills necessary to enter a variety of different careers in the field of marine engineering technology areas of operations, maintenance, and manufacturing.
2. Engineering technologists with competencies in analytical thinking, problem solving, teamwork, communications, and with the ability, and hands-on experience, to apply these skills to support design applications and to solve existing and emerging problems.

The **Outcomes** of the Marine Engineering Technology major are as follows:

Students will demonstrate the following through the Marine Engineering Technology program of study at the Academy:

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline.
2. An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline.
3. An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.
4. An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes.
5. An ability to function effectively as a member as well as a leader on technical teams.

The Marine Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org. Notes:

- Each first-year student must pass PE114.

Additional requirements for graduation:

- Complete practical training and regimental requirements as published.
- Pass both practical and written portions of USCG lifeboatman examination and the USCG Third Assistant Engineer's examination.
- Complete sea time requirements as required for the USCG license.
- Core classes within the MET Program have STCW competencies within the course, and students are required to achieve a minimum of 70% grade to obtain credit for these competencies.

The following table outlines the normal sequence of courses taken by students majoring in Marine Engineering Technology.

2020/Fall – Undergraduate/Bachelor of Science/Marine Engineering Technology

Major Requirements

Credits : 144.50 Min | 144.50 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 8 Min | 8 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
CH101	Chemical Principles	4.00
EG101	Fundamentals of Engineering Operations	2.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00
NS101	Introduction to Nautical Science	2.00
PD101	Personal Development I	0.50
PE114	Ocean Survival	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	16.00

First Year Sem1 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits

PE%	Any PE Course **(Optional)**	

First Year Semester 2

Courses : 9 Min | 9 Max Credits : 14.50 Min | 14.50 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
MS110	Technical Calculus I	4.00
MT12	Maintenance – First Year	0.00
NA152	Ship Structure & Stability	3.00
PD102	Personal Development I	0.50
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
VPDSD	Vessel Person. w/ Desig. Security Duties	0.00
	Total :	14.50

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CE103	First Year Cruise – Engine	4.00
	Total :	4.00

Sophomore Semester 1

Courses : 8 Min | 8 Max Credits : 18.50 Min | 18.50 Max

Course	Name	Credits
EG234	Power Equipment Lab	2.00
EG261	Steam Generators I	3.00
EG292	Diesel Power I	3.00
ET101	Graphics	3.00
ET201	Fluid Power	3.00
MT21E	Maintenance Sophomore Engine	0.00
PD201	Personal Development II	0.50
PS201	Technical Physics II	4.00
	Total :	18.50

Sophomore Semester 2

Courses : 7 Min | 7 Max Credits : 18.00 Min | 18.00 Max

Course	Name	Credits
EG243	Welding	2.00
EG252	Machine Tool Operations I	2.50
EG392	Diesel Power II	3.00

ET211	Thermodynamics I		3.00
ET371	Electrical Power I		4.00
HC220	Humanities I		3.00
PD202	Personal Development II		0.50
		Total :	18.00

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name		Credits
CE203	Cadet Shipping Engine		4.00
		Total :	4.00

Junior Semester 1

Courses : 7 Min | 7 Max Credits : 17.50 Min | 17.50 Max

Course	Name		Credits
EG321	Steam Turbines I		3.00
EG351	Machine Tool Operations II		2.50
EG372	Electrical Power II		3.00
ET212	Thermodynamics II		3.00
ET452	Technical Communications		3.00
HC230	Humanities II		3.00
PD301	Personal Development III		0.00
		Total :	17.50

Junior Semester 2

Courses : 6 Min | 6 Max Credits : 14.00 Min | 14.00 Max

Course	Name		Credits
EG382	Steam Power Systems I		3.00
ET202	Statics and Dynamics		4.00
ET432	Power Control Electronics		3.00
MS120	Technical Calculus II		4.00
MT32E	Maintenance Junior Engine		0.00
PD302	Personal Development III		0.00
		Total :	14.00

Junior Sem2 Hum-SS

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	

HY%	Any HY Course
PY%	Any PY Course

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name		Credits
CE303	Junior Cruise Engine		4.00
		Total :	4.00

Senior Semester 1

Courses : 8 Min | 8 Max Credits : 14.50 Min | 14.50 Max

Course	Name		Credits
EG422	Steam Power Systems II		3.00
EG481	Marine Refrigeration & Air Conditioning		2.50
ET230	Strength of Materials		3.00
ET351	Thermal/Fluids Lab		2.00
ET401	Automation and Control		3.00
ET491	Marine Engineering Technology Capstone I		1.00
MT41E	Maintenance Senior Engine		0.00
PD401	Personal Development IV		0.00
		Total :	14.50

Senior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Semester 2

Courses : 4 Min | 4 Max Credits : 7.00 Min | 7.00 Max

Course	Name		Credits
ET362	Nature and Properties of Materials		3.00
ET492	Marine Engineer Technology Capstone II		1.00
MD310	Medical Care Provider		3.00
PD402	Personal Development IV		0.00
		Total :	7.00

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Marine Systems Engineering

This major is offered in two tracks: the five year License Track and the four year Non-License Track. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the B.S. degree, graduating students are required to have a minimum grade point average of 2.25 in the MSE program core courses. For the MSE program, core courses are defined as courses with the prefixes CE, CO, CR, EG, ES, ET, MS, NA, and PS.

The **Objectives** of the Marine Systems Engineering major are as follows:

Three to five years after receiving a B.S. from Maine Maritime Academy, the typical Marine Systems Engineering graduate is expected to:

- Be competent and confident in his or her professional career and able to freely choose between graduate engineering education and design engineering careers.
- Have demonstrated the professionalism, technical competence and versatility to be moving into positions of technical responsibility.
- Recognize that his or her undergraduate education at Maine Maritime Academy has provided a solid basis for assuming technical responsibilities and opportunities for continued career development.
- Understand the importance of social and ethical responsibilities in his or her engineering career.

The **Outcomes** of the Marine Systems Engineering major are as follows:

Students will demonstrate the following through the Marine Systems Engineering program of study at the Academy:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Marine Systems Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Marine Systems Engineering (USCG License Track)

The Marine Systems Engineering – License Track program combines many of the technical courses of the Engineering Operations and the Engineering Technology programs with a 10-course calculus-based design and analysis sequence. In addition to the 180 days of industrial practice at sea offered by the other programs, "Systems" also includes a three-to-four month co-op term in a shoreside industrial or government engineering facility.

The complete program takes five years, with the opportunity to sit for the U.S. Coast Guard Third Assistant Engineer's License in the fourth year and for the Fundamentals of Engineering examination at the completion of the first semester of the fifth year. Students in this program may apply for a Bachelor of Science degree with a major in Engineering Operations after four years of study, with automatic eligibility to return to commence the fifth year within a three-year period after graduation. (With this four-year track, Probability and Statistics for Engineering and Science (MS251) is not required.)

Successful completion of the 5-year program leads to a Bachelor of Science degree with a major in Marine Systems Engineering – License Track, and prepares the graduate for a career as a sea-going merchant marine engineering officer, or in applied or design engineering, engineering consulting, or for a management position in maritime, industrial power, or general engineering fields. Graduates of Marine Systems Engineering – License Track are also well prepared to pursue advanced study at graduate school in numerous engineering disciplines.

The program in Marine Systems Engineering – License Track is designed for students with a strong mathematical and analytical ability as well as interest in practical engineering. It is the most academically rigorous course of study at Maine Maritime Academy. Only a few engineering programs in the United States offer a comparable curriculum. The synergy of the 10-course design/analysis sequence with a strong hands-on marine component is the hallmark of the MSE license track.

Notes:

- Each first-year student must pass PE114.

Additional requirements for graduation:

- Complete practical training and regimental requirements as published.
- Pass both practical and written portions of USCG lifeboatman examination and the USCG Third Assistant Engineer's examination.
- Complete sea time requirements as required for the USCG license.

- Core classes within the MSE Program have STCW competencies within the course, and students are required to achieve a minimum of 70% grade to obtain credit for these competencies.

The following table outlines the normal sequence of courses taken by students majoring in Marine Systems Engineering – License Track:

2020/Fall – Undergraduate/Bachelor of Science/Marine Systems Engineering (USCG License Track)

Major Requirements

Credits : 175.50 Min | 177.50 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 9 Min | 9 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
CS151	Introduction to Engineering Programming	3.00
EG101	Fundamentals of Engineering Operations	2.00
ES180	Engineering Design I	2.00
HC111	Composition	3.00
MS150	Calculus I	4.00
NS101	Introduction to Nautical Science	2.00
PD101	Personal Development I	0.50
PE114	Ocean Survival	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	17.00

First Year Sem1 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

First Year Semester 2

Courses : 10 Min | 10 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
CH152	Engineering Chemistry	4.00
EG243	Welding	2.00
ET101	Graphics	3.00

MS160	Calculus II		4.00
MT12	Maintenance – First Year		0.00
PD102	Personal Development I		0.50
PS162	Physics I		4.00
USCG2	USCG Fire Fighting Live Burn		0.00
USCG3	Lifeboat Exam		0.00
VPDSD	Vessel Person. w/ Desig. Security Duties		0.00
		Total :	17.50

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CE103	First Year Cruise – Engine	4.00
	Total :	4.00

Sophomore Semester 1

Courses : 7 Min | 7 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
EG265	Steam Generating Systems	2.00
EG292	Diesel Power I	3.00
ES201	Introduction to Thermal Fluid Science	5.00
ES205	Engineering Statics	3.00
MT21E	Maintenance Sophomore Engine	0.00
PD201	Personal Development II	0.50
PS261	Physics II	4.00
	Total :	17.50

Sophomore Semester 2

Courses : 7 Min | 7 Max Credits : 19.00 Min | 19.00 Max

Course	Name	Credits
EG234	Power Equipment Lab	2.00
EG252	Machine Tool Operations I	2.50
EG392	Diesel Power II	3.00
ES352	Engineering Thermodynamics II	3.00
ES371	Enhanced Electrical Power I	4.00
MS252	Engineering Math I	4.00
PD202	Personal Development II	0.50
	Total :	19.00

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name		Credits
CE203	Cadet Shipping Engine		4.00
		Total :	4.00

Junior Semester 1

Courses : 7 Min | 7 Max Credits : 18.00 Min | 18.00 Max

Course	Name	Credits
EG321	Steam Turbines I	3.00
EG372	Electrical Power II	3.00
ES420	Engineering Dynamics	3.00
HC230	Humanities II	3.00
MS260	Differential Equations	3.00
OC101	Introduction to Ocean Science	3.00
PD301	Personal Development III	0.00
	Total :	18.00

Junior Semester 2

Courses : 8 Min | 8 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
EG382	Steam Power Systems I	3.00
ES235	Engineering Strength of Materials	3.00
ES245	Engineering Fluid Mechanics	3.00
ES490	Numerical & Computer Methods for Enginee	3.00
ET351	Thermal/Fluids Lab	2.00
ET452	Technical Communications	3.00
MT32E	Maintenance Junior Engine	0.00
PD302	Personal Development III	0.00
	Total :	17.00

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CE303	Junior Cruise Engine	4.00
	Total :	4.00

Senior Semester 1

Courses : 7 Min | 7 Max Credits : 14.50 Min | 14.50 Max

Course	Name	Credits
EG481	Marine Refrigeration & Air Conditioning	2.50
ES433	Control Systems Engineering	3.00
ET432	Power Control Electronics	3.00

MD310	Medical Care Provider		3.00
MS251	Prob & Statistics For Eng & Science		3.00
MT41E	Maintenance Senior Engine		0.00
PD401	Personal Development IV		0.00
		Total :	14.50

Senior Sem1 Hum Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
HC%	Any HC Course	
HY%	Any HY Course	

Senior Semester 2

Courses : 5 Min | 5 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
EG422	Steam Power Systems II	3.00
ES380	Engineering Design II	3.00
ET377	Engineering Economics	3.00
NA372	Naval Architecture I	3.00
PD402	Personal Development IV	0.00
	Total :	12.00

Senior Sem2 SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
PY%	Any PY Course	

Senior Semester 3

Courses : 1 Min | 1 Max Credits : 1.50 Min | 1.50 Max

Course	Name	Credits
CO400	Cooperative Industrial Field Exp	1.50
	Total :	1.50

Fifth Year Semester 1

Courses : 4 Min | 4 Max Credits : 10.00 Min | 10.00 Max

Course	Name	Credits
ES430	Machine Design	3.00
ES501	Engineering Materials	3.00
ES598	Capstone Design Preparation	1.00
MS451	Engineering Mathematics II	3.00
	Total :	10.00

FifthYear Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Fifth Year Semester 2

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits
ES599	Capstone Design Project	3.00
HC220	Humanities I	3.00
	Total :	6.00

FifthYear Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 1.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

FifthYear Sem2 Hum-SS Elect

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Marine Systems Engineering (Non-License Track)

The Non-License Track of Marine Systems Engineering is a four-year Bachelor of Science program including all the humanities, math, science, and engineering analysis and design courses of the 5-year Marine Systems Engineering program, but without many of the engineering operations courses required by the 5-year program. It does not lead to eligibility to sit for the USCG Third Assistant Engineer's license.

The MSE Non-License Track program is one of the more academically rigorous courses of study at Maine Maritime Academy. Comparable to the mechanical engineering curricula of other institutions, MSE Non-License Track is distinguished by its grounding in marine applications and naval architecture.

Successful completion of the 4-year program leads to a Bachelor of Science degree in Marine Systems Engineering – Non License Track, and prepares the graduate for careers in engineering design, consulting, or management in maritime, industrial power, or general engineering fields. Graduates of this non-license track are also well prepared to pursue advanced study at graduate school in numerous engineering disciplines.

Notes:

- Each first-year student must pass PE114.

The following table outlines the normal sequence of courses taken by students majoring in Marine Systems Engineering – Non-License Track:

2020/Fall – Undergraduate/Bachelor of Science/Marine Systems Engineering (Non-License Track)

Major Requirements

Credits : 146.00 Min | 150.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 7 Min | 7 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
CS151	Introduction to Engineering Programming	3.00
EG101	Fundamentals of Engineering Operations	2.00
EG243	Welding	2.00
ES180	Engineering Design I	2.00
FY100	First Year Experience	1.00
HC111	Composition	3.00
MS150	Calculus I	4.00
	Total :	17.00

First Year Sem1 Swim PE

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE102	Basic Water Skills **(Optional)**	0.50
PE113	Lifeguard Training **(Optional)**	1.00
PE114	Ocean Survival **(Optional)**	0.50
PE122	Water Basketball **(Optional)**	0.50
PE123	Water Polo **(Optional)**	0.50

	Total :	3.00

First Year Sem1 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
CH152	Engineering Chemistry	4.00
ES196	Ship Systems & Design	2.50
ET101	Graphics	3.00
MS160	Calculus II	4.00
PS162	Physics I	4.00
	Total :	17.50

Sophomore Semester 1

Courses : 5 Min | 5 Max Credits : 18.00 Min | 18.00 Max

Course	Name	Credits
EG292	Diesel Power I	3.00
ES201	Introduction to Thermal Fluid Science	5.00
ES205	Engineering Statics	3.00
MS251	Prob & Statistics For Eng & Science	3.00
PS261	Physics II	4.00
	Total :	18.00

Sophomore Semester 2

Courses : 6 Min | 6 Max Credits : 18.50 Min | 18.50 Max

Course	Name	Credits
EG252	Machine Tool Operations I	2.50
ES235	Engineering Strength of Materials	3.00
ES352	Engineering Thermodynamics II	3.00
ES371	Enhanced Electrical Power I	4.00
ET351	Thermal/Fluids Lab	2.00
MS252	Engineering Math I	4.00
	Total :	18.50

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 1.50 Min | 4.00 Max

Course	Name	Credits
CO203	Cooperative Experience Eng I	4.00

			Total :	4.00

Junior Semester 1

Courses : 6 Min | 6 Max Credits : 18.00 Min | 18.00 Max

	Course		Name	Credits
	ES420	And	Engineering Dynamics	3.00
	ET432	And	Power Control Electronics	3.00
	HC220	And	Humanities I	3.00
	MS260	And	Differential Equations	3.00
	OC101	And	Introduction to Ocean Science	3.00
(	EG321	Or	Steam Turbines I	3.00
	EG261	Or	Steam Generators I	3.00
	EG372	)	Electrical Power II	3.00
			Total :	18.00

Junior Semester 2

Courses : 5 Min | 5 Max Credits : 15.00 Min | 15.00 Max

Course	Name	Credits
ES245	Engineering Fluid Mechanics	3.00
ES380	Engineering Design II	3.00
ES490	Numerical & Computer Methods for Enginee	3.00
ET452	Technical Communications	3.00
NA372	Naval Architecture I	3.00
	Total :	15.00

Junior Sem2 Tech Elect

Courses : 1 Min | 1 Max Credits : 2.00 Min | 3.00 Max

Course	Name	Credits
EG%	Any EG Course	
ES%	Any ES Course	
ET%	Any ET Course	
NA%	Any NA Course	

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 1.50 Min | 2.00 Max

Course	Name	Credits
CO400	Cooperative Industrial Field Exp	1.50
	Total :	1.50

Senior Semester 1

Courses : 5 Min | 5 Max Credits : 15.00 Min | 15.00 Max

Course	Name	Credits

ES430	Machine Design		3.00
ES433	Control Systems Engineering		3.00
ES501	Engineering Materials		3.00
MS451	Engineering Mathematics II		3.00
NA430	Naval Architecture II		3.00
		Total :	15.00

Senior Sem1 SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
PY%	Any PY Course	
SO%	Any SO Course	

Senior Semester 2

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
ET377	Engineering Economics	3.00
HC230	Humanities II	3.00
NA599	Capstone Design Project	3.00
	Total :	9.00

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Humanities Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
HC%	Any HC Course	
HY%	Any HY Course	

Senior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Power Engineering Operations

The Power Engineering Operations program is concerned primarily with the operation and maintenance of industrial steam and gas turbine power plants and with related electrical systems. Classroom studies are closely coordinated with practical experience in laboratories. Successful completion of the program leads to the Bachelor of Science degree and, after passing a State of Maine examination, a 4th-Class Stationary Engineer's license. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the B.S. degree, graduating students are required to have a minimum grade point average of 2.25 in the PEO program core courses. For the PEO program, core courses are defined as courses with the prefixes CO, EG, ET, MS, and PS. Students majoring in this program may enroll in any of the minor programs offered at the college. Graduates are employed by power generation and energy production companies.

The **Objectives** of the Power Engineering Operations major are as follows:

1. Operators with competencies in existing and emerging power production technologies, industry best operations practices, teamwork, communications, and with the ability, and hands-on experience, to apply these skills to operations and maintenance of power plants.
2. Operators who recognize the need for, and who have the ability to, remain current, and upgrade their capabilities, in their chosen field. This will include upgrading their operating license.

The following table outlines the normal sequence of courses taken by students majoring in Power Engineering Operations:

Notes:

- Each first-year student must pass a swim-based PE Class.

2020/Fall – Undergraduate/Bachelor of Science/Power Engineering Operations

Major Requirements

Credits : 127.00 Min | 129.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 6 Min | 6 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits

CS150	Structured Problem Solving with Computer		3.00
EG101	Fundamentals of Engineering Operations		2.00
FY100	First Year Experience		1.00
HC111	Composition		3.00
MS101	Pre-Calculus Mathematics		4.00
USCG1	USCG Fire Fighting		0.00
		Total :	13.00

First Year Semester 2

Courses : 6 Min | 6 Max Credits : 14.00 Min | 14.00 Max

Course	Name	Credits
ET101	Graphics	3.00
HC220	Humanities I	3.00
MS110	Technical Calculus I	4.00
MT12	Maintenance – First Year	0.00
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
	Total :	14.00

First Year Sem2 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

First Year Sem2 Swim PE

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE102	Basic Water Skills **(Optional)**	0.50
PE103	Skin & Scuba Diving **(Optional)**	1.00
PE113	Lifeguard Training **(Optional)**	1.00
PE114	Ocean Survival **(Optional)**	0.50
PE123	Water Polo **(Optional)**	0.50
	Total :	3.50

Sophomore Semester 1

Courses : 6 Min | 6 Max Credits : 18.00 Min | 18.00 Max

Course	Name	Credits
EG243	Welding	2.00
EG261	Steam Generators I	3.00
EG292	Diesel Power I	3.00
ET201	Fluid Power	3.00

HC230	Humanities II		3.00
PS201	Technical Physics II		4.00
		Total :	18.00

Sophomore Semester 2

Courses : 6 Min | 6 Max Credits : 18.50 Min | 18.50 Max

Course	Name		Credits
CH101	Chemical Principles		4.00
EG234	Power Equipment Lab		2.00
EG252	Machine Tool Operations I		2.50
EG392	Diesel Power II		3.00
ET211	Thermodynamics I		3.00
ET371	Electrical Power I		4.00
		Total :	18.50

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 2.00 Min | 2.00 Max

Course	Name		Credits
CO201	PEO Cooperative Industrial Fld Exp I		2.00
		Total :	2.00

Junior Semester 1

Courses : 3 Min | 3 Max Credits : 8.50 Min | 8.50 Max

Course	Name		Credits
EG321	Steam Turbines I		3.00
EG351	Machine Tool Operations II		2.50
EG372	Electrical Power II		3.00
		Total :	8.50

Junior Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Junior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Junior Semester 2

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name		Credits
EG382	Steam Power Systems I		3.00
EG431	Gas Turbines		3.00
ET401	Automation and Control		3.00
ET452	Technical Communications		3.00
		Total :	12.00

Junior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 2.00 Min | 2.00 Max

Course	Name		Credits
CO301	PEO Coop Industrial Field Exp II		2.00
		Total :	2.00

Senior Semester 1

Courses : 2 Min | 2 Max Credits : 7.00 Min | 7.00 Max

Course	Name		Credits
EG497	Power Engineering Operations Capstone I		4.00
ET212	Thermodynamics II		3.00
		Total :	7.00

Senior Sem1 SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
PY%	Any PY Course	
SO%	Any SO Course	

Senior Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	

HC%	Any HC Course
HMSS%	Any Hum/SS Transfer Course
HY%	Any HY Course
PY%	Any PY Course

Senior Semester 2

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name		Credits
EG498	Power Engineering Operations Capstone II		4.00
ET377	Engineering Economics		3.00
ET482	Heating, Ventilation, & Air Conditioning		2.00
		Total :	9.00

Senior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem2 Tech Elective

Courses : 1 Min | 1 Max Credits : 1.00 Min | 3.00 Max

Course	Name	Credits
EG%	Any EG Course	
ES%	Any ES Course	
ET%	Any ET Course	
NA%	Any NA Course	

Power Engineering Technology

The Power Engineering Technology major is based on the body of knowledge inherent in Marine Engineering Operations, but it is oriented toward the shore-side power industry rather than marine power plants. It also includes additional studies in writing and communications, mathematics, and technical sciences. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the B.S. degree, graduating students are required to have a minimum grade point average of 2.25 in the PET program core courses. For the PET program, core courses are defined as courses with the prefixes CH, CO, EG, ET, MS, and PS. Students are required to participate in approved industrial co-op programs in shore-side power plants. Participation in the Regiment is optional when enrolled in this program.

Successful completion of this major leads to the Bachelor of Science degree. Graduates are eligible to sit for the State of Maine Third Class Engineer (stationary plant engineer) license, and the Fundamentals of Engineering Examination. Graduates are employed in power generation and related industries throughout the United States of America.

The **Objectives** of the Power Engineering Technology major are as follows:

Three to five years after receiving their B.S. from Maine Maritime Academy, typical Power Engineering Technology graduates are expected to be:

A. Versatile engineering technologists with competencies in existing and emerging power production technologies, analytical thinking, problem solving, and with the ability, and hands-on experience, to apply these skills to solve existing and emerging problems. (1-2, 4)

B. Engineering technologists who recognize the need for, and who have the ability to, remain current in their chosen field especially in the areas of teamwork and communications. (3, 5)

The **Outcomes** of the Power Engineering Technology major are as follows:

Students will demonstrate the following through the Power Engineering Technology program of study at MMA:

1. Demonstrated mastery of the knowledge, techniques, skills and modern tools of the power industry. [A]
2. The ability to support the design of systems, components or processes to meet desired needs. [A]
3. The ability to communicate effectively. [B]
4. The ability to conduct, analyze and interpret experiments and apply experimental results to improve processes. [A]
5. The ability to function effectively on teams. [B]

Notes:

- First Year Fall: Each first-year student must pass one of PE102, PE103, PE113 or PE114.

The Power Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org.
The following outlines the normal sequence of courses taken by students majoring in Power Engineering Technology.

2020/Fall – Undergraduate/Bachelor of Science/Power Engineering Technology

Major Requirements

Credits : 132.00 Min | 136.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 5 Min | 5 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
EG101	Fundamentals of Engineering Operations	2.00
FY100	First Year Experience	1.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00
	Total :	13.00

First Year Sem1 Hum-SS Elect

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
EG234	Power Equipment Lab	2.00
ET101	Graphics	3.00
HC220	Humanities I	3.00

MS110	Technical Calculus I		4.00
PS102	Technical Physics I		4.00
		Total :	16.00

First Year Sem2 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

First Year Sem2 Swim PE

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE102	Basic Water Skills **(Optional)**	0.50
PE103	Skin & Scuba Diving **(Optional)**	1.00
PE113	Lifeguard Training **(Optional)**	1.00
PE114	Ocean Survival **(Optional)**	0.50
PE123	Water Polo **(Optional)**	0.50
	Total :	3.50

Sophomore Semester 1

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
EG243	Welding	2.00
EG261	Steam Generators I	3.00
ET201	Fluid Power	3.00
ET202	Statics and Dynamics	4.00
PS201	Technical Physics II	4.00
	Total :	16.00

Sophomore Semester 2

Courses : 6 Min | 6 Max Credits : 18.00 Min | 18.00 Max

Course	Name	Credits
CH101	Chemical Principles	4.00
EG242	Machine Tool Practices	1.00
ET211	Thermodynamics I	3.00
ET230	Strength of Materials	3.00
ET371	Electrical Power I	4.00
ET378	Computer Applications For Power	3.00
	Total :	18.00

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 2.00 Min | 2.00 Max

Course	Name		Credits
CO200	Cooperative Industrial Field Exp I		2.00
		Total :	2.00

Junior Semester 1

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name		Credits
EG321	Steam Turbines I		3.00
EG372	Electrical Power II		3.00
ET212	Thermodynamics II		3.00
HC230	Humanities II		3.00
MS120	Technical Calculus II		4.00
		Total :	16.00

Junior Semester 2

Courses : 6 Min | 6 Max Credits : 18.00 Min | 18.00 Max

Course	Name		Credits
EG382	Steam Power Systems I		3.00
EG431	Gas Turbines		3.00
ET377	Engineering Economics		3.00
ET401	Automation and Control		3.00
ET432	Power Control Electronics		3.00
ET452	Technical Communications		3.00
		Total :	18.00

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 2.00 Min | 2.00 Max

Course	Name		Credits
CO300	Cooperative Industrial Field Exp II		2.00
		Total :	2.00

Senior Semester 1

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name		Credits
EG292	Diesel Power I		3.00
ET351	Thermal/Fluids Lab		2.00
ET498	PET Capstone I		4.00
		Total :	9.00

Senior Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 1.00 Min | 3.00 Max

Course	Name	Credits

%	Any Course

Senior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Semester 2

Courses : 3 Min | 3 Max Credits : 10.00 Min | 10.00 Max

Course	Name	Credits
ET362	Nature and Properties of Materials	3.00
ET482	Heating, Ventilation, & Air Conditioning	2.00
ET499	Power Engineering Technology Capstone II	5.00
	Total :	10.00

Senior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 1.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Ship Design

MAINE MARITIME ACADEMY/BATH IRON WORKS

Note: The Bath Iron Works Apprentice Program in Ship Design is offered only in Bath, Maine. Not all Student Life Services on the Castine campus are available in Bath, Maine.

The objective of the BIW apprenticeship is to train highly skilled, versatile, and educated mechanics and designers through both classroom instruction and hands-on experience. The program strives to develop proficiency and knowledge in:

- Engineering principles and problem-solving techniques
- Organizational, communication, and leadership skills
- Trade or discipline-based skills and safe work practices

Successful completion of this program leads to the Associate of Science degree.

SHIP DESIGN

Course Number	Course Name	Credits
BIW CS150	Structured Problem Solving with Computers	3
BIW EG102	Intro to Marine Engineering	2
BIW EG240	Welding Technology	2
BIW EG252	Drawing Development and Technology	3
BIW ET206	Mechanics I	3
BIW ET230	Strength of Materials	3
BIW ET235	Material Properties and Testing	3
BIW ET282	Design Practices	2
BIW ET283	Intro to Marine Design	3
BIW ET383	Marine Design II	3
BIW HC110	Business Communications	3
BIW MA200	Labor History	2
BIW MA230	Organizational Behavior	3
BIW MS105	Mathematics I	3
BIW MS205	Mathematics II	3
BIW NA151	Ship Building Process	4
BIW PS103	Physics I	3
BIW OJT	On the Job Training	12

Ship Production

MAINE MARITIME ACADEMY/BATH IRON WORKS

Note: The Bath Iron Works (BIW) Apprentice Program in Ship Production is offered only in Bath, Maine. Not all Student Life services on the Castine campus are available in Bath, Maine.

The objective of the BIW apprenticeship is to train highly skilled, versatile, and educated mechanics and designers through both classroom instruction and hands-on experience. The program strives to develop proficiency and knowledge in:

- Engineering principles and problem-solving techniques
- Organizational, communication, and leadership skills
- Trade or discipline-based skills and safe work practices

Successful completion of this program leads to the Associate of Science degree.

SHIP PRODUCTION

Course Number	Course Name	Credits
BIW CS201	Introduction to Computing	2
BIW EG106	Confined Space Safety	1
BIW EG280	Basic Electricity	2
BIW EG120	Mechanical Drawing I	3
BIW EG250	Mechanical Drawing II	3
BIW ET206	Mechanics I	3
BIW ET306	Mechanics II	2
BIW ET230	Strength of Materials	3
BIW ET235	Material Properties and Testing I	3
BIW HC110	Business Communications	3
BIW HC113	Oral Communications Skills	3
BIW MA200	Labor History	2
BIW MA230	Organizational Behavior	3
BIW MS105	Mathematics I	3
BIW MS205	Mathematics II	3
BIW NA151	Ship Building Process	4
BIW PS103	Physics I	3
BIW PS203	Physics II	3
BIW OJT	On the Job Training	12

International Business & Logistics

The Loeb-Sullivan School of International Business and Logistics undergraduate program blends international business education with contemporary business logistics management skills. Intended primarily for full-time residential students, graduates of the program develop critical thinking, communication and analytical skills. Courses in core functional areas of business provide a solid foundation for upper level courses dealing with the complexities of doing business internationally. Specialized courses that deal with the challenges of domestic and global supply chain management constitute the unique program. Experiential learning, the fundamental ethos of a Maine Maritime Academy education, is a significant component of the program and includes voluntary internships and a mandatory cooperative education program. The IBL department offers minor programs in the areas of Business Management and Logistics Management. For the IBL program, core courses are defined as courses with the prefix EC, LO and MA.

The sequence of courses for the Bachelor of Science degree in International and Business Logistics is as follows:

2020/Fall – Undergraduate/Bachelor of Science/International Business & Logistics

Major Requirements

Credits : 127.00 Min | 132.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 6 Min | 6 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
EC102	Microeconomics	3.00
FY100	First Year Experience	1.00
HC111	Composition	3.00
MA101	Intro To Business & Supply Chain Mgmt	3.00
MS141	Finite Math	4.00
	Total :	17.00

First Year Semester 2

Courses : 4 Min | 4 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits
EC103	Macroeconomics	3.00

HC220	Humanities I		3.00
MA111	Financial Accounting		3.00
MS151	Calculus For Business		4.00
		Total :	13.00

First Year Sem2 Geography Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
GE200	Human Geography I	3.00
GE210	Human Geography II	3.00
	Total :	6.00

First Year Sem2 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

First Year Sem2 Swim PE

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE102	Basic Water Skills **(Optional)**	0.50
PE103	Skin & Scuba Diving **(Optional)**	1.00
PE114	Ocean Survival **(Optional)**	0.50
PE123	Water Polo **(Optional)**	0.50
	Total :	2.50

Sophomore Semester 1

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
LO201	Business Logistics	3.00
MA222	Marketing Management	3.00
MA242	Managerial Accounting	3.00
PO230	Contemp World Politics I	3.00
	Total :	12.00

Soph Sem1 Lab Science Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI101	General Biology I	4.00 *
CH210	Chemistry I	4.00 *
CH301	Chemical Principles	4.00 *
OC101	Introduction to Ocean Science	3.00 *

PS102	Technical Physics I	4.00 *
PS162	Physics I	4.00 *

*** Or any other approved Lab Science course**

Total : 23.00

Sophomore Semester 2

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
HC232	Management Communication	3.00
LO213	Freight Transportation	3.00
MA204	International Business	3.00
MS253	Statistics For Business & Management	3.00

Total : 12.00

Soph Sem2 Foreign Language

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
HC160	Spanish Level I	3.00
HC161	Spanish Level II	3.00
HC163	French Level I	3.00
HC171	German Level I	3.00
HC190	German Level II	3.00 *

*** Other Foreign Language courses as offered**

Total : 15.00

Sophomore Semester 3

Courses : 0 Min | 1 Max Credits : 0.00 Min | 3.00 Max

Course	Name	Credits
LO200	IBL Internship **(Optional)**	3.00

Total : 3.00

Junior Semester 1

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
LO311	Logistics Information Systems	3.00
MA312	Production And Operations Management	3.00
MA332	Business Law	3.00

Total : 12.00

Junior Sem1 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
GE210	Human Geography II	3.00
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PY%	Any PY Course	
	Total :	3.00

Junior Semester 2

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
LO344	Warehousing & Distribution Management	3.00
LO346	Global Sourcing &Procurement Negotiation	3.00
MA343	Financial Management	3.00
	Total :	9.00

Junior Sem2 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO330	Contemp World Politics II	3.00
PY%	Any PY Course	
	Total :	3.00

Junior Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
LO%	Any LO Course	*
MA%	Any MA Course	*

*** See Department-Approved list at the end of this Academic Plan**

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
LO400	Co-Op Educational Experience in IBL	4.00
	Total :	4.00

Senior Semester 1

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits

LO432	Strategic Supply Chain Management		3.00
MA401	Seminar Strategic Mgmt & Org Behavior		3.00
		Total :	6.00

Senior Sem1 Gened Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
LO%	Any LO Course	*
MA%	Any MA Course	*

*** See Department-Approved list at the end of this Academic Plan**

Senior Semester 2

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name		Credits
LO422	International Logistics		3.00
MA422	International Business Law		3.00
		Total :	6.00

Senior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem2 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem2 SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
GE%	Any GE Course	

HY%	Any HY Course
PY%	Any PY Course

Foreign Language courses may be substituted for General Education electives. MS101 may be substituted for MS141. MS110 or MS150 may be substituted for MS151.

A minimum of fifty percent of business and logistics credit hours required for the IBL major must be earned at Maine Maritime Academy. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the B.S. degree, graduating IBL majors are required to have a minimum grade point average of 2.25 in the IBL program core courses. For the IBL program, core courses are defined as courses with the prefixes EC, LO, and MA.

IBL students are required to obtain a minimum grade of C- (as described in respective course syllabi), with no more than one grade below C- in all 100 and 200 level EC, LO, and MA courses. If a student receives a D in any 100 or 200 level EC, LO, or MA course, they may appeal to the Department Chair of the Loeb-Sullivan School to allow the course use for degree completion with the understanding that the 2.25 Core GPA must also be met. Students must also earn a minimum grade of C- (as described in respective course syllabi) in all 300 and 400 EC, LO, and MA courses.

Participation in the Regiment is optional when enrolled in this program. Students may also elect to participate in First Year Cruise so long as space is available and must have been in the Regiment for the year and meet the following prerequisites: 4/C Maintenance; Ship's Orientation; Ocean Survival (PE114), Fire Training, and NS101.

IBL Approved Department Electives (To include the following existing IBL non-required courses and related courses from other MMA Departments)

- EN202 Introduction to Sustainability
- EG101 Fundamentals of Engineering Operations
- GE221 Geographic Information Systems
- HC260 Sustainable Energy & Society
- LO200 IBL Cooperative Industrial Field Experience
- MA470-477 Free Enterprise Service Learning (SBLA)
- MA498 Special Topics in International Business & Logistics
- NS101 Introduction to Nautical Science
- NS102 Ship Structure
- NS122 Cargo I
- NS131 Introduction to Marine Transportation
- NS210 Tanker Operations
- NS301 Stability (Prerequisite NS102 or NS135)
- NS421 Hazardous Materials Handling
- NS496 MT Special Topics
- NV401 Leadership and Management
- NV402 Leadership and Ethics

Marine Transportation Operations

The Marine Transportation Operations curriculum is organized to develop those skills and abilities that are necessary in pursuing a professional career at sea. Students majoring in this program also may participate in any minor/concentration programs. Successful completion of this program leads to a Bachelor of Science degree and the opportunity to sit for a federal examination for the U.S. Coast Guard Third Mate's unlimited license. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the B.S. degree, graduating students are required to have a minimum grade point average of 2.25 in the MTO program core courses. For the MTO program, core courses are defined as courses with the prefix CD, CR, and NS.

Additional requirements for graduation:

- Complete practical training and regimental requirements as published in the Regimental Manual.
- Pass both practical and written portions of USCG lifeboatman examination and the USCG Third Mate's examination.
- Complete sea time requirements as required for the USCG license.
- Fulfill one elective with PO230 (Contemporary World Politics I), EC102 (Microeconomics), EC201 (Macroeconomics), GE200 (World Regional Geography I), or GE210 (World Regional Geography II).
- PS301 (Technical Physics III) can be substituted for PS201 (Technical Physics II).

The following table outlines the normal sequence of courses taken by students majoring in Marine Transportation Operations:

2020/Fall – Undergraduate/Bachelor of Science/Marine Transportation Operations

Major Requirements

Credits : 137.00 Min | 137.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 8 Min | 8 Max Credits : 15.00 Min | 15.00 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
EG101	Fundamentals of Engineering Operations	2.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00

NS101	Introduction to Nautical Science		2.00
PD101	Personal Development I		0.50
PE114	Ocean Survival		0.50
USCG1	USCG Fire Fighting		0.00
		Total :	15.00

First Year Sem1 Phys Ed

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

First Year Semester 2

Courses : 10 Min | 10 Max Credits : 16.50 Min | 16.50 Max

Course	Name	Credits
HC220	Humanities I	3.00
MS110	Technical Calculus I	4.00
MT12	Maintenance – First Year	0.00
NS102	Ship Structure	3.00
NS241	Seamanship	2.00
PD102	Personal Development I	0.50
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
VPDSD	Vessel Person. w/ Desig. Security Duties	0.00
	Total :	16.50

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CD103	First Year Cruise – Deck	4.00
	Total :	4.00

Sophomore Semester 1

Courses : 7 Min | 7 Max Credits : 14.50 Min | 14.50 Max

Course	Name	Credits
MT21D	Maintenance Sophomore Deck	0.00
NS122	Cargo I	3.00
NS271	Terrestrial Navigation I	3.00
NS272	Terrestrial Navigation Lab	1.00
OC101	Introduction to Ocean Science	3.00
PD201	Personal Development II	0.50

PS201	Technical Physics II		4.00
		Total :	14.50

Soph Sem1 Gened Elec

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC102	Microeconomics	3.00
EC103	Macroeconomics	3.00
GE200	Human Geography I	3.00
GE210	Human Geography II	3.00
PO230	Contemp World Politics I	3.00
	Total :	15.00

Sophomore Semester 2

Courses : 7 Min | 7 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
NS131	Introduction to Marine Transportation	3.00
NS210	Tanker Operations	4.00
NS262	Navigation Rules	3.00
NS282	Celestial Navigation I	3.00
NS292	Electronic Navigation	3.00
NS293	Electronic Navigation Lab	1.00
PD202	Personal Development II	0.50
	Total :	17.50

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CD203	Cadet Shipping Deck	4.00
	Total :	4.00

Junior Semester 1

Courses : 4 Min | 4 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
NS301	Stability	3.00
NS345	Ship Handling	3.00
PD301	Personal Development III	0.00
	Total :	9.00

Junior Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Junior Sem1 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GE%	Any GE Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO%	Any PO Course	
PY%	Any PY Course	

Junior Semester 2

Courses : 5 Min | 5 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
MT32D	Maint Junior Deck	0.00
NS221	Meteorology	3.00
NS332	Marine Communications	3.00
NS381	Terrestrial Navigation II	3.00
PD302	Personal Development III	0.00
	Total :	9.00

Junior Sem2 Free Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits
%	Any Course	

Junior Semester 3

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
CD303	Junior Cruise Deck	4.00
	Total :	4.00

Senior Semester 1

Courses : 6 Min | 6 Max Credits : 10.00 Min | 10.00 Max

Course	Name	Credits
MT41D	Maintenance Senior Deck	0.00
NS420	Ship’s Business	3.00
NS461	Casualty Analysis	3.00
NS491	Advanced Navigation	3.00

NS499	License Seminar		1.00
PD401	Personal Development IV		0.00
		Total :	10.00

Senior Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EG%	Any EG Course	
NA%	Any NA Course	
NS%	Any NS Course	

Senior Semester 2

Courses : 5 Min | 5 Max Credits : 12.00 Min | 12.00 Max

Course	Name		Credits
HC232	Management Communication		3.00
MD310	Medical Care Provider		3.00
NS493	Electronic Navigation II		3.00
NS498	Watchkeeping		3.00
PD402	Personal Development IV		0.00
		Total :	12.00

Senior Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EG%	Any EG Course	
NA%	Any NA Course	
NS%	Any NS Course	

Vessel Operations and Technology

The Vessel Operations and Technology curriculum is designed to prepare students for positions of responsibility in the operation and management of a variety of private and commercial vessels. The program is organized in a two-plus-two format offering a two-year Associate of Science degree in Small Vessel Operations and a four-year Bachelor of Science degree in Vessel Operations and Technology. U.S. Coast Guard licenses also are available.Four academic semesters, plus a cooperative work experience during the summer following the first year, lead to an Associate of Science degree. Four additional academic semesters plus two additional cooperative work experiences and a training cruise, lead to a Bachelor of Science degree.

A student completing the A.S. degree requirements and the appropriate cooperative work experience, and meeting the applicable USCG requirements, will receive a USCG license as mate of vessels not more than 200 tons, operating in near-coastal waters, up to 200 miles offshore, and an Able Seaman Limited certification. A comprehensive license exam, administered by MMA, is a requirement for receiving this license as well as a prerequisite for the 500/1600 ton license.

A student completing the B.S. degree requisites, two additional cooperative work experiences on appropriately-sized vessels, and a training cruise, and meeting the USCG requirements, may be eligible to sit for the USCG examination for a license as mate of vessels not more than 500 tons or 1600 tons (depending on their sea service), near coastal or oceans.

Participation in the Regiment of Midshipmen is optional when enrolled in this program. However, students electing to participate in First Year Cruise on the Training Ship *State of Maine* are subject to the Priority for Course Registration policy, must have been in the Regiment for the year and meet the following prerequisites: 4/C Maintenance; Ship's Orientation; Ocean Survival (PE114), Fire Training, and NS101. In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the A.S. and B.S. degrees, graduating students are required to have a minimum grade point average of 2.25 in the VOT/SVO program core courses. For the VOT program, core courses are defined as courses with the prefix CO, CR, and NS.

The following table outlines the normal sequence of courses taken by students majoring in Vessel Operations and Technology / Small Vessel Operations.

2020/Fall – Undergraduate/Bachelor of Science/Vessel Operations and Technology

Major Requirements

Credits : 135.00 Min | 135.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 9 Min | 9 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
FY100	First Year Experience	1.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00
NS101	Introduction to Nautical Science	2.00
NS103	Introduction to Vessel Operations	2.00
PE100	Basic Sailing	0.50
PE114	Ocean Survival	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	16.00

First Year Semester 2

Courses : 7 Min | 7 Max Credits : 15.00 Min | 15.00 Max

Course	Name	Credits
HC220	Humanities I	3.00
NS132	Small Craft Technology	3.00
NS135	Small Craft Construction	3.00
NS241	Seamanship	2.00
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
	Total :	15.00

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
CO223	SVO/VOT Cooperative Work Exp I	3.00
	Total :	3.00

Sophomore Semester 1

Courses : 5 Min | 5 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits
NS122	Cargo I	3.00
NS232	Marine Systems	3.00
NS271	Terrestrial Navigation I	3.00
NS272	Terrestrial Navigation Lab	1.00
OC101	Introduction to Ocean Science	3.00

	Total :	13.00

Soph Sem1 Gened Elec

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GE%	Any GE Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO%	Any PO Course	
PY%	Any PY Course	

Sophomore Semester 2

Courses : 6 Min | 6 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits
NS221	Meteorology	3.00
NS262	Navigation Rules	3.00
NS292	Electronic Navigation	3.00
NS293	Electronic Navigation Lab	1.00
NS298	Topics in Small Vessel Operations	2.00
NS299	200 Ton License Seminar	1.00
	Total :	13.00

Soph Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
NS%	Any NS Course	

Sophomore Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
CO323	VOT Cooperative Work Exp II	3.00
	Total :	3.00

Junior Semester 1

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
NS301	Stability	3.00
NS332	Marine Communications	3.00
NS345	Ship Handling	3.00

	Total :	12.00

Junior Sem1 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GE%	Any GE Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO%	Any PO Course	
PY%	Any PY Course	

Junior Semester 2

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
EG392	Diesel Power II	3.00
NS282	Celestial Navigation I	3.00
NS342	Workboat Operations	3.00
NS381	Terrestrial Navigation II	3.00
	Total :	12.00

Junior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Junior Semester 3

Courses : 2 Min | 2 Max Credits : 5.00 Min | 5.00 Max

Course	Name	Credits
CO423	VOT Work Experience III	3.00
CR313	VOT Training Cruise	2.00
	Total :	5.00

Senior Semester 1

Courses : 4 Min | 4 Max Credits : 10.00 Min | 10.00 Max

Course	Name	Credits
NS491	Advanced Navigation	3.00
NS493	Electronic Navigation II	3.00
NS497	Watchkeeping Limited Tonnage	3.00
NS499	License Seminar	1.00
	Total :	10.00

Senior Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
NS%	Any NS Course	

Senior Sem1 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GE%	Any GE Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO%	Any PO Course	
PY%	Any PY Course	

Senior Semester 2

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
HC232	Management Communication	3.00
MD310	Medical Care Provider	3.00
NS461	Casualty Analysis	3.00
	Total :	9.00

Senior Sem2 Bus Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
MA%	Any MA Course	

Senior Sem2 Gened Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GE%	Any GE Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO%	Any PO Course	
PY%	Any PY Course	

Maritime Management & 200 Ton Limited License

A 30 month program is available at the graduate level for qualified applicants intending to pursue the 200 Ton Limited License simultaneously with the M.S. degree in Maritime Management. Please contact the graduate school for more information.

Small Vessel Operations

Small Vessel Operations (2 year)/Vessel Operations and Technology

The Vessel Operations and Technology curriculum is designed to prepare students for positions of responsibility in the operation and management of a variety of private and commercial vessels. The program is organized in a two-plus-two format offering a two-year Associate of Science degree in Small Vessel Operations (SVO) and a four-year Bachelor of Science degree in Vessel Operations and Technology (VOT). A range of limited-tonnage U.S. Coast Guard merchant mariner licenses are also associated with these degree programs. Four academic semesters, plus a cooperative work experience during the summer following the first year, lead to an Associate of Science degree. Four additional academic semesters plus two additional cooperative work experiences and the VOT training cruise, lead to a Bachelor of Science degree.

A student successfully completing the first two years of the program, including an appropriate cooperative work experience, and meeting all the applicable USCG requirements will receive a USCG license as mate of vessels not more than 200 gross tons, Near Coastal (200 miles offshore). A comprehensive license exam, administered by MMA, is a requirement to earn this USCG license and is a prerequisite for both the mate 500-ton and mate 1600-ton licenses.

A student successfully completing the Bachelor of Science degree requisites, two additional cooperative work experiences on appropriately-sized vessels, the VOT training cruise and meeting all the applicable USCG requirements, will be eligible to sit for the USCG License examination either as mate of vessels not more than 500 gross tons or as mate of vessels not more than 1600 gross tons.

Depending on specific USCG sea-service and vessel tonnage requirements students will be eligible for either a Near Coastal or Oceans endorsement on their license. This program also satisfies the training and assessment requirements to meet the STCW Code for both *Ratings Forming Part of a Navigational Watch* and *Officer in Charge of a Navigational Watch*.

Participation in the Regiment of Midshipmen is optional when enrolled in this program. However, students electing to participate in First Year Cruise on the Training Ship *State of Maine* are subject to the Priority for Course Registration policy, must have been in the Regiment for the year and meet the following prerequisites: 4/C Maintenance; Ship's Orientation; Ocean Survival (PE114), Fire Training, and NS101.

In addition to meeting the college requirement for graduation with at least a 2.0 grade point average for the A.S. and B.S. degrees, graduating students are required to have a minimum grade point average of 2.25 in the VOT/SVO program core courses. For the VOT program, core courses are defined as courses with the prefix CO, CR, and NS.

The following table outlines the normal sequence of courses taken by students majoring in Small Vessel Operations/Vessel Operations and Technology.

2020/Fall – Undergraduate/Associate of Science/Small Vessel Operations

Major Requirements

Credits : 66.00 Min | 66.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 9 Min | 9 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
FY100	First Year Experience	1.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00
NS101	Introduction to Nautical Science	2.00
NS103	Introduction to Vessel Operations	2.00
PE100	Basic Sailing	0.50
PE114	Ocean Survival	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	16.00

First Year Semester 2

Courses : 6 Min | 6 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
NS132	Small Craft Technology	3.00
NS135	Small Craft Construction	3.00
NS241	Seamanship	2.00
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
	Total :	12.00

First Year Sem2 HUM

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
HC220	Humanities I	3.00
HC230	Humanities II	3.00
	Total :	6.00

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
CO223	SVO/VOT Cooperative Work Exp I	3.00
	Total :	3.00

Sophomore Semester 1

Courses : 5 Min | 5 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits
NS122	Cargo I	3.00
NS232	Marine Systems	3.00
NS271	Terrestrial Navigation I	3.00
NS272	Terrestrial Navigation Lab	1.00
OC101	Introduction to Ocean Science	3.00
	Total :	13.00

Soph Sem1 Gened Elec

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GE%	Any GE Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PO%	Any PO Course	
PY%	Any PY Course	

Sophomore Semester 2

Courses : 6 Min | 6 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits
NS221	Meteorology	3.00
NS262	Navigation Rules	3.00
NS292	Electronic Navigation	3.00
NS293	Electronic Navigation Lab	1.00
NS298	Topics in Small Vessel Operations	2.00
NS299	200 Ton License Seminar	1.00
	Total :	13.00

Soph Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits

NS%	Any NS Course

Small Craft Design

The Small Craft Design program leads to an Associate of Science degree that is offered jointly by Maine Maritime Academy in Castine and The Landing School of Boatbuilding and Design in Kennebunkport, Maine. Students spend one year at Maine Maritime Academy as residential students in Castine and one year at The Landing School in Kennebunkport. Students must meet admission criteria for both institutions to be accepted in this degree program.The objectives of the Small Craft Design major are to provide students with a structured learning environment in which they can become knowledgeable and proficient in the practical application of the fundamental principles of small craft design, and develop the skills to communicate effectively with other industry professionals by graphical and other methods as appropriate.

The following table outlines the normal sequence of courses taken by students majoring in Small Craft Design:

2020/Fall – Undergraduate/Associate of Science/Small Craft Design

Major Requirements

Credits : 68.00 Min | 69.00 Max
2.000 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 9 Min | 9 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
FY100	First Year Experience	1.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00
NS101	Introduction to Nautical Science	2.00
NS103	Introduction to Vessel Operations	2.00
PE100	Basic Sailing	0.50
PE114	Ocean Survival	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	16.00

First Year Semester 2

Courses : 4 Min | 4 Max Credits : 7.00 Min | 7.00 Max

Course	Name	Credits

ET101	Graphics	3.00
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
	Total :	7.00

First Year Sem2 HUM

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
HC220	Humanities I	3.00
HC230	Humanities II	3.00
	Total :	6.00

First Year Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

First Year Sem2 Major Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
NS%	Any NS Course	

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 2.00 Min | 3.00 Max

Course		Name	Credits
(CO223	Or	SVO/VOT Cooperative Work Exp I	3.00
YO213	)	Small Craft Design Cooperative Wk Exp	2.00
		Total :	2.00 – 3.00

Sophomore Semester 1

Courses : 6 Min | 6 Max Credits : 18.50 Min | 18.50 Max

Course	Name	Credits
LS DSN111	Design I	3.50
LS DSN112	Naval Architecture	3.50
LS DSN113	Marine Engineering	4.00
LS DSN114	Structural Design	3.50
LS DSN115	Drafting and CAD I	2.50
LS DSN116	Design Topics I	1.50
	Total :	18.50

Sophomore Semester 2

Courses : 6 Min | 6 Max Credits : 15.50 Min | 15.50 Max

Course	Name	Credits
LS DSN211	Design II	3.00
LS DSN212	Naval Architecture II	3.00
LS DSN214	Construction	3.00
LS DSN215	CAD II	2.00
LS DSN216	Design Topics II	1.50
LS DSN218	Design Project	3.00
	Total :	15.50

Small Craft Systems

The Small Craft Systems program leads to an Associate of Science degree that is offered jointly by Maine Maritime Academy in Castine and with The Landing School of Boatbuilding and Design in Kennebunkport, Maine. Students spend one year at Maine Maritime Academy as residential students in Castine and one year at The Landing School in Kennebunkport. Students must meet admission criteria for both institutions to be accepted in this degree program.

The Small Craft Systems program emphasizes the interface of marine systems with boat design and construction while practicing the actual installation of these systems in a real world setting.

The following table outlines the normal sequence of courses taken by students majoring in Small Craft Systems:

2020/Fall – Undergraduate/Associate of Science/Small Craft Systems

Major Requirements

Credits : 71.00 Min | 71.00 Max
2.000 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 9 Min | 9 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
CS150	Structured Problem Solving with Computer	3.00
FY100	First Year Experience	1.00
HC111	Composition	3.00
MS101	Pre-Calculus Mathematics	4.00
NS101	Introduction to Nautical Science	2.00
NS103	Introduction to Vessel Operations	2.00
PE100	Basic Sailing	0.50
PE114	Ocean Survival	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	16.00

First Year Semester 2

Courses : 4 Min | 4 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits
NS241	Seamanship	2.00

PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
	Total :	6.00

First Year Sem2 HUM

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
HC220	Humanities I	3.00
HC230	Humanities II	3.00
	Total :	6.00

First Year Sem2 Major Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
NS%	Any NS Course	

First Year Sem2 General Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
GENED%	Any GENED Course	
HC%	Any HC Course	
HY%	Any HY Course	
PY%	Any PY Course	

First Year Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
CO223	SVO/VOT Cooperative Work Exp I	3.00
	Total :	3.00

Sophomore Semester 1

Courses : 5 Min | 5 Max Credits : 18.50 Min | 18.50 Max

Course	Name	Credits
LS MST120	Shop Methods/Materials	3.50
LS MST121	Composite Repair	1.50
LS MST122	Propulsion I	4.00
LS MST123	Propulsion II	5.50
LS MST124	DC Electrical	4.00
	Total :	18.50

Sophomore Semester 2

Courses : 6 Min | 6 Max Credits : 18.50 Min | 18.50 Max

Course	Name	Credits
LS MST226	Marine Plumbing	3.00
LS MST227	Marine Electronics	1.50
LS MST228	Mechanical Special Topics	2.50
LS MST229	AC Electricity I	3.00
LS MST230	Marine Refrigeration & A/C	2.00
LS MST231	Project Boat	6.50
	Total :	18.50

Maritime Technology

The Maritime Technology curriculum is designed to recognize achievement in a comprehensive area of study in maritime-related courses without eligibility for a mariner's credential. The degree is awarded only in exceptional circumstances to alumni, upon successful petition to the Academic Board and approval by the Provost. This major is only available to alumni who can demonstrate they are no longer eligible to sit for the U.S. Coast Guard exam due to expiration of sea-time. This degree is not available to students on matriculation. Alumni interested in obtaining this degree should contact the Provost's office. Candidates for this degree must complete 120 credits of eligible coursework with a minimum overall GPA of 2.0. The 120 credits must comprise a minimum of 60 credits of recognized core courses, 40 credits in general education courses, and 20 credits of elective courses. Courses specifically related to license preparation are not eligible in fulfilling the 120-credit requirement.

Recognized core courses for the major may come from courses designated BI, EG*, ET*, NA, NS*, NV, OC, and OS.

*NS272, NS293, NS299, NS341, NS345, NS471, NS497, NS498, and NS499 are not eligible for meeting degree requirements.

*EG497, EG498 and ET498, ET499 are also not eligible for meeting degree requirements.

Recognized General Education courses and elective courses eligible for the major may come from courses designated CH, CS, EC, EN, ES, GE, HC, HY, LO, MA, MD, MS, PO, PS and PY.

Courses designated CD, CE, CO, CR, MT and USCG may not be counted toward the degree.

Ocean Studies Majors

The Corning School of Ocean Studies offers three majors leading to a Bachelor of Science degree and three majors leading to a dual degree with Small Vessel Operations. A minor program in Oceanography is offered by this department. A concentration in Marine Biology is also offered, which may be elected by Oceanography majors.

Participation in the Regiment of Midshipmen is optional when enrolled in these programs.

Coastal and Marine Environmental Science

The Coastal and Marine Environmental Science major curriculum will train students to work in the interdisciplinary field of coastal and marine environmental science. Students will learn and have experiences in the physical, chemical, geological, and life sciences, with a focus on the coastal and marine environment, and the role of humans within these environments. Graduates may pursue graduate education, as well as careers in environmental consulting, fisheries, aquaculture, policy, and public education.

The following sequence of courses will be taken by candidates for the Bachelor of Science in Coastal and Marine Environmental Science:

2020/Fall – Undergraduate/Bachelor of Science/Coastal Marine and Environmental Science

Major Requirements

Credits : 122.00 Min | 125.00 Max
2.000 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 6 Min | 6 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
BI101	General Biology I	4.00
CH210	Chemistry I	4.00
FY100	First Year Experience	1.00
MS101	Pre-Calculus Mathematics	4.00
OS000	OS Seminar O	0.00
OS101	Int. to Oceanography and Env. Science	4.00
	Total :	17.00

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name		Credits
BI102	General Biology II		4.00
CH220	Chemistry II		4.00
HC111	Composition		3.00
MS150	Calculus I		4.00
OS001	OS Seminar I		1.00
		Total :	16.00

First Year Sem2 Swim PE

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name		Credits
PE102	Basic Water Skills **(Optional)**		0.50
PE103	Skin & Scuba Diving **(Optional)**		1.00
PE113	Lifeguard Training **(Optional)**		1.00
PE114	Ocean Survival **(Optional)**		0.50
PE123	Water Polo **(Optional)**		0.50
		Total :	3.50

Sophomore Semester 1

Courses : 4 Min | 4 Max Credits : 11.00 Min | 11.00 Max

Course	Name		Credits
EN202	Introduction to Sustainability		3.00
HC220	Humanities I		3.00
OS002	OS Seminar II		1.00
OS204	Physical Geology		4.00
		Total :	11.00

Soph Sem1 Hum-SS Elect

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Sophomore Semester 2

Courses : 5 Min | 5 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits

OS003	OS Seminar III		1.00
OS203	Design & Applied Stat In Science		4.00
OS212	Chemical Oceanography		4.00
OS225	Land-Margin Ecosystems		4.00
PS102	Technical Physics I		4.00
		Total :	17.00

Junior Semester 1

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
BI201	Ecology	4.00
OC210	Physical Oceanography	4.00
OS004	OS Seminar IV	1.00
OS230	Intro. to Global Environmental Change	3.00
PS301	Technical Physics III	4.00
	Total :	16.00

Junior Sem1 PE Elective

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

Junior Semester 2

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
GE221	Geographic Information Science	4.00
OS005	OS Seminar V	1.00
OS400	Prep for Research in Marine Science	4.00
	Total :	9.00

Junior Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Junior Sem2 Hum-SS

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	

HY%	Any HY Course
PY%	Any PY Course

Senior Semester 1

Courses : 4 Min | 4 Max Credits : 11.00 Min | 11.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
OS006	OS Seminar VI	1.00
OS321	Coastal Resource MGMT	3.00
OS401	Research Project	4.00
	Total :	11.00

Senior Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Senior Sem2 Free Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Marine Biology

The Marine Biology major focuses its training and experiences on the biological component of Ocean Studies. This major provides instruction in essential biology courses (biology, ecology, physiology, cell biology and genetics) as well as more specialized topics relevant to marine organisms. Graduates may pursue graduate education as well as careers in fisheries, aquaculture, environmental management, consulting, medicine, and public education.

The following sequence of courses will be taken by candidates for the Bachelor of Science in Marine Biology:

2020/Fall – Undergraduate/Bachelor of Science/Marine Biology

Major Requirements

Credits : 124.00 Min | 126.00 Max
2.000 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 6 Min | 6 Max Credits : 17.00 Min | 17.00 Max

Course	Name		Credits
BI101	General Biology I		4.00
CH210	Chemistry I		4.00
FY100	First Year Experience		1.00
MS101	Pre-Calculus Mathematics		4.00
OS000	OS Seminar O		0.00
OS101	Int. to Oceanography and Env. Science		4.00
		Total :	17.00

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name		Credits
BI102	General Biology II		4.00
CH220	Chemistry II		4.00
HC111	Composition		3.00
MS150	Calculus I		4.00
OS001	OS Seminar I		1.00
		Total :	16.00

First Year Sem2 Swim PE

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name		Credits
PE102	Basic Water Skills **(Optional)**		0.50
PE103	Skin & Scuba Diving **(Optional)**		1.00
PE113	Lifeguard Training **(Optional)**		1.00
PE114	Ocean Survival **(Optional)**		0.50
PE123	Water Polo **(Optional)**		0.50
		Total :	3.50

Sophomore Semester 1

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name		Credits
BI220	Marine Botany		4.00
CH310	Introduction to Organic Chemistry		4.00
HC220	Humanities I		3.00
OS002	OS Seminar II		1.00
		Total :	12.00

Soph Sem1 Hum-SS Elect

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Sophomore Semester 2

Courses : 5 Min | 5 Max Credits : 17.00 Min | 17.00 Max

Course	Name		Credits
BI210	Marine Zoology		4.00
OS003	OS Seminar III		1.00
OS203	Design & Applied Stat In Science		4.00
OS212	Chemical Oceanography		4.00
PS102	Technical Physics I		4.00
		Total :	17.00

Junior Semester 1

Courses : 5 Min | 5 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits

BI201	Ecology		4.00
BI301	Marine Organism Physiology		4.00
OS004	OS Seminar IV		1.00
OS210	Physical Oceanography		4.00
PS301	Technical Physics III		4.00
		Total :	17.00

Junior Semester 2

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
BI308	Cell Biology	4.00
OS005	OS Seminar V	1.00
OS400	Prep for Research in Marine Science	4.00
	Total :	9.00

Junior Sem2 Dept Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 8.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Junior Sem2 PE Elective

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

Senior Semester 1

Courses : 3 Min | 3 Max Credits : 8.00 Min | 8.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
OS006	OS Seminar VI	1.00
OS401	Research Project	4.00
	Total :	8.00

Senior Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	

HC%	Any HC Course
HMSS%	Any Hum/SS Transfer Course
HY%	Any HY Course
PY%	Any PY Course

Senior Semester 2

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name		Credits
BI312	Genetics		3.00
		Total :	3.00

Senior Sem2 Free Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits
%	Any Course	

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Oceanography

The Oceanography major prepares students in the field of oceanography, with an emphasis on problem solving and decision making in an ocean setting. This broad-based oceanography curriculum encompasses the study of chemistry, biology, physics, geology, writing and communications, computer science, mathematics, humanities, and social sciences. Graduates of the program may pursue employment in the various fields of ocean sciences (resource management, aquaculture, research, environmental protection, science education, or oceanography) or graduate education.

The sequence of courses shown below will be taken by candidates for the Bachelor of Science in Oceanography.

2020/Fall – Undergraduate/Bachelor of Science/Oceanography

Major Requirements

Credits : 122.00 Min | 126.00 Max
2.000 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 6 Min | 6 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
BI101	General Biology I	4.00
CH210	Chemistry I	4.00
FY100	First Year Experience	1.00
MS101	Pre-Calculus Mathematics	4.00
OS000	OS Seminar O	0.00
OS101	Int. to Oceanography and Env. Science	4.00
	Total :	17.00

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
BI102	General Biology II	4.00
CH220	Chemistry II	4.00
HC111	Composition	3.00
MS150	Calculus I	4.00
OS001	OS Seminar I	1.00

		Total :	16.00

Sophomore Semester 1 A

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
BI220	Marine Botany	4.00
CH310	Introduction to Organic Chemistry	4.00
	Total :	8.00

Sophomore Semester 1

Courses : 4 Min | 4 Max Credits : 10.00 Min | 10.00 Max

Course	Name	Credits
HC220	Humanities I	3.00
NS101	Introduction to Nautical Science	2.00
OS002	OS Seminar II	1.00
OS204	Physical Geology	4.00
	Total :	10.00

Soph Sem1 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Sophomore Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
OS003	OS Seminar III	1.00
OS203	Design & Applied Stat In Science	4.00
OS211	Geological Oceanography	3.00
OS212	Chemical Oceanography	4.00
PS102	Technical Physics I	4.00
	Total :	16.00

Soph Sem 2 Swim PE

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE102	Basic Water Skills **(Optional)**	0.50
PE103	Skin & Scuba Diving **(Optional)**	1.00
PE113	Lifeguard Training **(Optional)**	1.00
PE114	Ocean Survival **(Optional)**	0.50
PE123	Water Polo **(Optional)**	0.50
	Total :	3.50

Junior Semester 1

Courses : 4 Min | 4 Max Credits : 12.00 Min | 12.00 Max

Course	Name	Credits
OS004	OS Seminar IV	1.00
OS210	Physical Oceanography	4.00
OS213	Biological Oceanography	3.00
PS301	Technical Physics III	4.00
	Total :	12.00

Junior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Junior Sem1 PE Elective

Courses : 1 Min | 1 Max Credits : 0.50 Min | 0.50 Max

Course	Name	Credits
PE%	Any PE Course **(Optional)**	

Junior Semester 2

Courses : 2 Min | 2 Max Credits : 5.00 Min | 5.00 Max

Course	Name	Credits
OS005	OS Seminar V	1.00
OS400	Prep for Research in Marine Science	4.00
	Total :	5.00

Junior Sem2 Dept Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 8.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Junior Sem2 Hum-SS

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	

HY%	Any HY Course
PY%	Any PY Course

Senior Semester 1

Courses : 3 Min | 3 Max Credits : 8.00 Min | 8.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
OS006	OS Seminar VI	1.00
OS401	Research Project	4.00
	Total :	8.00

Senior Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Senior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Senior Sem2 Free Elective

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
%	Any Course	

Coastal and Marine Environmental Science/Small Vessel Operations (dual major)

The Coastal and Marine Environmental Science/Small Vessel Operations dual major allows the student to complete all of the requirements for the Bachelor of Science degree in Coastal and Marine Environmental Science and Small Vessel Operations, as well as a USCG license as mate of vessels not more than 200 gross tons, Near Coastal (200 miles offshore). This program may be completed in 5 years and is designed for students who plan to work in the coastal and marine environmental science field and may need the capability to operate small vessels.

The following sequence of courses will be taken by candidates for the Bachelor of Science in Coastal and Marine Environmental Science/Small Vessel Operations dual major.

2020/Fall – Undergraduate/Bachelor of Science/Coastal Marine & Env Sci / Small Vessel Ops

Major Requirements

Credits : 163.00 Min | 166.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 7 Min | 7 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
BI101	General Biology I	4.00
CH210	Chemistry I	4.00
FY100	First Year Experience	1.00
MS101	Pre-Calculus Mathematics	4.00
OS000	OS Seminar O	0.00
OS101	Int. to Oceanography and Env. Science	4.00
PE114	Ocean Survival	0.50
	Total :	17.50

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
BI102	General Biology II	4.00

CH220	Chemistry II		4.00
HC111	Composition		3.00
MS150	Calculus I		4.00
OS001	OS Seminar I		1.00
		Total :	16.00

Sophomore Semester 1

Courses : 7 Min | 7 Max Credits : 13.50 Min | 13.50 Max

Course	Name	Credits
EN202	Introduction to Sustainability	3.00
HC220	Humanities I	3.00
NS101	Introduction to Nautical Science	2.00
OS002	OS Seminar II	1.00
OS204	Physical Geology	4.00
PE100	Basic Sailing	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	13.50

Soph Sem1 Hum-SS Elect

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Sophomore Semester 2

Courses : 7 Min | 7 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
OS003	OS Seminar III	1.00
OS203	Design & Applied Stat In Science	4.00
OS212	Chemical Oceanography	4.00
OS225	Land-Margin Ecosystems	4.00
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
	Total :	17.00

Junior Semester 1

Courses : 6 Min | 6 Max Credits : 18.00 Min | 18.00 Max

Course	Name		Credits
BI201	Ecology		4.00
NS103	Introduction to Vessel Operations		2.00
OC210	Physical Oceanography		4.00
OS004	OS Seminar IV		1.00
OS230	Intro. to Global Environmental Change		3.00
PS301	Technical Physics III		4.00
		Total :	18.00

Junior Semester 2

Courses : 4 Min | 4 Max Credits : 11.00 Min | 11.00 Max

Course	Name		Credits
GE221	Geographic Information Science		4.00
NS241	Seamanship		2.00
OS005	OS Seminar V		1.00
OS400	Prep for Research in Marine Science		4.00
		Total :	11.00

Junior Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Junior Sem2 Hum-SS

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Semester 1

Courses : 6 Min | 6 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
NS132	Small Craft Technology	3.00
NS135	Small Craft Construction	3.00
OS006	OS Seminar VI	1.00
OS321	Coastal Resource MGMT	3.00

OS401	Research Project		4.00
		Total :	17.00

Senior Sem2 Dept Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 8.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem2 Free Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 6.00 Max

Course	Name	Credits
%	Any Course	

Senior Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
CO223	SVO/VOT Cooperative Work Exp I	3.00
	Total :	3.00

Fifth Year Semester 1

Courses : 4 Min | 4 Max Credits : 10.00 Min | 10.00 Max

Course	Name	Credits
NS122	Cargo I	3.00
NS232	Marine Systems	3.00
NS271	Terrestrial Navigation I	3.00
NS272	Terrestrial Navigation Lab	1.00
	Total :	10.00

Fifth Year Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
NS%	Any NS Course	

Fifth Year Semester 2

Courses : 6 Min | 6 Max Credits : 13.00 Min | 13.00 Max

Course	Name		Credits
NS221	Meteorology		3.00
NS262	Navigation Rules		3.00
NS292	Electronic Navigation		3.00
NS293	Electronic Navigation Lab		1.00
NS298	Topics in Small Vessel Operations		2.00
NS299	200 Ton License Seminar		1.00
		Total :	13.00

Marine Biology / Small Vessel Operations (dual major)

The Marine Biology/Small Vessel Operations dual major allows the student to complete all of the requirements for the Bachelor of Science degree in Marine Biology and Small Vessel Operations, as well as a USCG license as mate of vessels not more than 200 gross tons, Near Coastal (200 miles offshore). This program may be completed in 5 years and is designed for students who plan to work in the marine biology field and may need the capability to operate small vessels.

The following table outlines the normal sequence of courses taken by students majoring in Marine Biology/Small Vessel Operations dual major.

2020/Fall – Undergraduate/Bachelor of Science/Marine Biology / Small Vessel Operations (dual major)

Major Requirements

Credits : 165.00 Min | 167.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 7 Min | 7 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
BI101	General Biology I	4.00
CH210	Chemistry I	4.00
FY100	First Year Experience	1.00
MS101	Pre-Calculus Mathematics	4.00
OS000	OS Seminar O	0.00
OS101	Int. to Oceanography and Env. Science	4.00
PE114	Ocean Survival	0.50
	Total :	17.50

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
BI102	General Biology II	4.00
CH220	Chemistry II	4.00

HC111	Composition		3.00
MS150	Calculus I		4.00
OS001	OS Seminar I		1.00
		Total :	16.00

Sophomore Semester 1

Courses : 7 Min | 7 Max Credits : 14.50 Min | 14.50 Max

Course	Name	Credits
BI220	Marine Botany	4.00
CH310	Introduction to Organic Chemistry	4.00
HC220	Humanities I	3.00
NS101	Introduction to Nautical Science	2.00
OS002	OS Seminar II	1.00
PE100	Basic Sailing	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	14.50

Soph Sem1 Hum-SS Elect

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Sophomore Semester 2

Courses : 7 Min | 7 Max Credits : 17.00 Min | 17.00 Max

Course	Name	Credits
BI210	Marine Zoology	4.00
OS003	OS Seminar III	1.00
OS203	Design & Applied Stat In Science	4.00
OS212	Chemical Oceanography	4.00
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00
USCG3	Lifeboat Exam	0.00
	Total :	17.00

Junior Semester 1

Courses : 6 Min | 6 Max Credits : 19.00 Min | 19.00 Max

Course	Name	Credits

BI201	Ecology		4.00
BI301	Marine Organism Physiology		4.00
NS103	Introduction to Vessel Operations		2.00
OS004	OS Seminar IV		1.00
OS210	Physical Oceanography		4.00
PS301	Technical Physics III		4.00
		Total :	19.00

Junior Semester 2

Courses : 4 Min | 4 Max Credits : 11.00 Min | 11.00 Max

Course	Name	Credits
BI308	Cell Biology	4.00
NS241	Seamanship	2.00
OS005	OS Seminar V	1.00
OS400	Prep for Research in Marine Science	4.00
	Total :	11.00

Junior Sem2 Dept Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 8.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Senior Semester 1

Courses : 5 Min | 5 Max Credits : 14.00 Min | 14.00 Max

Course	Name	Credits
HC230	Humanities II	3.00
NS132	Small Craft Technology	3.00
NS135	Small Craft Construction	3.00
OS006	OS Seminar VI	1.00
OS401	Research Project	4.00
	Total :	14.00

Senior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Semester 2

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name		Credits
BI312	Genetics		3.00
		Total :	3.00

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem2 Free Elective

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
%	Any Course	

Senior Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name		Credits
CO223	SVO/VOT Cooperative Work Exp I		3.00
		Total :	3.00

Fifth Year Semester 1

Courses : 4 Min | 4 Max Credits : 10.00 Min | 10.00 Max

Course	Name		Credits
NS122	Cargo I		3.00
NS232	Marine Systems		3.00
NS271	Terrestrial Navigation I		3.00
NS272	Terrestrial Navigation Lab		1.00
		Total :	10.00

Fifth Year Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
NS%	Any NS Course	

Fifth Year Semester 2

Courses : 6 Min | 6 Max Credits : 13.00 Min | 13.00 Max

Course	Name	Credits

NS221	Meteorology		3.00
NS262	Navigation Rules		3.00
NS292	Electronic Navigation		3.00
NS293	Electronic Navigation Lab		1.00
NS298	Topics in Small Vessel Operations		2.00
NS299	200 Ton License Seminar		1.00
		Total :	13.00

Oceanography / Small Vessel Operations (dual major)

The Oceanography/Small Vessel Operations dual major allows the student to complete all of the requirements for the Bachelor of Science degree in Oceanography and Small Vessel Operations, as well as a USCG license as mate of vessels not more than 200 gross tons, Near Coastal (200 miles offshore). This program may be completed in 5 years and is designed for students who plan to work in the oceanography field and may need the capability to operate small vessels.

The following table outlines the normal sequence of courses taken by students majoring in Oceanography/Small Vessel Operations dual major.

2020/Fall – Undergraduate/Bachelor of Science/Oceanography/Small Vessel Operations (dual major)

Major Requirements

Credits : 161.00 Min | 165.00 Max
2.250 Core GPA Minimum
2.000 Overall GPA Minimum

First Year Semester 1

Courses : 7 Min | 7 Max Credits : 17.50 Min | 17.50 Max

Course	Name	Credits
BI101	General Biology I	4.00
CH210	Chemistry I	4.00
FY100	First Year Experience	1.00
MS101	Pre-Calculus Mathematics	4.00
OS000	OS Seminar O	0.00
OS101	Int. to Oceanography and Env. Science	4.00
PE114	Ocean Survival	0.50
	Total :	17.50

First Year Semester 2

Courses : 5 Min | 5 Max Credits : 16.00 Min | 16.00 Max

Course	Name	Credits
BI102	General Biology II	4.00
CH220	Chemistry II	4.00
HC111	Composition	3.00

MS150	Calculus I		4.00
OS001	OS Seminar I		1.00
		Total :	16.00

Sophomore Semester 1 A

Courses : 1 Min | 1 Max Credits : 4.00 Min | 4.00 Max

Course	Name	Credits
BI220	Marine Botany	4.00
CH310	Introduction to Organic Chemistry	4.00
	Total :	8.00

Sophomore Semester 1

Courses : 6 Min | 6 Max Credits : 10.50 Min | 10.50 Max

Course	Name	Credits
HC220	Humanities I	3.00
NS101	Introduction to Nautical Science	2.00
OS002	OS Seminar II	1.00
OS204	Physical Geology	4.00
PE100	Basic Sailing	0.50
USCG1	USCG Fire Fighting	0.00
	Total :	10.50

Soph Sem1 Hum-SS Elect

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Sophomore Semester 2

Courses : 8 Min | 8 Max Credits : 18.00 Min | 18.00 Max

Course	Name	Credits
NS241	Seamanship	2.00
OS003	OS Seminar III	1.00
OS203	Design & Applied Stat In Science	4.00
OS211	Geological Oceanography	3.00
OS212	Chemical Oceanography	4.00
PS102	Technical Physics I	4.00
USCG2	USCG Fire Fighting Live Burn	0.00

USCG3	Lifeboat Exam		0.00
		Total :	18.00

Junior Semester 1

Courses : 5 Min | 5 Max Credits : 14.00 Min | 14.00 Max

Course	Name	Credits
NS103	Introduction to Vessel Operations	2.00
OS004	OS Seminar IV	1.00
OS210	Physical Oceanography	4.00
OS213	Biological Oceanography	3.00
PS301	Technical Physics III	4.00
	Total :	14.00

Junior Sem1 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Junior Semester 2

Courses : 2 Min | 2 Max Credits : 5.00 Min | 5.00 Max

Course	Name	Credits
OS005	OS Seminar V	1.00
OS400	Prep for Research in Marine Science	4.00
	Total :	5.00

Junior Sem2 Dept Elective

Courses : 2 Min | 2 Max Credits : 6.00 Min | 8.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Junior Sem2 Free Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
%	Any Course	

Senior Semester 1

Courses : 5 Min | 5 Max Credits : 14.00 Min | 14.00 Max

Course	Name	Credits

HC230	Humanities II		3.00
NS132	Small Craft Technology		3.00
NS135	Small Craft Construction		3.00
OS006	OS Seminar VI		1.00
OS401	Research Project		4.00
		Total :	14.00

Senior Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
OS%	Any OS Course	

Senior Sem2 Hum-SS Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
EC%	Any EC Course	
HC%	Any HC Course	
HMSS%	Any Hum/SS Transfer Course	
HY%	Any HY Course	
PY%	Any PY Course	

Senior Sem2 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 4.00 Max

Course	Name	Credits
BI%	Any BI Course	
GE221	Geographic Information Science	4.00
OS%	Any OS Course	
	Total :	4.00

Senior Sem2 Free Elective

Courses : 3 Min | 3 Max Credits : 9.00 Min | 9.00 Max

Course	Name	Credits
%	Any Course	

Senior Semester 3

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
CO223	SVO/VOT Cooperative Work Exp I	3.00
	Total :	3.00

Fifth Year Semester 1

Courses : 4 Min | 4 Max Credits : 10.00 Min | 10.00 Max

Course	Name		Credits
NS122	Cargo I		3.00
NS232	Marine Systems		3.00
NS271	Terrestrial Navigation I		3.00
NS272	Terrestrial Navigation Lab		1.00
		Total :	10.00

Fifth Year Sem1 Dept Elective

Courses : 1 Min | 1 Max Credits : 3.00 Min | 3.00 Max

Course	Name	Credits
NS%	Any NS Course	

Fifth Year Semester 2

Courses : 6 Min | 6 Max Credits : 13.00 Min | 13.00 Max

Course	Name		Credits
NS221	Meteorology		3.00
NS262	Navigation Rules		3.00
NS292	Electronic Navigation		3.00
NS293	Electronic Navigation Lab		1.00
NS298	Topics in Small Vessel Operations		2.00
NS299	200 Ton License Seminar		1.00
		Total :	13.00

Minor Programs and Concentrations

All Academic Departments at Maine Maritime Academy offer opportunities for specialization in one or more areas of study. Students wishing to receive credit for a specialized program of study should consult with the designated minor or concentration coordinator(s) to receive advice.

Minor Guidelines

A minor program generally consists of 18 credit hours of courses related to a specialized field of study and included on the official list of courses acceptable for that minor. A minimum of 12 of the 18 credit hours must be taken at Maine Maritime Academy. Courses identified for one minor cannot be counted for another minor.

Concentration Guidelines

A concentration generally consists of 18 hours of courses related to a specific field of study within, or extending the student's major program, and included on the official list of courses acceptable for that concentration. A minimum of 12 of the 18 credit hours must be taken at Maine Maritime Academy. Courses identified for one concentration may not be counted toward any other concentration or minor.

Grade Requirements

To qualify for a minor or a concentration, a student must meet all requirements for graduation from Maine Maritime Academy. Students are required to obtain a GPA of at least a 2.00 in the minor or concentration with no more than one grade below a "C".

More Than One Minor or Concentration

Students desiring approval to pursue more than one minor and/or concentration must have approval from advisors in each of the sequences. To receive more than one minor and/or concentration, a student must satisfy all the requirements listed above for each sequence.

See the Academic Policy section on Maximum Credit Hour Loads for the course overload policy.

Also refer to each Department's Catalog or web page regarding specialization opportunities within their respective programs of study.

Minor/Concentration Requirements

Business

Required Courses:		
MA101	Intro to Business & Supply Chain Mgmt	3
MA111	Financial Accounting	3
MA222	Marketing Management	3
And any 2 of the following:		
EC102	Microeconomics	3
EC103	Macroeconomics	3
LO201	Business Logistics	3
LO213	Freight Transportation	3
LO311	Logistics Information Systems	3
LO344	Warehousing & Distribution Management	3
LO346	Global Sourcing & Procurement Negotiation	3
LO422	International Logistics	3
LO432	Strategic Supply Chain Management	3
MA204	International Business	3
MA242	Managerial Accounting	3
MA332	Business Law	3
MA343	Financial Management	3
MA422	International Business Law	3
MA470	Applied Business Logistics Education	0.5-4
MA498	Special Topics: IBL	1-3
And any 1 of the following:		
ET377	Engineering Economics	3
GE221	Geographic Information Science	4
HC232	Management Communication	3
MS253	Statistics for Business & Management	3
NS122	Cargo I	3
NS131	Introduction to Marine Transportation	3
NS210	Tanker Operations	4
NS301	Stability	3
NS335	Yacht Management	3
NS420	Ship's Business	3
NV401	Leadership & Management	3
NV402	Leadership & Ethics	3

OS203	Design & Applied Stat in Science	4

Environmental Sustainability

The environmental sustainability minor is an interdisciplinary course of study that introduces the foundational concepts necessary for work in environmental science, policy or remediation. The core courses ensure understanding of the science and sociology of environmental problems. Follow on courses allow students to focus on different aspects of sustainability in industry.

Required Courses:		
CH101 or	Chemical Principles	4
CH210 or	Chemistry I	4
CH352	Engineering Chemistry	4
EN202	Introduction to Sustainability	3
HC260	Sustainable Energy & Society	3
And any 2 or 3 of the following:		
EG350	Intro to Environmental Regulations & Ethical Industrial Compliance	3
EN232	Pollution Control & Remediation	3
EN402	Biofuels: Production and Use	3
EN420	Air Pollution & Emissions Testing & Cont	3
Choose up to 1 of the following:		
MA101	Intro to Business & Supply Chain Mgmt	3
NS132	Small Craft Technology	3
NS210	Tanker Operations	4
OC101	Introduction to Ocean Science	3
OS101	Intro to Oceanography & Environmental Science	4

Additional courses as approved by the minor coordinator

Humanities & Social Science

Required Courses:		
HC220 or	Humanities I	3
HC230	Humanities II	3

Any HC course except		1-3
HC111	Composition	
HC232	Management Communication	
And any HY, PY, GE, or PO course		1-3
In addition, following may be used to fulfill minor requirements.		
NV202	Seapower and Maritime Affairs	3
NV310	The Evolution of Warfare	3
NV402	Leadership & Ethics	3
NV411	Fundamentals of Maneuver Warfare	3

Nine credit hours of the 18 credits required must be at the 300 level or higher.

*IBL majors: no courses required of your major may be used for this minor.

Industrial Power Plant Technology

*Required Courses:		
ET211 or	Thermodynamics I	3
ES201	Introduction to Thermal Fluid Science	5
ET212 or	Thermodynamics II	3
ES352	Engineering Thermodynamics II	3
ET498	PET Capstone I	4
ET499	Power Engineering Technology Capstone II	5
And any 1 of the following:		
ET201	Fluid Power	3
ET377	Engineering Economics	3
ET202	Statics and Dynamics	4
EG491	Diesel Power III	3
ET378	Computer Applications for Power	3
MS251	Prob & Statistics for Eng. & Science	3
Optional for a Concentration:		
ET401	Automation and Control	3
ET432	Power Control Electronics	3
EG422	Steam Power Systems II	3

Others with the approval of the advisor.

Marine Biology

Marine biology is the focused study of marine organisms and their role in the ocean environment. The marine biology minor introduces students to general concepts in biology, and applies those concepts to marine botany and marine zoology. Students can further tailor their interests within the marine biology minor by focusing on advanced topics in ecology, physiology, cell biology, genetics, and other specialized topics. Students in the minor will also develop field and laboratory skills, as well as skills in scientific communication.

Required Courses:		
BI101	General Biology I	4
BI102	General Biology II	4
BI210	Marine Zoology	4
BI220	Marine Botany	4
And any 2 of the following:		
BI201	Ecology	4
BI218	Animal Behavior	3
BI301	Marine Organism Physiology	4
BI306	Ichthyology	4
BI308	Cell Biology	4
BI312	Genetics	3

Marine Engineering Operations

Required Courses:		
EG101	Fundamentals of Engineering Operations	2
CE103	First Year Cruise-Engine	4
EG261	Steam Generators I	3
EG292	Diesel Power I	3
ET371	Electrical Power I	4
And 5 credits from the following:		
ET101	Graphics	3
ET201	Fluid Power	3
EG252	Machine Tool Operations I	2.5
EG321	Steam Turbines I	3
EG372	Electrical Power II	3
EG392	Diesel Power II	3
ET211	Thermodynamics I	3

EG243	Welding	2

Marine Transportation Operations

Required Courses:

NS101	Introduction to Nautical Science	2
NS241	Seamanship	2

And 15 credits of NS-designated courses.

Mathematics

Required Courses:

MS252	Engineering Math I	4
MS260	Differential Equations	3

And at least 1 of the following:

MS251	Prob & Statistics for Eng & Science	3
MS253	Statistics for Business & Management	3
MS451	Engineering Mathematics II	3

And up to 2 courses from: computer programming, physics, engineering, math (except calculus courses) approved by minor advisor.

Naval Architecture

Required Courses:

NA152 or	Ship Structure & Stability	3
NS102	Ship Structure	3
NS301	Stability	3
ET202 or	Statics and Dynamics	4
ES205	Engineering Statics	3
ET230 or	Strength of Materials	3
ES235	Engineering Strength of Materials	3
ET201 or	Fluid Power	3
ES245	Engineering Fluid Mechanics	3
NA372	Naval Architecture I	3

NA430	Naval Architecture II	3

Naval Science

Required Courses:		
PE100	Basic Sailing	0.5
NV101	Intro to Naval Science	3
EG101	Fundamentals of Engineering Operations	2
NV202	Seapower and Maritime Affairs	3
NV211	Naval Ship Systems II (Weapons)	3
NV301 and	Navigation	3
NV302	Naval Operations & Seamanship	3
Or		
NV310 and	The Evolution of Warfare	3
NV411	Fundamentals of Maneuver Warfare	3
NV402	Leadership & Ethics	3

Oceanography

Oceanography is the study of the earth's oceans: their biological, geological, physical, and chemical processes, how these processes interact, and interactions between oceans and the atmosphere, the sea bed, and coastlines. The minor in oceanography, offered by the Corning School of Ocean Studies, provides a background that explores each of the major disciplines, but the curriculum can be tailored toward a student's particular interest. An oceanography minor enhances a student's understanding of the science of the ocean and provides them with practical analytical techniques for ocean observing. For students interested in careers on the ocean in business or as vessel operators, this minor provides knowledge about the physical world within which they will operate.

Required Courses:		
OC101 or	Introduction to Ocean Science	3
OS101	Intro to Oceanography & Environmental Science	4
Plus courses from the following:		
BI210	Marine Zoology	4

BI220	Marine Botany	4
BI306	Ichthyology	4
OS210 or	Physical Oceanography	4
OS309	Ocean Circulation & Prop of Seawater	3
OS204 or	Physical Geology	4
OS308	The Earth	3
OS212	Chemical Oceanography	4
OS213	Biological Oceanography	3
OS499	Special Topics in Ocean Studies	1-3

For a total of 18 credits in Ocean Studies coursework.

Physical Science

Required Courses:

18 credit hours from the following fields:

Chemistry, meteorology, ocean studies, or physics.

At least 2 courses must be of a sequential nature and the minor advisor must approve inclusion of any course towards this minor.

Sail Training

Required Courses:

At least 18 credit hours in the following courses:

PE200	Intermediate Sailing	0.5
NS344	Traditional Vessel Technology	3
CR214 This course is required unless waived by the Minor Coordinator due to prior significant sailing experience.	Auxiliary Sail Training Cruise	4
NS341	Auxiliary Sail Vessel Operations	3
NS321	Weather Rout	
PE401	Advanced Sail Vessel Handling	1
NS343	Modern Sail Vessel Technology	3
NS443	Rigging Technology	3

NS445	Sailmaking Technology	3

Note: For a Concentration, only 12 credit hours from the above courses is required.

Students not enrolled in the VOT major must take at least 6 credit hours in the following courses:

PE100	Basic Sailing	0.5
PE114	Ocean Survival	0.5
NS241	Seamanship	2
NS132	Small Craft Technology	3
NS135	Small Craft Construction	3
NS232	Marine Systems	3
NS301	Stability	3

Small Vessel Operations

Required Courses:

NS101	Introduction to Nautical Science	2
NS262	Navigation Rules	3
NS271	Terrestrial Navigation I	3
NS272	Terrestrial Navigation Lab	1

Plus any 3 NS-designated courses to total not less than 18 credit hours.

Technical Science

Required Courses:

ET211 or	Thermodynamics I	3
ES251	Engineering Thermodynamics I	3

Plus Any 3 or 5 of the following:

ET202 or	Statics and Dynamics	4
ES205	Engineering Statics	3
ET212 or	Thermodynamics II	3
ES352	Engineering Thermodynamics II	3
ET230 or	Strength of Materials	3
ES235	Engineering Strength of Materials	3
ES245	Engineering Fluid Mechanics	3

ES420	Engineering Dynamics	3
Up to 2 of the following:		
MS120	Technical Calculus II	4
MS160	Calculus II	4
MS251	Prob & Statistics For Eng & Science	3
MS252	Engineering Math I	4
CS150	Structured Problem Solving with Computer	3
CS220	C/C++ Programming	3

The minor advisor may approve other courses.

Course Descriptions

Each course's abbreviation, number, title, description, prerequisites (if any), and credits are listed below. Courses offered at the Bath Iron Works Shipyard as part of the Ship Design and Ship Production majors and at The Landing School as part of the Small Craft Design program are listed at the end of this section.

Course Abbreviations

Undergraduate Courses

BI	Biology
CD	Cadet Shipping – Deck
CE	Cadet Shipping Engineering
CH	Chemistry
CO	Cooperative Education
CR	Cruise
CS	Computer Science
EC	Economics
EG	Engineering Operations
EN	Environmental
ES	Engineering
ET	Engineering Technology
GE	Geography
HC	Humanities & Communication
HY	History
LL	Lifelong Learning
LO	Logistics
MA	Management
MD	Medicine
MS	Mathematics
NA	Naval Architecture
NS	Nautical Science
NV	Naval Science
OC	Ocean Studies
OS	Ocean Studies
PD	Personal Development
PE	Physical Education
PO	Political Science
PS	Physics
PY	Psychology
US	USCG Courses
YM	Small Vessel Management
YO	Small Vessel Operations
YT	Small Vessel Technology

BIW Courses

BIW CH	Chemistry
BIW CS	Computer Science
BIW EC	Economics
BIW EG	Engineering
BIW ET	Engineering Technology
BIW HC	Humanities & Communication
BIW MA	Management
BIW MS	Mathematics
BIW NA	Naval Architecture
BIW PS	Physics

Landing School Courses

LS DSN	Topics in Design
LS MST	Topics in Systems

Cr = credit hour; Lab = Laboratory hours; Rec = Recitation or lecture hours.

BIOLOGY (↑ Top ↑)

BI101 : General Biology I — An introductory course in modern biology covering the following topics: evolution and the diversification of life, including principles of taxonomy and diversity of form; function and structure of plants including transport, nutrition, sensory systems, reproduction, and defense; function and structure of animals including nutrition, digestion, gas exchange, circulation, excretion, chemical and electrical signals, reproduction, and the immune system; ecology, including behavior, population ecology, species interactions, community ecology, and ecosystems.
Rec. 3, Lab. 3, Cr. 4

BI102 : General Biology II — Introduction to the concepts and principles of modern biological thought with coverage of the following topics: the chemical basis of life including atoms, molecules, organic macromolecules, and cellular structure and function; cell division, including mitosis and meiosis; the fundamentals of Mendelian genetics, gene structure and expression, and current research in the field of genetics; developmental biology and cellular differentiation; evolutionary patterns and processes.
Prerequisite: BI101. Rec. 3, Lab 3, Cr. 4.

BI201 : Ecology — An introductory course in ecology. A study of the interactions of organisms with each other and with their abiotic environment. Topics include environmental factors, population ecology, community ecology, and ecosystem energetics. Emphasis is on illustration of basic principles using the local marine ecosystem.
Prerequisite: BI102 and OS203. Rec. 3, Lab. 3, Cr. 4.

BI210 : Marine Zoology — An overview of animal biology in the marine environment. Physiology, behavior, ecology, and evolution of marine unicellular and multicellular animals will be presented. The laboratory portion of the course will focus on the diversity and habitats of marine animals in the Gulf of Maine region. Prerequisite: BI102. Rec. 3, Lab. 3, Cr. 4.

BI218 : Animal Behavior — The evolution and ecology of animal behavior is explored in detail. The evolution and diversity, as well as the ecological consequences, of behavior will be studied. Topics include the genetics and physiology of behavior, perceptual systems, integration and storage of information, ecology of reproduction, feeding behavior, habitat selection and migration, and social behavior.
Prerequisite: BI102. Rec. 3, Cr. 3.

BI220 : Marine Botany — An introduction to the taxonomic, physiological, chemical, and ecological aspects of marine photosynthesizers. Topics covered include: marine plant environments, physiological ecology, the influence of anthropogenic effects on marine photosynthesizers, as well as an examination of microalgae, seaweeds, salt marsh plants, and sea grasses. Laboratory emphasis is on a survey of marine flora and habitats found in the Gulf of

Maine.
Prerequisite: BI102. Rec. 3, Lab 3, Cr. 4.

BI301 : Marine Organism Physiology — Physiology examines the processes of cells, tissues, and organ systems. This course is designed to allow an understanding of how physiological processes relate to how organisms function in their environment. We will utilize three primary approaches: (1) structure/function studies examining how the morphology of a system relates to function, (2) comparative discussions contrasting the mechanisms by which marine plants and animals are adapted to life in the marine environment, and (3) evolutionary comparisons of how different organ systems have evolved within and throughout marine taxa.
Prerequisite: BI102 and OS203. Rec. 3, Lab 3, Cr. 4.

BI306 : Ichthyology — An introductory course in the biology of fishes. Topics include: anatomy and physiology, ecology, evolution and behavior of fishes, classification of fishes, and the conservation and management of fish and fisheries.
Prerequisites: BI210 or BI220. Rec. 3, Lab. 3, Cr. 4.

BI308 : Cell Biology — This course is an overview of the fundamental structure and function of biomolecules and organelles of the plant and animal cell. Cell structure and function topics include membrane phenomena, cytoskeleton, gene expression (replication, transcription, translation), protein sorting and function, secretory pathways, signal transduction, and cell cycle. Additional areas include energy production and utilization, cellular biosynthesis, and control of cellular activities. Prerequisites: BI102 and CH310. Rec. 3, Lab. 3, Cr. 4.

BI312 : Genetics — This course is an introduction to genetics from the molecular to the population level. The course covers concepts of classical Mendelian genetics, prokaryote genetics, maintenance of variability, gene interactions, and modern genomics. Genetics in ecological and evolutionary settings will be emphasized. Modern genetic techniques and technologies will be described as well.
Prerequisites: BI102 and CH310. Rec. 3, Cr. 3.

BI321 : Biology of Symbiosis — Symbiosis is the interaction between two or more different types of organisms in an ecological setting. Interactions such as mutualism, commensalism, parasitism, and predation occur at the cellular, organismal, and community levels. Relevant marine, aquatic, and terrestrial examples of symbiotic relationships will be investigated and discussed in order to appreciate the biological and evolutionary significance of these remarkable associations.
Prerequisites: BI201 and BI301. Rec. 3, Cr. 3.

BI323 : Biogeography — A course examining the distribution of organisms on Earth. Topics covered will include global and regional biogeographic patterns, early Earth and fundamental biogeographic processes, phylogeography, ecological biogeography, and conservation biogeography. This course will also explore current biogeography topics by discussing papers from primary literature.
Prerequisites: BI201. Rec. 3, Cr. 3.

BI499 : Special Topics in Biology — A course allowing students to pursue instruction not normally offered in the curriculum, through any combination of lecture and laboratory. Departmental approval required. Prerequisite: MS101. Cr. 1-3 as appropriate.

CADET SHIPPING – DECK (↑ Top ↑)

CD103 : First Year Cruise – Deck — Introduction to the shipboard responsibilities of deck officers. Orientation and practical experience in watch standing and ship maintenance procedures, including an overview of ship systems. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites include: EG101, NS101, PE114, VPDSD, participation in the Regiment; completion of the ship's Familiarization/Orientation program; first year maintenance; fire training; pass the USCG Lifeboatman Exam. Cr. 4.

CD203 : Cadet Shipping Deck — A cooperative experience in the merchant marine in which the student is normally assigned a billet aboard a commercial merchant ship by the director of cadet shipping. (In some cases this cruise may be accomplished aboard the T.S. State of Maine.) The student participates in the operation of the ship as a cadet mate applying classroom lessons of the first two years. An extensive written sea project detailing all aspects of the experience is required.
Prerequisites: students must not be on academic probation and must have passed CR103 or CD103, NS122, NS241, NS262, NS282, NS292, MT21D or Department Chair approval. Basic Safety Training and drug-free certification are also required. Cr. 4.

CD303 : Junior Cruise Deck — The final cruise in a series of three. A thorough shipboard experience designed to prepare the student to understand fully the systems and operating procedures necessary for the execution of the responsibilities of a third mate. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements.
Prerequisites: CD203 with a grade of C- or higher, NS221, NS301, NS332, NS345, NS381, MT32D or Department Chair approval. Cr. 4.

CADET SHIPPING ENGINEERING (↑ Top ↑)

CE103 : First Year Cruise – Engine — Introduction to the shipboard responsibilities of engineering officers. Orientation and practical experience in watch standing and ship maintenance procedures, including an overview of ship systems. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites include: EG101, NS101, PE114, VPDSD, participation in the Regiment; completion of the ship's Familiarization/Orientation program; first year maintenance; fire training; pass the USCG Lifeboatman Exam. Cr. 4.

CE203 : Cadet Shipping Engine — A cooperative experience in the merchant marine in which the student is normally assigned a billet aboard a commercial merchant ship by the director of cadet shipping. (In some cases this cruise may be accomplished aboard the T.S. State of Maine.) The student participates in the operation of the ship as a cadet engineer applying classroom lessons of the first two years. An extensive written sea project detailing all aspects of the experience is required.
Prerequisites: students must not be on academic probation and must have passed CR103 or CE103, ET201 or ES201, EG234, EG252, EG261 or EG265, ET371 or ES371, and EG292 or have a minimum of C- grade in each at the end of the 10th week of the current semester, or obtain permission of the Engineering Cadet Shipping Coordinator. Basic Safety Training and drug-free certification are also required.
Cr. 4.

CE303 : Junior Cruise Engine — The final cruise in a series of three. A thorough shipboard experience designed to prepare the student to understand fully the systems and operating procedures necessary for the execution of the responsibilities of a third engineer. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: CE203 with a grade of C- or higher, EG372, ET211 or ES251 or ES201; Satisfactory participation in the ship's Familiarization/Orientation Program, Maintenance Second Class, or approval by the Training Committee on Exceptional cases. Cr. 4.

CHEMISTRY (↑ Top ↑)

CH101 : Chemical Principles — Formerly CH301. This course examines basic concepts of general chemistry, including: stoichiometry, atomic structure, periodic properties, chemical bonding, states and properties of matter, equilibria, acids and bases, and properties of organic compounds. Rec. 3, Lab. 3, Cr. 4.

CH152 : Engineering Chemistry — Atomic and molecular structure, bonding types and energies, stoichiometric computations, solutions, equilibria, oxidation-reduction, nuclear and organic chemistry. Rec. 3, Lab. 3, Cr. 4.

CH210 : Chemistry I — An introduction to the nature and properties of matter at the atomic and molecular level; chemical changes; stoichiometry; energy changes; structure and periodicity of elements; states of matter, chemical bonding, and kinetics. Rec. 3, Lab. 3, Cr. 4.

CH220 : Chemistry II — A second course in chemistry dealing with equilibria of acids and bases; simple thermodynamics; electrochemistry, nuclear chemistry; metals and non-metals; and brief introduction to organic and biochemistry. Prerequisite: CH210. Rec. 3, Lab. 3, Cr. 4.

CH310 : Introduction to Organic Chemistry — An introduction to general organic chemistry with an emphasis on natural aspects of the topic. Areas of concentration will include: organic nomenclature, structural theory and stereochemistry of aliphatic and aromatic compounds, and chemical reactions of fundamental importance to organic chemistry. The laboratory will present

a survey of analytic methods commonly employed in organic chemistry. Prerequisite: CH220. Rec. 3, Lab. 3, Cr. 4.

COOPERATIVE EDUCATION (↑ Top ↑)

CO200 : Cooperative Industrial Field Exp I — A full-time work experience for power engineering technology students, normally with wage compensation, in shoreside industrial and utility power plants. The work experience must be related, in both theoretical and practical engineering, to the student's field of study in basic power engineering operations and maintenance. A minimum of ten full weeks or the equivalent at the discretion of the instructor, of employment is required to be eligible for credit in this course. Note: The combined satisfactory employment hours of CO200 and CO300, however, must total 1050 hours or more in a steam facility for the student to be eligible for the State of Maine Third Class Engineer (Stationary Plant) license. The course grade will be based on an extensive written project documenting this work experience. When registering for this course, the student must be in good academic standing. Students in a probation or warning status will not be eligible to participate in this course. Prerequisites: EG234, EG243, EG261, ET101, ET211, ET371, and drug free certification required. Cr. 2.

CO201 : PEO Cooperative Industrial Fld Exp I — A full-time work experience for power engineering operations students, normally with wage compensation, in shoreside, steam powered, industrial and utility power plants. The work experience must be related in both theoretical and practical engineering, to the student's field of study in basic power engineering operations and maintenance. A minimum of twelve full weeks or the equivalent at the discretion of the instructor, of employment is required to be eligible for credit in this course. Note: The combined satisfactory employment hours of CO201 and CO301, however, must total 1050 hours or more in a steam facility for the student to be eligible for the State of Maine Fourth Class Engineer (Stationary Plant) license. The course grade will be based on an extensive written project documenting this work experience. When registering for this course, the student must be in good academic standing. Students in a probation or warning status will not be eligible to participate in this course. Prerequisites: EG234, EG243, EG261, ET101, ET211, ET371, and drug free certification required. Cr. 2.

CO203 : Cooperative Experience Eng I — A full-time work experience for Marine Systems Engineering (non-license track) students, normally for wage compensation, in a real-world engineering environment. Credit will be awarded at ¼ credit for each two weeks of satisfactory work, with a minimum of 1.5 credits required to earn credit for the course. Requirements include a daily work-activity journal (unless prohibited by documented national or company security concerns), a brief completion report, and a weekly e-mail report sent to the MSE Co-op Coordinator. Prerequisites: Student must have successfully completed the first two years of the MSE program, be in good academic standing and not be on academic warning or probation, and drug free certification required. Prerequisite: ES196 or CR103 or CE103. Cr. 1.5 to 4.0.

CO223 : SVO/VOT Cooperative Work Exp I — A minimum of 60 days of supervised work experience aboard an appropriate vessel. This cooperative work experience is intended to provide the student with an entry level deck position for training and sea service days toward a

USCG 200 GT Mate/Near Coastal license. Students are encouraged to pursue vessel opportunities aligned with their particular interests. An extensive written sea project is required. (A total of 120 qualifying sea service days are required for the USCG 200 GT Mate/Near Coastal license). Prerequisite: HC111, NS101, NS103, PE114, NS132, NS135, NS241, USCG1 and USCG2 or approval of the SVO/VOT coordinator and drug free certification required; pass the USCG Lifeboatman Exam, USCG3. Cr. 3.

CO300 : Cooperative Industrial Field Exp II — The second in a series of full-time work experiences for power engineering technology students, normally with wage compensation, in shoreside industrial and utility power plants. A continuation of CO200 with emphasis on advanced power engineering operations, maintenance, organization, and management. A minimum of ten full weeks or the equivalent at the discretion of the instructor, of employment is required to be eligible for credit in this course. Note: The combined satisfactory employment hours of CO200 and CO300, however, must total 1050 hours or more in a steam facility for the student to be eligible for the State of Maine Third Class Engineer (Stationary Plant) license. The course grade will be based on an extensive written project documenting this work experience. When registering for this course, the student must be in good academic standing. Students in a probation or warning status are not eligible to participate in this course. Prerequisites: CO200, EG382, EG431, ET212, ET378, ET432, and drug free certification required. Cr. 2.

CO301 : PEO Coop Industrial Field Exp II — The second in a series of full-time work experiences for power engineering operations students, normally with wage compensation, in shoreside, steam powered, industrial and utility power plants. A continuation of CO201 with emphasis on advanced power engineering operations, maintenance, organization, and management. A minimum of twelve full weeks or the equivalent at the discretion of the instructor, of employment is required to be eligible for credit in this course. Note: The combined satisfactory employment hours of CO201 and CO301, however, must total 1050 hours or more in a steam facility for the student to be eligible for the State of Maine Fourth Class Engineer (Stationary Plant) license. The course grade will be based on an extensive written project documenting this work experience. When registering for this course, you must be in good academic standing. Students in a probation or warning status are not eligible to participate in this course. Prerequisites: CO201, EG321, EG372, EG382, EG431, and drug free certification required. Cr. 2.

CO311 : Ocean Studies Cooperative Exp — A maximum of three credits will be offered for a directed cooperative education experience: students must submit a proposal for evaluation and approval of the Ocean Studies faculty at which time credits will be assigned; the final grade to be based on a cooperative education project report to be submitted by the student upon completion of the Co-op experience. Prerequisite: drug free certification required. Cr. 1-3.

CO323 : VOT Cooperative Work Exp II — A minimum of 60 days of supervised work experience aboard an appropriate vessel greater than 50 gross tons. This cooperative work experience is intended to provide the student with a more advanced deck position, with increased responsibilities, for training and sea service toward a USCG 500 GT Mate/Near Coastal/Oceans license. Students are encouraged to pursue vessel opportunities aligned with their particular interests. An extensive written sea project is required. (A total of 240 qualifying sea service days

are required to the USCG 50 GT Mate/Near Coastal/Oceans license). Prerequisite: CO223, NS271, NS272, NS262, NS292 or approval of the VOT coordinator and drug free certification required. Cr. 3.

CO400 : Cooperative Industrial Field Exp — A period of work experience, normally full-time and paid, with private industry or government in a job related to the student's degree program and/or career goals and which differs significantly from previous experiences. Normally, credit will be awarded at the rate of 0.25 credits for each two weeks of full-time work experience. No student may earn more than four credits in this course during his/her enrollment at the Academy and these credits cannot be substituted for any other degree or minor program requirements. Prerequisite: MSE program coordinator's approval and drug free certification required. Cr. 0.5 to 4.0. (Students in Marine Systems Engineering are required to successfully complete 1.5 credits of this course.)

CO410 : Maritime Transp Coop Field Exp — A period of work experience, normally full-time and paid, with private industry or government in a job related to the student's degree program and/or career goals and which differs significantly from previous experiences. Normally, credit will be awarded at the rate of one-half credit for each two weeks of full-time work experience. Grading will be on a satisfactory/unsatisfactory basis. No student may earn more than four credits in cooperative education during his/her enrollment at the Academy and these credits cannot be substituted for any other degree or minor program requirements. Prerequisite: Department Chair approval and drug free certification required. Cr. 0.5 to 4.

CO423 : VOT Work Experience III — A minimum of 60 days of supervised work experience aboard an appropriate vessel greater than 50 gross tons. This cooperative work experience is intended to provide the student with a more advanced deck position, with increased responsibilities, for training and sea service toward a USCG 500 GT Mate/Near Coastal/Oceans license. Students are encouraged to pursue vessel opportunities aligned with their particular interests. An extensive written sea project is required. (A total of 240 qualifying sea service days are required to the USCG 50 GT Mate/Near Coastal/Oceans license). Prerequisite: CO323 or approval of the VOT coordinator and drug free certification required. Cr. 3.

CRUISE (↑ Top ↑)

CR214 : Auxiliary Sail Training Cruise — This two-month training cruise will introduce the Auxiliary Sail License Candidate to the preparation and operation of a large, traditional sailing vessel. One month will be spent fitting out the schooner Bowdoin (and other vessels) for the sailing season, and one month will be spent sailing. The itinerary will include both coastwise and offshore sailing. Cr. 4.

CR313 : VOT Training Cruise — A two week training cruise for fourth year students that encompasses advanced practical training and STCW assessment. This is both a coastwise and offshore passage incorporating terrestrial and celestial navigation, watchkeeping, vessel handling, emergency operations, passage planning and the entering and clearing of foreign ports. The schooner Bowdoin is used for this course so the student is also exposed to sailing a

traditionally rigged auxiliary sail vessel. Prerequisites: NS101, NS241, NS262, NS271, NS272, NS282, NS292, NS381. Cr. 2.

COMPUTER SCIENCE (↑ Top ↑)

CS150 : Structured Problem Solving with Computer — A course in problem solving using computers and emphasizing a structured approach. Topics include: structured solution methods, programming fundamentals, spreadsheet modeling, and an introduction to presentation software. Rec. 3, Cr. 3.

CS151 : Introduction to Engineering Programming — An introductory level course in computer programming and applications. This course introduces engineering students to basic structured programming and engineering mathematical software. Rec. 3, Cr. 3.

CS220 : C/C++ Programming — An intermediate course in computer programming, using C/C++. Prerequisite: CS150. Rec. 3, Cr. 3.

CS331 : Special Topics Computer Science — A course allowing students to pursue various topics in Computer Science. Rec. 3, Cr. 3

ECONOMICS (↑ Top ↑)

EC102 : Microeconomics — Introduction to supply and demand, markets, externalities and public goods, the theory of the firm, industrial organization and game theory, and factor markets. Rec. 3, Cr. 3.

EC103 : Macroeconomics — Introduction to national income accounting, business cycles, and inflation. Topics also include money and banking, monetary and fiscal policy. Rec. 3, Cr. 3

ENGINEERING OPERATIONS (↑ Top ↑)

EG101 : Fundamentals of Engineering Operations — A study of basic mechanical power generation systems, with emphasis on the applicable technologies and their safe and efficient management. The course is designed to introduce both engineering and non-engineering students to operating engineering. The course provides a foundation for many engineering department courses. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 2.

EG234 : Power Equipment Lab — An introduction to marine and stationary power plant systems and equipment through study, inspection, and maintenance applications. Topics include lubrication and lube oil purification systems; pumps; air removal equipment; and heat exchangers; piping systems and valves; control systems for temperature, pressure, and flow; compressed air systems; distilling plants; and auxiliary steam turbines. In addition, basic equipment techniques and tag-out safety procedures are introduced. This course supports the marine license program requirements to meet the Standards for Training, Certification and

Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: EG101. Lab. 3, Cr. 2.

EG242 : Machine Tool Practices — An introductory course in machine tool practices for Power Engineering Technology students. This course is designed to give students the basic theory and practical application necessary to work with and supervise the operation of machine tools and associated equipment such as engine lathe, milling machine, drill press and precision measuring and layout tools. PET students may take EG252 in place of this course and also apply EG252 toward the PET Free Elective requirement. Rec. 1, Lab. 0, Cr. 1.

EG243 : Welding — An introduction to and practice in the principles, safety aspects, and correct operations of arc welding and oxyacetylene cutting. Emphasis is on all-position shielded metal arc welding. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 1, Lab 2, Cr. 2.

EG252 : Machine Tool Operations I — An introductory course in machine tool practices. This course is designed to give students the basic theory and practical application necessary to operate machine tools and associated equipment such as engine lathe, milling machine, drill press, precision measuring and layout tools. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 1, Lab. 3, Cr. 2 .5.

EG261 : Steam Generators I — The construction and design of marine boilers of all types, including fuel oil systems and equipment, feedwater analysis, furnace refractories, and U. S. Coast Guard construction regulations. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: EG101. Rec. 3, Cr. 3.

EG265 : Steam Generating Systems — A condensed version of EG261 (Steam Generators I) with more emphasis on principles of design, automation, and operation and less emphasis on construction details. Prerequisite: Marine Systems Engineering Major or consent of instructor. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: EG101. Rec. 2, Cr. 2.

EG292 : Diesel Power I — Introductory study of diesel engine principles, covering typical construction features with pertinent systems including fuel, lubricating, cooling, starting and maneuvering, exhaust and heat recovery. Rec. 3, Cr. 3.

EG321 : Steam Turbines I — A study of the elementary principles, descriptive classifications, and construction and accessories of various types of marine, stationary, and auxiliary turbines.

This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: ET211 or ES251 or ES201. Rec. 3, Cr. 3.

EG350 : Environmental Regulation & Compliance — This course is designed to develop each student's ability to recognize and effectively deal with compliance issues and professional ethics associated with environmental permitting procedures. The course will include an introduction to environmental science with a focus on defining standards pertaining to all aspects of pollutants, emissions, control technology, and enforcement. The course will consist of three primary areas: air quality, water quality including ballast water, and hazardous waste. Prerequisites: CH301 or CH101 or CH352 or CH152 or CH210. Rec. 3, Cr. 3.

EG351 : Machine Tool Operations II — Practical study of the operation and utilization of lathes and milling machines. Provides a continuing opportunity to receive actual practice in threading and milling projects. Prerequisite: EG252. Rec. 1, Lab 3, Cr. 2.5.

EG352 : Machine Tool Operations III — Designed to give the machine tool student experience in developing advanced machining skills. Training includes internal single point threading and boring; knurling, radius and taper turning on the lathe; and advanced milling machine operations using traditional machining methods. Computer numerical controlled programming and machining will be introduced. Traditional machining and computer numerical control (CNC) machining projects are required. Prerequisite: EG351 or permission of instructor. Rec. 1, Lab 2, Cr. 2.

EG372 : Electrical Power II — Builds on ET/ES371 to develop an understanding of design, construction, operational characteristics, efficiency and maintenance of DC and single- and 3-phase AC machinery, and pulse-width modulation (PWM) and its applications to propulsion and industrial drives. Lab work will emphasize principles of safe and efficient operation, troubleshooting, and installation of electrical machinery and systematic use of measuring equipment. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: MS110 or MS150, ET371 or ES371, CE203 or CO200 or CO201 or CO203. Rec. 2, Lab. 2, Cr. 3.

EG382 : Steam Power Systems I — A study of measurement and adjustment techniques, and of control systems on modern main and auxiliary steam turbines. Includes lubrication systems, main propulsion shafting and propellers, and maintenance and emergency repairs of main propulsion turbines. The operation and maintenance of all types of marine boilers and their associated equipment along with U.S. Coast Guard operating regulations are covered. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: EG265 or EG261, EG321. Rec. 3, Cr. 3.

EG387 : Offshore Technology II — The objective of this course is to provide the student with an introduction to the offshore oil exploration industry, including rig design and construction, and deepwater drilling operations. Combined with NS 386 (Offshore Tech I), this course is intended to prepare the student with the basic knowledge to successfully engage in a career in the offshore oil industry. Included topics: Rig design and construction, subsea equipment and operations, mud circulating systems, drilling equipment, drill string, directional drilling, fracking operations, hole problems, and rig casualties. Prerequisite: NS386. Rec. 3, Cr. 3.

EG392 : Diesel Power II — Continuation of material from EG292, with emphasis on theory and operation of air intake systems, fuel injection systems, governors, and lubrication systems. Characteristics of available lubricants and factors affecting lubrication and combustion are covered in detail. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: EG292 or NS132. Rec. 2, Lab. 2, Cr. 3.

EG400 : Special Topics in Engineering Operations — An upper-level course in engineering operations and related topics. Topics to be determined based on student or faculty proposals. Prerequisites to be determined based on course level and content or approval of department chair and instructor. Cr. 1-3.

EG422 : Steam Power Systems II — Covers operations, testing, and components of steam power plants through lectures and laboratories that include work with a steam plant simulator and an operating steam plant. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: EG382, and ET371 or ES371. Rec. 2, Lab. 2, Cr. 3.

EG431 : Gas Turbines — The design, operation, and maintenance of marine and industrial gas turbines and their systems. Prerequisites: ET211 and EG321. Rec. 3, Cr. 3.

EG442 : Advanced Welding — The theory and practice of specialized types of welding such as tungsten inert gas, aluminum, and pipe welding. Includes specialized fabrication problems encountered aboard ship. Prerequisite: EG243. Lab. 3, Cr. 1.

EG481 : Marine Refrigeration & Air Conditioning — Refrigeration processes encountered in the marine field and industry. Includes the design, operation, and maintenance of the principal refrigeration cycle components, reciprocating and rotary centrifugal compressors, and the refrigerants used. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: ET211 or ES201 Rec. 2, Lab. 1, Cr. 2.5.

EG491 : Diesel Power III — A review of marine diesel engines of all types including the design, operation and maintenance, indicator card analysis, and emergency repair of large diesel engines. Prerequisite: EG392. Rec. 2, Lab. 2, Cr. 3.

EG492 : Diesel Power III (No Lab) — A review of marine diesel engines of all types including the design, operation and maintenance, indicator card analysis, and emergency repair of large diesel engines. Prerequisite: EG392. Rec. 2, Cr. 2.

EG497 : Power Engineering Operations Capstone I — The course will introduce concepts of power plant operations, which build on previous PEO curriculum material. This will include fossil power plant operations and technologies, electrical grid operation and current topics of interest in the power generation industry. This course is a communications intensive course. Prerequisites: EG382 and EG431. Rec. 3, Lab. 2, Cr. 4.

EG498 : Power Engineering Operations Capstone II — The course will develop concepts of power plant operations, which build on previous PEO curriculum material. This will include combined cycle power plant operations and technologies, environmental considerations, professional ethics and current topics of interest in the power generation industry. This course is a communications intensive course. Prerequisite: EG497. Rec. 3, Lab. 2, Cr. 4.

ENVIRONMENTAL (↑ Top ↑)

EN201 : Understanding Climate Change — This interdisciplinary course investigates the interaction of major factors that influence global climate. Students will examine evidence that supports and refutes climate change due to human activity and related effects on the biosphere. The course also addresses strategies to minimize or adapt to changes in climate and their affects on global physical, social, and biological landscapes. Content relevant to each student's major is included. Rec. 3, Cr. 3

EN202 : Introduction to Sustainability — This introductory course will examine the effects of our actions in the areas of business, engineering, science and transportation as they relate to our marine and terrestrial environment. Students will consider pollutant sources and effects, mitigation affects, regulatory and ethical behavior, environmental health and safety, and financial considerations. At the completion of this course students will have a fundamental understanding of environmental issues and responsibilities as they relate to degree programs at MMA. Rec. 3, Cr. 3.

EN232 : Pollution Control & Remediation — This course provides an introduction to pollution control (regulations and environmental effects), wastewater treatment, oil spill containment, spill response, recover and beach/soil remediation, on-shore spill response and sail remediation, and process control specifically (but not exclusively) related to marine transportation and power plants. Course will include related environmental health and safety component. Course will include hands-on lab components for sample testing, site monitoring, site visits and coordinate with local facilities and State or Federal regulators. Prerequisite: EN202. Rec. 2, lab. 2, Cr. 3.

EN236 : Oil Pollution Prevention & Response — Pollution Prevention, MARPOL Convention. Particularly Sensitive Sea Areas.Oil Pollution, Preparedness, Response and Co-Operation Convention (OPRC). Environmental Sensitivity and Impacts. Oil spill properties, behavior and fate, health and safety, response organization and control strategies, oil

containment booms, oil skimmers. Shoreline Clean-up. Media Relations. Liability and compensation. Oil Spills in Ice Covered Waters. Oil spill trajectory model and oil weathering model. Case studies. Table top exercises. Rec. 3, Cr. 3.

EN399 : Special Topics in Env. Sustainability — An upper level course in environmental sustainability and related topics. This course will address institutional goals including "gather, analyze and interpret information" and "recognize environmental consequences of individual and professional decisions" as well as other goals determined by the instructor. Prerequisites to be determined by course level and content. Cr. 3 or 4.

EN402 : Biofuels: Production and Use — This course will focus on the development, production and use of 1st and 2nd generation biofuels including biomass, alcohol, biodiesel, biogas and engineered specialty fuels like biojet and biocrude. An overview of the field provides the rationale for biofuels as part of the energy sector. The basic chemistry and energetics of combustion, fermentation and other relevant reactions are considered fundamental to understanding how fuel creates energy, and the subtle differences between fuels that make them more or less valuable. Economic, regulatory, social and environmental considerations will make up a significant percentage of the course content. Prerequisites: CH301 or CH101 or CH352 or CH152 or CH210. Rec. 2, Lab. 3, Cr. 3.

EN420 : Air Pollution Testing & Control — This course will include an introduction to air pollution regulations, emissions testing, the science of emissions and reduction in emissions through process control and mechanical optimization, air pollution control techniques specifically (but not exclusively) related to marine transportation and power plants. This course will also include a related environmental health and safety component. This course will include hands-on lab components for sample testing and site monitoring. Prerequisites: CH210 or CH301 or CH101 or CH352 or CH152. Rec. 2. Lab. 2, Cr. 3.

ENGINEERING (↑ Top ↑)

ES180 : Engineering Design I — A first course in "structured" conceptual design of engineering systems. Lectures emphasize methods of creating alternate approaches to solve a given "open ended" engineering problem, and identifying the most promising solutions. This communications intensive course includes a conceptual design project and simple computer application. Students will work in design teams devising, evaluating, and defending a feasible solution to a design problem. Rec. 2, Cr. 2.

ES196 : Ship Systems & Design — A study of the construction and design of ship hull and engineering systems, using the Training Ship State of Maine and Medium Speed Engine Lab as case studies. This course will focus on the design of the systems, but present operational aspects to better understand the system design, including experiential learning in laboratory exercises and a research project. Prerequisite: HC111 and EG101. Lab 4. Cr. 2.5.

ES201 : Introduction to Thermal Fluid Science — This course provides an introduction to fluid dynamics and thermodynamics including the properties of pure substances, gas laws, first and second laws of thermodynamics. Topics include hydrostatics, conservation of mass and

energy, introduction to the second law of thermodynamics and basic heat transfer. Practical problems in hydrostatics, pipe flows and losses, pump sizing, heat transfer and thermal analysis of heat devices including engines and heat exchangers will be part of the course. Computer problem will also be assigned. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: CS151, MS110 or MS150, PS102 or PS 162, ET201 Lab concurrent or permission of the instructor. Rec 4 Lab 2, Cr. 5

ES205 : Engineering Statics — The study of forces applied to structures. Includes an introduction to vector mechanics, static equilibrium, two and three-dimensional force systems, distributed forces, and friction. Structures studied include trusses, frames, and beams. Prerequisites: MS110 or MS150 and PS102 or PS162. Rec. 3, Cr. 3.

ES235 : Engineering Strength of Materials — A study of stresses and strains in structures due to tension, compression, shear, torsion, bending, and combined stresses. Stress transformation and introduction to three-dimensional stresses. Applications include beams, columns, and indeterminate structures. Prerequisite: ES205. Rec. 3, Cr. 3.

ES245 : Engineering Fluid Mechanics — An engineering-level extension to ET201 Fluid Power. Topics include fluid statics and dynamics as applied to ship stability, series and parallel pipe flow, open channel flow, and inviscid flow around solid objects. Application of curve fits and dimensional analysis to experiment design and data reduction. Prerequisites: ET201 or ES201, ES205, MS252. Rec. 3, Cr. 3.

ES251 : Engineering Thermodynamics I — Introduction to thermodynamic properties, phases, and processes and the concepts of energy, work, and heat. The First and Second Laws of Thermodynamics are developed. Entropy and availability are developed through Second Law analysis. Computer application and problem solving are emphasized and design and open-ended problems are presented as design experiences. Prerequisites: MS110 or MS150, PS102 or PS162, and CS150. Rec. 3, Cr. 3.

ES352 : Engineering Thermodynamics II — Engineering applications of the First and Second Laws of Thermodynamics, entropy and availability to the following topics: analysis of power and refrigeration cycles, gas mixtures, psychometrics and flow through nozzles, and blade passages, and combustion processes. Heat transfer principles are introduced. Engineering design and computer applications are emphasized. Prerequisites: ES201, MS120 or MS160, and PS201 or PS261. Rec. 3, Cr. 3.

ES371 : Enhanced Electrical Power I — An expanded version of ET371, for students planning to take the Engineering-in-Training (EIT) examination. Includes additional topics in AC and DC circuit theory, transient analysis in DC circuits, Norton's and Thevenin's Theorems, loop current and node voltage analysis, and complex notation analysis of AC circuits. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be

completed in addition to the class requirements. Prerequisites: PS201 or PS261, MS110 or MS150. Rec. 3, Lab. 2, Cr. 4.

ES380 : Engineering Design II — A second course in engineering design, utilizing applied probability and statistics for design evaluation and improvement. Topics may include control charts, measurements, analysis of variance, statistically designed experiments, robust design, response surfaces, and reliability. Topics and techniques discussed may also include product design and development, design team skills, and engineering project management. This communications-intensive course includes computer modeling and analysis and a significant design project. Prerequisites: ES180, CS150, MS252; or consent of instructor. (Students are expected to have completed or to be taking ET230/ES235 and ES245 concurrently.) Prerequisites: Rec. 3, Cr. 3.

ES400 : Special Topics in Engineering — An upper-level course in engineering design or related topics. Topics to be determined based on student or faculty proposals. Prerequisites to be determined based on course level and content or approval of department chair and instructor. Cr. 1-3.

ES410 : Engr in Training Review — A review of topics that are normally covered on the EIT examination, plus material on how the examination is organized. Prerequisite: major in MSE, MET, PET; senior standing. Cr. 2

ES420 : Engineering Dynamics — A vector-based study of linear and angular kinematics, linear and angular kinetics, energy methods, impulse, momentum and kinetics of simple three dimensional motions. Prerequisites: ES205 and MS260. Rec. 3, Cr. 3.

ES425 : Engineering Dynamics II — An upper-level course in engineering mechanics. Topics include a detailed study in the kinematics and kinetics of a rigid body, vibration theory, Lagrangian mechanics, and the Hamiltonian function. Application of these techniques to the solution of practical engineering problems will be emphasized. Prerequisite: ES420. Rec. 3, Cr. 3.

ES430 : Machine Design — Application of the basic concepts of engineering statics, strength of materials, and dynamics to the design of machine elements. Analytical and empirical techniques are presented for the design and analysis of a variety of mechanical components including fasteners, springs, bearings, gears, shafts and couplings. Lubrication principles are introduced through bearing analysis. Prerequisites: ES235 and ES420 or permission of the instructor. Rec. 3, Cr. 3.

ES433 : Control Systems Engineering — Electromechanical control systems theory and applications to design and analysis of practical marine and industrial electromechanical automation and control systems. Topics include, mathematical modeling of dynamic systems, transient-response analysis, stability analysis, steady-state errors, and PID compensation, and will utilize computer analysis and simulation. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). Prerequisites: ET432 (Co-requisite for 5 Year MSE students), MS260, Rec. 2, Lab. 2, Cr. 3.

ES490 : Numerical & Computer Methods for Enginee — A variety of numerical algorithms and techniques which may be employed in the solution of engineering problems. Topics may include solution of nonlinear equations, zeroes of polynomials, interpolation and approximation, curve fitting, numerical differentiation and integration, matrix manipulations, linear simultaneous equations, solution of first and higher order (and systems of) differential equations, finite difference approximation for derivatives, and mathematical modeling. Prerequisites: CS150 or CS151, and MS252. Rec. 3, Cr. 3.

ES491 : Intro to Reliability Engineering — This course investigates the relationship between design, manufacture, and the likelihood of failure at the component and system levels. Topics include a study of reliability mathematics, reliability testing, risk analysis, human factors, design of experiments, and reliability management. Application of these techniques to the solution of marine systems problems will be emphasized. Prerequisites: ES380 and MS260. Rec. 3, Cr. 3.

ES501 : Engineering Materials — An introduction to the structure and structural characteristics of materials used in engineering, including metallic alloys, ceramics, polymers, and composites. Methods of processing are emphasized. Prerequisites: ET230 or ES235 and CH301 or CH352. Rec. 3, Cr. 3.

ES510 : Engineering Test Laboratory — A laboratory experience through which students learn the basics of engineering testing. This communications-intensive course includes experiment design, instrument selection and calibration, data collection, analysis of data, and report writing and presentation. Prerequisites: ES235, ES245, ES251 or ES201. Lab. 3, Cr. 2.

ES598 : Capstone Design Preparation — Preparation for the major design project required in the final semester of all Marine Systems Engineering students. Each student or student team will work with an engineering faculty member to select a problem, collect reference materials, develop design objectives and specifications, select a design approach and methodology, and devise a detailed project plan. This course is communications intensive. (In special cases, course requirements may be satisfied through independent study.) Prerequisite: Marine Systems Engineering final year status or permission of the major Coordinator. Rec. 1, Cr. 1.

ES599 : Capstone Design Project — A communications-intensive project course in which the student, individually or as part of a team, applies his/her knowledge of engineering operations, engineering science, engineering design, and technical communications to analyze and create, communicate, and defend design solutions to an open-ended problem of practical interest approved by an engineering faculty member. Prerequisite: ES598. Rec. 1, Cr. 3.

ENGINEERING TECHNOLOGY (↑ Top ↑)

ET101 : Graphics — Study and practice in lettering, use of tools, methods of geometric construction, multiview projection, orthographic representation, and delineation applied to marine technology and engineering. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab 2, Cr. 3.

ET201 : Fluid Power — An introduction to applied fluid mechanics, including properties, hydrostatic pressure, flow and pressure, flow and pressure measurements, forces on areas, continuity equation, Bernoulli and general energy equations, analysis of piping systems for losses, and pump selection. These principles are applied to a variety of typical engineering problems in fluid systems. This course is designed to develop each student's ability to analyze engineering problems. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: MS101 and CS150 (or equivalent). Rec 2, Lab 2, Cr. 3

ET202 : Statics and Dynamics — Study of static force systems, equilibrium, friction, and moments, and their application to structures, including trusses. Also includes study of simple dynamic systems, including kinematics of rectilinear and angular motion, force and inertia, work, energy, and power, the basics of oscillatory motion, and impulse and momentum. Prerequisites: MS110 or MS150, PS102 or PS162. Rec. 4, Cr. 4.

ET211 : Thermodynamics I — An introduction to heat and work processes that covers units, properties, energy, and the first and second laws of thermodynamics applied to ideal gas and steam processes. Prerequisite: ET201. Rec. 3, Cr. 3.

ET212 : Thermodynamics II — Power and refrigeration cycles, heat transfer, and contemporary problems in energy conversion. Prerequisite: ET211. Rec. 3, Cr. 3.

ET230 : Strength of Materials — Study of stresses and strains produced in materials due to tension, compression, shear, and torsion. Prerequisite: ET202. Rec. 3, Cr. 3.

ET351 : Thermal/Fluids Lab — Experiments in thermodynamics, heat transfer, and fluid mechanics, standard experimental techniques, data analysis, and report writing. Communications intensive. Prerequisite: ET211 or ES352 or ES201 or ES251. Lab. 3, Cr. 2.

ET362 : Nature and Properties of Materials — This course introduces materials used in engineering applications along with guidelines for determining the appropriate materials for a given application. It also introduces fundamental science that determines the properties of materials, such as bonding types and atomic/molecular structures. Mechanical and physical properties of materials will be examined in the lectures and in laboratory exercises. Includes standard experimental techniques, mechanical and computerized data acquisition and analysis, and report writing. Communications intensive. Prerequisites: CH301, ET230, and ET452. Rec. 2, Lab. 2, Cr. 3.

ET371 : Electrical Power I — Extension of electromagnetic principles to AC and DC circuits, including balanced three-phase AC, and their application to the analysis of DC and AC circuits. Includes meters, transformers, batteries, and three-phase AC. Introduction to practical operation of shipboard and industrial electrical systems. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: PS201 or PS261. Rec. 3, Lab. 2, Cr. 4.

ET377 : Engineering Economics — A study of economic theories and principles as applied to engineering decision making. It includes methods of compound interest, annual worth, and present worth, rate of return, benefit/cost ratio, capital allocation, depreciation, and risk analysis. Other topics will include revenue requirements, price level changes, and minimum attractive rate of return. Rec. 3, Cr. 3.

ET378 : Computer Applications For Power — A practical study of typical engineering software used in industry. Examples include the use of spreadsheet for economic studies, computer aided drafting, power plant controls, moving data from one analysis to another, and special topics chosen by the instructor. Prerequisite: CS150. Rec. 2, Lab. 3, Cr. 3.

ET399 : Special Topics in Engineering Technology — An upper-level course in engineering technology and related topics. Topics to be determined based on student or faculty proposals. Prerequisites to be determined based on course level and content or approval of department chair and instructor. Cr. 1-3.

ET401 : Automation and Control — A study of principles and hardware for control and automation systems as applied to processes in marine and shoreside power plants. Media studied include pneumatic, hydraulic, mechanical, and electrical/electronic. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: EG372, CE203 or CO200 or CO201 or CO203. Co-requisite: ET432. Rec. 2, Lab. 2, Cr. 3.

ET432 : Power Control Electronics — Operational amplifier theory, applications and troubleshooting of basic electronic components used to control electrical power, including diodes, transistors, SCRs, relays and related components. Circuits studied include operational amplifiers, rectifiers, transistor drivers, transducers, digital logic circuits. Applications may be taken from automation, AC and DC control circuits, battery charging systems and power supplies, and digital logic systems. Prerequisite: ES371 or ET371. Rec. 2, Lab. 2, Cr. 3.

ET452 : Technical Communications — Extension of the theory and practice of communications tasks of a working engineer or technologist, including engineering proposals and reports; mechanism and process description; instructions, accident or casualty reports; technical specifications; and progress reports. Application of effective visual aids to both oral and written communications will be emphasized. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: HC111 and, CO200 or CO201 or CO203. Rec. 3, Cr. 3.

ET482 : Heating, Ventilation, & Air Conditioning — A study of the components, functions, and operating principles of an air conditioning system with particular attention focused on the influence of temperature, humidity, and air motion as related to human comfort. Topics include psychometrics, air quality, capacity calculations for heat gain and loss, air distribution, and elementary refrigeration systems. Rec. 2, Cr. 2.

ET491 : Marine Engineering Technology Capstone I — A course in which the student, individually, applies his/her knowledge of engineering operations and engineering science to a project that gathers and interprets information from an operating power plant (marine or stationary). Upon completion of the project, the student will be required to defend a written summary. This project will incorporate elements of the MET curriculum to develop student competence in technical and non-technical skills to solve problems. This course may require the student to work as part of a team to collect data and/or other information to support their individual project, as well as the team project that is part of MET Capstone II. Prerequisites: CE203, EG372, and ET211. Rec.1, Cr. 1.

ET492 : Marine Engineer Technology Capstone II — A course in which the student, as part of a team, applies his/her knowledge of engineering operations, engineering science, and technical communications to orally defend and report on collected data from the ET491 Marine Engineering Technology Capstone I project. This project will draw together elements of the MET curriculum to develop student competence in technical and non-technical skills to solve engineering problems. Prerequisite: ET491. Rec. 1, Cr. 1.

ET498 : PET Capstone I — A course in which the student, individually, applies his/her knowledge of computer methods, engineering operations, engineering science and technical communications to analyze, create, communicate and defend a written technical project. Additionally, the course will introduce concepts of power plant operations, which build on previous PET curriculum material. This will include fossil power plant operations and technologies, using a power plant simulator, electrical grid operation and current topics of interest in the power generation industry. This course is a communications intensive and computer intensive course. Prerequisites: ET378, EG382 and EG431. Rec. 3, Lab. 2, Cr. 4.

ET499 : Power Engineering Technology Capstone II — A course in which the student, individually, and as part of a team, applies his/her knowledge of computer methods, engineering operations, engineering science and technical communications to analyze and create, communicate and defend a written project. At least one formal presentation will be included in this project. Additionally, the course will develop concepts of power plant operations, which build on previous PET curriculum material. This will include combined cycle power plant operations and technologies, using a power plant simulator, environmental considerations, professional ethics and current topics of interest in the power generation industry. This course is a communications intensive and computer intensive course. Prerequisite: ET498. Rec. 4, Lab. 2, Cr. 5.

GEOGRAPHY (↑ Top ↑)

GE200 : Human Geography I — This course exposes students to the major issues affecting people and the places where they live. Students will develop cartographic-, writing-, and critical-thinking skills as they explore relationships both between and across diverse socio-cultural and physical environments. Topics include population, health, migration, gender, sexual identity, folk and popular culture, language, religion, and ethnicity. Rec. 3, Cr. 3.

GE210 : Human Geography II — This course exposes students to the major issues affecting people and the places where they live. Students will develop cartographic-, writing- and critical-thinking skills as they explore relationships both between and across diverse socio-cultural and physical environments. Topics include political systems, food and agriculture, oceans and fisheries, environment and climate change, development and economic systems, transportation, industry and energy, services and settlements, and urban patterns. Rec. 3, Cr. 3.

GE221 : Geographic Information Science — An introductory course in which students will learn the fundamentals of Geographic Information Science and its application to science, business and the social sciences. The course will include lectures, readings, and hands-on activities both on and beyond computers. Students will learn to use GIS software to define and complete a research project. Topics covered will include integrating the basic concepts of cartography with GIS technologies, applying GIS to real world problems, understanding the ethical and social problems relevant to GIS, attaining and analyzing spatial data, and working with various GIS software packages. Rec. 3, Lab 3, Cr. 4

GE331 : Special Topics in Geography — An upper-level course in geography and related topics. Topics to be determined based on student or faculty proposals. Prerequisites to be determined based on course level and content or approval of department chair and instructor. Cr. 1-3.

HUMANITIES & COMMUNICATION (↑ Top ↑)

HC111 : Composition — This course helps students develop a flexible writing process that can be adapted to a variety of situations. Critical thinking and argumentation are emphasized, and students practice basic research skills as they learn to write effectively in a professional voice. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

HC160 : Spanish Level I — Introductory level includes the basics of the language with equal emphasis on developing reading, listening, writing, and speaking skills. For students with no previous study of the language or fewer than 2 years in high school. Cr. 3.

HC161 : Spanish Level II — Intermediate level includes a systematic, but gradual review of the essentials of grammar and strengthens reading, writing, and especially speaking skills. Cr. 3.

HC163 : French Level I — Introductory level includes the basics of the language with equal emphasis on developing reading, listening, writing, and speaking skills. For students with no previous study of the language or fewer than 2 years in high school. Cr. 3.

HC164 : French Level II — Intermediate level includes a systematic, but gradual review of the essentials of grammar and strengthens reading, writing, and especially speaking skills. Cr. 3.

HC171 : German Level I — Introductory level includes the basics of the language with equal emphasis on developing reading, listening, writing, and speaking skills. For students with no previous study of the language or fewer than 2 years in high school. Cr. 3.

HC190 : German Level II — Intermediate level includes a systematic, but gradual review of the essentials of grammar and strengthens reading, writing, and especially speaking skills. Cr. 3.

HC220 : Humanities I — An interdisciplinary examination of the cultural roots of modern global society from human beginnings through the early modern period. Prerequisite: HC111. Rec. 3, Cr. 3.

HC230 : Humanities II — An interdisciplinary examination of the cultural roots of modern global society from the early modern period to the present. Prerequisite: HC111. Rec. 3, Cr. 3.

HC232 : Management Communication — Students apply basic writing skills to produce various types of business communication, such as short and long reports, letters of inquiry, transmittals, proposal preparation, and organization of information for oral presentation using modern technological communication systems. Prerequisite: HC111. Rec. 3, Cr. 3.

HC260 : Sustainable Energy & Society — Energy use and policy is changing, with increased international energy demand and increasing environmental pressures. This course provides an overview of energy use in the US and the world, looking at how we arrived at our current state of energy consumption. The course will cover energy technology, policy, economics and environmental effects of energy use, the political and social issues related to energy consumption in the US and worldwide, and sustainability. This course fulfills the requirements of a Humanities/Social Science elective. Rec. 3, Lab. 0, Cr. 3.

HC300 : Independent Study — An independent research project or course to be arranged between the instructor and an advanced student or students pursuing a humanities and social sciences minor. Regular seminar meetings and an extensive research project required. Prerequisite: HC111, permission of instructor and advisor. Rec. 3, Cr. 3.

HC311 : Technology and Society I — This course offers a survey of the interrelationships between technology (and science) and society, from prehistoric times to the present. The course will acquaint students with the basic history of technology, its development, the controversies it has produced, and some of its impacts on society. Prerequisite: HC111. Rec. 3, Cr. 3.

HC321 : Film Appreciation — This course traces historical developments in film production (including types of framing, the introduction of camera motion, lens effects, the introduction of sound, etc.) and shows how these techniques lead to cinematic meaning. Prerequisite: HC111, Rec. 3, Cr. 3.

HC331 : Special Topics in Humanities — An upper-level course allowing students to pursue various topics in the humanities. Topics might include: thematic or imagistic studies, or work of special genres, or individual authors, philosophers, composers and/or artists. Proposals may be

student or instructor initiated. Prerequisites: HC112 or HC220 and HC211 or HC230 and approval of department chair and instructor. Rec. 3, Cr. 3.

HC333 : Basic Drawing — This course helps students understand the language of drawing, a means of communicating literal or imaginative pictorial ideas. Students will develop a vocabulary for drawing, and learn how to accurately represent on paper what one sees. This course will stress learning about the power of line, and perspective on a two-dimensional surface so that the work tells the viewer what the artist wants to say and that the drawing aspires to be art rather than a diagram. Rec. 3, Cr. 3.

HC337 : Peer Tutoring Workshop — This course prepares students to work in the MMA Writing Center as peer consultants. Topics include writing center theory and practice, an overview of disciplinary genres, and working with ESL and learning-disabled students. Writing process strategies are reviewed, as are such rhetorical elements as style, organization, grammar, punctuation, and usage. Students complete the course with a practicum in the Writing Center. Prerequisite: HC111 and instructor permission, Rec. 1, Cr. 1.0

HC339 : Digital Photography — This course is an introduction to the art and science of photography. Primary emphasis is placed on photographic fundamentals and skill development in the use of the 35mm camera and in printing photographs in the black-and-white darkroom. Principles and essentials for users of digital technology are also included. Attention to composition is stressed. Rec. 3, Cr. 3.

HC360 : Honors Seminar — An upper level, Humanities/Social Science elective course that will focus on an interdisciplinary study of current issues. This course is open to students with high aspirations who are nominated and invited by the faculty. Students will be eager to search for answers to difficult problems, and will critically analyze and discuss contemporary issues while challenging their opinions and beliefs across disciplines. For a description of this semester's offering please see the course description on the portal. Prerequisites: Instructors permission, HC-111, 112 or 211. Rec. 3, Cr. 3.

HISTORY (↑ Top ↑)

HY260 : American History 1500-1877 — Beginning with early civilizations in North America, this course recounts the settlement of the continent, the colonial and revolutionary periods, the early national period, sectionalism, the Civil War and Reconstruction. Rec. 3, Cr. 3.

HY270 : American History 1877-Present — This course examines both the internal growing pains of American society beginning in 1877 as well as the sometimes rocky U.S. rise to global power, tracing the country's initial reluctance to enter world affairs to its status, at the end of the twentieth century, as the cultural, political, and economic leader of the world – the last superpower. Rec. 3, Cr. 3.

HY310 : Civil War and Reconstruction — The American Civil War still stands as the most destructive in this nation's history. Resolving issues left untouched by the Declaration of Independence, the Revolutionary War, and the Constitution, the Civil War was a bitter and

bloody fight to define and extend rights promised by the Founding Fathers. This course examines events leading to war, four years of armed conflict, and the Reconstruction period. Prerequisite: HY260 or HY300, or permission of instructor. Rec. 3, Cr. 3.

HY331 : Special Topics: History — An upper-level course allowing students to pursue various topics in the history. Proposals may be student or instructor initiated. Rec. 3, Cr. 3.

HY360 : Twentieth-Century America — Frequently called "The American Century" the years 1900 to 2000 mark a time of immense change for the United States, both domestically and internationally. This course examines the evolution of America from involvement in WWI, through the Great Depression, WWII, the Cold War, the fall of the Soviet Union, and the end of the millennium. Prerequisite: Either HY260, HY270 or permission of the instructor. Rec. 3, Cr. 3.

LOGISTICS (↑ Top ↑)

LO201 : Business Logistics — An introduction to the field of business logistics and with a focus on inventory and its various components such as materials management, physical distribution, traffic management, warehousing, purchasing, inventory management, outsourcing, and logistics organization. Exposure to current trends and developments in logistics management including, but not limited to, environmental and social impacts of a supply chain and respective applied sustainable solutions. The course will serve as a base for upper level logistics courses. Prerequisites: MA101, MA111, and sophomore standing or LSS Department Chair permission. Rec. 3, Cr. 3.

LO213 : Freight Transportation — Theory and case analysis pertaining to modal, intermodal and multimodal freight transportation with coverage of road, rail, air and water modes of transportation. Course focuses on the role of transportation in the logistics and supply chain processes including industry structure, capabilities, financial performance, key player analysis, and the contractual and pricing interface between shippers and carriers. Prerequisites: MA101, MA111, LO201 and sophomore standing or LSS Department Chair permission. Rec. 3, Cr. 3.

LO311 : Logistics Information Systems — Introduction to the application of information technology in logistics organizations and the roles of managers and staff professionals in developing and using information systems based on current and future technology. This course uses software packages and applications to solve logistics and transportation problems, and study of logistics related technologies. Prerequisites: CS150, LO201, MA101, MA111, and junior standing or LSS Department Chair permission. Rec. 3, Lab. 2, Cr. 3

LO344 : Warehousing & Distribution Management — This course will study warehousing operations and physical distribution of inventory in the form of raw materials, semi-processed and finished goods in supply chains. Study of material handling equipment and packaging of goods and materials throughout the distribution center, warehouse, production operation, and related inbound and outbound transportation will be covered. Facility design and layout for efficient flow of materials will be introduced. Prerequisites: LO201, LO213, LO311 and junior standing, or LSS Department Chair permission. Rec. 3, Cr. 3.

LO346 : Global Sourcing &Procurement Negotiation — Acquisition of necessary goods, materials and services in exchange for funds or other remuneration. Locating qualified vendors, seeking alternative sources, and negotiating favorable terms are considered. Emphasis is placed on contemporary and emerging strategic considerations such as partnering with suppliers to design, develop and service product lines, and establishment of long-term prime vendor contracts. Prerequisites: LO201, MA312, junior standing, or LSS Department Chair permission. Rec. 3, Cr. 3.

LO400 : Co-Op Educational Experience in IBL — It is the responsibility of the student to find and secure the Co-Op experience. The IBL Co-Op is a period of full-time, paid, professional employment experience within the private or public sector including non-profit organizations. The earned position must be related to logistics or supply chain management, and which differs significantly from any previous employment experiences. All IBL students are required to earn a minimum of three Co-Op credits to be earned in twelve weeks of full-time employment or 480 hours. The student is required to complete several graded milestones prior to the summer co-op in addition to an extensive written project. The syllabus contains the necessary details of assignments and is subject to change each year. No student may earn more than four credits with LO400 during his/her enrollment at MMA and these credits cannot be substituted for any other degree or minor program requirements. Prerequisite: IBL program coordinator's approval, junior standing or LSS Department Chair permission, and drug free certification required. Cr. 3-4.

LO422 : International Logistics — A study of the various components of international logistics system such as import/export procedures and documentation, international commercial and payment terms, world shipping markets, air and ocean freight management, third party logistics service providers, and cargo and financial risk management issues. Prerequisites: LO201, LO346, MA304 and senior standing or LSS Department Chair permission. Rec. 3, Cr. 3.

LO432 : Strategic Supply Chain Management — The study of logistics and supply chain potential future shifts and the drivers for those changes. Explores current events in supply chain, structural issues, and development of future direction, options and alternatives with roles that current students may play in that environment including inter-firm logistics integration, planning, sourcing, production, order management, distribution, administration, and customer relations that can be strategically harnessed to leverage strategic competitive advantage across multiple companies. Includes integrated supply chain metrics and performance measurement. The case method will be used to provide experience in integrating material from this and prior courses in the International Business and Logistics program. Prerequisites: LO201, LO213, LO344, MA312, and senior standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MANAGEMENT (↑ Top ↑)

MA101 : Intro To Business & Supply Chain Mgmt — A foundation course that provides an overview of the fundamentals of business management in the context of global logistics and supply chain. It includes a conceptual framework for the managerial functions and challenges within and between companies in the creation and distribution of tangible goods, as well as the nature of contemporary business, current issues, and career opportunities. This course is a

requirement of all IBL students even if a similar course is completed at another institution. Rec. 3, Cr. 3.

MA111 : Financial Accounting — An introduction to the preparation, use, and analysis of the four basic financial statements with an emphasis placed on the study of various financial transactions. Rec. 3, Cr. 3.

MA204 : International Business — An introductory survey course to doing business globally. Course will focus on country differences, theories and issues in cross-border trade and investment, and global monetary system and competing in the global marketplace, with special emphasis on entry strategies and modes. Prerequisites: EC102, EC103, MA111, and Sophomore standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MA222 : Marketing Management — Focuses on the process of creating and fulfilling consumer and organizational needs through strategies involving the conception, pricing, promotion and distribution of ideas, goods and services in a market economy. The interrelationship of planning and marketing is explored throughout the course. Prerequisites: MA101, and sophomore standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MA242 : Managerial Accounting — An introduction to management decision making involving such topics as: cost/volume relationships, budgets and variances, the allocation of costs, and job costing and process costing. Prerequisite: MA111, and sophomore standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MA310 : Principles of Project Management — Twenty-first century careers in the maritime industry, scientific research, engineering and international business require the skills to manage large, complex projects with diverse stakeholders across multiple organizations. This course introduces the foundational concepts necessary to successfully initiate, plan, schedule, execute and assess such projects. Students will explore project management with a practical, hands-on approach using case studies, appropriate software tools and collaboration with industry partners. Team-based learning will allow students to develop analytical, critical thinking and decision-making skills necessary to lead and/or participate in a project environment with team members from different disciplines. Prerequisites: Junior standing or department chair permission. Rec. 3. Cr. 3.

MA312 : Production And Operations Management — Building and managing world-class operations through Total Quality Management; designing, building, planning, and controlling Fast Response Organizations including demand management, process design, capacity strategy, facility location and layout, inventory management, performance measurement, and global enterprise integration. Prerequisites: LO201, LO213, MA204, MA101, MA111, and junior standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MA332 : Business Law — Course will examine elements of business law including its ethics and the U.S. judicial system. Topics to be covered include contract and employment law, business regulations, and corporate governance issues, and related case studies. Prerequisites: MA101 and junior standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MA343 : Financial Management — An introduction to the study of asset pricing, risk management, project evaluation, and debt and dividend policies. Prerequisites: MA111, Junior standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MA401 : Seminar Strategic Mgmt & Org Behavior — This course addresses the processes and stakeholders that characterize and create the dynamics of contemporary organizational life. Topics such as organizational culture, conflict, group interaction, and structure are addressed from both a theoretical and "real world" perspective. Relevant case studies are considered to develop and broaden insight and analytical skills that are vital to manage, navigate, and lead organizations through change and growth. Prerequisites: LO400, and senior standing or LSS Department Chair permission. Rec. 3, Cr. 3.

MA422 : International Business Law — The role of law in transnational commerce; traditional business law subjects (sales, commercial paper, etc.) as well as environmental subjects (trade regulations, employment, ethics, and others) are studied to assist managers in competing successfully in competitive global markets through development of skills to make judgments about the political and business risk of doing business internationally. Prerequisites: MA332, MA204, and senior standing at MMA or LSS Department Chair permission. Rec. 3, Cr. 3.

MA470 : Applied Business Logistics Education — A community outreach program that aims to promote free enterprise and business principles while enhancing written and oral communication, leadership, self-discipline and teamwork skills. Will provide hands-on learning experience for students in business and economics, and also opportunities to network with local and national business leaders. Students in Free Enterprise involvement and project team participation required. Approval by department is required. Cr. 0.5-4

MA498 : Special Topics: IBL — A course allowing students to pursue advanced topics of international business and logistics not offered in the curriculum. Topics of study will depend on the interests of the student and supervising faculty member(s). Approval by department chair is required. Cr. 1-3.

MEDICINE (↑ Top ↑)

MD310 : Medical Care Provider — A study of the assessment, recognition and treatment of various diseases and injuries that may be encountered in the workplace. This course includes first aid, CPR and blood borne pathogens. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

MD311 : Medical Person In Charge — A course including didactic and mostly practical skills. Included will be IVs, medication administration, skeletal and spinal immobilization. Prerequisite: MD310. Rec. 3, Cr. 3.

MD312 : Emergency Medical Technician — This course, that follows the National EMS Education Standards, is designed to give students, through lecture, practical lab, and clinical

experience, the entry-level knowledge and skills necessary to provide basic emergency medical care and transportation for patients who access the emergency medical system. Upon successful course completion, students are eligible to take the National Registry of EMT's certification examinations. Students will perform interventions necessary to provide patient care and transportation including basic level patient assessment, airway management and oxygen administration, CPR, spinal immobilization, shock management, bandaging and splinting, and medication administration. This course meets twice a week and up to 4 weekend days. Text, Online Work and all assigned work must be completed prior to end of class and an average of 75% must be achieved to take the National Registry of EMT's certification examination. Rec. 6, Cr. 5.

MD331 : Special Topics in Medicine — An upper-level course allowing students to pursue various topics in Medicine. Proposals may be student or instructor initiated. Prerequisites: Approval of department chair and instructor. Rec. 3, Cr. 3.

MATHEMATICS (↑ Top ↑)

MS101 : Pre-Calculus Mathematics — Includes linear and quadratic equations, inequalities, simultaneous linear equations, matrices, graphs, composite and inverse functions, logarithmic and exponential functions, complex numbers and the complex plane, basic trigonometry, and trigonometric identities and equations. Rec. 4, Cr. 4.

MS102 : Pre-Calculus, Part I — Part 1 of a 2-part pre-calculus sequence. Includes linear and quadratic equations, inequalities, complex numbers, basic trigonometry. To be followed by MS103. Rec. 3, Cr. 2.

MS103 : Pre-Calculus, Part II — Part 2 of a 2-semester pre-calculus sequence. Includes graphs, composite and inverse functions, simultaneous linear equations, matrices, logarithmic and exponential functions, and trigonometric identities and equations. Prerequisite: MS102. Rec. 3, Cr. 2.

MS110 : Technical Calculus I — Differential and integral calculus of algebraic and transcendental functions; applications, including physical problems, graphing and optimization; and basic integration, indefinite and definite integrals. Prerequisite: MS101 or equivalent. Rec. 4, Cr. 4.

MS120 : Technical Calculus II — A second course in calculus, covering further techniques of integration, calculus of transcendental functions, functions of several variables, infinite series, and an introduction to ordinary differential equations. Prerequisite: MS110. Rec. 4, Cr. 4.

MS141 : Finite Math — A course designed to develop the mathematical skills considered important for business students and prepare them for business calculus. Topics include: algebra review, linear functions, systems of linear equations and matrices, linear programming, the mathematics of finance, logic, sets, elementary probability and statistics, game theory, digraphs and networks, and nonlinear functions. Rec. 4, Cr. 4.

MS150 : Calculus I — Functions, analytic geometry, limits, continuity, derivatives of algebraic functions and applications; study of graphs maxima and minima, methods of approximation; and elementary integration, indefinite and definite integrals. Rec. 4, Cr. 4.

MS151 : Calculus For Business — A course designed to develop the mathematical skills considered important for business students. The primary emphasis is on the calculus for functions of one variable and its applications. Note: It is recommended that students planning to pursue graduate studies or those on an NROTC scholarship should take MS150. Prerequisite: MS101 or equivalent. Rec. 4, Cr. 4.

MS160 : Calculus II — Applications of the integral, advanced methods of integration, analytic geometry, the calculus of transcendental functions, improper integration, conics and polar coordinates, and the introduction of infinite series and the calculus of several variables. Prerequisite: MS150 or permission of the Mathematics Coordinator. Rec. 4, Cr. 4.

MS251 : Prob & Statistics For Eng & Science — An introductory, calculus-based course in probability and statistics with an emphasis on engineering and scientific applications. Topics include: descriptive statistics; probability (basic probability and discrete and continuous random variables and their distributions); point and interval estimation; hypothesis testing of sample means, proportions, and variances; regression models; use of statistical software. Applications will include reliability and experimental design. Prerequisites: a Computer Science course or evidence of computer literacy, and MS150. Rec. 3, Cr. 3.

MS252 : Engineering Math I — An introduction to applied mathematics useful in applied science and design engineering. Topics include infinite series formation, both functional and numerical, in pursuit of non-analytical solution, numerical techniques with emphasis on error analysis, vector calculus and linear algebra. Applications include, but are not limited to, chemical reaction, electrical circuits, curvilinear regression for experimental data, oscillatory systems, fluid force, coupled systems and mathematical modeling of dynamic systems. Use of computer generated solution is encouraged. Prerequisite: MS120 or MS160. Rec. 4, Cr. 4.

MS253 : Statistics For Business & Management — An introductory, algebra-based course in statistics with an emphasis on business and managerial applications. Topics include descriptive statistics; basic probability and random variables; point and interval estimation; hypothesis testing of sample means and proportions; linear regression and correlation; and use of statistical software. Applications will include decision making, quality management, statistical process control, and time-series forecasting models. Prerequisite: a Computer Science course or evidence of computer literacy. Rec. 3, Cr. 3.

MS260 : Differential Equations — A first course in ordinary differential equations with emphasis on analytic solution. Topics include existence and uniqueness of solution, first order equations, linear and selected nonlinear higher order equations, and solution by Laplace transforms, numerical solution and introduction to solution by series. Applications selected from mechanics, biology, thermodynamics, resonance, electrical networks, automatic control and servomechanisms, epidemiology and ecology. Mathematical formulation and design are stressed in all applications. Prerequisite: MS120 or MS160. Rec. 3, Cr. 3.

MS299 : Special Topics in Mathematics — A course allowing a student to pursue topics or sequences of topics not otherwise offered. Proposals are to be student initiated, in consultation with an instructor. Prerequisite: Department and instructor approval. Rec. 1-3, Cr. 1-3.

MS451 : Engineering Mathematics II — A second course in applied mathematics for applied science and design engineering students. Topics include review of eigenvectors, eigenvalues and orthogonality, Taylor series method, Picard's method of iteration, method of Frobenius, Bessel's equation, Legendre's equation, Strum-Liouville problems, Fourier series and analysis, Gram-Schmidt orthonormalization and self-adjoin differential equations. Partial differential equations such as the heat equation, wave equation and potential equation are formulated using basic physical principles and brought to solution. The Laplacian in rectangular, cylindrical and spherical coordinates is investigated. Application to design analysis and dynamical systems is stressed. Prerequisites: MS252 and MS260. Rec. 3, Cr. 3.

NAVAL ARCHITECTURE (↑ Top ↑)

NA152 : Ship Structure & Stability — Presents the principles of naval architecture and their application to modern vessels. Describes the procedures used in the determination of ship characteristics; damaged and undamaged stability including topics like loose water, flooding and grounding; and typical ship construction and ship building procedures, tests, and ship's trials. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

NA372 : Naval Architecture I — Theory and practice of naval architecture, basic principles and design calculations; terminology, hull form geometry, buoyancy, intact and damaged stability and trim, ship strength and powering. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: ET230 or ES235, and ET201 or ES201 or ES245. Rec. 3, Cr. 3.

NA430 : Naval Architecture II — Ship dynamics. This course continues the development of naval architecture topics including resistance and powering, seakeeping, and maneuvering. In parallel, students will develop a concept design for a small vessel based on a set of mission requirements. Prerequisite: NA372. Rec. 3, Cr. 3.

NA499 : Topics Naval Architecture — A course allowing students to pursue advanced topics in Naval Architecture not offered in the curriculum. Topics of study will depend on the interests of the student and supervising faculty member(s). Approval by department chair is required. Cr. 1-3.

NA599 : Capstone Design Project — A communications-intensive ship design project in which the student, individually or as part of a team, applies his/her knowledge of ship stability, strength, resistance, powering, machinery selection, and general arrangements to complete a concept design from a set of performance requirements. Students will apply modern computer

tools for naval architecture to calculate hull shape, hydrostatics, damage stability, and resistance. Students will present their final design and defend design decisions. Prerequisite: NA372, NA430. Rec. 1, Cr. 3

NAUTICAL SCIENCE (↑ Top ↑)

NS101 : Introduction to Nautical Science — An introduction to nautical science which covers basic skills that would put the student at the able bodied seaman level of knowledge and prepare the student for the U.S. Coast Guard lifeboat examination. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab. 2, Cr. 2.

NS102 : Ship Structure — An introduction to ship construction as it relates to all types of vessels. Basic naval architecture and management functions regarding ship structure are stressed. Topics include hull structure and components, vessel design process, design stresses, tonnage measurements, and load line assignment. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: EG101 and NS101. Rec. 3, Cr. 3.

NS103 : Introduction to Vessel Operations — This course will introduce students to the fundamentals of Vessel Operations. It is designed to run concurrently with NS101 and augment the seamanship skills taught in that class. The curriculum includes basic nomenclature, vessel propulsion and handling, safety and regulations pertinent to the maritime industry. The lab portion of the course is taught by the Waterfront Staff and will provide students with the opportunity to put classroom concepts into safe practice aboard vessels on the water. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab 2, Cr. 2.

NS122 : Cargo I — A study of vessel cargo and the role of the ship in integrated transportation systems. At the introductory level topics include cargo responsibility, fundamental objectives of good stowage, and a survey of cargo gear. The role of the ship's officer is examined and related to various types of vessels and cargo operations. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

NS131 : Introduction to Marine Transportation — A current overview of the maritime industry, what it consists of, how it operates, how it is characterized economically, and how it is regulated. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

NS132 : Small Craft Technology — Introduction to the fundamentals of the engine and drive-train typically found aboard commercial vessels and yachts. Emphasis is on the high speed marine diesel engine, the theory of its operation and the understanding of its associated components. Fuel, air, lubrication, and cooling systems are covered. The lab includes the disassembly, inspection, re-assembly and running of a small diesel engine. Rec. 2, Lab. 3, Cr. 3.

NS135 : Small Craft Construction — An introduction to the fundamentals of vessel construction. While the major focus will be on wooden boat plans and construction, the course will also cover steel, aluminum and fiberglass construction methods. Vessel construction terminology, the process of lofting, and scantling requirements are discussed. The lab is focused on the building of a half hull from lines drawings. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab. 2, Cr. 3

NS210 : Tanker Operations — Tanker Operations — This course meets the USCG formal education requirements for Dangerous Liquid Cargo Person In Charge (PIC) (46cfr 13.209), Tankerman Engineer (46 cfr 13.509) and the competence requirements of Table A-V/1-1-2 of the STCW Code as amended for the Minimum Standard of Competence In Advanced Training for Oil Tanker Cargo Operations. Provided evidence of 90 days of service in deck or engine departments of one or more tank vessels for the following limitations a Tankerman-Engineer endorsement shall be limited to maintenance and repair of cargo equipment or Tankerman-PIC (Barge) (DL) endorsement be limited to Non-Self Propelled barges.
Successful completion of this course will lead to the issuance of the Dangerous Liquid Cargo Certificate and credited with 2 loads & 2 discharges toward the Tankerman PIC endorsement. The presentations will highlight areas of principal concern to the junior officers, especially those necessary to minimize the possibility of accidents and pollution. Included are a detailed study of cargo handling procedures, inert gas systems and crude oil washing, environmental protection, tanker safety practices, and other required topics associated with tank vessel operations. Rec. 3, Lab. 2, Cr. 4.

NS221 : Meteorology — Basic concepts of meteorology with particular emphasis on marine applications. This includes a study of ocean winds and weather with the plotting and analysis of weather maps, weather routing of ships, and familiarization with the various Weather Bureau publications and services. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

NS232 : Marine Systems — Electrical and mechanical system fundamentals, associated with yachts and small commercial vessels, are examined. These include: DC electrical theory and installation standards, storage batteries, multi-meter use, AC electricity, pumping systems, refrigeration, reverse-osmosis water makers and hydraulics, ABYC standards and CFR requirements are covered. The lab explores DC circuits, wiring standards, systems operation, installation and maintenance. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have

embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: NS132. Rec. 2, Lab 2, Cr. 3.

NS241 : Seamanship — Seamanship refers to a body of practical knowledge that is essential to creative solutions at sea, as well as to routine shipboard operations. Through labs and lectures the student will be acquainted with the information and practical skills associated with rigging, mechanical advantage, deck equipment, hardware, maintenance, and line handling and safety procedures. The course includes material appropriate to functioning as an Able Bodied Seaman, as well as to efficiently organizing the work of others. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: NS101. Rec. 2, Lab 2, Cr. 2.

NS262 : Navigation Rules — The International and Inland Rules of the Road for preventing collisions at sea. This includes application, definitions, lights and shapes, steering and sailing rules with sound signals for vessels in meeting, crossing, and overtaking situations, and conduct of vessels in restricted visibility. Rec. 3, Cr. 3.

NS271 : Terrestrial Navigation I — An introductory navigation course intended for all students pursuing a license for any tonnage class. The rudiments of navigation are covered in lecture format. Topics include: charts, plotting tools and techniques, dead reckoning, gyro and magnetic compasses and their errors, fixes and running fixes, set and drift, tidal and current calculations, navigation publications, and chart correcting and piloting with electronic navigation instruments. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

NS272 : Terrestrial Navigation Lab — Weekly exercises aboard Academy watercraft and in the Academy's Bridge and Navigation Simulator allow the student to practice the skills taught in NS271. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: Must be taken concurrently with NS271. Lab 3, Cr. 1.

NS282 : Celestial Navigation I — A celestial navigation course intended for students pursuing an unlimited Third Mate's license or an ocean endorsement for a limited tonnage license. This course will cover the basic practices of celestial navigation. Emphasis is placed on solutions of the various celestial navigation calculations involving the sun. Topics covered are: time from a navigational standpoint, essentials of nautical astronomy, time diagrams, the nautical almanac, sight reduction of the sun, time of celestial phenomena, local apparent noon, noon sights, azimuths, and amplitudes of the sun. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: NS271 and NS272. Rec. 4, Cr. 3.

NS292 : Electronic Navigation — Introduction to electronic navigation topics including theory, practical operation, and use of modern shipboard electronic navigation instruments. Successful completion of the marine radar portion of this course, the co-requisite NS293 course, and the follow-on course (NS498) leads to certification as Radar Observer as approved by the U.S. Coast Guard. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Pre-requisites: NS271 and NS272. Co-requisite: NS293. Rec. 3, Cr. 3.

NS293 : Electronic Navigation Lab — Weekly exercises in the RADAR simulator allow the student to practice and develop skills in interpreting RADAR information and using RADAR for collision avoidance, as well as applying theory taught in NS292. Successful completion of this course is necessary for certification as a USCG RADAR Observer. This course supports the marine license requirements to meet the Standards for Training, Certification, and Watchkeeping (STCW). Co-requisite: NS292. Lab 1, Cr. 1

NS298 : Topics in Small Vessel Operations — This course addresses a variety of nautical topics that have not been covered in the first three semesters of the SVO/VOT program. Topics include ship structure, ship handling, towing, marine communications, emergency procedures and stability. These topics are covered at a level appropriate for anyone holding a USCG Mate 200 ton license. In the latter part of the semester, and in conjunction with NS299, class time is used for taking the Mate 200 ton exam. Prerequisite: NS241. Rec. 2, Cr. 2.

NS299 : 200 Ton License Seminar — Course to assist sophomore license candidates in the VOT and SVO programs. Preparation for completing the appropriate USCG license examinations will include use of sample tests, test-taking techniques/stragegies, study guides and how to use of CFRs and other references. Rec. 2, Cr. 1.

NS301 : Stability — Principles, terms, and procedures used in determination of transverse, longitudinal, and damage stability of ships of all sizes. Examines the physical laws affecting a floating body. Includes the effects of cargo operations, loose water, fuel consumption, grounding, and flooding on vessel stability and examines cases involving loss of stability. Calculating and adjusting trim are also covered. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: NS102 for MTO students; NS135 for VOT students. Rec. 3, Cr. 3.

NS321 : Weather Routing — This course will build on the basics of meteorology learned in NS221, Meteorology. The student will learn to locate, organize and interpret various weather products from commercial and government sources, including facsimile maps, internet sites and commercial weather software. The student will utilize these products to plan and execute “virtual voyages” in real-time, making vessel routing decisions for chosen vessels on fictitious voyages. Prerequisite: NS221. Rec. 2, Lab 2, Cr. 3.

NS332 : Marine Communications — This course offers a comprehensive study of the various maritime communications, stressing distress and safety communications including, but not limited to; radiotelephone procedures GMDSS FCC regulations, and flag and flashing light signaling. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: NS292 and NS293. Rec. 2, Lab. 3, Cr. 3.

NS335 : Yacht Management — This course is designed to address the major challenges facing those who manage and typically captain both privately owned and chartered yachts. Topics covered include an overview of the yacht industry and the captain's responsibilities for fiduciary obligations, crew management, trip planning, and offshore passage making. Shipyard/haul out planning and management are also addressed. A major project for the course is the development of an individual trip plan. Prerequisite: Consent of Instructor Rec. 3, Cr. 3.

NS341 : Auxiliary Sail Vessel Operations — This course will prepare the student to sail as a deckhand or mate aboard an inspected auxiliary sail vessel, as well as to sit for the USCG Auxiliary Sail License Exam. (Sea experience will have to be documented by the student on his/her own time in order to qualify for the license.) The successful student who earns his/her license will be qualified to sail as mate or master on USCG certified auxiliary sailing vessels such as passenger vessels, charter vessels and training vessels. Subject areas will include sail theory, sail vessel handling, heavy weather sailing, rules and regulations, voyage planning and emergency procedures. Labs will take advantage of the academy-owned sailing yachts and the schooner Bowdoin, including one weekend cruise aboard the Bowdoin. Prerequisites: NS101, PE200, PS102 or permission of the instructor. Rec. 2, Lab 2, Cr. 3.

NS342 : Workboat Operations — This course provides a background in the operation and management of limited tonnage vessels. Topics include vessel design, cargo operations, and vessel management. Lab sessions aboard the M/V Pentagoet require students to develop proficiency in all aspects of the vessel's operation. Emphasis is placed on advanced close-quarters maneuvering. Practical vessel handling requirements and operations for the assessment of the TOAR (Towing Operator's Assessment Record) are initiated in class and lab. Prerequisites: NS345. Rec. 2, Lab. 3, Cr. 3.

NS343 : Modern Sail Vessel Technology — This is a lab course which will introduce the student to modern rigging and sail making skills (including concepts and materials) and their application to professional sailors. Topics to be covered include: assembly and maintenance of double/exotic braid running rigging, leading edge sail construction methods and repair, selection of standing rigging, tuning of multi-spreader rigs, handling characteristics associated with rig tune, winches and furling systems, spars, and safety while working aloft. Prerequisite: NS241, PE200. Lab 6, Cr. 3.

NS344 : Traditional Vessel Technology — Through a mixture of lab and lecture, this course addresses the skills and the historical contexts which are part of traditional sailing vessel operations in the present day. Topics include marlinspike seamanship, canvas and leather work,

caulking, aspects of wire and fiber rigging, block maintenance, and general rig safety. Prerequisite: NS241. Rec. 2, Lab 2, Cr. 3.

NS345 : Ship Handling — During this course, students will develop the knowledge and practical ability needed to be a boat and ship handler. Topics include propulsion systems, ship maneuvering, anchoring, docking and undocking, emergency situations, ship pilots, ship to ship interaction, channel effects and tug use. Classroom lecture, launch and tug use, as well as the shiphandling simulator are used to present the material. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab. 3, Cr. 3.

NS381 : Terrestrial Navigation II — Terrestrial Navigation II — Students will study the Sailings and other material related to long range voyaging that appears on the USCG exam. Other topics include magnetic and gyrocompasses, and voyage planning publications. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: NS271 and NS272. Rec. 4, Cr. 3.

NS386 : Offshore Technology I — The objective of this course is to provide the student with an introduction to the offshore oil exploration industry, including rig design and construction, and marine/maintenance operations. Combined with EG387 (Offshore Tech II), this course is intended to prepare the student with the basic knowledge to successfully engage in a career in the offshore oil industry. Included topics: Safety/Environmental procedures, offshore organization, crane operations, helicopter operations, vessel transfer operations, weather procedure, overview of drilling operations, rig stability and dynamic position and riser management. Rec. 3, Cr. 3.

NS400 : Ind Study in Mar Trans & Nautical Sci — INDEPENDENT STUDY IN MARINE TRANSPORTATION AND NAUTICAL SCIENCE – Prerequisite: Permission of Instructor. Cr. 3.

NS412 : Advanced Tanker Operations — An elective course for students planning to sail aboard tank vessels which examines the current theories, principles, and practices of tanker operations. The course is designed to solidify and increase the student's knowledge of operations and management skills aboard various types of tankers through lectures and lab simulations. Prerequisite: NS210, or ET201 and EG234. Cr. 3.

NS420 : Ship's Business — This course addresses the administrative aspect of the master's job aboard ship. Subject areas include applicable U.S. Laws, international codes and conventions, vessel security, shipping articles, logbooks, documents and certificates, Customs and Immigration paperwork, cargo paperwork, charter parties, and dealing with domestic and foreign authorities. Rec. 3, Cr. 3.

NS443 : Rigging Technology — A hands-on lab course which will build on modern and traditional rigging skills and concepts introduced in Modern Sail Vessel Technology and

Traditional Vessel Technology. Topics to be covered include: Static and dynamic tuning of multi-spreader rigs and lower aspect traditional rigging, assembly and maintenance of selection of standing/running rigging, handling characteristics associated with rig tune, winches and furling systems, spars, and safety while working aloft. Course materials will focus on emerging regulatory changes around self-inspection, legal documentation, and maintenance of Inspected Sailing Vessels rigging practices. Prerequisite: Ns-343,Modern Sail Vessel Technology, Ns-344, Traditional Vessel Technology. Lab 6, Cr. 3.

NS445 : Sailmaking Technology — A hands-on lab course which will build on modern and traditional sailmaking skills and concepts introduced in Modern Sail Vessel Technology. Students will inspect and repair sails from MMA vessels, design/construct a traditional sail and design/construct a modern sail utilizing CAD technology. Students will be held to high standards resulting in professional quality sails for usage in MMA's sailing programs: Prerequisite: Ns-343,Modern Sail Vessel Technology. Lab 6, Cr. 3.

NS461 : Casualty Analysis — Applications of navigation rules with emphasis on the analysis of selected cases and court interpretations. Emphasis on the safety implications of marine casualties as well as casualty management as it relates to applicable federal rules and regulations. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: NS262. Rec. 3, Cr. 3.

NS471 : Tug And Barge Operations — Basic theory of various modes of towing operations, including; design of coastal, offshore and inland towing vessels, barges and equipment. Preparations for different modes of towing, regulatory requirements, documentation and the industry's use of safety management systems. Practical application of towing theory, vessels operations and safety are covered during the lab sessions utilizing MMA's tug and barge. Transitioning between modes of towing and towing operations for the practical assessments of the TOAR (Towing Operator's Assessment Record) are covered during class and labs. Prerequisites: NS241, NS262, NS271, NS272, NS342. Rec. 1, Lab. 6, Cr. 3.

NS491 : Advanced Navigation — This course will integrate the components of terrestrial navigation and celestial navigation. Emphasis will be placed on the duties of the second mate. Preparatory instruction for U.S. Coast Guard licensing examinations will additionally take place in this course. Prerequisites: NS282 and NS381. Rec. 4, Cr. 3.

NS493 : Electronic Navigation II — Provides instruction including practical simulation based training in integrated navigation systems, concentrating on Electronic Chart Display and Information Systems (ECDIS). Topics include: the use of ECDIS in navigation, voyage planning and voyage monitoring; precautions to observe when using ECDIS; ECDIS sensor input, including AIS, GPS, gyro-compass, fathometer and speed log; use of ECDIS with alternative positioning sources. Prerequisites: NS292, NS493 and NS381. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab 2, Cr. 3.

NS496 : Topics in Marine Transportation — A course allowing students to pursue advanced topics in Marine Transportation not offered in the curriculum. Topics of study will depend on the interests of the student and supervising faculty member(s). Approval by department chair is required. Cr. 1-3.

NS497 : Watchkeeping Limited Tonnage — This course makes extensive use of a bridge simulator to prepare students to stand a safe navigational watch, performing collision avoidance, navigation, communication, passage planning, and other vessel management functions. Much of this course is organized around BRM and ARPA training and certification. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: CR313, NS262, NS271, NS272, NS292 and NS293. Rec. 2, Lab. 2, Cr. 3.

NS498 : Watchkeeping — Extensive use of simulator training will occur in this course. Particular emphasis will be placed on radar, ARPA, collision avoidance and bridge team management techniques. Successful completion of this course will result in certification as a radar observer as per USCG regulations. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: NS262, NS271, NS272, NS292, NS293, NS345, CD203 and CD303. Rec. 2, Lab. 2, Cr. 3.

NS499 : License Seminar — An in-depth review of topics found on the U.S. Coast Guard Third Mate's examination. Mock examinations and quizzes are used extensively. Topics include seamanship, rules and regulations, stability, navigation rules, and ship's business. Rec. 1, Cr. 1.

NAVAL SCIENCE (↑ Top ↑)

NV100 : Naval Science Laboratory — A series of laboratories designed to provide student application of leadership techniques, and to prepare NROTC members for leadership positions in the U.S. Navy and Marine Corps. Lab. 2, Cr. 0 (each term).

NV101 : Intro to Naval Science — This course introduces the student to the organization of the U.S. Navy. The course also introduces the student to the career paths available in aviation, surface warfare, nuclear power, and the Marine Corps. An understanding of the responsibilities of a naval officer, the Navy's mission, general military information, and the applications of these concepts within the Navy are also stressed. Rec. 3, Cr. 3.

NV202 : Seapower and Maritime Affairs — In this course, students study the influence of sea power, ships, and trade from colonial days to the present. Emphasis will be placed on American naval history since 1775, the evolution of ships from sail to steam, and the effects of war on seagoing America. Rec. 3, Cr. 3.

NV211 : Naval Ship Systems II (Weapons) — This course provides an in-depth study of the theory and principles of operation of contemporary naval weapons systems. It includes coverage

of weapon system types, capabilities and limitations, theory of target acquisition, identification and tracking, sonar, and basics of radar theory. Rec. 3, Cr. 3.

NV222 : Strategic Sealift Officer Course — A continuation of NV101, this course provides prospective Strategic Sealift Officers with a fundamental understanding of their role in our national security and familiarizes them with the basic principles and procedures for operating a merchant ship as a naval or military auxiliary in a wartime convoy or independent sailing situation. Specific shipboard techniques and the total sea power objectives will be explored to familiarize the student with particular aspects of naval control of shipping, underway operations, and a variety of organizational relationships. Prerequisite: NV101. Rec. 3, Cr. 3.

NV301 : Navigation — This course provides the student with the fundamental understanding and a practical working capability in safe navigation. Included are a comprehensive treatment of coastal piloting, inland and international rules of the road, and an introduction to meteorology as it pertains to heavy weather conditions at sea. Rec. 3, Cr. 3.

NV302 : Naval Operations & Seamanship — This course familiarizes the student with the functions and responsibilities of the junior naval officer in the areas of shipboard operations and administration. Included are a comprehensive study of relative motion, naval communications, ship operations, formation maneuvering, replenishment at sea, and naval command and control. Rec. 3, Cr. 3.

NV310 : The Evolution of Warfare — This course traces the development of warfare from the dawn of recorded history to the present, focusing on the impact of major military theorists, strategists, tacticians and technological developments. The student acquires a basic sense of strategy, develops an understanding of military alternatives, and learns the impact of historical precedent on military thought and action. Rec. 3, Cr. 3.

NV401 : Leadership & Management — Naval organization and management practices are examined within the context of American social and industrial organization for logistics, service, support functions, and service of major components of the Navy and Marine Corps shipboard organization. Rec. 3, Cr. 3.

NV402 : Leadership & Ethics — The purpose of this course is to sharpen the student's understanding of some important issues about morality and to develop moral reasoning ability. The course integrates an intellectual exploration of Western moral traditions and ethical philosophy with topics and issues confronting newly commissioned officers as military leaders. The course provides a foundation in major moral traditions, including Utilitarianism, Kantian ethics, Constitutional Law, Natural Law theory, and virtue ethics. In addition, students will discuss the ethics of war through discussions of the Just War Theory (Jus Ad Bellum) and the Conduct of War (Jus Ad Bello). Readings will be from various fields, including leadership, ethics, philosophy, theology, and law and will be enhanced through case studies, video segments, and current issues in the news. It is recommended that students be in their junior or senior year; however they need not be in the NROTC program. Rec. 3, Cr. 3.

NV411 : Fundamentals of Maneuver Warfare — Fundamentals of Maneuver Warfare: [Replaces NV 410 Amphibious Warfare] Broad aspects of warfare and their interactions with maneuver warfare doctrine. Focus on the United States Marine Corps as the premier maneuver warfare fighting institution. Historical influences on current tactical, operational, and strategic implications of maneuver warfare practices. Case studies. Enrollment preference to NROTC students. Prerequisites: NV310 or instructor permission. Rec. 3, Cr. 3.

OCEAN STUDIES (↑ Top ↑)

OC101 : Introduction to Ocean Science — An introduction to the concepts of physical, geological, chemical, and biological ocean science. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab. 2, Cr. 3.

OS000 : OS Seminar O — A seminar format course covering topics in the ocean sciences and related areas of interest. All Coastal and Marine Environmental Science, Marine Biology, and Oceanography majors are required to enroll in the OS seminar sequence for every semester in residence except for fourth-year spring semester. Rec. 1, Cr. 1.

OS001 : OS Seminar I — A seminar format course covering topics in the ocean sciences and related areas of interest. Designed to develop communication and critical thinking skills, the course utilizes group discussion and library research to understand and interpret presentations by invited speakers. Topics will be addressed with increasing depth and sophistication as students progress through the series. All Marine Biology and Marine Science or Oceanography majors are required to enroll in this sequence for every semester in residence except the first-year fall and fourth-year spring semesters. Rec. 1, Cr. 1.

OS002 : OS Seminar II — A seminar format course covering topics in the ocean sciences and related areas of interest. Designed to develop communication and critical thinking skills, the course utilizes group discussion and library research to understand and interpret presentations by invited speakers. Topics will be addressed with increasing depth and sophistication as students progress through the series. All Marine Biology and Marine Science or Oceanography majors are required to enroll in this sequence for every semester in residence except the first-year fall and fourth-year spring semesters. Rec. 1, Cr. 1.

OS003 : OS Seminar III — A seminar format course covering topics in the ocean sciences and related areas of interest. Designed to develop communication and critical thinking skills, the course utilizes group discussion and library research to understand and interpret presentations by invited speakers. Topics will be addressed with increasing depth and sophistication as students progress through the series. All Marine Biology and Marine Science or Oceanography majors are required to enroll in this sequence for every semester in residence except the first-year fall and fourth-year spring semesters. Rec. 1, Cr. 1.

OS004 : OS Seminar IV — A seminar format course covering topics in the ocean sciences and related areas of interest. Designed to develop communication and critical thinking skills, the

course utilizes group discussion and library research to understand and interpret presentations by invited speakers. Topics will be addressed with increasing depth and sophistication as students progress through the series. All Marine Biology and Marine Science or Oceanography majors are required to enroll in this sequence for every semester in residence except the first-year fall and fourth-year spring semesters. Rec. 1, Cr. 1.

OS005 : OS Seminar V — A seminar format course covering topics in the ocean sciences and related areas of interest. Designed to develop communication and critical thinking skills, the course utilizes group discussion and library research to understand and interpret presentations by invited speakers. Topics will be addressed with increasing depth and sophistication as students progress through the series. All Marine Biology and Marine Science or Oceanography majors are required to enroll in this sequence for every semester in residence except the first-year fall and fourth-year spring semesters. Rec. 1, Cr. 1.

OS006 : OS Seminar VI — A seminar format course covering topics in the ocean sciences and related areas of interest. Designed to develop communication and critical thinking skills, the course utilizes group discussion and library research to understand and interpret presentations by invited speakers. Topics will be addressed with increasing depth and sophistication as students progress through the series. All Marine Biology and Marine Science or Oceanography majors are required to enroll in this sequence for every semester in residence except the first-year fall and fourth-year spring semesters. Rec. 1, Cr. 1.

OS101 : Int. to Oceanography and Env. Science — Formerly OS101 (Introduction to Marine Science AND/OR Introduction to Marine and Environmental Science). An introduction to the physics, chemistry, geology, and biology of coastal and marine ecosystems. Laboratory emphasis is on sampling methods, data analysis, and the interactions among coastal and marine environmental phenomena. Rec. 3, Lab. 3, Cr. 4.

OS203 : Design & Applied Stat In Science — This course instructs the student in the practical application of statistical methods in the sciences. Topics include: introduction to statistical methodology and software, how to select appropriate statistical techniques for data description or hypothesis testing, how to analyze statistical output; how to design laboratory and field experiments, how to design sampling programs, and how to communicate the results of statistical analyses in oral, written, and graphical methods. Rec. 3, Lab. 3, Cr. 4.

OS204 : Physical Geology — An introduction to geology. The minerals and sedimentary, metamorphic, and igneous rocks that make up the earth are examined. The course includes a survey of the processes that shape the earth, such as: plate tectonics, wind, water, glaciers, volcanism, and mass wasting. Processes internal to the earth such as earthquakes, and effects of these processes, such as faulting and folding are also examined. Rec. 3, Lab. 3, Cr. 4.

OS210 : Physical Oceanography — Formerly OC210 (Physical Oceanography). An introduction to ocean circulation and physical aspects of the ocean's water. Ocean physics exerts important controls on marine life so this course is designed for all students interested in the ocean as a system. Rec. 3, Lab 3, Cr. 4

OS211 : Geological Oceanography — Formerly OS211 (Marine Geology). The geology of the deep ocean and continental margins is examined including the formation of these provinces and modification through sedimentation. Presents the role of plate tectonics in shaping the oceans and the role of biology and chemistry in sedimentation. Prerequisite: OS204 or OS308. Rec. 3, Cr. 3.

OS212 : Chemical Oceanography — Formerly OS212 (Marine Geochemistry). An examination of the major chemical features of the oceans in the context of the biological, physical and geological processes that shape them. Labs focus on the sampling and analysis of seawater, and related data analysis. Prerequisite: CH220. Rec. 3, Lab 1, Cr. 4.

OS213 : Biological Oceanography — Biological oceanography is an interdisciplinary field of study that examines the factors and processes that influence the distribution and abundance of marine organisms. These factors and processes include ecological and biological interactions between marine organisms as well as interactions between marine organisms and their surrounding chemical, physical and geological ocean environment. Topics to be covered include reviews of the physical and chemical processes that influence marine biota (e.g. nutrient cycling, light dynamics, stratification, upwelling, tidal mixing, etc), controls and patterns in marine primary productivity, secondary productivity processes and food web interactions, the microbial loop, and human impacts on ocean biology. Prerequisites: OS101. Rec.3, Cr. 3.

OS220 : Marine Pollution — This class is a scientific, quantitative examination of marine pollution. We will consider questions such as: What kind of material is discharged or makes its way into the ocean? How much of it is there? How harmful is it to humans, sea life, and food resources? Will it go away? What can be done to mitigate marine pollution and its effects? These questions will be examined through readings, case studies, and discussion of current events. Prerequisite: CH101, CH152, or CH210. Rec. 3, Cr. 3.

OS225 : Land-Margin Ecosystems — Land-Margin Ecosystems is a broad-based, introductory survey course covering the types of interactions at the land-sea margin. Fundamental ecological principles are introduced, including the water cycle, biogeochemical processing, biodiversity, and human impacts. Students will be introduced to the breadth of types of land-margin ecosystems and their differences. Management approaches for measuring ecological services and ecological health will also be discussed. This lecture and laboratory-based course will introduce and/or reinforce concepts of marine geochemistry, physical oceanography, biological oceanography, physical geology, and sustainability. Prerequisites: OS101, OS204. Rec. 3, Lab. 3, Cr. 4.

OS230 : Intro. to Global Environmental Change — An examination of the causes and consequences of global change: changing climate, eustatic sea level rise, ocean pH, ecosystems, and pollution; human population growth and land and ocean use changes; geological precedents; model projections and uncertainties; societal consequences; mitigation and adaptation; and ethical considerations. Prerequisites: CH101 or CH152 or CH210, and EN202. Rec. 3, Cr. 3.

OS300 : Scientific Diving — The Scientific Diving course is designed to acquaint certified recreational SCUBA divers with various scientific diving procedures and techniques in order to

qualify participants to dive under the auspices of the American Academy of Underwater Sciences (AAUS) both nationally and internationally. After successful completion of this course and approval by the MMA Diving Control Board, these candidates qualify for verification of training from MMA as AAUS certified Scientific Divers. Prerequisites: PE 303 or Permission of Instructor. Rec. 1, Lab. 3, Cr. 2.

OS308 : The Earth — An introduction to geology. The minerals and sedimentary, metamorphic, and igneous rocks that make up the earth are examined. The course includes a survey of the processes that shape the earth, such as: plate tectonics, wind, water, glaciers, volcanism, and mass wasting. Processes internal to the earth such as earthquakes, and effects of these processes, such as faulting and folding are also examined. Rec. 3, Cr. 3.

OS309 : Ocean Circulation & Prop of Seawater — An introduction to large scale ocean circulation, wind driven flow, tides and waves. This course also covers the seawater properties important to circulation, sound speed and light in the ocean. Rec. 3, Cr. 3.

OS321 : Coastal Resource MGMT — This course provides students with a comprehensive overview of the coastal environment, its resources and uses. In addition students will learn about federal, state and local coastal planning and management issues. The first part of the course examines the existing management framework. The latter half of the course focuses on specific coastal resource management issues such as coastal pollution, coastal hazards, ocean dumping, offshore oil development, fisheries management and marine and coastal protected areas. Rec. 3, Cr. 3.

OS400 : Prep for Research in Marine Science — This course introduces students to the details of conducting research in marine science and marine biology. Both theoretical and practical components of scientific research will be presented. Subsequently, students receive individual instruction in the development of their own research proposal. Prerequisites/Corequisites: Marine Biology majors: BI201, BI210, BI220, BI301, OS101 and OS203. Marine Science or Oceanography majors: BI210 or CH310, OS101, OS203, OS204, OS210 and OS212. Rec. 3, Lab 3, Cr. 4.

OS401 : Research Project — This course requires students to complete a self-designed study that results in an undergraduate thesis. This thesis can be an independent research project developed and executed by the student. Research projects may be conducted under the supervision of a researcher not associated with Maine Maritime Academy, but an Ocean Studies faculty member must serve as an internal sponsor and overseer of the project. Prerequisite: OS400. Rec. 3, Lab 3, Cr. 4.

OS499 : Special Topics in Ocean Studies — A course allowing students to pursue topics not normally offered in the curriculum, and may be any combination of lecture and laboratory. Departmental approval required. Cr. 1-3 as appropriate.

PERSONAL DEVELOPMENT (↑ Top ↑)

PD101 : Personal Development I — These courses focus on the fundamentals of personal leadership. Students will study characteristics of effective leadership, and the evolution of leadership behaviors. The course contains an introduction to leadership principles and examines the concept of leadership styles, traits, and types. Students will conduct assessments of their own unique set of leadership traits to identify strengths and weaknesses of their own styles and learn how to effectively employ their leadership abilities. Students will analyze leadership roles in the regiment and in the college's student organizations to expand their leadership "tool bag" and to demonstrate that leadership is both an art and a science. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Each course is Rec. 1, Cr. 0.5.

PD102 : Personal Development I — These courses focus on the fundamentals of personal leadership. Students will study characteristics of effective leadership, and the evolution of leadership behaviors. The course contains an introduction to leadership principles and examines the concept of leadership styles, traits, and types. Students will conduct assessments of their own unique set of leadership traits to identify strengths and weaknesses of their own styles and learn how to effectively employ their leadership abilities. Students will analyze leadership roles in the regiment and in the college's student organizations to expand their leadership "tool bag" and to demonstrate that leadership is both an art and a science. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Each course is Rec. 1, Cr. 0.5.

PD201 : Personal Development II — This course is designed to expose sophomore students to organizational leadership tenents and to assist them in their development of good positive leadership traits. The roles and responsibilities of a leader in the maritime environment are always changing, but one thing remains the same – behind every success in the maritime industry there is a leader who is willing to embrace and conquer challenges. The course will identify the different styles, techniques, and images of a successful leader while incorporating how to develop and fine tune students' leadership skills. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Each course is Rec. 1, Cr. 0.5.

PD202 : Personal Development II — This course is designed to expose sophomore students to organizational leadership tenents and to assist them in their development of good positive leadership traits. The roles and responsibilities of a leader in the maritime environment are always changing, but one thing remains the same – behind every success in the maritime industry there is a leader who is willing to embrace and conquer challenges. The course will identify the different styles, techniques, and images of a successful leader while incorporating how to develop and fine tune students' leadership skills. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping

(STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Each course is Rec. 1, Cr. 0.5.

PD301 : Personal Development III — This is a cumulative program that builds on the two previous years of Personal Development that will incorporate discussion and application of leadership theories, critical thinking, and problem solving. Students will explore and develop a personal philosophy of leadership and then test that model in life situations encountered during operation of the training ship while under the supervision of the course moderators. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 0, Cr. 0.

PD302 : Personal Development III — This is a cumulative program that builds on the two previous years of Personal Development that will incorporate discussion and application of leadership theories, critical thinking, and problem solving. Students will explore and develop a personal philosophy of leadership and then test that model in life situations encountered during operation of the training ship while under the supervision of the course moderators. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 0, Cr. 0.

PHYSICAL EDUCATION (↑ Top ↑)

PE100 : Basic Sailing — Nomenclature, terminology, and sailing techniques for Mercury class boats. Certification in Mercury class boats is possible upon completion of this course. Lab 3, Cr. 0.5

PE102 : Basic Water Skills — Covers swimming skills such as stroke mechanics, breath control, diving, as well as drown proofing techniques and hypothermia. This course is ranked as "satisfactory" or "unsatisfactory" and is not computed in the student's QPA. Lab 3, Cr. 0.5.

PE103 : Skin & Scuba Diving — Basic techniques in use of equipment. Covers safety procedures and physiological aspects of diving. Professional Association of Diving Instructors (PADI) certification is available, but not mandatory, upon completion of established requirements. Prerequisite: Demonstration of swimming ability. Lab 3, Cr. 1.

PE104 : Tennis – 1st Half — Covers basic skills of serving, ground strokes, volley and overhand, as well as strategy, tennis customs and traditions, and rules of the game. Lab 3, Cr. 0.5.

PE105 : Racquetball -1st Half — Rules, court strategy, and various shot combinations. Grip, stance, ball control, and other fundamental techniques. Patterns of play for singles and doubles. Lab 3, Cr. 0.5.

PE107 : Wiffleball — Rules, Individual skills and how these skills are used in team play. This includes strategy, rules, and scoring. Lab 3, Cr. 0.5.

PE108 : Physical Fitness — The course enables the student to experience the various components of physical fitness, e.g., endurance, strength, ability, balance, flexibility, and speed. Theories on weight control are discussed. Opportunities to prepare oneself to meet the physical demands of daily life are presented. Lab 3, Cr. 0.5.

PE111 : Volleyball – 2nd Half — Individual skills and how these skills are used in team play. This includes strategy, rules, and scoring. Lab 3, Cr. 0.5.

PE113 : Lifeguard Training — This course is designed to teach lifeguard candidates the skills and knowledge needed to prevent and respond to aquatic emergencies. It offers instruction in accident prevention, water rescue skills, First Aid, and CPR. American Red Cross Lifeguard certification is available. Prerequisite: Demonstration of swimming ability. Lab 3, Cr. 1.

PE114 : Ocean Survival — A cold water safety and survival course to familiarize students with the planning and steps necessary to work, recreate, and supervise safety on or around cold water. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Lab 3, Cr. 0.5.

PE116 : Fitness:Relaxation Massage — Students will learn the basic techniques of therapeutic massage. 0.5 Cr.

PE119 : Flag Football — Students will learn the fundamentals and engage in play of flag football. 0.5 Cr.

PE120 : Contemporary Health Issues — The main course objective is to impart information about substance use and abuse that is correct and current; includes independent study. Rec. 3, Cr. 0.5.

PE124 : Floor Hockey — Students will learn the fundamentals and engage in play of floor hockey. 0.5 Cr.

PE130 : Special Topics in Physical Ed — This course allows students to pursue various topics in physical education that might not be offered regularly in the PE curriculum. Prerequisite: approval of Athletic Department Chair. Lab 3, Cr. 0.5.

PE200 : Intermediate Sailing — This half-semester course will follow PE100 Basic Sailing, and labs will be taught in Mercurys and sloops of up to 30 feet. Topics will include use of the spinnaker, precise maneuvering under sail and power, including mooring, anchoring and docking, and heavy weather sailing in sloops. A grade of A or B will earn the student a MMA Intermediate Sailing Certificate for sailing outside of classes. Prerequisite: a grade of A or B in PE100, or certification in Mercury sloops, or permission of the instructor. Lab 3, Cr. 0.5.

PE202 : Small Arms Certification — This is a certified course, which meets the Military Sealift Command (MSC) small arms training and live fire requirements. It is required annually for all mariners working aboard MSC or MSC contracted vessels, and emphasizes the safe and

effective use of pistols, rifles and shotguns aboard vessels. This course will be conduct in the classroom and at the firing range in two consecutive weekends, to be determined based on weather conditions and range availability. All weapons and ammunition will be supplied by non-refundable lab fee. Cr. 1.

PE303 : Rescue Diver — The Rescue Diver course is specifically designed to train students in the dynamics of rescue management. Students develop their dive knowledge and skills to effectively perform diver rescues and assists, as well learn to manage diving accident situations and apply first aid skills. The Rescue Diver course is very much a hands on course, with role-playing to gain the experience needed for most dive incidents. Students learn to look beyond themselves and consider the safety and well being of other divers. Cr. 1

PE401 : Advanced Sail Vessel Handling — A follow-up course to Intermediate Sailing and Auxiliary Sail Vessel Operations. This course will give the student substantial vessel handling under sail on vessels 25-45′. Students will be challenged with advanced sailing maneuvers with and without the instructor on board. Participants will take part in activities focused around various career options available to professional sailors. Course work is comprised of weekly labs and sailing activities scheduled by the student outside of lab time. Prerequisite: PE200, NS341, or Maine Maritime Academy certification as skipper of 20-30 foot sloops. Lab 3, Cr. 1.

PE403 : Master Scuba Diver — The Master SCUBA Diver certification is the highest nonprofessional diver rating and shows superior achievement and experience. To reach this level the student must complete all levels of diver training including Rescue Diver and 5 specialty courses as well as a minimum of 50 logged dives. Each Specialty Course is a safe and supervised introduction to that area. Certain specialty courses, such as Enriched Air Nitrox and Wreck Diver, allow the student to participate in activities that are otherwise beyond their training, such as diving nitrox air mixtures and penetrating wrecks. Classroom sessions (Peak Performance Buoyancy, Drift, Night, Deep, Boat and Wreck) will be conducted to familiarize the student with the techniques, knowledge, planning, organization, potential hazards and safety skills for the various interest areas of diving. Each specialty dive area will also include up to 4 training dives. The Enriched Air Nitrox is a self-study Specialty. Students unable to pass the written certification exam will be provided additional classroom instruction. The Specialty dives will be conducted over the student's spring break on the Caribbean island of Bonaire, Dutch Antilles. Cr. 2.

POLITICAL SCIENCE (↑ Top ↑)

PO200 : American Government — A survey of the characteristics and functions of the American political system with emphasis on the origins and activities of the institutions of the American national government. Rec. 3, Cr. 3.

PO230 : Contemp World Politics I — This course is an introductory survey of the field of international relations with an emphasis on the interaction of global political, social, and economic factors. Rec. 3, Cr. 3.

PO330 : Contemp World Politics II — This upper-level course allows students to pursue more in-depth study of particular areas of foreign relations. Prerequisite: PO230 or permission of the instructor. Rec. 3, Cr. 3.

PHYSICS (↑ Top ↑)

PS102 : Technical Physics I — This is an introductory course in classical mechanics without calculus. Geometry, algebra, trigonometry and vectors are used extensively. The course covers: One- and two-dimensional kinematics; Newton's Laws of motion and their applications; the work-energy theorem and work done by conservative and non-conservative forces; potential energy and conservation of mechanical energy; conservation of linear momentum; rotational kinematics and dynamics and, if time permits, gravitation. The course includes thirteen two-hour labs designed to reinforce, in a tangible way, the material covered in the lectures. Prerequisite: MS101 (or MS102 with a grade of C or better and MS103 taken concurrently). Rec. 3, Lab. 2, Cr. 4.

PS162 : Physics I — This is an introductory calculus-based course in classical mechanics. The course covers: One-, two- and three-dimensional kinematics; Newton's laws and Newtonian dynamics with applications; work, energy and conservation of energy; systems of particles; collisions; rotation of a rigid body; rigid body dynamics. The course includes 13 two-hour labs designed to reinforce, in a tangible way, the material covered in the lectures. Pre-requisite: MS120 or MS150 taken concurrently. Rec. 3, Lab. 2, Cr. 4.

PS201 : Technical Physics II — This is an introductory course in classical electricity and magnetism without calculus. Geometry, algebra, trigonometry and vectors are used extensively. The course covers: Electrostatics (including Gauss' Law); electric potential and electric potential energy; the fundamentals of DC circuits; the vector magnetic field and its creation by charged particles in motion and currents through wires; magnetic flux and Faraday's law of induction as well as Lenz's Law; generators, motors and transformers; the fundamentals of AC circuitry (including RLC circuits) and, if time permits, electromagnetic waves. The course includes 13 two-hour labs designed to reinforce, in a tangible way, the material covered in the lectures. Prerequisite: PS102. Rec. 3, Lab. 2, Cr. 4.

PS220 : Special Topics in Physics — A course allowing students to pursue topics not normally offered in the curriculum. Proposals may be student initiated, in consultation with an instructor, and may be any combination of lecture and laboratory. Departmental approval required. Prerequisite: permission of instructor. Cr. 1-3 as appropriate.

PS261 : Physics II — This is a calculus-based course in classical electricity and magnetism. The course covers: Electric force and electric charge; the electric field; Gauss' Law; electrostatic potential and energy; capacitors and dielectrics; current and Ohm's Law; DC circuits; magnetic force and magnetic fields, including Ampere's Law and the Biot-Savart Law; charges and currents in magnetic fields; electromagnetic induction; AC circuits. . Prerequisite: PS162 or permission of the instructor. It is recommended that MS160 be taken concurrently if not already taken. Rec. 3, Lab. 2, Cr. 4.

PS299 : Independent Study in Physics — A course allowing students to pursue advanced topics not normally offered in the curriculum. Proposals are student initiated in consultation with the instructor. May be repeated for credit. Prerequisite: permission of instructor. Cr. 1-3 as appropriate.

PS300 : Modern Physics — Modern physics introduces the student to the special theory of relativity, quantum mechanics, nuclear and elementary particle physics. It is a survey course with applications. Problem solving requires basic understanding of calculus and differential equations. Prerequisites: PS261 or PS201 and MS160. Rec. 3, Cr. 3.

PS301 : Technical Physics III — A course devoted to the physics of oscillations, waves and sound, fluids, temperature and heat, phases and phase changes, the laws of thermodynamics, physical and geometrical optics and electromagnetic waves. The focus is on the mathematical description of such phenomena and problem solving will be emphasized in order to reinforce the concepts taught. Prerequisite: PS102. Rec. 3, Lab. 2, Cr. 4.

PSYCHOLOGY (↑ Top ↑)

PY200 : Introduction To Psychology — This course provides an introduction to psychology – theories, research and practice. Emphasis will be on human behaviors, the brain, perception, principles of learning, and therapies. Rec. 3, Cr. 3.

PY210 : Human Relations and Group Dynamics — This course is designed to help students understand, critique, analyze and integrate the major theories, research, and application of dyadic and small group processes. It will emphasize group effectiveness for completion of tasks and communication. Diversity, including gender, ethnicity, and culture, will be examined. Status and power will be examined from both worker and supervisor perspectives. Students will participate in structured group activities in an environment that facilitates candid communication. Prerequisite: PY200. Rec. 3, Cr. 3.

PY331 : Special Topics: Psychology — A course allowing students to pursue topics not normally offered in the curriculum. Proposals may be student initiated, in consultation with an instructor, and may be any combination of lecture and laboratory. Departmental approval required. Prerequisite: permission of instructor. Cr. 1-3 as appropriate.

USCG COURSES (↑ Top ↑)

USCG1 : USCG Fire Fighting — This course satisfies the USCG requirements for both basic and advanced firefighting as outlined in 46CFR 10, 46CFR 13, and as per STCW Table A-VI/3. Through both classroom instruction and practical training several topic areas are covered including: chemistry of fire, fire behavior and attacking a fire; use of fire extinguishers, protective equipment, and self-contained breathing apparatus are part of the training exercises. Shipboard firefighting training includes practical exercises in the operation of onboard firefighting equipment, fixed firefighting systems, search and rescue, emergency evacuation and engine room fires. Successful completion of both USCG1 and USCG2 are required by all students pursuing a USCG license. Rec. 1, Lab 2, Cr. 0

USCG2 : USCG Fire Fighting Live Burn — This course takes place at a live burn facility where students receive practical training in an actual live burn situation including entering a burning building and attacking a fire as part of a firefighting party. Successful completion of both USCG1 and USCG2 are required by all students pursuing a USCG license. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 0, Lab 2, Cr. 0.

USCG3 : Lifeboat Exam — A comprehensive 70 question multiple choice examination covering the topics of Lifeboats, Liferafts, Safety, and Survival at Sea. Maine Maritime Academy is authorized by the United States Coast Guard to administer this examination. This examination normally is scheduled early in the second semester of the student's first year. Successful passing of the lifeboat examination is a prerequisite for CR103, First Year Cruise and a USCG requirement for obtaining a merchant mariner credential. Prerequisites: NS101. Cr. 0.

SMALL VESSEL OPERATIONS (↑ Top ↑)

YO213 : Small Craft Design Cooperative Wk Exp — A minimum of 60 days of supervised work experience in the design, construction, or maintenance of small craft. This cooperative work experience is intended to provide the student with an entry level experience. Prerequisite: Completion of the first year of Small Craft Design program or approval of the SCD coordinator and drug free certification required. Cr. 2.

BATH IRON WORKS COURSES

The following courses are taught at the Bath Iron Works Shipyard in Bath, Maine, and are available only to BIW apprentices.

CHEMISTRY (↑ Top ↑)

BIW CH101 : Chemistry — This course will emphasize the basic laws and theories of chemistry and their derivation from experimental evidence. It presents the qualitative and quantitative aspects of matter's composition and changes and their unifying principles. It includes physical and chemical properties, periodicity of elements, stoichiometry, current atomic and bonding theories, laws and theories of physical states and changes of state, solution chemistry, and thermochemistry.
Rec. 3, Cr. 3.

BIW CH102 : Chemistry Lab — Laboratory experiments to emphasize the empirical basis for the principles discussed in lecture and the proper gathering and interpretation of experimental data. Corequisite: CH101. Rec. 3, Lab 3, Cr. 1.

COMPUTER SCIENCE (↑ Top ↑)

BIW CS150 : Structured Prob Solving with Computers — A course in problem solving using computers and emphasizing a structured approach. Topics include: structured solution methods, programming fundamentals, spreadsheet modeling, and an introduction to presentation software. Rec. 3, Cr. 3.

BIW CS201 : Introduction to Computing — This course is designed to introduce the student to personal computer use in a modern business environment. Emphasis is on skill development in a variety of applications, including word processing, spreadsheets, and relational databases, working in a local area network, and corporate systems. Rec. 4, Cr. 2.

ENGINEERING (↑ Top ↑)

BIW EG102 : Introduction to Marine Engineering — A study of marine systems with emphasis on new construction. The course is designed to provide the student with an overview of marine systems and the techniques used to install, test and align these systems. A review of ship construction manufacturing technique is also covered. Rec. 3, Cr. 2.

BIW EG103 : Intro Nondestructive Exam Methods — This course will contain introductory information on the basis of nondestructive testing, including all aspects of visual inspection. This will include discussion of typical sources of material manufacturing discontinuities in raw stock, forgings, castings, tubing/pipe, as well as discontinuities due to grinding, heat treating, welding, and fatigue. This course will also provide training in the visual inspection process, including the basis of visual perception, equipment, and acceptance/rejection criteria. Rec. 2, Cr. 1.

BIW EG105 : Liq Penetrant & Mag Part Exam Methods — This course is designed to provide the necessary training required to perform liquid penetrant (PT) and magnetic particle (MT) testing on various base materials and weld configurations, and to then evaluate the results. Training in each method will be provided such that base material or weld discontinuities can be detected and then evaluated to determine if they are acceptable or unacceptable. Rec. 2, Cr. 1.

BIW EG106 : Confined Space Safety — This course will provide instruction in the various methods, processes, and concepts required to recognize, evaluate, and control confined space hazards. Students will understand the duties associated with the testing of confined spaces. Students will also recognize key uses and limitations of testing instrumentation. Cr. 1.

BIW EG120 : Mechanical Drawing I — An introduction to the basics of mechanical drawing, including equipment and general drawing techniques; geometric construction; multiview (orthographic) drawings; basic isometrics; section views; descriptive geometry; and auxiliary views. Rec. 3, Cr. 3.

BIW EG201 : Ultrasonic Test Methods — This course is designed to provide the necessary training required to perform ultrasonic testing (UT) on various base metals and weld configurations, and then to evaluate those results. Training will be provided on ultrasonic theory and instrument operation, with application to thickness gauging and flaw detection. Further

training will be provided on interpreting data to determine discontinuity shape, identity and location, and then evaluating these results to determine acceptability. Cr. 2.

BIW EG203 : Radiographic Test Methods — This course is designed to provide the necessary training required to perform radiographic (RT) testing on various base materials and weld configurations, and to then evaluate the results. Radiological safety measures will be stressed (including state certification). Instruction will include the necessary inspection techniques, film handling, etc. to ensure adequate film contrast and clarity. Further instruction will be provided on interpreting, identifying, and evaluating radiographic film discontinuities. Rec. 2, Cr. 2.

BIW EG215 : Blueprint Reading Methods — A study of the sketches and blueprints used by the structural trades. Rec. 3, Cr. 1.

BIW EG216 : Sheet Metal Methods — A study of the blueprints and procedures used in the sheet metal trade. Rec. 3, Cr. 1.

BIW EG217 : Pipefitting Methods — A study of the blueprints and procedures used in the pipefitting trade. Rec. 3, Cr. 1.

BIW EG218 : Electrical Methods — A study of the blueprints and procedures used in the electrical trade. Rec. 3, Cr. 1.

BIW EG219 : Outside Machinist Methods — A study of the blueprints and procedures used in the outside machinist trade. Rec. 3, Cr. 2.

BIW EG240 : Welding Technology — A course designed to provide insight into the technical aspects of standard welding techniques and practices. It includes a review of material testing and the heat treatment of steel, BIW's welding processes (SMAW, GTAW, GMAW, GMAW-P, FCAW, SAW), thermal cutting processes (Plasma, Laser, Oxy Fuel and Carbon Arc Gouging) weld procedures, procedure and welder qualification testing, joint designs, welding best practices, weld distortion control, and causes of weld defects. Rec. 2, Cr. 2.

BIW EG241 : Welding Symbols — Introduction to recognizing, reading, interpreting, and drawing welding symbols. Rec. 2, Cr. 1.

BIW EG250 : Mechanical Drawing II — A continuation of Mechanical Drawing I, including parallel and radial line developments as well as triangulation in the drawing of ventilation and piping systems. Practical ventilation, piping, and shipboard application problems are also studied. Prerequisite: BIW EG120. Rec. 3, Cr. 3.

BIW EG252 : Drawing Development and Technology — Students learn to create working drawing packages for the BIW production trades. Topics include: Drawing formatting including determining best views for production, basic views and details, usage of callbacks and symbols, giveral notes pages, build requirements, dimensions and reference points, line weights and other functional drawing components, drawing types (fabrication, install, etc), tolerances and tolerance stacking and multi-discipline drawings. Other topics as time permits. Rec. 3, Cr. 3.

BIW EG255 : Machine Shop Theory I — A study of the tools, materials, machinery and technology used in the machine shop. Rec. 3, Cr. 3.

BIW EG280 : Electricity I — Introduction to the nature of electricity: resistance, current, voltage, Ohm's law, network theorems, and AC. Rec. 3, Cr. 2.

BIW EG281 : Electricity II — A continuation of Basic Electricity, introduces inductive and capacitive circuits, meters and transformers. Prerequisite: BIW EG280. Rec. 3, Cr. 3.

BIW EG282 : Electricity III — Topics include construction and troubleshooting of AC and DC generators and motors. Prerequisite: BIW EG281. Rec. 3, Cr. 1.

BIW EG283 : Electricity IV — Topics include development and layout of motor control circuits and uses individual and team labs involving hot and de-energized motor control circuits. Prerequisite: BIW EG282. Rec. 3, Cr. 3.

BIW EG355 : Machine Shop Theory II — A study of the tools, materials, machinery and technology used in the machine shop. Prerequisite: BIW EG255. Rec. 3, Cr. 2.

ENGINEERING TECHNOLOGY (↑ Top ↑)

BIW ET200 : Basic Electronics — Introduction to the nature of electronics, semi-conductor fundamentals, diodes, zener diodes, and their use in power supply and regulator circuits. Rec. 3, Cr. 2.

BIW ET206 : Mechanics I — The study of forces applied to structures. Introduces vector mechanics, static equilibrium, two and three dimensional force systems, distributed forces and friction, linear and angular kinematics, linear and angular kinetics, energy methods, impulse, momentum, kinetics of three-dimensional motions, and vibrations. Structures studied include plane and three-dimensional trusses, frames, beams, and cables. Rec. 3, Cr. 3.

BIW ET207 : Electronics II — A continuation of Basic Electronics, introduces bi-polar transistor operation and characteristics, field effect transistors, thyristors, and optoelectric devices. Prerequisite: BIW ET200. Rec. 3, Cr. 2.

BIW ET208 : Electronics III — Topics include digital concepts: number systems, semiconductor devices for digital circuits, integrated, digital integrated, and digital logical circuits. Boolean algebra and arithmetic circuits will be covered as time permits. Prerequisite: BIW ET207. Rec. 3, Cr. 3.

BIW ET209 : Electronics IV — Topics in counter circuits, shift registers, timers, analog interfacing, memories, microprocessors, fundamentals, and programmable logic controllers will be covered as time permits. Prerequisite: BIW ET208. Rec.3, Cr. 3.

BIW ET230 : Strength of Materials — Study of stresses and strains in structural members including tension, compression, shear, torsion, bending, and combined stresses. Stresses and strains in beams, columns, and indeterminate structure are also examined. Rec. 3, Cr. 3.

BIW ET235 : Material Properties and Testing — A foundation course designed to acquaint the student with the properties and testing procedures of today's common industrial materials used in ship building. Materials science, application considerations, and analysis of properties of metals, polymers, wood, concrete, material coatings, ceramics and composites will be covered through classroom and laboratory activity. Students will study the destructive and non-destructive testing procedures performed to identify and determine mechanical, physical and other properties for specific industrial and ship building applications. Cr. 3.

BIW ET282 : Design Practices — The goal of this course is to give students the skills required to make sound decisions when developing any design. Emphasis will be on concept development while considering manufacturing processes, cost, material selection, standardization, design evaluation and prototype development. Students will also develop skills and become familiar with types of tradeoffs required in a fast track design environment. Prerequisites: BIW EG252. Rec. 2, Cr. 2.

BIW ET283 : Intro to Marine Design — This Marine Design course presents topics required for understanding ship design at an introductory level, including buoyancy, stability, materials of manufacture, and inter-related systems. Students will be introduced to maritime vocabulary as they develop an understanding of the basic requirements of design and an appreciation for systems engineering principles. The course will cover maritime history, forces on a ship, design for manufacture concepts, and the basic physics, geometry and algebra concepts upon which ship design is based. Students will tour a working shipyard, if possible. Rec. 3, Cr. 3.

BIW ET306 : Mechanics II — The study of forces applied to structures. Introduces vector mechanics, static equilibrium, two and three dimensional force systems, distributed forces and friction, linear and angular kinematics, linear and angular kinetics, energy methods, impulse, momentum, kinetics of three-dimensional motions, and vibrations. Structures studied include plane and three-dimensional trusses, frames, beams, and cables. Prerequisite: BIW ET206. Rec. 3, Cr. 2.

BIW ET383 : Marine Design II — This Intermediate Marine Design course presents topics required for understanding ship design at an intermediate level and concentrates on detailed design for specific area and disciplines within the shipbuilding disciplines. Students will expand their understanding of the taxonomy and vocabulary of the marine industry especially as it pertains to certain disciplines within the shipbuilding industry. Students will develop an intermediate understanding for the requirements of design and an appreciation for systems engineering principles at a detailed level. The course will cover maritime history as it pertains to the review of case studies which examine the need for requirements and standards and the consequences that occur when those requirements are not met. Students will be introduced to the detailed shipbuilding design discipline data they need to have a working knowledge of for ships systems design including electrical, structural, piping, machinery, HVAC, and hull outfitting with due consideration for safety, human factors, and environmental control requirements.

Students will complete a final project that they will present, which combines this working knowledge with a requirements bounded design solution for a ship design that accounts for dynamic forces on a ship, and design for manufacture concepts. Class room analytical work will include concepts involving basic physics, geometry and algebra. Students will tour a working shipyard if possible. Rec. 3, Cr. 3.

HUMANITIES & COMMUNICATION (↑ Top ↑)

BIW HC110 : Business Communications — Students apply basic writing skills to produce various types of business communications with a focus on technical reports, proposals and procedures. Students will also present reports orally with visual aids. Students will produce resumes and letters of application. Rec. 3, Cr. 3.

BIW HC113 : Oral Communication Skills — Deals with the basics of business and professional communications, personal skills, working in groups and making effective presentations. Students will study methods of problem solving, managing conflict and conducting effective meetings through lecture and extemporaneous exercises. Students will also develop and make presentations of various lengths to selected audiences. Rec. 3, Cr. 3.

MANAGEMENT (↑ Top ↑)

BIW MA200 : Labor History — The history of the organized labor movement in the United States and Canada. Includes the colonial period through the twentieth century. An introduction to the precepts of labor law and collective bargaining. Particular attention will be paid to the history of labor in Maine, the shipbuilding industry, and Bath Iron Works. Rec. 3, Cr. 2.

BIW MA230 : Organizational Behavior — Emphasis is developing a grasp of issues and problems associated with human behavior at work. Specific topics include leadership, motivation, teamwork, conflict management, goal setting, job enrichment, time and stress management and communication styles. Rec 3, Cr. 3.

MATHEMATICS (↑ Top ↑)

BIW MS105 : Mathematics I — This course is designed to provide a foundation of mathematic skills necessary for the applied technical courses which follow. Areas of study include a review of basic algebra; solving equations and word problems; geometry; trig functions, right triangles and vectors; and factors and factoring. Rec. 3, Cr. 3.

BIW MS205 : Mathematics II — A continuation of Mathematics I, including the study of fractions and fractional equations; systems of linear equations; exponents and radicals; quadratic equations; oblique triangles; and radian measure. Prerequisite: BIW MS105. Rec. 3, Cr. 3.

NAVAL ARCHITECTURE (↑ Top ↑)

BIW NA151 : Ship Building Process — A study of the principles of naval architecture and their application to modern vessels and the building methods and processes used at BIW. Topics

include shipbuilding history, yard layout and construction stages, ship design and dimensions, structure, fabrication, pre-outfit, materials, ship stresses and welding, manufacturing engineering, hull integration, launching, sea trials and ship shock trials. Rec. 4, Cr. 4.

PHYSICS (↑ Top ↑)

BIW PS103 : Physics I — An introductory college physics course sequence without calculus. Emphasis on Newtonian mechanics of rigid bodies, fluids, heat and introductory thermodynamics, electricity and magnetism. Other related topics as time permits. Rec. 3 and 3, Cr. 3 and 3.

BIW PS203 : Physics II — An introductory college physics course sequence without calculus. Emphasis on Newtonian mechanics of rigid bodies, fluids, heat and introductory thermodynamics, electricity and magnetism. Other related topics as time permits. Rec. 3 and 3, Cr. 3 and 3.

THE LANDING SCHOOL COURSES

The following courses are taught at The Landing School in Kennebunkport, Maine, and are available only to students enrolled in the Small Craft Design and Small Vessel Systems majors.

TOPICS IN DESIGN (↑ Top ↑)

LS DSN111 : Design I — This course covers subjects concerned with the overall design of small craft such as design methodologies, lines plans, parametric studies, weights and centers calculations, deck and cockpit geometry, ergonomics, general arrangements and deck layouts. Aesthetics are also considered. Much of the learning in this course is centered on practical design projects. 3.5 CR

LS DSN112 : Naval Architecture — This course covers subjects concerned with the technical design of small craft such as calculation of area and volumetric properties, hydrostatics and stability, hull form design, basic hydrodynamics, resistance and propulsion. Displacement and semi-displacement and planing boats are considered. 3.5 Cr.

LS DSN113 : Marine Engineering — This course covers small craft system design and installation issues for such elements as ventilation, machinery, tanks, plumbing and electrical systems. Small scale individual case studies in the early part of the course are followed by the complete system installation design for the same sail boat design project used in DSN111 and DSN112. 4 Cr.

LS DSN114 : Structural Design — This course covers statics, applied mechanics, strength of materials, structural mechanics and basic composite theory and their application to such

problems in yacht design. These theoretical subjects also provide an essential foundation for the scantling and structural design studies in the construction course, DSN 214. 3.5 Cr.

LS DSN115 : Drafting and CAD I — This course begins with the basics of sketching, technical drawing by hand, and traditional tools of the trade. We then cover computer aided design (CAD) and drafting. Hull surface modeling, 3-D design and 2-D drafting as well as spreadsheet calculations are covered in detail. The primary software packages used are "Orca3d', "Rhino", "AutoCAD", "Excel" and "Word." No prior experience with these packages is required or assumed. 2.5 Cr.

LS DSN116 : Design Topics I — This course covers a variety of subject areas that are important to a small craft designer's education but that do not fit appropriately into one of the other modules. Subjects include use of computer office tools such as spreadsheets and word processors, and project management skills. Also included are a series of industry enhancement elements such as guest speakers from the industry and visits to relevant facilities and events. 1.5 Cr.

LS DSN117 : Marine Engineering – Mechanical — This course covers small craft system design and installation issues for propulsion machinery, ventilation, tanks, plumbing, and air conditioning systems. Small scale case studies in the early part of the course are followed by complete system installation designs for the boat design project(s) used in DSN111 & DSN112. 3.5 CR.

LS DSN118 : Marine Engineering – Electrical — This course covers the design and installation of small craft electrical systems. Subjects include: the characteristics and behavior of electrical systems; the types of marine batteries and their charging/discharging characteristics; the design of a DC electrical system, including preparing a suitable schematic; identifying AC power sources and describing their function; designing an AC electrical system and preparing a suitable schematic; designing a start/charge circuit and preparing a suitable schematic; describing the process of galvanic corrosion and identifying the components of bonding and lightning protection systems; describing the function of basic marine electronics and understanding their installation requirements. 2.5 CR

LS DSN211 : Design II — This course builds on, and further develops, the subjects introduced in DSN111. Regulatory requirements for commercial vessels and larger yachts are also considered. The design of an aluminum planing Pilot boat is the focus DSN211. 3 Cr.

LS DSN212 : Naval Architecture II — This course builds on, and further develops, the subjects introduced in DSN112. Additional subjects include: planning hulls; propeller nomenclature and selection; sub-division and flooding considerations; regulatory requirements for commercial vessels and larger yachts. 3 Cr.

LS DSN214 : Construction — This course applies the theoretical concepts studied in DSN114 to the structural design of metal and composite boats and their component parts. The course covers the derivation of composite scantlings to match the ISO standards, as well as the design of

the scantlings and other construction details (such as the engine beds) for the aluminum Pilot boat. 3 Cr.

LS DSN215 : CAD II — This course continues the study and application of computer aided design (CAD) and drafting software started in DSN115, focusing on hull form definition (FastShip) and vessel rendering (Rhino). 2 Cr.

LS DSN216 : Design Topics II — This course continues the discussion of topics of importance to a small craft designer started in DSN116 including variations in design approaches, design office practices and client and customer relationships. 1.5 Cr.

LS DSN218 : Design Project — The second half of the second semester is largely devoted to an individual Design Project. This involves the preliminary study design of a sea-going boat built of composite materials to industry or classification standards for offshore or ocean use. The boat may be power or sail but the waterline length has to be between 27 and 40 feet and there has to be accommodation for four adults. The purpose of this project is to allow the student bring together all the knowledge and skills learnt in the earlier part of the program and to demonstrate that they can use these to produce a safe, technically sound, appropriate and attractive boat to match the design brief they have developed. The results of the project also form a significant portfolio to assist the student as he/she seeks employment. 3 Cr.

LS DSN219 : Powerboat Design — This course builds on, and further develops, the subjects introduced in DSN 111 and DSN112. This course expands the learning topics from those courses into more specific Yacht Design and Naval Architecture subject matter specific to powerboats. Specific topics will include powering and range prediction, planning hull design and behavior characteristics, as well as design issues unique to powerboats. 3 CR.

LS DSN220 : Sailboat Design — This course builds on, and further develops, the subjects introduced in DSN 111 and DSN112. This course expands the learning topics from those courses into more specific Yacht Design and Naval Architecture subject matter specific to sailing yachts. Topics will include sailing performance, stability, and seaworthiness, deck arrangements as they relate to sailing techniques, sailboat construction and details, including rig, keel and rudder design. 3 CR.

TOPICS IN SYSTEMS (↑ Top ↑)

LS MST120 : Shop Methods/Materials — The purpose of this course is to introduce practices, methods and materials used in small vessel maintenance and repairs including: use of measurement tools; cutting, drilling and filing metals; fastener identification and selection; use of taps and dies; PVC fabrication; soldering; selecting caulks, sealants and adhesives; estimating areas and volume; identifying and selecting hoses. This course is augmented by several specific labs. 3.5 Cr.

LS MST121 : Composite Repair — The purpose of this course is to introduce theory, identification, selection, properties and use of composite materials including resins, reinforcements, fillers and core materials. This course includes hands-on fabrication and repair of

both single skin and cored composite panels. This course is augmented by several specific labs. 1.5 Cr.

LS MST122 : Propulsion I — The purpose of this course is to introduce the internal combustion engine and related systems including: engine architecture; valve train; performance data; lubrication systems and lube oils; exhaust systems; cooling systems and engine winterizing or long term storage techniques. This course is augmented by several specific labs. 4 Cr.

LS MST123 : Propulsion II — The purpose of this course is to continue study of the internal combustion engine to include: gasoline engine fuel and ignition systems; diesel fuel systems including fuel injectors, injection pumps and forced induction; marine gear and related drive train components; propellers; shafting and struts; noise and vibration remediation; engine ventilation; outboards and sterndrives. Labs include ignition timing, fuel injector testing, bleeding diesel fuel systems, marine gear disassembly and inspection, ignition timing and valve adjustment. 5.5 Cr.

LS MST124 : DC Electrical — The purpose of this course is to study electrical theory, Ohm's Law, circuit identification and analysis, schematics and symbols, batteries, conductor selection and identification, American Boat and Yacht Council (ABYC) standards, over-current protection, system loads and distribution panels. Students will also cover solenoids and relays, DC motors and starters, engine instruments, battery charging techniques (including wind and solar), corrosion, cathodic protection and lightning. Hands-on labs will include, stripping and crimping wire, electrical soldering, use of multimeters, build a DC electrical system, disassembly and testing of alternators. 4 Cr.

LS MST226 : Marine Plumbing — The purpose of this course is to cover operation, installation and maintenance of seacocks; selection, installation and maintenance of pumps; raw water systems (bilge, washdown, scuppers and drains, live wells and bait wells); potable water systems and blackwater systems. The course includes a review of the overboard discharge regulations and health/hygiene considerations. Labs will include seacock installation, building a bilge pump system and potable water system. 3 Cr.

LS MST227 : Marine Electronics — The purpose of this course is to cover the theory, operation and installation of marine electronics including speedometers, depth finders, wind instruments, VHF and single sideband radios, radar, GPS and chart plotters. Proprietary and standard electronic networking systems such as NMEA 0183 and NMEA 2000 will be introduced. Lab will include the proper termination of a UHF connector. 1.5 Cr.

LS MST228 : Mechanical Special Topics — The purpose of this course is to cover selection and installation of windlasses and ground tackle; selection and installation of bow thrusters; mechanical and hydraulic steering; trim tab; CNG and LPG systems. Sail handling systems such as deck hardware, reefing and furling equipment as well as standing and running rigging will also be covered. Lab will include building a hydraulic steering station, building a working trim tab installation and properly terminating a Norseman style rigging fitting. 2.5 Cr.

LS MST229 : AC Electricity I — The purpose of this course is to cover AC electrical theory, alternators, applicable ABYC standards, shore power systems, over-current protection, ground fault circuits, galvanic isolators, transformers and generators and inverters. Students will reconfigure generators for various outputs as well as troubleshooting techniques and disassemble and test alternators. Students will also design and estimate a small vessel generator installation. Lab will be to design and construct a working AC electrical system. 3 Cr.

LS MST230 : Marine Refrigeration & A/C — The purpose of this course is to covers theory, design and installation of marine refrigeration and air conditioning systems. The course includes principles of temperature and heat, heat transfer and changes of state; the refrigeration cycle; BTU and airflow requirements; refrigerants and federal regulations controlling their use; air conditioning installations; service valves and gauges; AC and DC refrigeration systems, hermetic refrigeration systems and EPA regulations. Labs will include evacuation and recharging of system refrigerant, as well as use of gauges and the service valve. 2 Cr.

LS MST231 : Project Boat — The purpose of this course is to provide an application of the principles and techniques learned throughout the program. Students work in teams to refit and repair a small vessel. Specific tasks vary with the vessel, but generally include the design and replacement of the following systems: propulsion and related systems(fuel, exhaust, controls etc.); electrical; potable water; bilge pumps and sanitation. 6.5 Cr.

Campus Directory

For the MMA Directory, please refer to http://www.mainemaritime.edu/about-mma/campus-directory/

Board of Trustees

The Board of Trustees of Maine Maritime Academy consists of 16 members, all of whom are appointed by the Governor. Members are appointed for a five-year term and may be re-appointed at the discretion of the Governor. The Board has full legal responsibility and authority for the governance of Maine Maritime Academy. It appoints the President of the Academy, approves the establishment of academic programs, confers degrees on students who have completed all requirements for graduation, sets tuition rates, operating budgets, and more.

NOTICE: The **Board of Trustees** will conduct an Executive Committee meeting via teleconference on **Tuesday, October 20, 2020** from 2:00 to 3:00 PM. This meeting will include several divisional updates. Members of the public interested in virtually attending this meeting may request an invitation from the Secretary to the Board of Trustees, Janet Acker, at the contact information provided on this page by 4:00 PM Friday, October 16, 2020.

NOTICE: The **Board of Trustees** will conduct the 4th quarter board meeting via teleconference on **Thursday, November 12, 2020, time tba**. This meeting will include divisional reports and actions. Members of the public interested in virtually attending this meeting may request an invitation from the Secretary to the Board of Trustees, Janet Acker, at the contact information provided on this page by 4:00 PM Monday, November 9, 2020.

Meeting dates for 2020 are:

- February 27, 2020
- May 1, 2020 (Commencement) **CANCELLED DUE TO COVID-19**
- August 13, 2020
- November 12, 2020

Meeting dates for 2021 are:

- February 25, 2021
- April 30, 2021
- August 5, 2021
- November 11, 2021 (Veteran's Day)

All meetings are open to the public and notices are published in advance.

Board Members

- Earle A. Cianchette, Chair
- Jason Oney, Vice Chair
- Miles Unobsky Theeman, Treasurer
- Morten Arntzen
- Carolyn Brodsky
- Anne Devine

- Ted Dey
- Gregory S. Fryer
- Wendy Morrison
- Robert J. Peacock, II
- The Hon. W. Tom Sawyer, Jr.
- Mary Shea
- Robert D. Somerville
- Arthur “Kitt” Watson
- J. Douglas Wellington

Minutes of the Meetings

- May 2020 (Cancelled due to COVID-19 | no minutes)
- February 27, 2020
- November 2019
- August 2019
- May 2019
- February 2019
- November 2018
- August 2018
- May 2018
- March 2018
- November 2017
- August 2017
- May 2017
- November 2016
- August 2016
- May 2016
- February 2016
- November 2015
- August 2015
- May 2015
- February 2015

Administration

Office of the President

- President Dr. William J. Brennan
- Executive Assistant Janet Acker

Academic Division

- Acting Vice President for Academic Affairs and Provost Mark Coté
- Commandant Captain John Cashman
- Dean of Faculty Professor Susan Krauss Loomis
- Director of Accessibility Services Dr. Joceline Boucher
- Director of Career Services Captain Bryce Potter
- Director of Center for Professional Mariner Development Alan Chace
- Director of Library Services Lauren Gargani
- Registrar Amy H. Newton Gutow, J.D.
- Marine Operations Manager Dana Willis
- Interim Master TSSOM Captain Brendan McAvoy

Advancement Division

- Vice President for Advancement Christopher Haley
- Director of Alumni Affairs Jeffrey C. Wright
- Director of College Relations Jennifer DeJoy
- Director of Development Theodore 'Tade' Sullivan

Financial & Institutional Services Division

- Vice President for Financial & Institutional Services Richard Rosen
- Associate Vice President & Chief Information Officer Lisa Roy
- Director of Facilities and Safety Peter Stewart
- Director of Fiscal Operations Alice Herrick
- Director of Human Resources Carrie D. Margrave, J.D
- Bookstore Manager Kathy MacArthur
- General Manager of Dining Services Phil Cotoni

Student Affairs Division

- Vice President for Student Affairs & Enrollment Management Dr. Elizabeth True
- Commandant Captain John Cashman
- Dean of Student Services Deidra Davis
- Director of Admissions and Enrollment Management Kelly Gualtieri
- Director of Athletics Stephen Peed
- Director of Counseling Services Paul Ferreira

- Director of Financial Aid Kathy Heath
- Director of Health Services Tammy Tyler, R.N.
- Director of Residential Life & Student Services Janice Folk

Faculty

ELIZABETH ALLABY, Adjunct Faculty in Arts & Sciences; B.S., B.A., Indiana University Bloomington; M.A., University of Wisconsin-Madison; Appointed 2019.

RICHARD D. ALLARD, Assistant Professor of Marine Transportation; B.S., California Maritime Academy; J.D., Empire Law School; Master, Steam or Motor Vessel, 1600 tons; Appointed 2009.

TIMOTHY N. ALLEN, Assistant Professor of Engineering; B.A., Empire State College; M.A.T., University of Maine; Appointed 2011.

MARK ANDREWS, Adjunct Instructor in Engineering; B.S., University of Maine, Farmington; Appointed 2019.

SADIE ALLEY FERREIRA, Assistant Professor of Engineering; B.S., Maine Maritime Academy; M.Ed., Husson University; Appointed 2016.

RICHARD S. ARMSTRONG, Adjunct Faculty in Engineering; B.S., M.S., Massachusetts Institute of Technology; Appointed 2008.

ENDER ASYALI, Associate Professor of Marine Transportation; B.S., M.S., Istanbul Technical University; Ph.D., Istanbul University; Appointed 2014.

PRISCILLA P. AUDETTE, Adjunct Faculty in Arts & Sciences and Engineering; B.S., University of California at Los Angeles; M.A., North Dakota State University; Appointed 2003.

DAVID E. AVERY, Acting Chair, Arts & Sciences Department, Associate Professor of Mathematics; B.A., College of the Atlantic; B.A., Rhode Island College; M.S., Ph.D., University of Rhode Island; Appointed 2011.

STEVEN E. BAER, Assistant Professor of Marine Science; B.A., University of Massachusetts Amherst; Ph.D., College of William & Mary; Appointed 2018.

THOMAS A. BATT, Chair, Arts and Sciences Department, Professor of Humanities and Communications; B.A., Cornell University; M.F.A., Ph.D., University of Massachusetts; Appointed 2005. Sabbatical Fall 2019.

THERESE L. BIGGIE, Adjunct in Physical Education; B.S., Purdue University; LMT; Appointed 2007.

MYLES BLOCK, Director, Fire Training Facility; B.S., Maine Maritime Academy; Appointed 2018.

JEFFREY K. BOAL, Assistant Professor Medical Instructor; B.S., Queens University, Ontario, Canada; B.S., University of Toronto, Ontario, Canada; Appointed 2015.

ELIZABETH P. BOUCHER, Adjunct Faculty in Arts & Sciences; B.A., Colby College; B.S., M.S., Maine Maritime Academy; Appointed 2017.

JOCELINE BOUCHER, Director of Accessibility Services; Professor of Marine Chemistry; A.B., University of Chicago; M.S., University Southern California; Ph.D., University of Rhode Island; Appointed 1991.

LOUISE T. BOURNE, Adjunct Faculty in Art; B.F.A., Portland School of Art; M.F.A., University of Michigan; Appointed 2000.

WILLIAM J. BRENNAN, President; Professor in Marine Science; B.S., University of Maine; M.A., University of Rhode Island; Ph.D., University of Maine; Appointed 2002.

LANCE A. BURTON, Associate Professor of Engineering; B.S., M.S., Maine Maritime Academy; Third Assistant Engineer, Steam, Motor, or Gas Turbine Vessels, Unlimited; Master, 100 tons, Near Coastal; Appointed 2008.

CLIFFORD R. CAMERON, JR., Adjunct Faculty in Engineer, and Chief Engineer, T.S. State of Maine; B.S., Maine Maritime Academy; Chief Engineer, Motor or Gas Turbine Vessels, Unlimited; Second Assistant Engineer, Steam Vessels, Unlimited; Appointed 2018.

WILLIAM CASE, Adjunct Faculty in Arts & Sciences; B.A., Syracuse University; M.A., Maxwell School (Syracuse University); Appointed 2019.

JOHN D. CASHMAN, Commandant of Midshipmen; B.S., Georgia Institute of Technology; J.D., Suffolk University Law School; Appointed 2019.

DEREK CHASE, Master, Small Vessels; Master, Steam or Motor Vessels, 500 tons Upon Inland Waters; Master, Steam, Motor, or Auxiliary Sail, 100 tons, Near Coastal; Appointed 2003.

G. ANDERSON CHASE, Professor of Marine Transportation; B.S., Maine Maritime Academy; Master, Steam or Motor Vessels, Unlimited; Master, Auxiliary Sail Vessels, 1600 tons; Appointed 1987.

LAUREL E. CHRISTIAN, Assistant Professor of Engineering; B.S., Maine Maritime Academy; Second Assistant Engineer, Motor Vessels Unlimited; Third Assistant Engineer, Steam, or Gas Turbine Vessels, Unlimited; State of Maine Third Class Stationary Engineer; Appointed 2020.

LONNIE S. CHRISTIAN, JR., Deputy Commandant; B.A. The Pennsylvania State University; M.A., U.S. Naval War College; Appointed 2017.

DAVID P. CIAMPA, Associate Professor of Physics; B.A., University of California at Berkeley; Ph.D., University of Michigan at Ann Arbor; Appointed 2010.

ANN CLEVELAND, Professor of Marine Biology; B.A., University of New Hampshire; M.S., University of Rhode Island; Ph.D., Northern Arizona University; Appointed 2002.

STEPHEN J. COLE, Associate Professor of Marine Transportation Operations; B.S., Maine Maritime Academy; M.S., University of Maine; Master, Steam or Motor Vessels, Unlimited; Appointed 2010.

ERIC N. COLUMBER, Adjunct Faculty in International Business & Logistics; B.A., Wittenberg University; J.D., Vermont Law School; Appointed 2009.

CHARLES COPPEDGE, Adjunct Faculty in Engineering; B.S., University of Texas at Arlington; M.S., University of Houston; Registered Professional Engineer; Appointed 2019.

MARK A. COTÉ, Acting Provost/Academic Dean; Professor of Engineering; B.S., Maine Maritime Academy; M.S.M.E., Clemson University; M.A. Naval War College; Second Assistant Engineer, Motor Vessels Unlimited; Third Assistant Engineer, Steam, or Gas Turbine Vessels, Unlimited; Registered Professional Engineer; State of Maine First Class Stationary Engineer; Appointed 1992.

FRANK CRUZ, JR., Instructor of Naval Science; GySgt, USMC; Appointed 2019.

DEIDRA A. DAVIS; Dean of Student Services and Enrollment Management, and Adjunct Faculty in Arts & Sciences; B.S., Nichols College; Appointed 1995.

MICHAEL DAVIS, Instructor of Naval Science; QMC, USN; B.S., Humboldt State University; Appointed 2019.

ROBERT E. DORR, JR., Adjunct Faculty in Bath Iron Works Apprenticeship Program Department of Engineering; A.A.S., Southern Maine Community College; B.S., University of Southern Maine; M.S., Saint Joseph's College; Appointed 2017.

AMY DRINKWATER, Adjunct Faculty in Arts & Sciences; B.S., Husson College; Appointed 2020.

LESLIE B. EADIE, Assistant Professor of Marine Transportation; B.S., Maine Maritime Academy; M.B.A., University of Phoenix; Master, Steam or Motor Vessels, Unlimited; Appointed 2007.

MARY B. EDDY, Adjunct Faculty in Marine Transportation; B.S., Maine Maritime Academy; Appointed 2017.

HARRIS W. ERLANSON, Adjunct Faculty in Marine Transportation and Second Mate, T.S. State of Maine; B.S., Maine Maritime Academy; Chief Mate, Steam or Motor Vessels, Unlimited; Master, 1600 tons; Appointed 1997.

SCOTT C. FERDEN, Adjunct Faculty in Engineering; A.A.S., Eastern Maine Community College; Appointed 2017.

BARBARA H. FLECK, Professor of Engineering; B.S., University of Cincinnati; M.S., Dartmouth College; Registered Professional Engineer; Appointed 1994.

LAURIE E. FLOOD, Professor of Engineering; B.S., Maine Maritime Academy; M.S., University of Maine; Third Assistant Engineer, Steam, Motor or Gas Turbine Vessels, Unlimited; State of Maine Third Class Stationary Engineer; Appointed 2001.

JANICE T. FOLK, Director of Residential Life and Resident Director of Curtis Hall, Adjunct Faculty in Arts & Sciences; B.A., Westfield State University; M.Ed., Salem State University; Appointed 2016.

CAREY L. FRIEDMAN, Assistant Professor of Marine Science; B.S., Trinity College; M.S., Cornell University; Ph.D., University of Rhode Island; Appointed 2015.

LAUREN I. GARGANI, Head Librarian; B.A., Ramapo College of New Jersey; M.A., Ohio University; M.L.I.S., University of Pittsburgh; Appointed 2016.

VINCE GARIN, Access and Collection Services Librarian, Adjunct Faculty in Arts & Sciences; B.S., M.A., University of Colorado Boulder; M.L.I.S., University of Denver; Appointed 2020.

JEAN-YVES GOURMELON, Instructor of Engineering; DESFI (Master II), Conservatoire National des Arts & Métiers, Institute Francais due Froid Industriel (Paris); DESMM, 1st Class Merchant Marine Officer license, unlimited, dual Deck & Engineering – Ecole Nationale Supérieure Maritime (ENSM); Appointed 2020.

IAN GRAY, Assistant Professor of Naval Science; LT, USN; B.S., United States Naval Academy; Appointed 2019.

AMY H. NEWTON GUTOW, Registrar; B.A., Connecticut College; J.D., University of New Hampshire School of Law; Appointed 2019.

JENNIFER L. HADDOCK, Adjunct Instructor of Marine Transportation; B.S., M.A., University of Rhode Island; Master, Auxiliary Sail Vessels, 1600 tons; Appointed 2020.

JOSEPH HARMAN, Assistant Professor of Engineering; B.S., Maine Maritime Academy; State of Maine First Class Stationary Engineer; Chief Engineer, Steam, Motor, or Gas Turbine Vessels, Unlimited; Appointed 2017.

WALDO P. HARMON, Adjunct Faculty in Engineering; Master Electrician; Appointed 1998.

WENDY R. HASLAM, Systems Integration Specialist, and Adjunct Faculty in Arts & Sciences; B.S., M.B.A., University of Maine; Appointed 2015.

COLLEEN M. HERLIHY, Adjunct Faculty in Arts & Sciences; A.A.S., Eastern Maine Community College; B.S., University of Maine Fort Kent; Appointed 2017.

RORY T. HERSOM, Assistant Professor of Engineering; B.S., Maine Maritime Academy; Appointed 2020.

NAVNEET JAIN, Associate Professor of Supply Chain Management; B.T., Gujarat Agricultural University, India; M.S., Maine Maritime Academy; Appointed 2006.

ERIC P. JERGENSON, Assistant Professor of Marine Transportation; Master, Small Craft Sail; B.S., Maine Maritime Academy; M.S., University of Maine; Master, Steam, Motor, or Auxiliary Sail Vessels, 500 tons; Appointed 2015.

SEAN D. KEARNS, Professor of Naval Science; CAPT, USN; B.S., Boston University; M.S., Massachusetts Institute of Technology; M.S., Naval War College; Appointed 2018.

ALMUS KENTER, Assistant Professor of Physics; B.S., Columbia University School of Engineering and Applied Science; Ph.D., The University of Wisconsin; Appointed 2017.

AARON J. KINGSBURY, Assistant Professor of Arts & Sciences; B.A., George Washington University; M.A., Simon Fraser University, Canada; M.Sc., University of Kassel, Germany; Ph.D., University of Hawaii, Manoa; Appointed 2018.

KIRK W. LANGFORD, Chair, Loeb Sullivan School of International Business and Logistics; Assistant Professor of International Business & Logistics; B.S., University of Illinois; M.B.A., Houston Baptist University; Appointed 2016.

GARY S. LAPHAM, Associate Professor of Mathematics; B.S., University of Maine; M.S., University of New Hampshire; Ph.D., University of Michigan; Appointed 2011.

TIMOTHY LEACH, Assistant Professor of Marine Transportation; M.S., Maine Maritime Academy; Master, Steam or Motor Vessel, 500 tons; Appointed 2017.

LISA LEAVERTON, Adjunct Faculty in Arts & Sciences; B.Music, Johns Hopkins University; M.F.A., University of Iowa; Appointed 2019.

MARK LEGEL, Assistant Professor of Engineering; B.S., University of Southern Maine; Appointed 2015.

PETER B. LEWIS, Assistant Professor of Engineering; B.S., Miami University; M.B.A., Emory University; Appointed 2018.

SUSAN K. LOOMIS, Dean of Faculty; Professor of Humanities and Communications; B.A., Regis College; M.A., University of Maine; Appointed 1985.

PATRICK E. LORENZ, Professor of Mathematics and Computer Science; B.A., St. John's University, MN; M.S., Johns Hopkins University; Ph.D., Southern Illinois University; Appointed 2004.

JERALD P. MARKLEY, Instructor of Engineering; Chief Engineer, Steam, Motor, or Gas Turbine Vessels, Unlimited; B.S., Maine Maritime Academy; Appointed 2002.

BRENDON B. McAVOY, Adjunct Faculty in Marine Transportation, and Interim Master, T.S. State of Maine; B.S., State University of New York Maritime Academy; M.A., University of Rhode Island; Master, Steam or Motor Vessels, Unlimited; Appointed 1998.

DONALD F. McCANN, Associate Professor of Engineering; B.A., Ithaca College; B.S., Cornell University; M.S., Ph.D., University of Maine; Appointed 2018.

JOHN H. McMILLAN, Adjunct Faculty in Ocean Survival; B.A. University of Southwestern Louisiana; Appointed 2008.

RICHARD F. MILLER, Associate Professor of Marine Transportation; B.S., Springfield College; M.S., Capella University; Master, any vessel not greater than 3,000 GT upon Oceans; Master Self Propelled Vessels Including Auxiliary Sail, 1600 tons upon Oceans; Appointed 2007.

PATRICK MORONEY, Assistant Professor of Engineering; B.S., Embry-Riddle Aeronautical University; M.S., University of Southern California; Appointed 2015.

JOSEPH D. MOSER, Assistant Professor of Humanities; B.A., Northwestern University; M.Div., Harvard Divinity School; M.A., Ph.D., Northwestern University; Appointed 2015.

KENNETH C. MOTSAY, Assistant Professor of Naval Science; Capt, USMC; B.S., United States Naval Academy; Appointed 2020.

JESSICA F. MUHLIN, Chair, Corning School of Ocean Studies; Associate Professor of Marine Biology; B.A., Boston University; Ph.D., University of Maine; Appointed 2007.

JENNIFER S. NORWOOD, Assistant Professor of Marine Transportation; B.S., Texas A&M University of Galveston; M.S., Maine Maritime Academy; Master, Steam or Motor Vessels, Unlimited; Appointed 2016.

AMY S. NYBERG, Assistant Professor of Physics; B.A., Ph.D., University of Houston; Appointed 2015.

MICHAEL O'DONNELL, Adjunct Faculty in Arts & Sciences; B.A., Boston College; J.D., University of Richard School of Law; Appointed 2020.

SONJA O'DONNELL, Adjunct Faculty in Arts & Sciences; B.A., Boston College; M.A., University of Delaware; Appointed 2019.

SARAH J. O'MALLEY, Instructor in Ocean Studies; B.S., M.Ed., University of Maine; Appointed 2010.

BRIAN A. OLIVARI, Assistant Professor of Engineering; B.S., Syracuse University; FCC Radiotelephone Operator License with Ship Radar Endorsement; Appointed 2006.

PAUL J. OXMAN, Adjunct Faculty in Arts & Sciences; B.F.A., University of Maine, Farmington; M.S.W., University of New England; Appointed 2017.

ZANDER C. PARKER, Instructor of Marine Transportation; A.S., Maine Maritime Academy; B.S. Queens University, Kingston, Ontario, Canada; Master, Steam or Motor Vessels, Auxiliary Sail 100 tons, Inland Waters; Appointed 2020.

DANIEL S. PARROTT, Chair, William F. Thompson School of Marine Transportation; Professor of Marine Transportation; B.A., Colby College; M.A., University of Rhode Island; Master, Steam, Motor, or Auxiliary Sail Vessels, 1600 tons; Second Mate, Steam and Motor Vessels, Unlimited; Appointed 2003.

GLENN D. PIERCE, Assistant Professor of Naval Science; CDR, USN; B.A., University of Southern Maine; Appointed 2017.

DANA I. POLOJÄRVI, Professor of Humanities and Communications; B.A., Trinity University; M.A., University of California at Los Angeles; Ph.D., Binghamton University; Appointed 2005.

JUSTIN M. PRATT, Assistant Professor of Chemistry; B.S., B.S.E., Southeast Missouri State University; Ph.D., Miami University; Appointed 2020.

RALPH H. PUNDT, Professor of Marine Transportation; B.S., Maine Maritime Academy; Master, Steam and Motor Vessels, Unlimited; Appointed 1999.

LEON A. RAIKES, Professor of Humanities; B.A., Kalamazoo College; M.A., American University of Beirut; Ph.D., Michigan State University; Appointed 2006.

KIMBERLY RIDENOUR RAIKES, Adjunct Faculty in Humanities; B.A., Kalamazoo College; M.T.S., Garrett-Evangelical Theological Seminary, Ordained 1999; Appointed 2006.

ILONA RANKIN, Adjunct Faculty in Mathematics; M.S., Odessa State University, Ukraine; Appointed 2019.

ELLIOT D. RAPPAPORT, Assistant Professor of Marine Transportation; B.A. Oberlin College; M.S., University of Maine; Master of Steam, Motor and Auxiliary Sail Vessels, 1600 tons; Appointed 2020.

FRED V. RAVAN, Adjunct Faculty in Arts & Sciences; B.A., M.A.T., University of South Carolina; Appointed 2018.

DOUGLAS A. READ, Associate Professor of Engineering; B.S., Webb Institute; M.S., Massachusetts Institute of Technology; Ph.D., University of Maine; Registered Professional Engineer; Appointed 2009.

LISA M. READ, Assistant Professor of Engineering; B.S., Webb Institute; M.S., Rensselaer Polytechnic University; Appointed 2019.

RICHARD T. REED, Professor of Engineering; B.S., M.S., University of Maryland; Appointed 1996.

LAUREN E. SAHL, Professor of Ocean Studies; B.S., State University of New York at New Paltz; Ph.D., Texas A & M University; Appointed 1990.

BRENDYN SARNACKI, Assistant Professor of Engineering; B.S., Maine Maritime Academy; Ph.D., University of Virginia; Appointed 2018.

W. PETER SARNACKI, Associate Professor of Engineering; B.S., Maine Maritime Academy; State of Alaska First Class Stationary Engineer; State of Maine Second Class Stationary Engineer; Second Assistant Engineer, Steam or Gas Turbine Vessels, Unlimited; Third Assistant Engineer, Motor Vessels, Unlimited; Appointed 1996.

GEORGE L. SCHATZ, Professor of Economics and Finance; B.A., Moorhead State University; M.A., University of Chicago; M.S., University of Arizona; Third Mate, Steam or Motor Vessels, Unlimited; Appointed 1989.

ALAINA SCHEUCHZER, Assistant Professor of Management; B.S., M.S., Maine Maritime Academy; Appointed 2014.

TIMOTHY J. SCHRODER, Adjunct Faculty of Aquatics; B.S., Bemidji State University; M.S., St. Francis College; Appointed 2008.

MARK M. SHAUGHNESSY, Professor of Business and Accounting; B.S., Babson College; M.B.A., Babson College; C.P.A., CGMA; Appointed 2008.

JACOB J. SIMMONS, Associate Professor of Mathematics; B.A., B.S., University of Maine; Ph.D. University of Maine; Appointed 2011.

DAVID G. SKAVES, Professor of Engineering; B.S., Massachusetts Maritime Academy; M.B.A., University of Maine; Chief Engineer, Steam, Motor, or Gas Turbine Vessels, Unlimited; Registered Professional Engineer; State of Maine First Class Stationary Engineer; Appointed 1986.

CHRISTINE SKWIOT, Associate Professor of Humanities and History; B.A., University of Michigan; M.A., University of Delaware; Ph.D., Rutgers University; Appointed 2014.

ADAM R. SLAZAS, Associate Professor of Marine Transportation; B.S., Massachusetts Maritime Academy; Master, Steam or Motor Vessels, Unlimited; Appointed 2007.

TREVOR A. SNOW, Class Officer, Appointed 2018.

DAVID W. SORICH, Assistant Professor of Economics and Management; B.S., University of Pennsylvania; M.B.A., London Business School; Appointed 2019.

NICHOLAS STARBIRD, Assistant Professor of Engineering; B.S., Maine Maritime Academy; Chief Engineer, Motor Vessels, Unlimited; Appointed 2019.

JAMES W. STEFANSKI, Instructor of Engineering; B.S., Maine Maritime Academy; First Assistant Engineer, Steam, Motor, or Gas Turbine Vessels, Unlimited; State of Maine Stationary Steam Engine First Class; Appointed 2012.

HENRY P. STEWART, Associate Professor of Engineering; B.S., Maine Maritime Academy; M.S., U.S. Naval Postgraduate School; M.M.A.S., U.S. Army Command and General Staff College; Chief Engineer, Steam, Motor, or Gas Turbine Vessels, Unlimited; State of Maine First Class Stationary Steam Engineer; Appointed 2015.

STEPHEN TARRANT, Assistant Professor of Marine Transportation; B.S., University of Connecticut; M.A.T., Sacred Heart University; Master of Steam, Motor or Auxiliary Sail, Unlimited; Master of Towing Vessels; Appointed 2011.

JEFFREY B. TAUB, Associate Professor of Mathematics and Computer Science; B.S., Cornell University; M.S., Naval Postgraduate School; M.S., Maine Maritime Academy; Appointed 2007.

J. SAMUEL TEEL, Professor of Marine Transportation and Nautical Science; B.S., Maine Maritime Academy; Master, Steam or Motor Vessels, Unlimited; Appointed 1982.

WILLIAM C. TEFFT, Lecturer of Engineering; Appointed 2012.

KATHARINE I. TUROK, Adjunct Faculty in Humanities and Communications; B.A., Wheaton College (Mass); M.A., A.B.D., Rutgers University; Appointed 2010.

JACK VALLES, Adjunct Faculty in Engineering; Certificate, Washington Community College; Appointed 2020.

HILLARY D. VanSPRONSEN, Assistant Professor of Mathematics; B.S., Grand Valley State University; M.A., Ph.D., University of Montana; Appointed 2020.

E. ALAN VERDE, Professor of Marine Biology; B.S., M.S., Walla Walla University; Ph.D., Florida Institute of Technology; Appointed 2004.

DAVID A. WALKER, Instructor of Engineering; A.S., Eastern Maine Vocational Technical Institute; A.S., BIW Apprenticeship Program; Appointed 2012.

TRAVIS WALLACE, Assistant Professor of Engineering; B.S., Maine Maritime Academy; M.S., Ph.D., University of Maine; Appointed 2018.

SEAN WALSH, Assistant Professor of Marine Transportation; A.S., Coastline Community College; B.S., Maine Maritime Academy; Master, Motor Vessels, 500 tons Near Coastal; Master, Towing Vessels, 500 tons, Near Coastal; Appointed 2011.

EDWARD WARDELL, Adjunct Faculty in Engineering; A.A.S., Alfred State College; Appointed 2018.

LeANN WHITNEY, Assistant Professor of Oceanography; B.S., University of Maine; Ph.D., University of Rhode Island; Appointed 2018.

KERRY A. WHITTAKER, Sawyer Visiting Professor; B.S., Colby College; Ph.D., Graduate School of Oceanography, University of Rhode Island; Appointed 2020.

KYLE WILLETTE, Company Officer, Appointed 2018.

DANA H. WILLIS, Marine Operations Manager; Master, Steam or Motor Vessels, 100 tons, Inland Waters; Master of Towing Vessels upon Inland Waters; Appointed 2001.

JEFFREY S. WILLMANN, Associate Professor of Mathematics; B.S., Tufts University; M.Ed., University of Maine; Appointed 1991.

PAUL A. WLODKOWSKI, Chair, Engineering Department; Professor of Engineering; A.B., Dartmouth College; M.S., University of Virginia; Ph.D., University of Maryland; Appointed 2002. Sabbatical Fall 2019.

F. MICHAEL YOUNG, Professor of Engineering; B.S., Maine Maritime Academy; Chief Engineer of Steam, Motor or Gas Turbine Vessels, Unlimited; Appointed 2015.

NATHANIEL ZMEK, User Support Technician, and Adjunct Faculty in Arts & Sciences; B.S., M.S., Maine Maritime Academy; Appointed 2017.

EMERITI FACULTY AND ADMINISTRATION

HAROLD C. ALEXANDER, Professor of Engineering Emeritus; B.S., M.S., Nova Scotia Technical College; Ph.D., Texas A & M University; Registered Professional Engineer; Appointed 1991.

RICHARD S. BABCOCK, Professor of Marine Transportation Emeritus; B.A., Western Michigan University; M.S., Maine Maritime Academy; Master, 100 tons; Appointed 1988.

JOHN BARLOW, V.P. for Academic Affairs and Academic Dean Emeritus; Professor of Ocean Studies Emeritus; B.S., University of Rhode Island; Ph.D., University of Maine; Appointed 1970.

EDGAR J. BIGGIE, JR., Associate Professor of Physical Education Emeritus; B.S., Ithaca College; M.Ed., University of Maine; Appointed 1968.

DONALD P. ELEY, Professor of Marine Transportation Emeritus; B.A., Humboldt State University; M.S., Maine Maritime Academy; Master, Steam, Motor, or Auxiliary Sail Vessels, 200 tons; Appointed 1993.

VERGE FORBES, Academic Dean Emeritus; B.S., University of Maine; M.Ed., D.P.E., Springfield College; Appointed 1963.

DONNA G. FRICKE, Professor of Humanities and Communications Emerita; B.A., Gettysburg College; M.A., Ph.D., The Pennsylvania State University; Appointed 1980.

ROBERT T. GIFFIN, Assistant Professor of Mechanical Arts Emeritus; B.S., University of Southern Maine; Appointed 1978.

KAVEH HAGHKERDAR, Professor of Engineering, Automation and Control Emeritus; B.S., M.S., Maine Maritime Academy; State of Maine First Class Stationary Engineer; Chief Engineer, Motor or Gas Turbine Vessels, Unlimited; First Assistant Engineer, Steam Vessels, Unlimited; Appointed 1983.

CAROLINE A. HERRICK, Associate Professor of Engineering Emerita; B.S., Massachusetts Institute of Technology; M.S., University of Southampton, England; Appointed 1981.

GROVES E. HERRICK, Professor of Engineering Emeritus; B.S., M.S., Massachusetts Institute of Technology; M.S. University of London; Ph.D., University of Southampton, England; D.I.C. Imperial College, London; Registered Professional Engineer; Appointed 1974.

G. ALBERT HIGGINS, JR., Academic Dean Emeritus; B.A., University of California at Los Angeles; M.A.L.S., Wesleyan University; M.N.S. Worcester Polytechnic Institute; Appointed 1983.

SARAH F. HUDSON, Associate Professor of Ship's Medicine Emerita; B.A., Colby College; State of Maine Licensed Advanced EMT, EMS Instructor Coordinator, Radiologic Technologist; Appointed 1989.

DANIEL J. JONES, Dean of Student Services/Enrollment Management Emeritus; B.S., Marietta College; Appointed 1986.

RICHARD W. KIMBALL, Professor of Engineering Emeritus; B.S.M.E., University of Maine; M.S., Massachusetts Institute of Technology; Ph.D., Massachusetts Institute of Technology; Appointed 2004.

SHASHI N. KUMAR, Associate Dean of the Loeb-Sullivan School of International Business and Logistics and Professor Emeritus of International Business and Logistics; M.S., Maine

Maritime Academy; Ph.D., University of Wales; Master Mariner, United Kingdom; Appointed 1987.

MARK S. LIBBY, Professor of Engineering Emeritus; B.S., M.S., Maine Maritime Academy; State of Maine First Class Stationary Engineer; Chief Engineer, Steam, Motor, or Gas Turbine Vessels, Unlimited; Appointed 1997.

ELAINE S. POTOKER, Professor of Business Emerita; B.A., State University of New York; M.A.T., University of Chicago; Ph.D., Ohio State University; Appointed 1997.

MICHAEL SCHAAB, Associate Professor of Physics Emeritus; B.S., Iona College; M.A., State University of New York; Appointed 2002.

DONALD SMALL, Professor of Engineering Emeritus; B.S., M.S., University of Maine; Registered Professional Engineer; Appointed 1968.

CHARLES B. WEEKS, JR., Professor of Marine Transportation and Nautical Science Emeritus; B.S., M.S., Maine Maritime Academy; Master, Steam or Motor Vessels, Unlimited; Appointed 1972.

* Appointment dates listed reflect permanent faculty status.

Visit MMA

Our 35-acre campus is located on a hillside overlooking majestic Penobscot Bay. The picturesque town of Castine, the home of Maine Maritime Academy, is rich in history, culture, natural beauty, and maritime tradition.

Our map and directions will help you plot your trip down the winding road to Castine. The village's main street has a bakery, bank, bookstore, general store, art galleries and two inns to welcome travelers. The summer season is busy with fairs and festivals, dining and shopping at the waterfront, golf, sailing, kayaking, and other pursuits.

The campus is 40 miles from Bangor, Maine's third largest city, and close to Acadia National Park, Baxter State Park, the Appalachian Trail, and other attractions. Please see the Castine Area page for resources to plan your visit.

Prospective students: if you're planning a visit to Maine Maritime Academy, you have several options for when and how you spend your time on campus. Learn more by visiting our admissions department.

For groups interested in hosting events on campus, please visit the Conferences section of this website for information on facilities and dining options.

Tobacco-Free Notice: For the health and wellbeing of our community, the Maine Maritime Academy campus and vessels (ashore and afloat) are smoke- and tobacco-free.

- Smoke and Tobacco Free Campus Policy (effective August 1, 2016)

Map & Directions

Maine Maritime Academy is located in the village of Castine, a picturesque town that overlooks the harbor and nearby islands on the Maine coast. Driving here by car takes approximately one hour from Bangor and Belfast, and 40 minutes from Ellsworth (see more mileage information for key cities below).

Directions

From the East (coastal)
Take Route 1 South through Ellsworth
About 18 miles south of downtown Ellsworth, turn left on Route 166
After 8 miles, continue on Route 166 until stop sign
Take a right and follow 166 into Castine
The Admissions Office is located in Leavitt Hall, the brick building directly after Pleasant Street, on the left

From the East (via Route 9)
Take Route 9 to Route 46, Eddington, 77 miles
Follow Route 46, across Route 1A, to Bucksport, 19 miles
Take left on Route 1 North/Route 3 for 1/2(half) mile
Turn right on Route 166
After 8 miles, continue on Route 166 until stop sign
Take a right and follow 166 into Castine
The Admissions Office is located in Leavitt Hall, the brick building directly after Pleasant Street, on the left

From the North
Take Interstate 95 to Bangor, Exit 182A (Old Exit 45), I-395
Take I-395 to Exit 4, Route 15 South to Bucksport
Follow Route 15 South to Bucksport, 18 miles, which merges with Route 1 North/Route3
One mile past Bucksport McDonald's, turn right on Route 166
After 8 miles, continue on Route 166 until stop sign
Take a right and follow 166 into Castine
The Admissions Office is located in Leavitt Hall, the brick building directly after Pleasant Street, on the left

From the South and West (2 options)
Option #1** – Take Interstate 95 to Exit 113 in Augusta
Follow signs to Route 3, Belfast
Follow Route 3 East to Belfast, 43 miles. Route 3 merges with Route 1 North
Continue on Route 1 North/Route 3 to Bucksport , 18 miles
One mile past Bucksport McDonald's, turn right on Route 166
After 8 miles, continue on Route 166 until stop sign
Take a right and follow 166 into Castine
The Admissions Office is located in Leavitt Hall, the brick building directly after Pleasant Street, on the left

-OR-

Option #2 – Take Interstate 95 to Bangor, Exit 182A (Old Exit 45), I-395
Take I-395 to Exit 4, then Route 15 South to Bucksport
Follow Route 15 South to Bucksport, 18 miles, which merges with Route 1 North/Route3
One mile past Bucksport McDonald's, turn right on Route 166
After 8 miles, continue on Route 166 until stop sign
Take a right and follow 166 into Castine
The Admissions Office is located in Leavitt Hall, the brick building directly after Pleasant Street, on the left

NOTE: Option #2 has more interstate highway driving but is 35 miles longer than Option #1.

Approximate Mileage to Castine from Key Cities

Augusta——— 80**
Bangor———- 40
Belfast——— 35
Boston——— 240**
Bucksport—— 15
Calais———- 115
Ellsworth——- 30
Freeport———120**
Houlton——— 160
Kittery——— 180**
Portland——- 135**

** – via Option #1

MAINE MARITIME ACADEMY
ACADEMIC CALENDAR
2020-2021
(subject to change)

19-20	August	First Year Regimental Students Report for RPT
24	August	Begin Add/Drop Period
26-31	August	Student arrival and check-in times will be staggered over several days
28	August	Faculty Orientation/Welcome remote
31	August	Commence Fall Semester Classes & Convocation for First-Year Students
4	September	End Add/Drop Period
18	September	1st Half Semester Course Withdrawal Deadline
9	October	Freshman & PFD Student Mid-Semester Grades Published
		1st Half Semester Courses End
12	October	2nd Half Semester Courses Begin
		Indigenous Peoples' Day – Full class schedule
16	October	Full Semester Course Withdrawal Deadline/Change of Major Deadline
30	October	2nd Half Semester Course Withdrawal Deadline
1-11	November	Registration for Spring 2021 Courses
11	November	Veterans Day – Full class schedule
16-20	November	Registration for Summer 2021 Courses
20	November	Undergraduate Courses End
21-24	November	Final Exams
25	November	Final Exam make-up
26	November	Thanksgiving – Winter break begins
18	December	Graduate Courses End
4	January	Begin Add/Drop Period
8	January	Faculty Workshop
11	January	First Day of Classes
15	January	End Add/Drop Period
29	January	1st Half Semester Course Withdrawal Deadline
30	January	Saturday Make-up Day
19	February	Freshman & PFD Student Mid-Semester Grades Published
		1st Half Semester Courses End
20	February	Saturday Make-up Day
22	February	2nd Half Semester Courses Begin
26	February	Full Semester Course Withdrawal Deadline/Change of Major Deadline
12	March	2nd Half Semester Course Withdrawal Deadline
13	March	Saturday Make-up Day
14-26	March	Registration for Fall 2021 Courses
2	April	Last Day of Classes
5-8	April	Final Exams
9	April	Final Exam make-up
10	April	TSSOM Cruise I Begins
16	May	TSSOM Cruise I Ends
17-21	May	USCG Exams
22	May	Commencement