Massachusetts Maritime Academy

Massachusetts Maritime 2025-2026 Catalog

Institutional Information

Accreditation

The Academy is a state university, one of twenty-nine public colleges and universities supported by the Commonwealth of Massachusetts.

Regionally, Massachusetts Maritime Academy is accredited by the New England Commission of Higher Education (NECHE).

Accreditation of an institution of higher education by the New England Commission of Higher Education indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer review process. An accredited college or university is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Commission of Higher Education is not partial but applies to the institution as a whole. As such, it is not a guarantee of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution. Inquiries regarding the accreditation status by the New England Commission of Higher Education should be directed to the administrative staff of the institution. Individuals may also contact:

New England Commission of Higher Education
3 Burlington Woods Drive, Burlington, MA 01803-4514
(781) 425-7785 E-Mail: info@neche.org

The Academy receives additional support from the United States Department of Transportation's Maritime Administration (MARAD)and the Department of the Navy, which provide legal authorization and support for its maritime programs. The Code of Federal Regulations (46 CFR Part 310) identifies Massachusetts Maritime Academy as one of the six state maritime colleges approved by MARAD to prepare graduates for federal license examination as third mate, ocean vessels, unlimited tons, or third assistant engineer, steam, gas turbine, and motor, unlimited horsepower.

The Academy is federally recognized by MARAD in accordance with curriculum standards as directed by

Section 1304(f)(1)(B) of the Maritime Education and Training Act of 1980 (Public Law 96-453). The Academy is subject to review every five years by the USCG/MARAD.

The Academy's bachelor of science degree program in International Maritime Business is accredited by the International Accreditation Council for Business Education (IACBE), http://www.iacbe.org.

The Energy Systems Engineering bachelor degree program at Massachusetts Maritime Academy is accredited by the Accreditation Board for Engineering and Technology (ABET), http://www.abet.org.

Mission Statement

Mission Statement

The mission of the Massachusetts Maritime Academy is to provide a quality education for graduates serving in the merchant marine, the military services, and those who serve the interests of the Commonwealth, Nation and global marketplace. The Academy does so by combining a rigorous academic program with a regimented lifestyle that instills honor, responsibility, discipline, and leadership.

Institutional Information

Policy on Open Educational Resources

Policy on Open Educational Resources

The Massachusetts Maritime Academy (MMA) community recognizes the need for the adoption, use, and development of Open Educational Resources (OER) at MMA. OER use by our faculty is an effective means of adhering to MMA's mission to provide a quality education and maintain rigorous academic standards. Further, OER can enhance teaching efficiency and effectiveness through the ability to focus, analyze, augment, and evolve course materials. Likewise, OER often improve student retention and educational equity through affordability and increased access. We encourage their inclusion, adoption, and development across all areas of MMA's curricula.

Institutional Information

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Board of Trustees

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Institutional Information

FERPA

Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

FERPA gives parents certain rights with respect to their children's education records. **These rights transfer to the student when they reach the age of 18 or attends a school beyond the high school level**. Students to whom the rights have transferred are "eligible students."

Eligible students have the right to inspect and review the student's education records maintained by the school. Schools are not required to provide copies of records unless, for reasons such as great distance, it is impossible for eligible students to review the records. Schools may charge a fee for copies.

Eligible students have the right to request that a school correct records which they believe to be inaccurate or misleading. If the school decides not to amend the record, the eligible student then has the right to a formal hearing. After the hearing, if the school still decides not to amend the record, the eligible student has the right to place a statement with the record setting forth his or her view about the contested information.

MMA must have written permission from the eligible student in order to release any information from a student's education record, even to the student's parents. However, FERPA allows schools to disclose those records, without consent, to the following parties or under the following conditions (34 CFR § 99.31):

School officials with legitimate educational interest; Other schools to which a student is transferring; Specified officials for audit or evaluation purposes; Appropriate parties in connection with financial aid to a student; Organizations conducting certain studies for or on behalf of the school; Accrediting organizations; To comply with a judicial order or lawfully issued subpoena; Appropriate officials in cases of health and safety emergencies; and State and local authorities, within a juvenile justice system, pursuant to specific State law.

Schools may disclose, without consent, "directory" information," which MMA defines as follows: student's name, hometown and state, major field of study, dates of attendance, degrees and awards, licenses and certificates, participation in officially recognized sports and activities, weight and height of athletic team members, most recent previous school attended, and a photograph. However, schools must tell eligible students about directory information and allow students a reasonable amount of time to request that the school not disclose directory information about them. Schools must notify eligible students annually of their rights under FERPA. The actual means of notification (special letter, inclusion in a PTA bulletin, student handbook, or newspaper article) is left to the discretion of each school.

History

History

From modest beginnings as a Boston-based floating maritime trade school aboard a borrowed U.S. Navy ship, to today's state-of-the-art campus at Taylor's Point with a purpose-built training ship, Massachusetts Maritime Academy (MMA) has forged an impressive record of service, progress, and achievement. It holds the distinction of being the longest continuously operating maritime academy in North America.

Founded as the Massachusetts Nautical Training School in 1891 to train deck and engineering officers for America's rapidly growing mercantile fleet, the Academy has retained its core mission and identity while successfully adapting to 21st century educational needs. From the original cohort of 40 male cadets studying two majors, MMA has evolved into a fully accredited college with a diverse and international student body and now offers Bachelor of Science degrees in seven programs and Master of Science degrees in three disciplines. Graduates of the Academy's two oldest majors, Marine Transportation and Marine Engineering, receive their professional US Coast Guard Merchant Mariner License as a Third Mate or Third Assistant Engineer along with their Bachelor of Science degree.

When entering its second century, the Academy broadened its academic offerings with the launch of a new Facilities Engineering program, followed by the introduction of the Marine Safety, Science and Environmental Protection major, designed for students interested in issues of marine biology and safety related to the maritime realm. The next two decades featured the inception of three additional majors: International Maritime Business in 2000, Emergency Management in 2005, and Energy Systems Engineering in 2012. These years of growth also saw the conferral of the Academy's inaugural Master of Science in Facilities Management and Master of Science in Emergency Management degrees. Most recently, a Master of Science in Maritime Business Management degree was instituted in 2020.

To meet the demands of its unique educational mission, the Academy has continued to focus on upgrades to the campus and its facilities, both onshore and afloat. The recently completed Maritime Conference Center has already hosted two large events: the 12th annual "Women on the Water" Conference and the International Association of Maritime Universities (IAMU) Annual 2024 General Assembly last October. Events like these offer cadets, faculty, and industry professionals, opportunities to connect on current maritime issues and develop their professional networks. In addition to accommodating significant gatherings, the conference center's meeting spaces, hospitality facilities and presentation capabilities provide the Academy with needed flexibility throughout the academic year.

Coinciding with the IAMU conference, the Academy accepted delivery in October 2024 of its first-ever purpose-built training vessel, Patriot State II. Sponsored by U.S. Maritime Administration (MARAD), this National Security Multimission Vessel completed its maiden voyage during the Winter Sea Term, providing Marine Transportation and Marine Engineering majors an advanced learning platform for navigation and engineering training.

Back ashore, MMA broke ground on a new $61 million Science and Technology building, which will open in Fall 2026. The new building will contain classrooms and lab space for Facilities Engineering, Energy Systems Engineering and Science and Mathematics.

Finally, the Academy is proud to be the home of the historic sailing vessel, SSV Ernestina-Morrissey, a gaff-rigged schooner launched from Essex, MA in 1894. After a working career of over a century in many different roles – as a Grand Banks fisherman, Arctic explorer, WWII survey and supply vessel, and finally carrying passengers from

Cape Verde to the U.S. - Ernestina-Morrissey recently completed an exhaustive eight-year restoration. At the Academy she is now used for undergraduate sail-training and leadership training for cadets, STEM programming, and community outreach and awareness.

Massachusetts Maritime Academy is committed to providing an educational program of the highest quality, underpinned by a robust Regimental system that fosters discipline, knowledge, and leadership. Collectively, these elements contribute to the success of our graduates in various industries worldwide. US News and World Report and Money Magazine have consistently ranked Massachusetts Maritime Academy as a “best return-on-investment” placing the school among the top 35, top 1% of colleges in the United States. Our Learn, Do, Lead philosophy has earned the Academy Money Magazine designation of “a most transformative college” and it is the only Maritime University to be ranked 5 stars. Today’s Academy enrolls over 1,500 students, making it the largest uniformed maritime academy in America. As ever since its founding, MMA remains…“full speed ahead!”

Institutional Information

Notice

NOTICE

The rules, regulations, policies, fees and other charges, courses of study, and academic requirements that appear in this catalog were in effect at the time of its publication. This catalog is published for informational purposes only and does not constitute a contract between the Academy and any student, applicant for admission, or other person. The Academy reserves the right to introduce, change, or eliminate rules, regulations, policies, fees and other charges, courses of study, and academic requirements. The Academy will give as much advance notice as it considers feasible or appropriate, but it reserves the right in all cases to do so without notice. It is the policy of Massachusetts Maritime Academy not to discriminate on the basis of race, creed, religion, color, gender, sexual orientation, age, disability, veteran status, marital status or national origin in its admissions, employment, and other activities. Massachusetts Maritime Academy policies can be accessed at the Consumer Information webpage.

This catalog was published in September 2025.

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

Admissions

Requirements

To be considered for admission to Massachusetts Maritime Academy, candidates must be capable of college-level study and have successfully completed high school courses in the following six subject areas.

Mathematics: Four courses in mathematics, (Algebra I, Algebra II, and Geometry and Precalculus/ Trigonometry, strongly recommended), including mathematics taken during the final year of high school.

English: Four courses in English, including grammar, composition, writing skills, and literature.

Foreign Language: Two sequential, one-year courses in either a classical or modern foreign language.

Social Science: Two courses in social science, including one in United States history.

Science : Three courses from natural science and/or physical science and/or technology/ engineering, including three courses with laboratory work. Technology/engineering courses must be designated as science courses (taken for science credit) by the high school; chemistry and physics are strongly recommended.

Elective Courses: At least two other elective courses from the above subjects or from the Arts and Humanities or Computer Science.

Admissions Committee

The Office of Admissions begins to review applications in early fall. November 1 is the early action deadline. Students who submit their application and all supporting documents on or prior to November 1 will be notified of a decision before the end of December. At that time, students will either be accepted or moved to rolling admission. Rolling admission review (accept, deny, or wait list) will begin on a regular basis at the conclusion of early action review when practicable, and no later than December 15, until the class is filled.

Licensed Track majors: Applicants applying for **Marine Engineering and Marine Transportation** must submit their application by December 15 for consideration due to space limitations for these highly competitive majors.

Admission to the Academy is based upon a complete evaluation of a candidate's academic record, testing information (including optional SAT or ACT scores), letter of recommendation, extracurricular and community activities, and leadership potential. A personal interview is recommended but not required as part of the admission process. All information regarding interviews, tours, and admission to the Academy, including details of all requirements and application forms, may be obtained by visiting the MMA website or calling the Office of Admissions at (800) 544-3411.

Physical Examination

Participation in the Regiment of Cadets is physically and mentally demanding. Enrollment in some programs is therefore contingent on the applicant being physically and mentally qualified. In general, illnesses or physical problems that would render the applicant unable to perform the regular duties of an officer of a ship at sea as determined by USCG standards disqualify students from the Marine Transportation or Marine Engineering major. Any questions regarding potential eligibility for USCG licensure based on a physical or mental condition may be discussed with Health Services by calling (508) 830-5048 or by emailing healthservices@maritime.edu . Accepted candidates are required to complete a physical examination by a physician of their choice and at their own expense. They must submit proof of compliance with the vaccination requirements of the Academy. Massachusetts Maritime Academy is a drug-free and smoke-free campus. Upon entry, all cadets are subject to random chemical screening. Candidates interested in serving as commissioned officers in the United States uniformed services are subject to certain minimum physical requirements. Additionally, candidates wishing to serve as officers in the United States Merchant Marine are subject to certain minimum physical requirements prescribed by the United States Coast Guard for licensing eligibility. U.S. Coast Guard regulations concerning the original licensing of Merchant Marine Officers require applicants to meet specific vision requirements. Deck officers must have vision correctable to at least 20/40 in one eye and be able to pass a U.S. Coast Guard approved color vision test. Engineering officers must have vision correctable to at least 20/50 in one eye and be able to distinguish red, green, blue, and yellow as determined by a medical professional. Uncorrected vision of greater than 20/200 may be subjected to the U.S.

Coast Guard waiver process. Inadequate color perception will disqualify an applicant for licensure. Students in U.S. Coast Guard license-track programs (Marine Transportation or Marine Engineering) must satisfy U.S. Merchant Marine medical requirements (719K)within nine months of beginning the program.

Students with Disabilities

Massachusetts Maritime Academy is committed to providing reasonable accommodations for students with documented disabilities. The Academic Accommodations Coordinator works with the faculty and campus departments to provide support for students with disabilities in compliance with the mandates of Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the ADA Amendments Act of 2009. At the post-secondary school level, a student must disclose their learning differences in order to receive reasonable academic accommodations. A student must submit documentation to Academic Accessibility Services (ADAcompliance@maritime.edu) from a qualified professional stating the nature of the disability and its impact on the student's learning in the college environment. This evaluation documentation must have been completed within three years of enrollment at MMA and must include recommendations from the evaluator that address the specific learning disability. An individualized education plan (I.E.P.) or 504 plan without underlying assessment documentation is not acceptable. The required documentation criteria are also available for download on the MMA web site. Once documentation is received and reviewed by the Academic Accommodations Coordinator, a support services plan is developed with the student. Depending upon the nature of the disability, students may be eligible for one or more of the allowing accommodations, among others:

- extended time for quizzes and tests (not to exceed time and one-half),
- preferential seating,
- reduced-distraction room for testing,
- priority registration,
- word processor use,
- use of tape recorder for lectures,
- textbooks on electronic media.

Reasonable accommodations will be arranged for a student, provided the accommodations do not substantially alter the fundamental nature of the academic class or program.

Academic Accessibility Services, part of the Academic Resource Center, is located on the third floor of the ABSIC Building. For questions or concerns about documentation guidelines or the accommodation process, please visit the Academic Accessibility Services link on our website or call the Academic Accommodations Coordinator at (508) 830-5350 or by email at: **ADAcompliance@maritime.edu**.

Priority enrollment is given to Veterans of the U.S. Armed Forces who meet the admissions standards.

Admissions

International Students

International Students

The Academy encourages applicants from all over the world to join the growing number of international cadets who have chosen to study within Massachusetts Maritime Academy's unique higher education setting. At the Academy, international students are not only immersed in American culture, but they also experience the distinctive

discipline, knowledge, and leadership taught by the Regiment of Cadets. Although the application requirements for international students are similar to those of traditional students, there are important differences that an international applicant must consider, including the following:

- Students who previously attended another higher education institution after secondary school--either in the United States or abroad--must comply with transfer student requirements and meet requirements specific to international students.
- The Acadmey does not offer financial aid to incoming international students, but they may qualify for merit-based scholarships. In subsequent years, they may apply for additional Academy funded scholarships.
- During the admission process, international students are required to submit an F1 Affidavit of Financial Support, along with supporting documentation demonstrating that they are able to fund their four years of study through a combination of their own funds and/or any other source of financial assistance.
- International students maybe required to submit TOEFL, IELTS, or Duolingo scores and SAT or ACT scores as part of their application packet. All other English proficiency exams may be reviewed on an individual basis. These scores may be waived if the student has proper documentation to substitute for the aforementioned requirements.
- Prospective international students may submit application documents (e.g., diplomas, transcripts, immunization records, etc.), translated and evaluated by a third-party provider, electronically. If documents must be sent as hard copies, students are strongly encouraged to do so well in advance of application deadlines.
- Admission standards are identical for all applicants, regardless of citizenship, and all applications are evaluated based upon the same admissions criteria.

Admissions

Transfer Admissions

Transfer Admissions

The Academy honors the Department of Higher Education's Commonwealth Commitment Compact for the following undergraduate programs: Emergency Management, Energy Systems Engineering, Facilities Engineering, International Maritime Business, and Marine Science, Safety and Environmental Protection. Admission applications from students wishing to transfer to the Academy from accredited institutions of higher education will be given full consideration. Transfer credit will be evaluated by the Registrar. The amount of credit awarded will be on a course-by-course basis depending on applicability to the Academy curriculum. Students considering a transfer to the Academy should obtain information on the process from the Transfer Applicants webpage. The Academy maintains a transfer course policy that includes but is not limited to the following criteria:

1. The transferred course must be offered at an accredited institution;

2. Transfer credit(s) are reviewed by the Registrar's Office and granted or denied with the advice and consent of the respective chairperson of the academic department in which the course is offered at the Academy;

3. A minimum grade of “C” (2.0 or higher) must be obtained in the course for it to be deemed successfully completed. A grade of “P” or its equivalent received during the Spring 2020 semester will also be deemed to be successfully completed. The grade received for the course transferred will not be included in calculating the student’s CGPA and will not appear on the transcript;

4. An official transcript showing completion of the course must be sent to the Office of Admissions as soon as possible. Credit for the course will not be awarded until after the official transcript is received;

5. Students transferring into the Regiment in spring semester must meet the Massachusetts Department of Higher Education transfer guidelines. They are also required to participate in freshman orientation.

6. Students intending to major in Marine Transportation or Marine Engineering must anticipate spending at least three full years at the Academy, regardless of the number of transfer credits accepted, in order to fulfill the course and license requirements of the degree/ license programs. Students in these programs must fulfill federal and international regulations, including the Merchant Marine Training and Education Act of 1980; the United States Coast Guard regulations for obtaining a Merchant Marine Officer’s license; the Maritime Administration’s regulations for State Maritime Academies found in Title 46 of the Code of Federal Regulations; and the Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) promulgated by the International Maritime Organization (IMO).

Admissions

Tuition Policy

Tuition Policy

All Massachusetts residents will be subject to in-state tuition. All New England (Connecticut, Maine, New Hampshire, Rhode Island, and Vermont) residents will be subject to New England regional tuition. Residents of all other states and international students will be subject to out-of-state-tuition. Students who have a break in enrollment at the Academy will be subject to the tuition rates in place at the time of re-admission. Out-of-state veterans and their dependents who will be receiving federal benefits while attending the Academy will be charged the in-state tuition rate.

Residency

An initial determination of a student’s state of residency is made by the Office of Admissions at the time of application. Requests to change a student’s state of residency are carefully considered on a case-by- case basis and must be made in accordance with Academy policy. Residency decisions will be based on the student’s dependency status as defined by the Free Application for State Aid (FAFSA). If the student is under the age of 24, residency is based on the parent’s legal state of residence.

Residency Policy Regulations Governing the Classification of Students for Tuition and Fee Purposes for Military/Veterans/ National Guard

Active members of the Armed Forces of the United States, including their spouses and dependent children, who are stationed in Massachusetts in connection with military service, are eligible for Massachusetts residency status immediately upon being assigned to Massachusetts. Eligibility* will continue as long as the student maintains

continuous enrollment. Veterans and their dependents who are receiving educational benefits through the GI Bill® are eligible for Massachusetts Residency for tuition and fee purposes immediately upon proof of veteran benefit eligibility for the student with a Certificate of Eligibility from the VA.

*Eligibility to be defined under the current GI Bill®.

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

Financial Information

Fees

Massachusetts Maritime Academy reserves the right to adjust the charges at any time before the charges are incurred by the student. Unless otherwise specified, all charges are annual.

General Charges

Application for admission (non-refundable)

Application	$ 50
Enrollment Deposit	$ 400
Books and supplies (estimated)	$1,500

RESIDENCY	TUITION AND FEES	ROOM AND BOARD	ANNUAL TOTAL
In State*	$11,801	$15,364	$27,165
New England Regional (CT, ME, NH, RI, VT)	$17,847	$15,364	$33,211
Out-of-State & International	$24,471	$15,364	$39,835

Additional Fees (to be added to above costs)

Orientation (first year only)	$1,915
Program Fees (Facilities Engineering & Energy Systems Engineering)	$1,442
Program Fees (Marine Engineering & Marine Transportation)	$2,034
Seabag (first year only)	$2,775
Health Insurance (if not covered by outside plan and waived online; estimate)	$4,721

Summer and Winter Fees

Continuing Education Courses (winter/summer)	$350/credit
Training Cruise (Facilities Engineering, Marine Engineering, & Marine Transportation)	$5,691
Training Cruise (Non-matriculated, visiting students)	$10,225
Experiential Learning (Emergency Management)	$3,974
Experiential Learning (Marine Science, Safety & Environmental Protection)	$5,281
Experiential Learning (International Maritime Business during 2nd year of study)	$5,926
Experiential Learning (Energy Systems Engineering, optional)	$5,563
Commercial Shipping	$3,569
Co-op (6 credits)	$3,569
Co-op (6 credits Guatemala)	$6,850
Co-op (3 credits)	$1,785

Other Charges (Non-refundable)

The following fees are paid only by students to whom the specified conditions apply:

Late registration fee	$100
Late payment fee: 1-29 days late	$100
30 or more days late (additional fee)	$150
Returned check/payment fee	$50

*In-state tuition also applies to the following students:

- A veteran using educational assistance under either Chapter 30 (Montgomery GI Bill ® - Active Duty Program), Chapter 31 (Vocational Rehabilitation), Chapter 33 (Post-9/11 GI Bill®), or Chapter 1606 regardless of their formal state of residence.
- Anyone using transferred Post-9/11 GI Bill® benefits (38 U.S.C. § 3319), regardless of their formal state of residence.
- Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at MMA.
- Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship, regardless of their formal state of residence.

Based on the Veteran's Access, Choice, and Accountability Act of 2014, qualifying Veterans, dependents, and other eligible individuals who qualify for benefits under Chapter 31 and Chapter 33, who do not meet the standard definition of an in-state student, but who are currently living in Massachusetts, regardless of permanent residency, will be charged the in-state tuition rate.

Financial Information

Payment Policies

Payment Policies

Registration and confirmation of class assignments are not complete until financial clearance is received, indicating full payment or partial payment in accordance with the payment plan policies described below. In the event that the student fails to attend class or leaves the Academy for any reason, the student must formally withdraw through the Registrar's Office. Failure to complete this withdrawal process will result in continued obligation for tuition and other charges. No student may return after withdrawing from the Academy in good standing or graduate unless all current obligations to the Academy are paid in full.

Based on the Veterans Benefits and Transitions Act of 2018, MMA will not impose any penalty on any individual who is entitled to educational assistance under Chapter 31, Vocational Rehabilitation and Employment, or Chapter 33, Post-9/11 GI Bill ® benefits ('covered individual'). Students will be considered 'covered individuals' as soon as they submit their VA eligibility paperwork to the Office of Student Financial Services.

These covered individuals will not be assessed late fees, will not be denied access to classes, libraries, or other institutional facilities, or be required to borrow additional funds, because of the individual's inability to meet their financial obligations to the Academy due to the delayed disbursement funding from VA under Chapter 31 or 33. These students will be permitted to attend or participate in the course of education during the period beginning on the date on which the individual provides MMA a certificate of eligibility for entitlement to educational assistance under Chapter 31 or 33. A "certificate of eligibility" can also include a "Statement of Benefits" obtained from the Department of Veterans Affairs' (VA) website (e-Benefits, or a VA 28-1905 form for Chapter 31 authorization purposes) and ending on the earlier of the following dates:

The date on which payment from the VA is made to the institution; 90 days after the date the institution certified tuition and fees following the receipt of the certificate of eligibility.

Expenses not covered by the VA must be settled by the due date on the billing statement.

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

How to Pay

The Academy uses a paperless e-billing/e-refund system, which provides fast and efficient delivery of tuition bills, refunds, and online account management. The Student Finance link in the Self-Service portal is available for student account management. Students can add other individuals as additional payers who will receive their own log-in credentials and can access the student's billing information through the Parent Payment Portal found on the MMA website.

Payment for tuition and fees is due well before the start of each term. Secure payments can be made through Self Service via credit card, debit card, or automatic withdrawal from checking or savings accounts. This service is available 24/7, account updates are available in real time under the View Activity Details in Self-Service Student Finance, and participants will receive e-mail confirmation when a payment is submitted. Credit/Debit card payments are assessed a 2.95% convenience fee by the credit card processor. Non-US credit cards are assessed a 4.25% fee.

MMA accepts payment by check via mail and by check at the Office of Student Financial Services in Flanagan Hall. Checks should be made payable to Massachusetts Maritime Academy and should include the student's name and ID number. Books and supplies are purchased directly from the Academy's bookstore, operated by Follett, Inc. Accordingly, these items require a separate check or credit card payment to the bookstore. All correspondence mailed to the office should be addressed to the attention of the Office of Student Financial Services.

Course Overloads and Reduced Loads

Full-time undergraduate tuition and fees are fixed, per-semester charges and include the cost of a student's normal academic curriculum requirements for the semester. They apply to credit loads between (and inclusive of) 12 and 20. Part-time tuition and fees apply for reduced credit loads under 12, and overload tuition and fees apply for credits taken in excess of 20. The part-time tuition and fees are pro-rated and based on residency status. The overload tuition and fees are in addition to the full-time tuition and fees and billed per credit hour over 20 at the current in-state tuition and fee cost per credit (waived for approved dual majors). A breakdown of part-time costs can be found on our website.

Tuition Reimbursement

Many companies reimburse a student or employee upon successful completion of courses. In these instances, students are responsible for paying their bills by the due date on the billing statement in Self Service Student Finance. Tuition may not be left unpaid pending reimbursement by an employer.

Change of Address

Students must inform the Registrar's Office of any billing address changes and should update this information through the Self-Service portal.

Financial Information

It is the Academy's policy to withhold all diplomas, degrees, and other official recognition of work done at the Academy from students with any outstanding debts to the Academy.

Students must pay fees in full before their registration for subsequent semesters. Payments may be made by credit card, personal check, certified check, money order, or autopayment through Self-Service Student Finance.

Payment by Outside Agencies

If a student's charges are to be paid by an outside agency, a payment authorization from that agency must be received by the Office of Student Financial Services prior to the bill due date. It is the student's responsibility to ensure that all necessary information is submitted and that payment is made by the due date. This does not include outside scholarships. Outside scholarships will be credited to a student's account once the funds are received by MMA and can not be subtracted from the bill until the funds have arrived.

Waivers

Anyone eligible for course tuition or fee waivers must submit documentation to the Office of Student Financial Services. Waivers cannot be applied retroactively.

Billing Problems

Any discrepancies in a bill should be brought to the attention of the Office of Student Financial Services. In case of a billing dispute, the undisputed portion of the bill must be paid by the due date to avoid incurring late fees.

MMA Payment Plan

The Academy offers an optional payment program for those who wish to pay on a monthly basis. This program establishes a contract whereby a fixed amount is paid monthly to the Academy by ACH or credit card. The cost of books, supplies, and escrow deposits are excluded. Interest is not charged on the unpaid balance.

Financial Information

Refund Policies

Refund Policies

The MMA refund policy complies with state and federal guidelines and applies to all tuition, fees, room, and board. A copy of the refund policy is included in the Academic Standards Manual provided to each student. The refund policy is also available on the Massachusetts Maritime Academy web site.

Academy operating expenses and student charges are predetermined on an annual basis. The refund policies have been established both in recognition of the Academy's advance commitment to operating expenses and in a spirit of fairness to students who withdraw from the Academy.

Tuition

Consideration for refund of tuition and fees requires written notice to the Registrar's Office of the student's intention to drop a course or withdraw from the Academy. The date this notice is received by the Registrar's Office is the effective date for determining the refund amount according to the following schedule.

Maritime Academy Preparatory Seminar (MAPS)

There is no refund of MAPS fees after the first day of classes (50% refund before the end of the first day).

Orientation Fee + Seabag

There is no refund of orientation fees after arrival for orientation. There is no refund of the seabag fee after the student takes possession of their seabag.

Academic Semesters

Withdrawal prior to first day of classes: *Full refund of tuition, fees, room, and board charges*

Withdrawal during first week of classes: *80% refund of tuition and fees. No refund for room and board charges*

Withdrawal during second week of classes: *50% refund of tuition and fees. No refund for room and board charges*

Withdrawal during third week of classes: *20% refund of tuition and fees. No refund for room and board charges*

Withdrawal after the third week of classes: *No refund*

Withdrawal from the training cruise, cooperative education, commercial shipping, or experiential learning on or after the first day: *No refund*

Room and Board

In accordance with the MMA refund policy, there will be no refund of room and board charges after the start of each semester.

Other Charges

All other fees and charges are non-refundable unless specifically stated in this catalog.

Refund Payments

Refund payments of credit balances will not be made until the student's scholarships, loans, and grants are received and credited to the student's account. The refund process generally begins after the end of the drop period each semester.

Students should consult with the Office of Student Financial Services and review the Financial Aid section for information on the effect of withdrawal or change in course load on financial aid. The student must pay all charges owed at the time of withdrawal or dismissal.

Financial Information

Financial Aid

Financial Aid

In compliance with federal and state regulations, financial aid is offered to students with demonstrated need as determined by the FAFSA. To make a college education affordable, it is the Academy's policy to give students with the greatest demonstrated need the highest level of grant aid. Self help aid, such as loans and Federal work-study, is equally apportioned to all students with need as funding allows.

A student must demonstrate financial need, which is the difference between a student's educational costs and the amount that the student and their parents are expected to provide as determined by an evaluation of the family's financial information provided on the Free Application for Federal Student Aid (FAFSA).

Eligibility for federal, state, and institutional funds will be based on family financial information and formulas legislated by Congress. These calculations yield an equitable and reasonable assessment of a family's ability to contribute to educational expenses. Priority is given to those students who submit all required application materials by May 1st.

The FAFSA must be completed each year to apply for all federal, state, and institutional financial aid. This is also a requirement for the John and Abigail Adams Scholarship, the Stanley Koplick Tuition Waiver, tuition and fee waivers from the MA Department of Children and Families, and the Valedictorian Tuition Waiver.

Financial Aid Eligibility

To be eligible for federal, state, and institutional financial aid, the student must

• be a U.S. citizen or permanent resident;

• be accepted for admission to the Academy;

• be enrolled in good standing;

• maintain satisfactory academic progress;

• not be in default on any Title IV loans or owe a repayment on any Title IV grant (Pell or FSEOG).

Financial Assistance Offered by Branches of the U.S. Armed Forces

Optional military service is an entirely voluntary source of financial aid for individuals who choose to enlist or commission in one of the following branches of the United States military service: the United States Air Force, United States Army, United States Coast Guard, United States Marine Corps, United States Navy, Massachusetts National Guard, or Army ROTC, each of which may provide its own student financial assistance plan. Recruiters can provide more details on this kind of financial assistance.

The Massachusetts National Guard provides tuition and fee assistance to active members. Students interested in the tuition and fee benefit should speak directly with their Massachusetts National Guard education liaison.

Veterans (and dependents of veterans) may qualify for certain educational benefits. Interested individuals should contact the Veterans Administration or visit their web site at www.gibill.va.gov.

U.S. Army Reserve Officer Training Corps (ROTC) Financial Assistance

U.S. Army ROTC financial assistance programs include four-, three-, and two-year scholarships, depending on availability; monthly stipend awards for selected sophomore, junior, and senior cadets; and the opportunity to earn tuition/fee benefits by joining the Army National Guard or Army Reserve while in ROTC.

Scholarships

First year student scholarships are awarded by the Admissions Office in accordance with the specific criteria for each scholarship and are distributed by the Office of Student Financial Services. A separate application is not necessary. All eligible students will be considered for scholarships for which they qualify at the time of their admission and will be notified by the Admissions Office.

In September, enrolled students may apply for additional available scholarships for the winter term, and in March they can apply for scholarships for the following academic year. The application is available online during the application period, and students are notified of the application period and deadline date via email. These scholarships have varied criteria and are available to all majors, but emphasis is placed on need after completion of a Free Application for Federal Student Aid (FAFSA).

Several agencies offer privately administered scholarship opportunities through the MMA Office of Student Financial Services. Information about such opportunities is available on the Cost and Financial Services web page, under the Types of Aid link. Application dates are announced to students through email as they become available.

Financial Aid from Outside Sources

Receipt of outside funding may affect the student's financial aid offer. Students receiving scholarships or other resources from outside agencies must notify the Office of Student Financial Services. In most cases, such scholarship funds must be received by the Academy to be used as credit on the bill. If scholarship funds are given directly to the student, the student must still report the scholarship to the Office of Student Financial Services.

Financial Aid Withdrawal Process

Students who receive any financial aid, including grants, scholarships, and federal loans, are subject to the Federal Return of Title IV Funds requirement, which provides a formula to determine the amount of financial aid a withdrawn student may retain. The requirement applies to all students who withdraw from the Academy, including students who do not follow the official withdrawal process and students who are dismissed by the Academy.

The requirement remains in effect through the 60% point of the semester, after which the student is entitled to all aid awarded for the semester provided the student continued to attend classes through the 60% point. MMA applies the same formula to state and institutional scholarships when a student withdraws, whether officially or unofficially, and when a student is dismissed for any reason.

In accordance with these guidelines, the student may retain only a pro-rated portion of the financial aid awarded, regardless of whether the student qualifies for a tuition and fee refund. Based on the student's length of enrollment, MMA must return grants, scholarships, and loans to the federal, state or institutional agency that made the award. If a student completes 45% of a semester, for example, that student is eligible for only 45% of the offered financial aid for the semester. MMA will return the remaining 55% to the awarding agency or institution. In most cases, the student will end up with a balance due to the Academy.

If the student received a cash disbursement of federal aid in the form of refund, or used anticipated aid in the campus bookstore, he or she may owe a repayment to either the Academy or the federal government. A student who withdraws may owe a repayment to the Academy or to the federal or state agency providing the financial aid.

Financial Information

Satisfactory Academic Progress

Financial Aid and Satisfactory Academic Progress

In Accordance with federal and state regulations, all students who apply for federal, state, and institutional financial assistance, including student loans, parent PLUS loans and Veterans Benefits must maintain satisfactory academic progress. A large number of private, credit-based loans also require that the student maintain satisfactory academic progress. Satisfactory academic progress standards for cumulative grade point average (CGPA) and successfully completed credits since beginning at MMA are evaluated at the end of each academic year, following the close of the spring semester. After evaluation, aid applicants will be notified via email if they do not meet the standards to qualify for aid in the coming year.

Student who do not apply for financial aid at the time of review will be evaluated when a financial aid application is received.

Massachusetts Maritime Academy Policy: In accordance with applicable federal regulations, the MMA satisfactory academic progress policy requires that students meet both qualitative and quantitative standards for maintaining satisfactory academic progress for financial aid.

Qualitative Measure: Students must have a financial aid calculated cumulative grade pint average on a 4.0 basis, according to the following schedule:

ATTEMPTED CREDITS	MINIMUM CUMULATIVE GPA
0 - 12	1.50
12.01 - 36	1.80
Greater than 36	2.0

Quantitative Measure (Maintenance of Effort): The student's entire MMA academic record is reviewed, and the student must successfully complete (pass) at least 67% of all attempted credits. Attempted credits include all credits for which a passing grade, a failing grade, an incomplete grade, or a withdrawal are recorded. The majority of students who fail to meet the completion rate requirement are students who withdraw, for any reason, during a semester and those students who fail multiple courses.

Any student who does not meet these standards is not eligible for financial aid. Any aid awarded prior to the determination of unsatisfactory academic progress will be cancelled.

Students have the right to appeal the determination of unsatisfactory academic progress if extremely unusual circumstances (e.g. accident, prolonged illness, death in the immediate family) contributed to the student's failure to maintain satisfactory academic progress. Students not meeting the satisfactory academic progress standards are sent an email outlining their deficiencies, along with an appeal form. The instructions on this form must be followed when submitting an appeal.

All appeals must be submitted in writing to the Director of Student Financial Services. Appeals can be e-mailed, but are only accepted if sent from the student’s MMA e-mail address. Appeals that do not address all of the points required on the appeal form will automatically be denied.

If the appeal is granted, a written plan developed in conjunction with the Director of Student Financial Services and signed by the student must be submitted to the Office of Student Financial Services no later than one week prior to the start of the semester. The agreement must outline the student’s specific academic expectations to ensure that the student will be in compliance with the satisfactory academic progress policy by the end of the term specified in the agreement. At a minimum, the plan must include the number of credits the student will take each semester and the minimum grade point average the student must maintain each semester specified in the agreement. For some students, the agreement may be only one semester in length; for others, it may encompass multiple semesters, depending upon how close the student is to being in compliance with the policy.

Student Incentive Payment (SIP)

SIP is a Department of Transportation (DOT)/MARAD incentive payment program that is offered to Midshipmen in the Strategic Sealift Midshipman Program (SSMP). The SIP Program is governed under 46 CFR 310.7 and is a voluntary program designed to assist cadets in defraying the cost of tuition, uniforms, books, and subsistence in return for a specific service obligation by the cadet.

As an incentive to become licensed officers in the United States Merchant Marine, the U.S. Department of Transportation's (DOT) Maritime Administration (MARAD) provides a limited number of Student Incentive Payment (SIP) Program allocations to each of the six state maritime academies (SMA). Those eligible to receive SIP may be awarded Federal funding of up to $32,000 in accordance with the following payment structure:

Freshman applicants enrolled in a four-year degree program:

- Year 1: $4,000
- Year 2: $4,000
- Year 3: $12,000
- Year 4: $12,000

Sophomore applicants enrolled in a four-year degree program:

- Year 1: $4,000
- Year 2: $14,000
- Year 3: $14,000

Junior applicants enrolled in a four-year degree program:

- Year 1: $16,000
- Year 2: $16,000

Service Obligation

SIP incurs a separate service obligation to MARAD, under the Department of Transportation. The MARAD service obligation is in addition to and concurrent with the service obligation to the Navy. If you apply and are selected by a SMA to participate in the SIP Program, you must sign a Service Obligation Contract (SOC) MA Form 890, and it must be approved by MARAD. If you are under 18 years old, your parent or guardian must sign your contract also. When you reach 18 years old, you will sign the SOC again without a parent or guardian's signature.

Note: All SIP related requests and inquiries should be routed through the MMA SIP Coordinator.

Student Life

Student Services provides a full range of activities and support services to assist each student in developing his or her full potential.

Student Services Division personnel strive to maintain a cultural, social, and spiritual environment at the Academy that stimulates student growth according to the “whole- person” concept.

Standards of Conduct

All students at the Academy are required to abide by the high standards of ethical behavior expected from professionals. A student administered honor code states simply that Massachusetts Maritime Academy cadets and students will not lie, cheat, or steal, nor do they tolerate these acts from others.

Personal conduct, both on campus and off campus, is governed by the regulations and standards of the Regiment of Cadets. Hazing, or any abuse of power, is a serious violation of state law and Academy regulations. It will not be tolerated.

Regiment of Cadets

The Academy seeks young men and women with developing maturity, strong academic motivation, self-discipline, and leadership potential. Providing a direct, practical leadership experience, the Regiment of Cadets is central to a student’s college experience as he or she prepares to assume a responsible leadership role at sea or ashore.

Unless they volunteer for a military commissioning program, cadets do not have a military obligation at Massachusetts Maritime Academy, and there is none after graduation.

All residential students must belong to the Regiment of Cadets, a program designed to enhance the character and abilities of each student. In choosing and being accepted by Massachusetts Maritime Academy, a student understands that he or she is enrolling in a unique and select college. The Academy provides a superb education and support structure for a cadet’s growth, and standards of conduct are necessarily high. Cadets meet a demand for academic excellence and adhere to rules and regulations designed to develop accountability, responsibility, and self-discipline. The principles of honor, personal integrity, and loyalty have traditionally characterized the professional officer. The Academy’s requirements, involving fortitude, honor, and integrity, are stringent in order to prepare the graduate for a successful professional career.

In addition to their pursuits in academic studies, cadets are trained as leaders. Within the Regiment, cadets practice leadership and management by supervising other cadets in a broad variety of activities, including the orientation of freshmen, room inspections, sea term planning, shipboard responsibilities, and competitive athletics. Cadets also apply professional knowledge and leadership while on annual sea terms on the USTS Patriot State II, while at cooperative education placements, and while undergoing training on Academy small craft.

The professional staff of Academy officers assigned to the Commandant of Cadets guide cadets in their leadership training and professional growth.

Specific rules and regulations involving student conduct may be found in the Regimental Manual, Chapter 3, sections 100-300. The Regimental Manual may be found online at https://www.maritime.edu/regiment. The appeals process, warning system, and means of improving behavior are also covered.

The Commandant of Cadets staff oversees all dorm room assignments and will restrict the age difference between roommates to no more than 10 years. Unless a cadet submits a change of gender identity request, the cadet will be assigned berthing (dorm rooms) and will use the facilities associated with the gender identification on record. A cadet may request to change the recorded gender identification at any time by presenting a request to the Office of the Commandant (after admission) or to the Admissions Department (during the application process).

Uniforms

Upon entering the Academy, all regimental students are required to purchase and maintain uniforms. Other clothing may be worn only as authorized by the Commandant of Cadets. Uniforms and equipment become the property of the student and may not be returned to the Academy.

Orientation Program

Immediately upon arrival at the Academy in mid-August, all cadet candidates receive indoctrination to the cadet way of life through a two-week orientation program. This program prepares the student to enter the Regiment equipped with the basic knowledge and skills necessary for the Academy's regimental lifestyle. Emphasis is placed on military drill, physical fitness, familiarization with the training ship and equipment, instruction in cadet watch standing, wearing and stowage of uniforms and equipment, and mental conditioning to inculcate a sense of honor and duty towards academic studies and professional training. The fast, disciplined pace of orientation is a significant transition for most cadets. The pressures involved in the program teach teamwork, discipline, and self-control, as well as time management skills and effective performance under stress. Cadets must be mentally and physically prepared to successfully complete the demanding regimen of orientation before they can enroll at the Academy.

Residential vs. Commuter Status

Residential vs. Commuter Status

The following guidelines regarding student status apply to all current and prospective students. They outline the requirements and circumstances under which a student may request commuter status.

Regimental Commuter Student Status

To be considered for enrollment as a regimental commuter, a student must petition the Commandant of Cadets in writing at least 30 days prior to the start of the semester and meet one of the following criteria:

• have successfully completed eight semesters in the Regiment, or

• qualify as a non-traditional cadet by being married and/or having children, or

• qualify through military status, such as by being a combat veteran, a disabled veteran, or a veteran who has served on active duty for a period of at least two years and who has been discharged under honorable conditions, or

• have a documented medical reason approved through MMA Health Services, or

- Be at least 24 years of age at the time of first enrolling, or

• have commuter status deemed prudent and necessary by the Commandant of Cadets.

Regimental commuters must comply with all rules and regulations as outlined in the Regimental Manual, including undergoing random drug testing selection, observing uniform and grooming standards, and participating in change of command, watch standing, and mast hearings.

Note: When applying for regimental commuter status as outlined above, adverse factors relating to discipline or academic history could disqualify a cadet.

Non-Regimental Commuter Student Status

Massachusetts Maritime Academy is not a commuter college. On rare occasions, a prospective student is allowed to apply for non-regimental commuter status or a matriculated student is allowed to apply to transfer from the Regiment of Cadets to non-regimental status, but only for the good of the Academy or for some unforeseen reason. Simply applying for non-regimental commuter status does not guarantee that the status will be granted.

Any student intending to complete a degree in a license-track program must remain in the Regiment of Cadets throughout that program.

Students with non-regimental status are not permitted to wear or graduate in the MMA uniform. Non-regimental students will not receive the Regimental Certificate.

Students wishing to leave the Regiment of Cadets shall not have any pending discipline issues, must have completed all extra-duty and/or restriction obligations, and must have fulfilled all other obligations (e.g., associated watches, shipboard maintenance). Additionally, students applying for non-regimental commuter status must be in good academic standing. If a cadet is approved to leave the Regiment of Cadets, they are not able to return to the Regiment.

To apply, current cadets must request the status change in writing at least 30 days prior to the start of the semester. Acceptance will be determined by a committee comprising the Registrar, Dean of Students, and Dean of Undergraduate Studies. or their designees.

A prospective student who intends to request non-regimental commuter status must do so at the time of application; major in any program except for Marine Engineering or Marine Transportation, and meet one of the criteria listed below:

- have a prior degree (associate's degree or higher) or a minimum of 60 transferable credits from an institution of higher education other than MMA
- be at least 24 years of age
- have prior military service (honorably discharged veteran)
- be legally married and/or have dependent children
- have a documented and valid health-related reason
- have commuter status deemed prudent and necessary by the Commandant of Cadets.

Part-Time Student Status

Part-Time Student Status

A student taking fewer than 12 credits in a semester will be designated a part-time student. A part-time student is not allowed to participate in varsity athletics and will be billed on a per-credit basis.

Student Life and Activities

Leave and Liberty Policy

Leave and Liberty Policy

Cadets receive liberty privileges proportional to their seniority, their position, and their responsibility in the regimental organization. Normally, cadets are granted liberty from Friday after classes until 1800 Sunday evening for fourth-class cadets and until 0700 on Monday for upper-class cadets. Leave is granted for weekend military reserve duty.

Cadets are not entitled to liberty when they are

(a) under conduct restriction, or

(b) a member of a duty detail for watch standing or maintenance.

Duty obligations will be assigned by the Regimental Staff, overseen by the Commandant of Cadets. Frequency will be determined by Class and Major. Requests for special liberty may be considered for:

(a) official Academy business,

(b) medical or dental consultation or treatment, or

(c) death or illness of an immediate member of the family.

(d) at the discretion of the Commandant.

Student Life and Activities

Career and Professional Services

Career and Professional Services

The Department of Career and Professional Services engages with students from their freshman year to their senior year and beyond. The department provides career preparation services, cooperative education placement, and commercial shipping placement.

Career preparation provides students with basic tools to begin the job search. The department hosts a series of workshops on such topics as resume and cover letter writing, interviewing skills, networking, and social media. The department also offers panel discussions and mock interviews with professionals in the field.

All students enrolled at the Academy participate in a unique educational process that blends classroom instruction with hands-on learning. Termed "Learn-Do-Learn", this pedagogical approach allows students to gain practical experience and on-the-job training in real-world settings. The confidence and knowledge developed during sea terms, cooperative education, and experiential learning opportunities contribute to the employment value of the Academy's graduates.

The focus of senior year is the job search. The department invites employers to campus throughout the year for two career fairs, presentations, interviews, meetings, panels and workshops in which students get to meet and interact with professionals and alumni working in the field.

The Office of Career and Professional Services continues to assist students after graduation, offering and electronic job board accessible via the Academy's home page. Traditionally, graduates find that their cooperative education placement and commercial shipping experiences enhance their employment opportunities.

Cooperative Education

The Academy's dynamic cooperative education programs function to enrich our students' practical educational experiences. Students in Facilities Engineering, Marine Science, Safety and Environmental Protection, Emergency Management, International maritime Business or Energy Systems Engineering are required to work and study within companies and organizations in fields corresponding to the majors. The cooperative education placements are designed to

- combine relevant work experience with academic studies while offering the best opportunities for personal and career development;
- develop a broader, more practical knowledge based on both academic and professional environments;
- improve confidence in career choices and aspirations;
- enrich both industry and the Academy education programs through an ongoing exchange of people and ideas, providing direct input from participating employers on the quality of student preparedness and curricula development;
- provide students with an opportunity to begin developing a network of professional contacts.

Cooperative education placements are available during Winter and Summer sessions. Employers provide outcome assessments on the students and the study programs. Eligibility standards exist for participation, and students complete a comprehensive project upon returning to school. Upon successful completion, students receive 3 credit hours for their cooperative education placement.

Commercial Shipping Program

Massachusetts Maritime Academy cadets and graduates have earned the respect of the world's largest and most successful shipping companies. Our cadets who major in either Marine Transportation or Marine Engineering spend approximately two months during the junior year aboard merchant ships in locations throughout the world, working, studying, and applying newly acquired skills. These commercial shipping experiences provide confidence-building opportunities that classrooms or academic laboratories cannot duplicate. As an added benefit, these challenging assignments often lead to gainful employment at graduation. Program participation is dependent upon proper academic performance and aptitude. Students should complete all commercial shipping prerequisite courses at least one full semester prior to a commercial shipping billet. Any student enrolled in any commercial shipping prerequisite courses the semester immediately prior to a billet, and who receives a mid-term deficiency

in the prerequisite course(s) will be immediately removed from the upcoming commercial shipping billet. Students must complete comprehensive projects prepared by the appropriate academic department and receive credit for completion.

Student Life and Activities

Mariner Credentialing Department

Mariner Credentialing Department

The Mariner Credentialing Department implements policies established by the U.S. Coast Guard for Marine Transportation and Marine Engineering (license-track) students and ensures that students in both majors meet the established requirements. The department assists students with this process beginning in the freshman year with cadet credentialing and medical approval and continuing through the senior year with professional licensure. The department also provides professional training required of license-track students by the Standards for Training, Certification and Watchkeeping for Seafarers (STCW), including training in medical first aid, firefighting, survival craft and rescue boats.

Policies relating to credentialing for the Marine Transportation and Marine Engineering programs cab be accessed at the department's web page.

Student Life and Activities

The Captain Paul Cuffe Global Institute

The Captain Paul Cuffe Global Institute

The Captain Paul Cuffe Global Institute's mission is to cultivate global perspectives through transformative experiences. Through engagement of programs and initiatives, we foster global awareness on campus and beyond by bridging cultures and forging connections to support intercultural understanding.

Visit the Captain Paul Cuffe Center webpage for more information.

Global Citizenship and Intercultural Learning

The CAPT Paul Cuffe Institute promotes the development of Global Citizenship through programs and initiatives such as:

- Student Exchange Programs
- Support for faculty-led international experiential learning programs
- International Student Support
- Intercultural awareness

Overseas Program Advisory Council

Education abroad and global learning are essential to cadet learning and the internationalization of our campus community. Experiential Learning, study abroad, and international co-ops all play a vital role in promoting intercultural awareness, global sensitivity, and job-readiness in a 21st century global workplace.

The CAPT Paul Cuffe Global Institute coordinates and co-chairs the Overseas Program Advisory Council in collaboration with Academic Affairs. The goal of the Council is to come together to discuss best practices in education abroad and international programs, while supporting the safety and effectiveness of our overseas experiences.

Student Support

The Cuffe Institute's Supportive Approaches to Learning Together (SALT) program provides comprehensive services to support student success. The program is designed to allow first-generation, Pell-eligible/recipient and/or students with learning differences to explore and engage their educational and personal goals within a learning community through receiving academic coaching and mentoring.

Women's Coalition

The function of the Women's Coalition is to promote wellness, empowerment, and networking for women on campus. This is a working group of primarily faculty and staff to discuss opportunities and further programming for the experience of women on campus. We look forward to working with student clubs, and other campus-wide programs and initiatives toward a shared mission.

Student Life and Activities

Athletics

Athletics

Varsity athletics play a major role in cadet life at the Academy. With well over one-third of students participating in at least one intercollegiate sport, the facilities on campus and the waters surrounding it are alive with activity on a daily basis.

As participants at an NCAA Division III member institution, student athletes play for the true love of the sport, succeeding both in athletic competition and academic pursuits. Though the Academy does not award athletic scholarships for its 15 varsity programs, it does provide the best competition around as a proud member of the Massachusetts State Collegiate Athletic Conference (MASCAC), Little East Conference (LEC), New England Intercollegiate Sailing Association (NEISA), and New England Interscholastic Rowing Association (NEIRA).

The Academy takes great pride in its tradition of athletic success, which includes conference and regional championships, numerous All America and Academic All-America citations, and accolades earned by cadets who have achieved all around success as scholar-athletes.

MMA Athletics supports the mission of the Academy by providing all student-athletes with an equal opportunity to enhance and develop values that foster leadership, sportsmanship, inclusion, and teamwork.

The men's varsity athletic program comprises baseball, crew, cross country, football, lacrosse, soccer, and track and field, while the women's varsity athletic program comprises crew, cross country, lacrosse, soccer, softball, track and field, and volleyball. The Academy also sponsors a co-ed varsity program in sailing.

For more information on Buccaneer Varsity Athletics, please visit https://www.mmabucs.com

Student Life and Activities

Student Clubs, Organizations, and Activities

Student Clubs, Organizations, and Activities

Students at the Academy are offered a wide variety of extracurricular activities, listed below.

Many of the clubs on campus are organized by cadet special-interest groups and obtain their charters through the Student Government Association. There are over 30 active clubs. Some of the more popular clubs appear below.

Asian Student Association: We are an inclusive organization and welcome cadets of all backgrounds. Anyone who wants to be a part of recognizing and embracing Asian culture on campus is encouraged to come!

Association of Student Engineers (ASE): The MMA ASE is affiliated with and sponsored by four professional organizations: the Association for Facilities Engineering (AFE); the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE); the Association of Energy Engineers (AEE); and the International Society for Pharmaceutical Engineering (ISPE). The ASE meets on a regular basis, coordinates guest speakers and facility tours, and introduces students to industry scholarship and networking opportunities.

Band and Chorus: The Academy's Regimental Band and Chorus is its premier musical organization. It performs music at Academy events and participates in Academy formations and ceremonies, change of command, military retirement ceremonies, and funerals at the Massachusetts National Cemetery. It also supports the Academy's mission by providing music for community events around the New England, Middle Atlantic, and Southeast Regions.

Black Student Union: The BSU is a nationwide organization that advocates the needs of students at colleges across America while empowering, teaching, discussing, and exploring the Black experience. Our mission is to strengthen connections with prospective students, current students, alumni, and all interested in supporting the Black community on campus.

Boxing Club: The boxing club trains at a local gym and attends local boxing events.

Climbing Club: Participates in climbing instruction and events at a local climbing course.

Community Service: All first-year and most upper-class cadets participate in local community services, such as blood drives, food pantries, Children of Military Families, the Department of Children and Families, Big Brother/ Big Sister, coaching in local middle schools, and mentoring disadvantaged youths.

Commuter Club: Meets monthly and is open to all students interested in supporting the increasing commuter population on campus. The mission of the Commuter Club is to advocate for commuting students who attend MMA, as well as to provide a network of support.

CrossFit Club: The CrossFit club trains at a local gym on a weekly basis.

Drill Team: The Academy's drill team is a precision drill platoon. Their primary mission is showcasing the discipline of Massachusetts Maritime Academy, both regionally and nationally, through solid routines displaying "discipline, knowledge, and leadership."

Empowered 5: Providing Networking, Mentoring, Growth & Support for all women at MMA- now & forever!

Golf Club: The Golf Club meets on a weekly basis and plays golf at a local golf course.

Hispanic Student Association: Our mission is to strengthen connections with prospective students, current students, alumni, and all interested in supporting the Hispanic community on campus. We strive to provide a more welcoming environment for those who may feel overwhelmed at the academy by providing fun events, a place to talk, and creating a stronger community within campus.

Hockey Club: Intercollegiate ACHA D3 Hockey. The club offers competitive options for players to compete against other college programs. The team plays a competitive 25-30 game schedule. Tryouts are required.

Honor Guard: The Academy's Honor Guard is a precision drill team and marching unit that performs in many regional events and parades.

International Association of Emergency Managers: The IAEM is involved in networking, résumé building, and attending emergency management conferences and events.

Intramurals: The intramural program provides an opportunity for all students to compete in a wide variety of team and individual sports. Each company of the Regiment is represented by teams and individuals in inter-company competition. This competition culminates each spring with the awarding of the Commandant's Cup Intramural Championship Trophy to the company winning the most points in the annual competition. The variety of intramural sports offered each year may vary according to student interests, but it usually consists of the following: hockey, soccer (indoor and outdoor), road racing, bicycle racing and touring, weight lifting, swimming, softball, speedball, street hockey, basketball, and volleyball.

Investment Club: This club offers cadets the opportunity to learn from investment professionals, discuss current trends and issues, and track markets. Under guidance of the faculty advisor, cadet teams gain valuable hands-on investing experience in analyzing securities. Using the resources of the Riccardi Cadet Investment Center, including access to Reuters' financial database and state-of-the-art trading wall with real-time stock tickers and information, cadet teams prepare portfolio recommendations that will be presented to an advisory board and used to invest a portion of the Academy's endowment.

Multicultural Club: The multicultural club brings together people of all cultures by hosting and participating in numerous events throughout the year and conducting festivals that celebrate culture through food, drink, and music.

North American Marine Environmental Protection Association: The NAMEPA is involved in networking and matters related to the industry.

Propeller Club, Port of MMA: The Propeller Club is chartered by the national organization of the same name. Its purpose is to introduce cadets to the nature of the maritime industry.

Rugby Club: With an exciting intercollegiate schedule and international competition during training cruises, the Rugby Club enjoys popular support from the student body.

Semper Fi Society: Established by cadets in the Marine Corps platoon leaders course.

Sexuality and Gender Alliance: Our goal as a student run board and club is to better the lives for LGBTQ+ students on campus and destigmatize the community in the maritime world.

Society of Naval Architects and Marine Engineers SNAME is a group of cadets interested in advancing naval architecture and marine engineering by hosting working groups, guest speakers, and field trips.

Student Government Association (SGA): All students belong to the SGA, which aims "to foster self-government among its members and promote student activities for the . best interests of the cadets at the Academy." The SGA officers include a President, Vice-President, Secretary, and Treasurer. Each of the four classes also elects a President, Vice-President, Secretary, and Treasurer, who organize specific class activities and serve jointly as a general assembly for the Association.

U.S. Coast Guard Auxiliary: The USCG Auxiliary meets to discuss recent events involving the Coast Guard and provides auxiliary support to the USCG on an as-needed basis.

Weekend Warriors: A group of cadets who meet to discuss and program on- and off campus weekend activities.

Wrestling Club: Holds training and matches at a local gymnasium.

Yoga Club: The yoga club conducts multiple yoga sessions each morning at both beginning and advanced levels.

Health Services

Health Services

Health Services

The Health Services medical clinic, located in Fourth Company, is a full service health center that provides evaluation and treatment of illnesses and injuries, laboratory testing, office-based procedures, United States Coast Guard and "fit for duty" physical examinations, travel vaccinations and health education to all cadets. The clinical staff includes a board certified physician and two board certified nurse practitioners. Health Services is open Monday through Friday for appointments. Health Services also provides a full range of medical care on board the Patriot State during sea term. The cadet's health insurance will be billed for services, but no co-payments or deductibles will be collected.

Counseling Services

Our on-campus counselor is a licensed mental health professional who provides supportive interventions for a range of issues related to adjustment, development, and social and emotional wellness. Services provided are individual counseling, crisis assessment, prevention programming, community referrals, and consultation to staff and faculty regarding students of concern.

Confidentiality

Professional standards of confidentiality are maintained by all staff members. By Federal and Massachusetts law, information cannot be disclosed, even to parents of cadets over the age of 18 years, without written permission from the student. Our Confidentiality Policy and more information may be found on our web site at www.maritime.edu/ health-safety.

Care and Action for Students Team (CAST)

The focus of Massachusetts Maritime Academy's Care and Action for Students Team (CAST) is the care and concern for students who may be in distress. The team's aim is to connect identified students with the resources and support needed to facilitate achievement of their personal and academic potential while at the Academy.

Family members and members of the MMA community may refer students of concern to CAST by submitting an online referral or by contacting any member of the team.

Health Insurance

Within the Commonwealth of Massachusetts, all students enrolled in institutions of higher education are required to participate in a health insurance program. The Academy sponsors an appropriate plan for those who do not have their own insurance. If a student is currently enrolled in an approved private or group insurance plan, the plan should be reviewed to ensure proper coverage. In some cases, the coverage ends when the individual reaches a certain age or does not apply when a student resides outside the home or abroad. Most insurance companies require annual verification of a student's enrollment, which can be obtained from the Registrar.

Student Life and Activities

Disability Resources

Disability Resources

Massachusetts Maritime Academy is committed to providing reasonable accommodations for students with documented disabilities. The ADA Coordinator works in collaboration with faculty and other campus departments to provide support for students with disabilities and to ensure equal access to all college programs. This coordination of efforts complies with the mandates of Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the ADA Amendments Act of 2009.

For questions or concerns about documentation, guidelines or the accommodations process, please call the ADA Coordinator at at (508) 830-5350, or visit the Academic Accessibility Services webpage.

Student Life and Activities

Campus Police

Campus Police

Although the Academy is located in a safe area less than two miles from the local police and fire stations, campus safety is a vital concern. The Official Guide to Campus Safety and Law Enforcement includes information concerning campus police and personal safety and provides advice regarding crime prevention strategies. It also details the law enforcement authority of campus police officers and includes pertinent policies concerning the reporting of crimes that may occur on campus. Also contained in the report are crime statistics for the most recent three-year period and campus disciplinary procedures. Copies of this security information report may be requested from the Campus Public Safety Department or at the public safety web page.

Parking Regulations

Parking regulations are in effect 24 hours a day, seven days a week. All vehicles parked on campus or in an MMA off-campus parking lot must have a valid, properly displayed decal or a temporary parking pass issued by MMA Campus Police. All parking decals must be permanently affixed to the vehicle to which it is registered. Student parking permits are valid only for one year.

Cadet vehicles are prohibited from parking in any staff parking area, with the exception of the Cape Cod Canal parking area outside those hours posted for staff only. Staff parking areas include the Beachmoor lot, along the Cape Cod Canal (Academy Drive during hours posted), 3rd Company Circle, the Harrington Lot, the ship's crew area, the side lot of Bresnahan Hall, Flanagan Parking lot (building side), and the Mess Deck lot.

First Class Cadet Officers (IV bars and up)

First class cadet officers are permitted to park in the following areas: Along the parade field across from Flanagan Hall, the gymnasium parking lot, the baseball field apron, Lot C on Academy Drive, the Kendall Rae lot on Perry Avenue, or the Mariners Inn (in designated areas). First Class Cadets First class cadets are permitted to park in the following areas: the gymnasium parking lot, the baseball field apron, Lot C on Academy Drive, the Kendall Rae lot on Perry Avenue, or the Mariners Inn (in designated areas).

Second Class Cadets

Second class cadets are permitted to park in the following areas: Lot C on Academy Drive or Kendall Rae on Perry Avenue.

Third Class Cadets

Third class cadets are permitted to park in the following area: Kendall Rae on Perry Avenue.

Commuter Students

Commuter students are permitted to park in the gymnasium parking lot.

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 from a private vendor of their choice.

Automated Teller Machine

There is one cash dispensing machine on campus, located in the dormitory complex.

Technology and Library Services

Library Services

Hours

The MMA Library, located on the first and second floors of the ABS Information Commons, opens at 0700, Monday through Friday. Daily, weekend, and special hours of operation can be found on the Library web page.

Collections

The library maintains an outstanding collection of print and electronic books, journals, newspapers, media and online databases. Remote access to the digital collection is available 24x7 for students and faculty. The collection contains more than 470,000 books and ebooks; over 78,000 journals, and over 45,000 streaming videos. The library is fully integrated within a library network, affording access to millions of volumes by courier and inter-library loan services. Materials required for license examinations are loaned to students for the semester. Professional staff are available to assist with research using scholarly resources and the Academy Archives.

Computing

Students can bring their personal laptops and use the wireless system or utilize computers located throughout the ABS building that are connected to the campus-wide network and Internet. Laptops and tablets are also available to students on a short-term loan basis from the IT Service Desk.

Course Support

Faculty can request library support that is tailored to their courses. Librarians are available for in-class research sessions, and the library offers dozens of subject-specific online research guides and tutorials. Faculty can also request that books or other research materials be placed on reserve for their courses; these are available for short-term borrowing by students.

Service Desk

The IT Service Desk is located at the library's circulation counter. Students, faculty, and staff are welcome to ask for IT- and library-related assistance in person, by telephone at (508-830-5308), via e-mail to servicedesk@maritime.edu, or via the online ticketing system at helpdesk.maritime.edu. The IT Service Desk offers assistance with any technology-related issues, including user accounts, access to Academy systems and computer equipment loans.

Simulation Technology

The Academy now maintains nine simulators that form an integral part of student education.

Ship Handling

The Maersk McKinney Moeller Ship's Simulation Center is a state-of-the-art navigation and full-mission simulator with a 360-degree horizontal field of view, and is only one of nine such simulators in the world. It enables trainees to be fully immersed in the virtual environment, thus increasing training realism. The simulator can be fully integrated with the Tugboat and ENL simulators, and it is highly configurable. Instructors can manipulate everything from the number of ships in the channel and the weather to the time of day and the current.

Liquid Cargo Handling

The George P. Livanos Dangerous Liquid Cargo Handling Simulator (LCHS) is designed to train and certify crew members of liquid cargo tankers, gas carriers, and terminals, and it is used to train other staff responsible for safe cargo handling and the operation of auxiliary equipment.

Electronic Navigation

The Electronic Navigation Lab (ENL) is a computer-based navigation system compliant with International Maritime Organization (IMO) regulations and can be used as an alternative to paper nautical charts. The lab consists of eight student stations, each station being itself a stand-alone full mission simulator.

Engine Room Operations

The Engine Room Operations Simulator provides our Marine Engineering students with basic to advanced training in engine room operations. The simulator provides three different ship models: a turbo-generated tanker, a medium speed diesel ferry, and a diesel electric passenger ship. Included in this simulator are teaching assessments to ensure that students meet the STCW requirements in engine room operations.

Gas Turbine Operations

Used by the Marine Engineering students, the Gas Turbine Operations Simulator is built on a Navy propulsion model. This simulator focuses on operating routines, integrated checklists, and corrective actions when faults occur.

Global Maritime Distress and Safety System

The Global Maritime Distress and Safety System Lab (GMDSS) includes all equipment required to carry out advanced exercises in all aspects of GMDSS/SAR training. The equipment is realistically emulated to simulate the various types of radio equipment most commonly used onboard ships.

Integrated Navigation

The Integrated Navigation Lab (INL) uniquely combines radar information, navigational charts, ENC safety parameters, targets, user-maps, routes, and tools for decision support, which all ensure safer navigation.

Mate of Towing Operations

The Towing Simulator is a state-of-the-art navigation and full bridge simulator dedicated to tug and towboat operations. The simulator offers a 270-degree horizontal field of view allowing the trainee to be fully immersed in realistic tug operations such as towing barges astern, pushing ahead, ship docking, escort operations, and inland waters and river towboat operations. The towing simulator allows students to complete many of the Towing Officers Maneuvering Assessments and provides 15 days of creditable sea time towards the Mate of Towing License Endorsement required by the USCG to operate as a licensed officer aboard tugs.

Emergency Management

The Clean Harbors Emergency Management Operations Training Center includes an Emergency Operations Center and Incident Command Post that can integrate and display both legacy and emergent technologies to simulate command and control in a realistic environment, facilitating development of tactical and strategic decision-making modeled after real-world scenarios.

Infrastructure Technology

Infrastructure Technology (IT) provides network and computing infrastructure that allows faculty and students access to information and services that are important for academic success. The department provides wired and wireless network services, along with desktop resources and applications, printing services, and cloud-based application suites. Working in conjunction with the IT Service Desk, IT responds to technical issues and also works to identify new and improved technologies that would benefit the campus. Students are required to bring their own computing devices to MMA. IT determines the minimum specifications for the student's personal device. These specifications can be found on the Academy web site.

There are many instructional technology resources available for students and faculty, including projection and sound systems, computers, document cameras, and DVD players. Online resources and cloud-based systems are available for learning management, training, and skills development. Tools and support for the development of online courses are also provided to the faculty.

President and Senior Staff

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Senior Staff and Faculty

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Humanities Department

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Marine Transportation Department

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School of Engineering

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Facilities Engineering Department

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Glossary of Abbreviations and Acronyms

1/C..... First-class cadet

2/C..... Second-class cadet

3/C..... Third-class cadet

4/C..... Fourth-class cadet

ABS..... American Bureau of Shipping

ACT..... American College Test

ADA..... Americans with Disabilities Act

ADM..... Admiral

APC..... Academic Policies Committee

ARPA..... Automatic Radar Plotting Aids

AUC..... All University Committee

CAD..... Computer-Aided Design

CAPT..... Captain

CC..... Curriculum Committee

CDR..... Commander

CDRE..... Commodore

CFR..... Code of Federal Regulations

CGPA..... Cumulative Grade Point Average

COLREGS..... International Regulations for the Prevention of Collisions at Sea

CZM..... Coastal Zone Management

DGCE..... Division of Graduate and Continuing Education

ECDIS..... Electronic Chart Display Information System

EM..... Emergency Management

ESE..... Energy Systems Engineering

DHE..... Massachusetts Department of Higher Education

DRO..... Disability Resource Office

ECAC..... Eastern College Athletic Conference

FAFSA..... Free Application for Federal Student Aid

FE..... Facilities Engineering

FERPA..... Family Educational Rights and Privacy Act

GEC..... Graduate Education Council

GEHU..... General Education Humanities

GESS..... General Education Social Science

GESM..... General Education Science and Mathematics

GMAT..... Graduate Management Administration Test

GMDSS..... Global Maritime Distress and Safety System

GPA..... Grade Point Average

GRE..... Graduate Record Examination

IELTS..... International English Language Testing System

IEP..... Individual Education Plan

IMB..... International Maritime Business

IMO..... International Maritime Organization

ISM..... International Ship Safety Management Code

LCDR..... Lieutenant Commander

LEED..... Leadership in Energy and Environmental Design

LT..... Lieutenant

LTJG..... Lieutenant Junior Grade

MAPS..... Maritime Academy Preparatory Seminar

MARAD..... United States Maritime Administration

MMA..... Massachusetts Maritime Academy

MMC..... Merchant Mariner's Credential

MSEM..... Master of Science in Emergency Management

MSMB..... Master of Science in Maritime Business Management

MSSEP..... Marine Science, Safety and Environmental Protection

MSFM..... Master of Science in Facilities Management

MT..... Marine Transportation

NCAA..... National Collegiate Athletic Association

NECHE..... New England Commission of Higher Education

OPA 90..... Oil Pollution Act of 1990

PIC..... Person-in-Charge

POW..... Plan of the Week

RADM..... Rear Admiral

ROP..... Reserve Officer Program

ROTC..... Reserve Officer Training Corps

SAC..... Student Affairs Committee

SAT..... Scholastic Aptitude Test

SGA..... Student Government Association

SIP..... Student Incentive Program

SOLAS..... Safety of Life at Sea

STC..... Sea Term Council

STCW..... Standards of Training, Certification and Watchkeeping for Seafarers SSO Strategic Sealift Officer

SSMP..... Strategic Sealift Midshipman Program

SSOP..... Strategic Sealift Officer Program

TOEFL..... Test of English as a Foreign Language

TWIC..... Transportation Worker Identification Credential

USCG..... United States Coast Guard

USMC..... United States Marine Corps

USN..... United States Navy

USNR..... United States Naval Reserve

USS..... United States Ship

USTS..... United States Training Ship

WPE..... Writing Proficiency Examination

Academic Calendar

2025 FALL TERM (72 INSTRUCTIONAL DAYS)			
Monday	01 September	Labor Day No Classes	
Tuesday	02 September	Faculty Orientation	
Wednesday	03 September	Commence Fall Classes	
Wednesday	10 September	Last Day to Add Courses	
Tuesday	23 September	Last Day to Drop Courses	
Monday	13 October	Columbus Day/Indigenous Peoples Day No Classes	
Wednesday	22 October	Mid-Term Deficiencies Due by End of the Day	
Tuesday	11 November	Veterans Day Observed – No Classes	
Wednesday	12 November	Last Day to Withdraw from a Course	
Tuesday	25 November	Commence Thanksgiving Break after last class	
Monday	01 December	Resume Classes	
Friday	12 December	Last Day of Classes	
Monday	15 December	Begin Final Examinations	
Thursday	18 December	Final Examinations End, End of Fall Semester	
Friday	19 December	Final Grades Due by end of day	
Tuesday	30 December	Academic Review Board Meets	

2026 WINTER SEA TERM (51 SEA DAYS)		
Monday	05 January	Winter Sea Term Begins, Sea Term alongside week
Saturday	10 January	Ship Departs
Sunday	22 February	Ship Arrives Buzzards Bay
Monday	23 February	STCW Make-up, as necessary
Tuesday	24 February	STCW Make-up, as necessary / End of Winter Sea Term at 1600
Thursday	26 February	Winter Sea Term Grades Due to End of Day
2026 DCGE WINTER TERM		
Monday	12 January	Commence Winter Classes
Monday	19 January	Martin Luther King Jr Day - No Classes
Monday	16 February	Presidents' Day - No Classes
Wednesday	18 February	End Winter Classes
Thurs-Fri	19-20 February	Winter Final Exams
Tuesday	24 February	Winter Class Grades Due by End of Day
Thursday	26 February	End of Winter Cooperative, End of Winter Term
2026 SPRING TERM (71 INSTRUCTIONAL DAYS)		
Tuesday	3 March	Faculty Orientation
Wednesday	3 March	Commence Spring Classes
Tuesday	10 March	Last Day to Add Courses
Monday	23 March	Last Day to Drop Classes
Thursday	16 April	Commence Spring Pause after Last Class
Tuesday	21 April	Resume Classes
Wednesday	22 April	Mid-Term Deficiencies due by End of Day
Monday-Thursday	11-14 May	License Examinations - **(2026 License Candidates Excused from Classes)**
Tuesday	12 May	Last Day to Withdraw from a Course

2026 WINTER SEA TERM (51 SEA DAYS)		
Wednesday	20 May	Change of Command, Classes Dismissed at 1600 and Resumed at 1800
Monday	25 May	Memorial Day- No Classes
Tuesday	26 May	**Observe Monday Academic Schedule**
Monday	8 June	Last Day of Classes
Tuesday	09 June	Begin Final Examinations
Friday	12 June	Final Examinations End, End of Spring Semester
Monday	15 June	Final Grades Due by End of Day
Saturday	20 June	Graduation, Class of 2026
Tuesday-Wednesday	23/24 June	Academic Review Board Meets (Scheduled by Department)

2026 SUMMER TERM		
Monday	29 June	Summer Term Begins, Commence Summer Classes
Friday	3 July	4th of July – No Classes
Friday	07 August	Summer Final Exams
Tuesday	11 August	Summer Class Grades Due by End of Day

Academic Program Information

Massachusetts Maritime Academy is a four-year, residential college accredited by the New England Commission of Higher Education and a member of the Massachusetts State University system. The Academy awards a Bachelor of Science degree in seven undergraduate programs and a Master of Science degree in three graduate programs.

The seven undergraduate degree programs are:

- Emergency Management
- Energy Systems Engineering
- Facilities Engineering
- International Maritime Business
- Marine Engineering with USCG License
- Marine Science, Safety and Environmental Protection
- Marine Transportation with USCG License

The three graduate degree programs are:

- Master of Science in Emergency Management
- Master of Science in Facilities Management
- Master of Science Maritime Business Management

The Academy's curricula are continually evolving in response to changes in the industries served by its programs. The Academy provides an exceptionally high level of academic support for an excellent instructional program. Course requirements and offerings are routinely evaluated and revised by departmental committees, the All University Committee, the Curriculum Committee, and the Graduate Education Council.

Academic Credit Hour Definition

In accordance with federal guidelines, Massachusetts Maritime Academy defines the credit hour to reasonably approximate the following:

- A credit hour for a class is one hour of classroom or direct faculty instruction and two hours of out-of-class student work per week over a semester;
- A credit hour for laboratories is two hours of lab time and two hours of out-of-class student work per week over a semester;
- A credit hour for an online class is one hour of direct synchronous or asynchronous instruction and two hours of out-of-class student work per week over a semester.
- A credit hour for cooperative education placements or experiential learning opportunities is a minimum of 40 contact hours, plus 5 hours of independent student project work if a project is required.

Note: in accordance with federal guidelines, MMA operates on a 50-minute hour for definition of a credit hour and defines a typical workday as eight contact hours.

Undergraduate Programs

Incoming students must declare a major as part of the admissions process. The academic year consists of two academic semesters of approximately fifteen weeks each and an intersession period during which qualified students are expected to complete one or more of the following: sea term, cooperative education placements, experiential learning opportunities, commercial shipping, or courses through continuing education.

Normally, each student is enrolled in five or six three-credit academic courses per semester. However, a student can retain full-time status by maintaining a minimum course load of twelve credit hours each academic semester. Students who do not successfully complete all of the courses designated during the appropriate semesters in the curriculum for their major must understand that such failure may affect their class designation, their expected date of graduation, their eligibility for financial aid, and their academic standing.

To carry a semester course load in excess of 19.5 credits, a student must first consult with his or her academic advisor and then obtain permission from the Dean of Undergraduate Studies or his/her designee. Note: overload tuition and fees apply for credits taken in excess of 20.0 (see Payment Policies page).

The curriculum for each major is designed to be completed in a systematic and sequential manner. Each semester, students are expected to enroll in courses appropriate to their academic standing and class designation.

Graduate Programs

Master of Science Degrees

All graduate classes are held synchronously online.

Courses meet virtually on alternating week ends on Friday evenings from 5:00 p.m.–10:00 p.m. and on Saturdays from 8:00 a.m.–6:00 p.m. The alternating weekend format provides students the opportunity to conduct research, meet with student teams, and satisfy classroom objectives for the next class meeting. The program begins with a one-day orientation. Each entering class comprises approximately 24 students, who progress through the program as a cohort.

Admission Requirements

The minimum requirements for admission to an MMA graduate program are as follows:

• candidate must possess a bachelor's degree; a minimum of two years professional work experience, though recent college graduates will be considered;

• candidate must provide two professional recommendations;

• candidate must provide official college transcripts from each college attended;

• candidate must provide a current résumé;

• candidate must provide a written statement of professional objectives, both long- and short-term, indicating how the graduate program will help the individual achieve these objectives.

For more information, contact Graduate Programs at (508) 830-5096.

Minors & Concentrations

Undergraduate Minors

A minor is a program of study of at least 18 credits outside the student's major that typically begins in the junior year with courses taken between semesters five through eight. With departmental permission, students with a 2.5 or higher cumulative grade point average (CGPA) may declare a minor. To declare a minor prior to the junior year, a student must also have completed either Calculus I or Applied Calculus.

Minor classes must be taken at the Academy. With the exception of electives or free electives for each major, a course cannot be counted twice; that is, it cannot fulfill both a requirement for the major and a requirement for the minor.

The Academy offers the following undergraduate minors:

- Energy Management Minor
- Environmental Health & Safety Minor
- Facilities Operations Minor

- Homeland Security Minor
- International Maritime Business Minor
- Marine Biology Minor
- Marine Construction Minor
- Marine Science, Safety and Environmental Protection Minor

Undergraduate Concentrations

With departmental permission, students with a minimum CGPA of 2.5 may enroll in a concentration of study. A concentration is a program of study with at least 12 credits within the student's major field but not prescribed in the major program. These courses are typically taken during semesters five through eight.

Concentration courses must be taken at the Academy. With the exception of electives or free electives for each major, a course cannot be counted twice; that is, it cannot fulfill both a requirement for the major and a requirement for the concentration.

The Academy offers the following undergraduate concentrations:

- Environmental Health & Safety Concentration
- Homeland Security Concentration
- Marine Biology Concentration
- Project Management Concentration
- Shipboard Environmental Health and Safety Officer Concentration

Dual Degree and 4+1 Programs

Dual Degree

Students with a minimum cumulative grade point average of 3.0 may enroll in a dual-degree program with the permission of the department chairperson of each program. Interested students may pursue dual degree combinations by presenting their proposals for approval by the chairperson of each department.

In order to officially declare a dual major before the end of the third semester, a student must have completed either Calculus I or Applied Calculus.

4+1 Program at MMA

The MMA 4+1 program is aimed at the eligible, high-achieving cadet who is prepared to launch his or her graduate education in the senior year of undergraduate studies. Motivated students from any of the seven MMA undergraduate degree programs can apply to any of the three graduate degree programs in the spring semester of the junior year. Accepted students would begin taking master's-level classes in the fall semester of the senior year alongside their graduate classmates, a student body comprised of working professionals. The graduate program is offered in a synchronous online format.

4+1 students complete five of their master's classes during their senior year. Optimally, these students will have found a job upon graduating from their undergraduate program and will complete the remaining master's-level courses during their first year of employment. Such employment is not required but is strongly encouraged.

The first five courses of the 4+1 program will be offered at a highly discounted rate to accepted undergraduate students. In addition, with department chair approval an accepted student may use two of the five graduate classes taken in the first three semesters to fulfill undergraduate electives, assisting students with time management while dual-enrolled.

Note: Students cannot reside on Campus following graduation from an undergraduate degree program.

4+1 MMA Degree Programs

Each of the three Master's degrees offers a specialized management curriculum.

Emergency Management

The graduate program in Emergency Management comprises 31 credits. Its mission is to provide graduates with the knowledge, skills and tools necessary to implement both proactive and reactive strategies to reduce the cost of a disaster in life and property and thus to be successful emergency managers and leaders in both the public and private sectors.

Facilities Management

The graduate program in Facilities Management comprises 31 credits. Its mission is to challenge students to think and act on a broader and higher plane. These skills should directly help them to succeed in their personal and professional careers.

Maritime Business Management

The graduate program in Maritime Business Management comprises 31 credits. Its mission is to produce highly skilled maritime business managers by providing students with the knowledge and tools necessary to become creative problem solvers, leading to success in senior maritime business management and leadership positions.

4 + 1 MMA Admissions Criteria

Students interested in the 4+1 program must have a minimum GPA of 3.0 for MMA programs and submit the following to apply:

1. a complete online application;

2. two recommendations;

3. a written statement of professional objectives that includes both long- and short-term professional goals and indicates how the graduate pro gram will help the student achieve these goals;

4. a current résumé.

For more information on the program, please visit www.maritime.edu/graduate-studies or contact Graduate Programs at 508-830-5096 or at graduate@maritime.edu.

4+1 Program through UMass Dartmouth

MMA and UMass Dartmouth have established a partnership to provide students a unique opportunity to successfully complete their academic goals, an Accelerated Pathway for a MMA undergraduate student to earn a Professional Science Master's (PSM) degree at UMass Dartmouth.

Coastal and Ocean Administration; Science and Technology Professional Science Master's (COAST PSM) Program at UMass Dartmouth

Coordinator: Professor Heather Burton

Apply to PSM program at UMass D in the spring semester of junior year at MMA. A 3.2 or better GPA overall after completion of the fall semester of junior year. MSSEP students may opt to complete up to 9 credits of graduate-level courses at UMass D prior to matriculation into PSM.

Military Information and Commissioning Opportunities

In recent years, MMA students have been commissioned upon graduation as officers in the National Guard, U.S. Army, U.S. Coast Guard, U.S. Marine Corps, U.S. Navy, and U.S. Navy Reserve.

Navy Strategic Sealift Midshipman Program (SSMP)

The Department of Naval Science administers the Strategic Sealift Midshipman Program (SSMP).

The SSMP is a unique type of NROTC Unit that is only offered at the seven maritime schools, and it differs in several key ways. Upon graduation, the SSMP allows students earning a Coast Guard License to be directly commissioned as officers into the Strategic Sealift Officer Program (SSOP), a specialized component of the Navy Reserve. Formerly known as the Merchant Marine Reserve, the SSOP is a cadre of naval officers who are licensed merchant mariners with sealift, maritime operations, and logistics subject matter expertise. The SSOP is called upon to provide integrated sealift operations in sup- port of National Defense.

SSMP Midshipmen who commission into the Navy Reserve will have an eight-year military service obligation. The program also offers a limited number of opportunities to pursue an Active Duty commission. This limited number of billets is based upon the current needs of the Navy and is not guaranteed. If selected for active duty, an individual incurs a military obligation that is dependent upon the community.

Once commissioned into the Navy Reserve, SSOP Officers serve in an Active Reserve status as either Individual Ready Reserve (IRR) or Selected Reserve (SELRES), with the majority of members falling under the IRR. Strategic Sealift Officers are reservists who serve on periods of active duty to support both afloat and shore-side military and reserve fleet operations that call for the training and experience of Merchant Marine Officers. While most members of the SSOP work in the maritime industry in their civilian careers, doing so is not a requirement of the program.

U.S. Army Reserve Officer Training Corps(ROTC)

Army ROTC is a mentally and physically challenging opportunity available to cadets who are interested in serving their country as officers in the nation’s most senior service, who are ready to achieve an unparalleled level of confidence and excellence as leaders, and who are committed to scholarship and physical fitness. The program

includes weekly classes in leadership, customs and traditions, and other subjects, and it incorporates hands-on, practical training. Cadets in the program undergo physical training twice each week and field training exercises once each semester.

Army ROTC cadets in the program also participate in various social events, benefit from affiliation with prestige organizations, and have the opportunity to attend, as cadets, such elite schools as Airborne and Air Assault. Freshmen attend ROTC classes at the Academy, while sophomores, juniors, and seniors attend classes at nearby Stonehill College.

Additional Information for MMA Students Who Are Members of the Armed Forces

Leaves: Students who are serving in the Armed Forces, including reserve components and National Guard, will be readmitted to MMA if such members are temporarily unavailable or must suspend enrollment by reason of serving in the Armed Forces. In addition, MMA will make efforts to accommodate short absences for services in the Armed Forces; requests for short absences should be directed to the Dean of Undergraduate Studies.

Grades: Any grade that does not affect GPA is not eligible for VA education benefits. Such grades include incomplete, audited, and non-credit courses.

Academic Information and Support Services

Academic Support

Academic Resource Center

The Academy is firmly committed to assisting students in maintaining satisfactory progress in their degree programs by providing first-year programming, tutoring, disability services, and supplemental advising resources through its Academic Resource Center (ARC), located on the third floor of the ABS Information Commons.

The ARC comprises five academic support units, each of which provides critical support in a particular area.

The *Learning Support Center* offers faculty and peer tutoring in science, technology, engineering, mathematics, business, and a host of other subjects.

The *Writing Center* offers tutoring in written and verbal communication to support literature and composition courses as well as other courses with an oral or written communication component. The Writing Center also assists students with professional correspondence relevant to their future careers.

The *Testing Center* administers standard assessment instruments for placement and to evaluate student proficiencies.

The Advising Office offers academic advising services and provides resources for college skills and success.

ADA Compliance is administered by the Assistant Dean of Academic Resources and the Director of Student Academic Support. Students with learning differences can contact the office at x5120 or by email at ADAcompliance@maritime.edu.

The ARC provides tutoring and other services and resources throughout the academic year at no cost to students. Services are offered in a supportive, accommodating learning environment by appointment and on a drop-in basis. Students are strongly advised to utilize these services and resources, which impart valuable skills for success in college and beyond.

Academic Faculty Advising

The academic advising system is an integral part of the student experience at MMA. Students are able to rely on the experience of the faculty and the up-to-date information faculty provide in order to facilitate their studies.

Advisors are available to assist students in developing their educational plan; in selecting a major, minor, or concentration; and in registering for courses. The advisor may provide guidance regarding ac academic alerts, mid-term deficiency reports, and academic probation. Most importantly, advisors are avail able to students seeking assistance concerning course material. In short, the academic advisor's knowledge and experience can be valuable resources for students.

Undergraduate Major Program Requirements

Major Program Requirements

A major program at Massachusetts Maritime Academy includes approximately 128 credits of academic semester courses plus sea terms, cooperative education placements, and/or experiential learning opportunities. Curriculum requirements for each program can be found within the Academic Programs Section of this catalog . Within each program, the academic courses are designated in the categories of Major courses, General Education courses, and Support courses. Each major program includes at least two free electives. Students may choose to add more free elective courses, a concentration, or a minor.

Major Courses

Approximately sixty credits in each degree program are designated as Major courses. These courses are related specifically to the degrees offered and usually offered by the department of the degree program.

General Education Courses

Certain required courses in the Humanities Department, the Social Science Department, and the Science and Mathematics Department are designated as General Education courses. Some of these courses are specified, and some are selected by the student. Additional information is included in the "General Education Requirements" section.

Support Courses

Courses that are outside of those designated as Major courses or General Education courses but required by a degree program are designated as Support courses.

Sea Terms and Commercial Shipping

Students in the Marine Transportation or Marine Engineering program must complete sea service, satisfying STCW and U.S. Coast Guard license criteria. Sea service is accrued by sailing on USTS Patriot State II and by sailing on commercial ships. At least three experiences will be aboard the USTS Patriot State II. Students who meet the necessary requirements typically participate in a commercial ship experience during their junior year. Commercial shipping experiences must comply with USCG and MARAD requirements. Equivalent sea time calculations are in compliance with USCG program approval. Students must complete all sea time as a prerequisite for taking the USCG license examinations.

Cooperative Education Placements

Depending upon the major, students completing a shore-side degree program must participate in up to three cooperative education placements. The Office of Career and Professional Services will assist students in locating and setting up cooperative education placements. Three or six credits are earned for successful completion of cooperative education placement and required academic work.

Experiential Learning Opportunities

Depending upon the major, students completing a non-license degree program may be required to complete experiential learning opportunities. These opportunities introduce students to working environments related to a specific program of study. Through instruction and practice, the experiences reinforce core concepts learned within the degree major. Students earn academic credit for successfully completing experiential learning opportunities. The length of such opportunities varies.

Civic Engagement

Civic engagement is an essential component of the academic programs and student life at the Academy. Part of the educational goal of the Academy is to expose students to ideas about civic rights and responsibilities and to encourage students to become active participants in the civic society of our state and nation. At MMA, an array of courses include components of civic learning and civic engagement. The campus also offers many opportunities for students to participate in civic activities. All cadets within the Regiment of Cadets are exposed to leadership development with an emphasis on duty, responsibility, and accountability, which prepares them to become active citizens. In addition, most students volunteer in service programs and outreach activities in the community.

Academic Programs

UNDERGRADUATE DEGREES: BACHELOR OF SCIENCE
Emergency Management
Energy Systems Engineering
Facilities Engineering
International Maritime Business
Marine Engineering
Marine Science, Safety and Environmental Protection
Marine Transportation
UNDERGRADUATE MINORS
Emergency and Risk Management Studies
Energy Management Minor
Environmental Health & Safety Minor
Facilities Operations Minor
Homeland Security Minor
International Maritime Business Minor
Marine Biology Minor
Marine Science, Safety and Environmental Protection Minor
UNDERGRADUATE CONCENTRATIONS
Emergency and Risk Management Studies
Environmental Health & Safety Concentration
Homeland Security Concentration
Marine Biology Concentration
Project Management Concentration
Shipboard Environmental Health and Safety Officer Concentration
GRADUATE DEGREES: MASTER OF SCIENCE
Master of Science in Emergency Management

Master of Science in Facilities Management
Master of Science Maritime Business Management

General Education Requirements

Students at Massachusetts Maritime Academy participate in the General Education curriculum in order to obtain the full benefits of a college education and the skills and knowledge for success in their future education and careers. Moving beyond the bounds of the major requirements, students are encouraged to become lifelong learners through a balanced variety of courses.

These courses contain enough depth and breadth in the areas of humanities, social science, mathematics, and science to provide the student with the skills necessary to succeed in an increasingly complex world. These fields of knowledge foster the aesthetic appreciation, quantitative reasoning, critical thinking, ethical analysis and evaluation, citizenship, and strong communication skills necessary for further self-development and personal inquiry.

As part of the General Education requirements, students must also complete the writing proficiency requirements, including the writing proficiency examination (WPE), which is taken at the end of College Writing (HU1110 Intro. to College Writing, HU1111 College Writing, or HU1112 Adv College Writing). Students who do not pass the WPE will be required to take Applied Writing (HU6062 Applied Writing) before or concurrently with Writing About Literature (HU1222 Writing About Literature).

Missing the WPE exam is considered failure unless evidence of extenuating circumstances is provided to and accepted by the WPE Coordinator.

Humanities

The required courses in the Humanities Department build skills in reading, writing, critical thinking, and communication; aesthetic and cultural awareness; and humanistic inquiry.

In the first semester, students take a college writing course that focuses on the skills necessary for logical presentation of thoughts and ideas in clear, concise language. In the second semester, students take *Writing About Literature*, where they read, analyze, and interpret fiction, poetry, and drama for meaning, technique, cultural and historical context, and significance as literary art.

Students are then required to select two electives in the Humanities: a literature course (Group I) chosen from a variety of genres, historical periods, and subject matter, followed by either another literature course or a non-literature course (Group II) chosen from a broad range of offerings within the department.

HU1110 Intro. to College Writing *Introduction to College Writing*, HU1111 College Writing *College Writing or* HU1112 Adv College Writing *Advanced College Writing*

HU1222 Writing About Literature *Writing About Literature*

One course from Humanities Group I

One course from either Humanities Group I *or* II

Social Science

The courses from the Social Science Department strive to make students aware of the richness of their civilization and society and to prepare them to think critically about their world. They also strengthen their skills in written and oral expression. Students first study the social, intellectual, political, and economic history of the modern era in Western Civilization and then explore the nature of American political culture in American Government.

After taking two courses as a base, students take three additional courses from the Social Science Department. They will take one course in each of three groupings, which will further broaden their critical thinking and writing skills.

The underlying principles of our economic system, the dynamics of capitalism, and the fundamentals of the international economy are studied in Group I courses, where the students choose either Microeconomics or Macroeconomics.

To acquire a clear understanding of the legal regulations and legal dynamics of the fields they are entering, students take one course from Group II.

Finally, to develop a well-rounded education, students select one additional course from the Social Science Department's Group III electives, which provide a wide range of offerings in history, geography, sociology, psychology, anthropology, behavioral science, economics and economic policy, and military affairs.

SS1211 Western Civilization *Western Civilization*

SS2121 American Government *American Government*

One course from Social Science Group I

One course from Social Science Group II

One course from Social Science Group III

Science and Mathematics

The required courses from the Science and Mathematics Department enhance the ability to think quantitatively, critically, and logically, and they illustrate the manner in which problems of a quantitative nature are solved through the use of algorithms and logical thought.

Students study fundamental mathematical functions in Precalculus with Trigonometry and explore the basic concepts of analysis in either Calculus I or Applied Calculus, depending on their major. Then students take one additional mathematics course with a Calculus I or Applied Calculus prerequisite. Thus, students learn to use mathematics, including calculus, in problem solving; to use technology appropriately in this process; and to apply mathematics to problems arising in other disciplines.

In the required science courses, students apply the scientific method in a variety of classroom and laboratory settings. In so doing, they develop the ability to carefully collect, organize, and analyze data for the purpose of synthesizing a model for better understanding or problem solving.

Basic concepts of matter are explored in Chemistry I to increase students' understanding of technology, health, and environmental issues.

Students study the laws of nature in College Physics I or Engineering Physics I in order to develop a method of reasoning that will enable them to interpret physical events in a rational manner. To add necessary depth to their study of natural science, students also select a sequential laboratory science course in either chemistry or physics.

SM1111 Precalculus with Trigonometry *Precalculus with Trigonometry*

SM1131 Chemistry I *Chemistry I*

SM1212 Calculus I *Calculus I or* SM1214 Applied Calculus *Applied Calculus*

One course from Science & Math Group I

One course from Science & Math Group II

One course from Science & Math Group III

General Education Requirements

Humanities Group I

HUMANITIES GROUP I

HU5021 Literature of the Sea *Literature of the Sea*

HU5022 Literature and Film *Literature and Film*

HU5025 Short Stories *Short Stories*

HU5026 Literature and Mythology *Literature and Mythology*

HU5027 Literature of the Supernatural *Literature of the Supernatural*

HU5029 Contemporary Literature *Contemporary Literature*

HU5030 Poetry *Poetry*

HU5034 Writers of the American South *Writers of the American South*

HU5035 American Theater *American Theater*

HU5036 Survival Literature *Survival Literature*

HU5040 Graphic Novel *The Graphic Novel*

HU5041 Afr/Am Lit. Preharlem Renaissa *African American Literature: Pre-Harlem Renaissance*

HU5042 AF/AM Lit Through Blues *African American Literature Through the Blues*

HU5043 Af/Am Lit Post-Harlem *African American Literature: Post-Harlem Renaissance*

HU5057 Science Fiction *Science Fiction*

HU5090 Spec. Topics-Humanities Gr I *Special Topics: Humanities Group I*

General Education Requirements

Humanities Group II

HUMANITIES GROUP II

HU2141 Spanish I *Spanish I*

HU2341 Elementary Chinese I *Elementary Chinese I*

HU6045 Environmental Writing *Environmental Writing*

HU6051 Philosophy *Philosophy*

HU6054 Ethics *Ethics*

HU6055 World Religions *Introduction to World Religions*

HU6058 Appalachian Cultures *Appalachian Cultures*

HU6060 Creative Writing: Poetry *Creative Writing: Poetry*

HU6061 Creative Writing: Fiction *Creative Writing: Fiction*

HU6065 Creative Writing: Non Fiction *Creative Writing: Nonfiction*

HU6071 Public Speaking *Public Speaking*

HU6072 Business Communication *Business Communications*

HU6073 Technical Writing *Technical Writing*

HU6080 Intro. to Art *Introduction to Art*

HU6090 Special Topics: Humanities *Special Topics: Humanities Group II*

General Education Requirements

Social Science Group I

SOCIAL SCIENCE GROUP I

SS2131 Microeconomics *Microeconomics*

SS2231 Macroeconomics *Macroeconomics*

General Education Requirements

Social Science Group II

SOCIAL SCIENCE GROUP II

MS3142 Environmental Law *Environmental Law*

SS3221 Business Law *Business Law*

SS3225 Admiralty and Maritime Law *Admiralty & Maritime Law*

SS4123 Legislative Compliance *International Law & Legislative Compliance for Mariners*

SS4132 Legal Issues in Emer. Mgt. *Legal Issues in Emergency Management*

General Education Requirements

Social Science Group III

SOCIAL SCIENCE GROUP III

SS2232 World Economic Geography *World Economic Geography*

SS2233 Political Geography *Political Geography*

SS3141 Introduction to Psychology *Introduction to Psychology*

SS3211 American Maritime History *American Maritime History*

SS3212 U.S. Foreign Policy Since 1945 *U.S. Foreign Policy since 1945*

SS3213 Seapower in World History *Sea Power in World History*

SS3214 Europe in the Middle Ages *Europe in the Middle Ages*

SS3216 Ancient History Seminar *Ancient History Seminar*

SS3217 Vietnam & United States Policy *Vietnam and U.S. Policy*

SS3218 Civil War and Reconstruction *Civil War and Reconstruction*

SS3219 American History I *American History I: Origins to 1865*

SS3220 American History II *American History II: 1865 to the Present*

SS3242 Ancient Greece Seminar *Ancient Greece*

SS3243 Ancient Rome Seminar *Ancient Rome*

SS3246 US Energy Policy *U.S. Energy Policy: Both Global & Domestic*

SS3247 Modern Irish History *Modern Irish History*

SS3250 Settling Mars: Lessons From Ru *Settling Mars: Lessons from Russian America*

SS3248 New England History *New England History*

SS4211 American Maritime History II *American Maritime Hist. II*

SS4311 20th Century History *20th-Century History*

SS4317 Intelligence and National Secu *Intelligence and National Security Policy*

General Education Requirements

Science & Math Group I

SCIENCE AND MATHEMATICS GROUP I

SM2113 Calculus II *Calculus II*

SM2115 Applied Environmental Math *Applied Environmental Mathematics*

SM2117 Quantitative Meth. for Mgmt. *Quantitative Methods for Management*

SM2119 Applied Mathematics *Applied Mathematics for Deck Officers*

SM2218 Statistics *Statistics*

General Education Requirements

Science & Math Group II

SCIENCE AND MATHEMATICS GROUP II

SM2121 College Physics I *College Physics I*

SM2123 Engineering Physics I *Engineering Physics I*

General Education Requirements

Science & Math Group III

SCIENCE AND MATHEMATICS GROUP III

SM1232 Chemistry II *Chemistry II*

SM2222 Coll. Physics II *College Physics II*

SM2224 Eng. Physics II *Engineering Physics II*

SM2233 Organic/Hazmat Chemistry *Organic/Hazardous Materials Chemistry*

Academic Policies and Standards

Grading Standards

Letter grades are assigned to students according to a 4.0 GPA scale (see table for letter grades and corresponding GPA equivalency).

Alphabetical Grade	GPA Equivalent
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
D-	0.67
F	0.00
P (Pass)	—
I (Incomplete)	—
X (Exempt)	—
W (Withdrawn)	—

A single, alphabetical grade certified by the instructor within the deadline published on the academic calendar is assigned to each student and submitted to the Registrar.

Students questioning a grade awarded must follow the Grade Appeal Process section of this chapter.

Grade changes must be submitted in writing to the Registrar by the instructor within two weeks after the start of the term immediately following the term in which the grade was given. An extension of the two week period may only be allowed upon special arrangement by the instructor with the Dean of Undergraduate Studies.

Pass-Fail

Eligibility: No course required for a major degree may be taken as a pass/fail option. Permission to take an eligible course for a pass/fail grade is granted at the sole discretion of the instructor. To request the pass/fail course option, a student must have a current academic standing of junior or senior status and a minimum cumulative grade point average (CGPA) of 2.5. The student must submit a fully completed request form to the Registrar prior to the end of the add/drop period; otherwise, the student will be graded according to the existing Academic Grading Standards. A student may take no more than one pass-fail course in a given semester and no more than two pass-fail courses as part of their overall curriculum.

Grading: The student's grade shall be calculated on the same basis as that used for all other students taking the course. The student shall receive a 'P' for a grade that exceeds the instructor's established passing benchmark. The student shall receive an 'F' for a grade that falls below the instructor's established passing benchmark. A passing grade of 'P' will not affect the student's cumulative grade point average (CGPA) and will be excluded from any GPA calculations. However, a failing grade of 'F' will negatively affect the student's CGPA by the applicable course credit being included in the calculation of the semester grade point average and the CGPA.

Incomplete

At the student's request, an instructor may agree to award an incomplete grade ('I') at the end of an academic term if the student has failed to meet a course requirement due to illness or other reasons beyond their control.

Students are authorized a maximum of two weeks into the following semester to rectify a grade of incomplete. If the incomplete is not rectified within that period, the incomplete is automatically converted to a failure ('F').

An extended period to submit a final grade may be allowed by the instructor upon approval of the Dean of Undergraduate Studies. The instructor shall submit a recommended grade to the Registrar within 48 hours of the extended period allowed above.

Academic Policies and Standards

Coursework Policies

Coursework Policies

Add/Drop Period

A student may add courses, consistent with other requirements, up to six business days into the semester. A student may drop a course, consistent with other requirements, up to 15 business days into the semester.

Note: Full-time status is considered to be twelve credits or more. Add/ drop changes could affect this status.

Withdrawal Policy

If a student wishes to withdraw from a course after the add/drop period, he or she must obtain written acknowledgment from the instructor, the student's academic advisor, and the Registrar. It must be understood that such withdrawal may affect the student's date of graduation, eligibility for financial aid, and anticipated graduation date. Students may withdraw from no more than one course per semester. No student may withdraw from a course after the 10th week of classes.

Students may not withdraw from a course previously failed or from SM1111 Precalculus with Trigonometry. No student may withdraw from the same course more than once. A "W" will appear on the student's transcript.

Course Exemption

An exemption is awarded to a student who has been authorized by the Dean of Undergraduate Studies or designee to omit taking a course. Exemptions apply only to the following:

- Through Advanced Placement examination, with a grade of 3 or better, the student has been determined to be proficient in course subject matter (prior to admittance only);
- Through transfer credit awarded for International Baccalaureate (IB) higher-level courses in which the student has earned a score of 4 or higher. Credit is not awarded for standard level courses. All decisions regarding transfer credit for IB courses will be made by the Registrar in consultation with the appropriate department chairperson (prior to admittance only);
- Through validation of grades received at another accredited institution of higher education with a grade of 'C' or better;
- Through validation of certified professional licenses or transcripts of grades by the Dean of Undergraduate Studies or designee;
- Through the College Level Examination Program (CLEP) with a score of 50 or higher with the approval of the Dean of Undergraduate Studies or designee (prior to admittance only).

Transfer Credits

In order for a student enrolled at the Academy to receive credit for a course taken at another institution, the following conditions must be met:

• The transfer course must be offered at an accredited institution;

• The catalog description of the course must be substantially similar to that of the corresponding Academy course and be of equal or greater credit hours;

• A request for approval to take the course for transfer credit must be submitted to the appropriate department chairperson at least two weeks prior to the start of the course;

• A student who requests a transfer course while enrolled during a semester at the Academy as a full-time student will have their course load reviewed specifically to determine whether the transfer course will constitute an overload or excessive load for the semester;

• Authorization to take the course for transfer credit will be granted or denied at the discretion of the Dean of Undergraduate Studies with the advice and consent of the respective chairperson of the academic department in which the course is offered at the Academy;

• A grade of 'C' or better (2.0 or higher) must be obtained in the course for it to be deemed successfully completed. The grade received for the course transferred will not be included in calculating the student's CGPA and will not appear on the transcript;

• An official transcript showing completion of the course must be sent to the Registrar's office no later than six weeks after the course completion. Credit for the course will be awarded once the official transcript is received;

• No Standards of Training, Certification and Watchkeeping (STCW) course may be taken online;

• A student must be in academic good standing in accordance with MMA policy at the time of their request to take an online course.

VALOR Act

The Registrar or designee shall serve as the contact point for evaluation of student military occupation, training, coursework, and experience. The Registrar will evaluate the prospective student's official transcripts, using the ACE Guide as a key reference for course descriptions and equivalencies.

Courses must carry the equivalent of three or more credits for transfer, and the students must have earned the equivalent of a "C" grade (75%) or better. Accepted coursework will appear on the student's transcript as transfer courses.

As per Academy policy, only the credits will transfer, not the grades. When necessary, the Registrar will consult with the appropriate department chairperson to determine transferability.

The Registrar will accept CLEP and/ or DANTES exam scores based on Academy policy and the recommended guidelines of these programs.

STCW courses, whether knowledge- or practical-based, will not be replaced by military coursework, training, or experience.

Cooperative Education Credit for Military Service

With appropriate documentation, credit for one, six-credit cooperative education placement may be awarded to students who meet one of the following eligibility requirements for military service in the U.S. Armed Forces or State National Guard:

• at least one year of fulltime, active duty within the preceding five years;

• at least one year of active reserve service within the preceding five years;

• at least 40 days of active service in a single calendar year while enrolled as a fulltime student at the Academy;

• fulfillment of the calendar year active reserve commitment while a full-time student at the Academy.

• Note: Under the MARAD approved 310 Programs, sea service accrued as part of active or reserve military service cannot be substituted for or credited as sea service toward a USCG license.

STCW Compliance

The international convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) is an international treaty that established minimum curriculum standards and performance measures for maritime training programs. Certain courses, as noted in the course descriptions, are designated as containing STCW knowledge and/or practical elements.

All students, regardless of major, must earn a grade of C- or better to pass any course containing STCW knowledge components and must successfully complete all practical demonstrations in any course containing STCW practical elements. Any STCW course serving as a prerequisite for another course must be passed with a grade of C- or better to satisfy the prerequisite.

In addition, students majoring in Marine Engineering or Marine Transportation must complete all U.S. Coast Guard required trainings and assessments for issuance of the appropriate U. S. Coast Guard merchant marine officer's license.

Academic Evaluation

Faculty have several tools in addition to the semester grading to measure a student's progress towards successful completion of a course. A member of the faculty may opt to use the academic alert system and/or mid-term deficiencies as a means of informing a student that they are not performing at a level necessary to pass the course. When a faculty member uses either of these tools, the information is disseminated to the student and to their academic advisor, and, if applicable, their company officer.

Academic Deficiency, Mid-term

A student found deficient at midterm will be notified by the Registrar of their deficiency. The student's academic advisor will be notified by the Registrar at that time, and, if applicable, the student's company officer.

Course Failures

A student must receive a passing grade (D- or better), unless otherwise indicated in the course description, to receive credit for a course. A student who fails a course has two options:

1. Repeat the failed course on campus. The repeated course grade and credit hours (see "Forgiveness of One" policy) will be used in calculating the term grade point average of the term in which the course is repeated. The cumulative grade point average will include the repeated grade and credit hours only;
2. Repeat the failed course, or equivalent, at another accredited institution. A minimum grade of 'C' (2.00) will be required for the course to be deemed successfully completed. Transfer grades will not be used in calculating the CGPA (see "Transfer Credits" section).

"Forgiveness of One" Policy

This policy allows a student to replace a failing grade with a higher grade for the purpose of calculating the Cumulative Grade Point Average. If a student were to fail a course on multiple attempts, all but the first failure would be calculated in the student's CGPA. Note: All grades will continue to be shown on the transcript.

Repeated Courses

A student may repeat a course previously passed (but never failed) once within one year of the original grade. The repeated course grade and credit hours will be used in calculating the term grade point average of the term in which the course is repeated. The cumulative grade point average will be calculated using the higher of the two grades and credit hours.

Grade Appeal Process

The grade appeal policy is designed to resolve a student's specific concerns with regard to a final course grade. If such a concern exists, the student is encouraged to initiate this process, mindful that no adverse consequences will result from making an informal or formal appeal.

If a student feels that a final course grade is inappropriate, the student must make an appointment with the faculty member to discuss the matter informally. The appointment must be requested within the first two weeks of the academic semester following the semester for which the grade was given. Every effort will be made to resolve the student's concerns informally.

If the student's concerns are not resolved through the informal appeal policy, the student may pursue the formal appeal process by meeting with the appropriate department chairperson. The burden of proof is on the student to show that a grade is inappropriate. The formal appeal must be initiated within two weeks after the conclusion of the informal process. The formal process commences when the student submits in writing a description of the basis for the grievance, including any corroborating materials, to the department chairperson. The department chairperson will promptly notify the instructor of the formal appeal. Within two weeks of said notification, the instructor must provide the department chairperson a written response to the grade appeal. The department chairperson will then make an assessment as to the validity of the student's grievance and provide a written copy of any recommendations to both the instructor and the student.

Whatever the recommendation of the department chairperson, it remains the sole prerogative of the instructor to change the grade given.

Exceptions to the policy time limits of both the informal and formal appeal processes may be permitted if the Dean of Undergraduate Studies determines that clear and compelling extenuating circumstances have occurred.

Class Attendance

Policies relating to attending class are set by each faculty member and are published in the syllabus for each course.

Extended Academic Absence

Students expecting to be absent from class for an extended period, regardless of the reason for the absence, must communicate with all of their instructors individually to determine whether the absence can be accommodated academically. For each course in which the absence can be accommodated, a plan must be developed in consultation with the instructor that clearly articulates all work, assignments, assessments, and other course requirements that need to be completed along with an expected timeline for completion.

While faculty will do their best to accommodate legitimate needs for extended absences, the nature of certain classes, STCW requirements, course pedagogies, individual instructor requirements, etc. may not allow for an extended absence in some courses. Ultimately, it is at the discretion of individual instructors to determine whether their course is able to support an extended absence. If an instructor(s) is unable to accommodate an extended absence, you may be advised to withdraw from the course.

Verification of Student Identity in Distance Education

To ensure compliance with the provisions of the United States Federal Higher Education Opportunity Act, Public Law 110-315, concerning the verification of student identity in distance education, the Academy has established policy for the following:

- providing students with a secure login and password;
- proctored examinations;
- utilization of current technologies and practices effective in verifying student identification.

Detailed information on policy applicable to distance education is available on the MMA web site.

Academic Honesty

Massachusetts Maritime Academy expects all cadets and students to abide by its Honor Code, which states that “Cadets and students do not lie, cheat, or steal, nor do they tolerate these acts from others.”

The Cadet Regimental Manual clearly outlines the various actions that may be considered cheating. These include plagiarism, misrepresentation, and unauthorized notes, among other things. (See Appendix A of the Cadet Regimental Manual.) Individual instructors may set the requirements for their courses as they wish, and students should make sure they understand these requirements.

Academic freedom has traditionally allowed instructors to address academic dishonesty in many ways, including (but not limited to) requiring the student to redo an assignment, assigning a grade of zero for the test or assignment, or failing the student for the course. When the situation warrants, the instructor may also refer the matter to the Honor Board, which may recommend suspension or dismissal from the Academy for violations of the Honor Code.

Academic Policies and Standards

Satisfactory Progress

Satisfactory Progress

A student is deemed to be making satisfactory progress toward a degree if the student maintains academic good standing and retains the same academic year designation for no more than three academic semesters.

Students who are not making satisfactory progress toward a degree will be reviewed by the Academic Review Board.

A student must complete all degree requirements, including license programs, within 10 years from the original date of enrollment. All courses, taken either at MMA or at another accredited institution, will have a 10-year time limitation except where Coast Guard regulations otherwise require. Exemptions to the 10-year limit may be considered on an individual basis when recommended by the Vice President of Academic Affairs and President of the Massachusetts Maritime Academy. Factors that may result in a waiver might include time spent on humanitarian efforts or in military service.

Academic Policies and Standards

Academic Standing

The following minimum standards are established for fall and spring semester cumulative grade point averages (CGPA):

YEAR	RETENTION FA CGPA	SP CGPA
1	1.0	1.5
2	1.5	1.8
3	2.0	2.0
4	2.0	2.0

YEAR	GOOD STANDING FA CGPA	SP CGPA
1	1.5	1.8
2	1.8	2.0
3	2.0	2.0
4	2.0	2.0

Note: Academic standards for the purposes of financial aid differ from those above. For more information, see Satisfactory Academic Progress.

Academic Review Board

The Academic Review Board reviews the academic status and potential of those students subject to dismissal from the Academy. The Board is empowered to recommend mitigation of a student's academic dismissal to suspension or probation.

The Academic Review Board comprises the department chairpersons, the Registrar, and the Dean of Undergraduate Studies. The deliberations of the Academic Review Board are conducted in accordance with procedural rules adopted on its motion. Recommendations are submitted to the Provost for consideration and final disposition.

Students who fail to meet the standards for retention may be dismissed from the Academy at the discretion of the Academic Review Board.

Academic Dismissal

Academic dismissal constitutes the removal of a student from the Academy because he or she was unable to achieve minimum academic standards.

Students who are academically dismissed from the Academy may not take courses through the Academy's standard 'day' program or through its Division of Graduate and Continuing Education. An academically dismissed student may apply for readmission to the Academy only after having completed at least 12 credits, approved by Massachusetts Maritime Academy and taken at other accredited institutions of higher learning, achieving a minimum cumulative grade point average of 2.50 at those institutions.

Any student falling in one or more of the following categories will be subject to dismissal from the Academy:

1. having failed to meet the minimum standards established for retention;
2. having failed three or more courses in a single term;
3. having been unable to achieve academic good standing after being on probation for two consecutive semesters;

having failed to advance to the next level of academic standing after three or more semesters.

Academic Suspension

Academic suspension constitutes temporary removal from the college for academic deficiencies that must be rectified before readmission, as identified by the Academic Review Board. The conditions of suspension include a written notification to the student of the course(s) that must be successfully completed either at MMA, as a non-matriculated student, or at another accredited institution of higher learning before he or she can be considered for readmission to the Academy. The Dean of Undergraduate Studies will determine the grade and/or grade point average the student must achieve to be considered for readmission to MMA.

Suspension will automatically result when a student fails to complete SM1111 Precalculus with Trigonometry Precalculus with Trigonometry by the end of the second semester at the Academy.

In order to be considered for readmission, subject to the approval of the Dean of Undergraduate Studies, a student who fails to complete SM1111 Precalculus with Trigonometry Precalculus with Trigonometry by the end of the second academic semester may

1. re-take the course at MMA, as a non-matriculated student, and earn a passing grade (D- or better), or
2. take a similar, pre-approved course at another accredited institution of higher learning and earn a grade of "C" or better.

A student who does not meet the condition of their suspension will be academically dismissed from the Academy. A student who satisfies the conditions of their suspension will be on academic probation for the following term.

Setback

Academic setback may be granted by the Academic Review Board when it concludes that a student otherwise subject to academic dismissal may benefit by repeating an academic semester at the Academy. A setback student will retake at least three courses for which they previously received grades of 'D+' or lower. Grades earned will replace the previous grades in the calculation of the CGPA. The student remains on academic probation during the setback semester and must bring their CGPA up to retention standards at the end of the semester or be dismissed from the Academy.

Eligibility: A student must have sophomore status or higher as defined by the Academic Standards to be eligible for academic setback, and a student is allowed only one setback while at the Academy.

Restrictions: A student on academic setback:

- must retake at least three courses;
- may not take more than one course not taken previously;
- may not take more than 13 academic credits;
- may not hold any regimental or shipboard leadership position;
- may not participate in Academy sponsored clubs, extracurricular activities, or varsity athletics.

Academic Probation

Probationary status is a warning to a student that they are no longer in academic good standing and are in jeopardy of falling below those standards established for retention or graduation. It is the responsibility of the student to increase their academic efforts in order to regain academic good standing.

Probation will automatically result when

1. a student's CGPA falls below those numbers established for academic good standing;
2. a student is readmitted following academic suspension or dismissal.

A student will be removed from academic probation by

1. raising their CGPA to the level necessary to be in academic good standing;
2. repeating and obtaining a passing grade in a course necessary to be in compliance with graduation requirements.

A student cannot remain on academic probation for more than two consecutive semesters without being subject to dismissal from the Academy.

A student on academic probation may not take more than 13 academic credits, may not hold any regimental or shipboard leadership position, and may not participate in Academy sponsored clubs, extracurricular activities, or varsity athletics.

Conduct Dismissal from the Academy

Any student dismissed from the Academy for conduct reasons will not be allowed to enroll in MMA courses, to include courses offered through the Division of Graduate and Continuing Education.

Academic Year & Class Designation

Academic Year Designation

Students in a degree program have the academic year designation of freshman, sophomore, junior, or senior.

A *sophomore* has successfully completed at least one-fourth of the courses required for the degree program, including all but two required first-year courses.

A *junior* has successfully completed at least one-half of the courses required for the degree program, including all required first-year courses and all but two required second-year courses.

A *senior* has successfully completed at least three-quarters of the courses required for the degree program, including all required first-year and second-year courses and all but two required third-year courses.

Class Designation

Members of the Regiment of Cadets are designated 1/C, 2/C, 3/C, and 4/C.

4/C status: Cadet Candidates receive recognition as 4/C cadets during the fall semester of their first year of enrollment.

4/C to 3/C status: Students who have successfully completed all but two freshman requirements and have a 1.8 cumulative grade point average.

3/C to 2/C status: Students who have successfully completed all freshman requirements, have successfully completed all but two sophomore requirements, and have a 2.0 cumulative grade point average.

2/C to 1/C status: Students who have successfully completed all freshman and sophomore requirements, have successfully completed all but two junior requirements, and have a 2.0 cumulative grade point average.

4/C to 3/C status (transfer students): Students who have completed one semester at MMA, completed the two-week orientation, completed Sea Term I or experiential learning, earned at least 48 credits (including transfer and MMA credits) prior to the start of spring semester (including English Composition, Pre- calculus with Trigonometry, and Chemistry I), and have a 1.8 cumulative grade point average.

Transfer students' class year designation is determined on an individual basis by the Vice President for Student Services or designee, based on the anticipated graduation date.

Academic Policies and Standards

Writing Program Eligibility & Standards

Writing Program Eligibility & Standards

At the end of their introductory college writing course HU1110 *Intro to College Writing*, HU1111 *College Writing*, or HU1112 *Advanced College Writing*, students will take the Writing Proficiency Examination (WPE). All students must take and pass this examination in order to graduate. Students who do not pass or do not take the WPE are required to take HU6062 Applied Writing Applied Writing before or concurrently with HU1222 Writing About Literature *Writing About Literature*, and must earn a C- or better in order to pass the course and satisfy the WPE requirement.

Transfer students, students with English Language AP credit, and students who have taken *College Writing* (or its equivalent) elsewhere are still required to take the WPE in their first semester. Failure to take the exam will require students to enroll in HU6062 Applied Writing *Applied Writing* before or concurrently with HU1222 Writing About Literature *Writing About Literature*.

Academic Policies and Standards

Awards & Honors

Awards and Honors

At the end of each academic term, full-time student grades are reviewed. For students with no incompletes or grades below C-, term grade point averages are calculated and academic proficiency is noted as follows:

President's List 3.6 or higher
Dean's List 3.3 to 3.59

A cadet who appears on the Dean's List or the President's List is entitled to wear the appropriate device on their uniform. All ribbons will be awarded by the Vice-President of Academic Affairs or designee at the appropriate time.

Academic Policies and Standards

Graduation Standards

Graduation Honors

Academic excellence for the baccalaureate program is recognized by awarding degrees summa cum laude (CGPA of 3.8 or higher), *magna cum laude* (CGPA of 3.6 to 3.79), and *cum laude* (CGPA of 3.3 to 3.59). The CGPA determined for honors is based on all college- level work attempted at Massachusetts Maritime Academy. Students who received three or more '*F*' grades at MMA are not eligible for graduation honors.

Graduate students are recognized as having achieved *highest honors* (CGPA of 3.85 or higher) or high honors (CGPA of 3.7 to 3.849).

The commencement booklet is printed prior to grades being submitted for the last term. Therefore, the Office of the Registrar must print the honors designation that a student has earned up to but not including their final semester. The student's official degree transcript will reflect the appropriate honors designation.

Graduation

To receive a Bachelor of Science degree, a student must

1. be recommended for the degree by the appropriate department in recognition of satisfactory completion of the minimum number of courses and credits as established in the degree curriculum;
2. maintain a cumulative grade point average of 2.0 as well as a grade point average of 2.0 in the major;
3. have not failed, without repeating successfully, any courses in the required curriculum (only failures in courses not required to complete the degree are allowed);
4. maintain prescribed standards of conduct and aptitude;
5. discharge all financial obligations to the Academy;
6. successfully complete applicable U.S. Coast Guard license examinations prior to the awarding of a degree in Marine Engineering or Marine Transportation, as required by the Maritime Administration (MARAD).

"Rule of Two"

Students who are delinquent in no more than two credit-bearing requirements (course, sea term, co-op, or commercial shipping) may participate in the June commencement ceremony by showing proof of registration in their remaining requirements. Their degree will be issued after successful completion of outstanding requirement(s).

Under no circumstances will students delinquent in more than two credit-bearing requirements be allowed to participate in the commencement ceremony.

Academic Policies and Standards

Residency Requirements

Residency Requirements

Residency requirements for students earning their first baccalaureate degree at the Academy are as follows:

1. Students must complete at least 40 credit hours in residence at the Academy;
2. At least half of courses required in the major must be in residence;
3. All courses required in any minor or concentration must be in residence;
4. At least 30 of the last 40 credit hours earned must be in residence (i.e., "final year" requirement).

Residency requirements for students earning their second baccalaureate degree at the Academy are as follows:

1. Students must complete at least 40 credit hours in residence at the Academy;
2. At least half of courses required in the major must be in residence;
3. All courses required in any minor or concentration must be in residence.

Residence credit includes the following:

- fall and spring term courses offered for credit through the Academy (including online and hybrid courses);
- winter and summer intersession courses offered for credit through the Division of Graduate and Continuing Education;
- foreign study credit earned through Academy- sponsored programs.

Residence credit does not include the following:

- transfer credit (including any foreign study credit through programs not sponsored by the Academy);
- International Baccalaureate credit;
- course exemptions awarded for Advanced Placement (AP coursework), ATP examinations, the College-Level Examination Program (CLEP), and the DSST Program.

Note that exceptions to the "final year" residency requirement may be granted at the discretion of the Dean of Undergraduate Studies. Exceptions, for instance, may be granted for active-duty service members, including Reservists and National Guardsmen. Students are still expected, however, to meet the minimum credit residency requirements for the degree.

For students who earned their first baccalaureate degree from the Academy and return for a second baccalaureate degree, cumulative credits and cumulative GPA will be continued from the prior degree, and the same transcript will be used.

Academic Assessment

Academic Assessment

Massachusetts Maritime Academy is committed to maintaining academic excellence and continuously improving the quality of our academic programs.

Through assessment of core competencies and institutional student learning outcomes, the Academy assesses and monitors the effectiveness of instruction and learning to identify academic weaknesses and areas for improvement.

Faculty and students participate in a variety of individual and program assessments to meet these objectives.

Students are assessed in five Core Competencies, which represent essential skills and abilities that form the educational foundation for all other courses and allow for success beyond the Academy.

These competencies are introduced, reinforced by, or incorporated into many courses throughout the curriculum. All students who graduate from MMA should achieve competency in these areas. The five core competencies are as follows:

Specialized Knowledge: This competency reflects what students should be able to demonstrate with respect to their major or academic program;

Broad and Integrative Learning: This competency reflects basic knowledge and understanding related to humanities, social sciences, sciences, and mathematics. It also reflects students' ability to bridge different areas of learning;

Intellectual Skills: This competency reflects students' skills as related to communication, quantitative literacy, and higher-order thinking. It also includes technology and information literacy skills, creating a foundation for lifelong learning;

Applied and Collaborative Learning: This competency reflects what students can do with what they know. It reflects students' application of knowledge, skills, and abilities as demonstrated in classroom, workplace, and other settings;

Civic and Global Learning: This competency reflects the knowledge, skills, values, and abilities necessary for participation in civic and democratic life. It includes awareness, understanding, and appreciation of social and political values as well as respect for diversity and inclusion.

Learning Outcomes

Consistent with its mission of providing each undergraduate student with educational experiences employing both conventional classroom instruction and practical, hands-on experience in state-of-the-art simulators, aboard a seagoing training vessel, aboard commercial ships, in shore-side laboratories, in the workplace, and during experiential learning, Massachusetts Maritime Academy has established institutional student learning outcomes that are derived from the Academy's core competencies and address expectations for the undergraduate experience within the majors, the general education program, and the co-curriculum. The institutional learning outcomes are as follows:

Specialized Knowledge

- Basic knowledge and understanding of the history, theories, scholarship, tools, technologies, methods, and/or specialized terms of a field of study;

Broad and Integrative Learning

- Basic knowledge and understanding of humanities, social sciences, sciences, and mathematics;
- Ability to explore concepts and questions that bridge different areas of learning;

Intellectual Skills

- Ability to write, read, speak, and listen effectively;
- Ability to critically and creatively comprehend and evaluate new information and ideas;
- Ability to use quantitative reasoning skills, applying basic concepts of mathematics and science;
- Capacity for lifelong learning, including the ability to utilize technology and information literacy;

Applied and Collaborative Learning

- Ability to work and achieve goals as a member of a team;
- Capacity for leadership, including the ability to make rational decisions while complying with a set of standards;
- Ability to perform and behave in a professional manner acceptable for career goals;

- Ability to make appropriate future decisions based on past and present conditions and circumstances;

Civic and Global Learning

- Basic knowledge, under- standing, and appreciation of diverse social and political values;
- Capacity for ethical reasoning, including the ability to make decisions and act in a socially responsible manner;
- Ability to integrate knowledge and skills in civic and global contexts;
- Capacity for empathy, including an appreciation for diversity and inclusion;
- Capacity for civic action, including the ability to engage in service that benefits the public good.

Methods of Assessment

The Outcomes Assessment program relies on a number of different methods for measuring the effectiveness of the educational process, including the following:

Departmental Self-Study: About every five years, each academic department conducts a self-assessment using appropriate guidelines and develops an action plan based on the assessment results and recommendations from external reviewers. Self-studies assess curriculum, faculty, and available resources.

Writing Assessment Program: Writing Assessment Program: All incoming students will be required to participate in a writing assessment program, which includes a writing placement test to evaluate the writing skills of all incoming first-year students and a writing proficiency examination (WPE) at the end of *Introduction to College Writing* (HU-1110), *College Writing* (HU-1111), or *Advanced College Writing* (HU-1112). All students, including those who have previously earned credit for *College Writing*, must pass the WPE as part of the graduation requirement or, if they fail or do not take the WPE, must take HU-6062 *Applied Writing* either before or concurrently with *Writing About Literature* (HU-1222) .

United States Coast Guard License Examination: This is a standardized examination administered by the United States Coast Guard to the two maritime license majors. Marine Transportation students are examined in Rules of the Road, General Deck Questions, General Navigation Questions, Safety, and Navigational Problems. Marine Engineering students are examined in General Subjects, Electricity, Steam Plants, Motor Plants, Gas Turbine Plants, and Engineering Safety.

Standards for Training, Certification and Watchkeeping for Seafarers (STCW) Quality Standards System: The International Maritime Organization requires all training and assessment to be "continuously monitored through a quality standards system to ensure achievement of defined objectives." Each student must meet qualifications in both academic coursework and practical training areas. Courses in Marine Transportation and Marine Engineering have been designed such that the defined standards are embedded throughout the curriculum and assessed through written and oral projects, examinations, and practical performance. All students participating in STCW courses are held to the same standards, regardless of major.

Fundamentals of Engineering (FE) Examination: All Energy Systems Engineering students will be required to take the nationwide FE examination in the spring semester of their senior year. This computer-based examination format is overseen by the National Council of Examiners for Engineering and Surveying (NCEES).

FEQE—Facilities Engineering Qualification Examination: The FEQE is required of all Facilities Engineering majors in order to graduate. The examination was developed by the Engineering Department to serve as the primary assessment tool for the major and comprises two sections. Section One includes assessment of all major topics, and Section Two is based on technical writing skills.

Marine Engineering Qualification Program: All Marine Engineering students participate in the Engineering Qualification Program. The purpose of the program is to ensure that each student in the Marine Engineering Program attains an increasing level of shipboard engineering expertise each year while at the Academy, can operate the training ship machinery efficiently and safely, and can demonstrate a satisfactory level of basic engineering knowledge prior to graduation.

All Programs

BIOC - Marine Biology Concentration

Description

Program Description

Coordinator: Professor Kristin Osborne

Open to all majors. To earn a concentration in Marine Biology.

Curriculum

Curriculum

TAKE ANY FOUR OF THE FOLLOWING:

MS4305 Aquaculture *Principles of Aquaculture*

MS4321 Biology of Fishes *Biology of Fishes*

MS4322 Marine Botany *Marine Botany*

MS4329 Marine Mammals *Marine Mammals*

MS4333 Invertebrate Zoology *Marine Invertebrate Zoology*

MS4334 Tropical Marine Ecology *Tropical Marine Ecology*

MS4342 Marine Microbiology *Marine Microbiology*

MS4341 Ecological Sustainability *Ecological Sustainability*

MS3456 Geo. Ocean. Field Experience *Geological Oceanography Field Experience*

BIOM - Marine Biology Minor

Description

Program Description

Coordinator: Professor Kristin Osborne

Open to all majors.

Curriculum

Curriculum

To earn a minor in Marine Biology, students must complete six of the following courses:

MS4305 Aquaculture Principles of Aquaculture

MS4321 Biology of Fishes Biology of Fishes

MS4322 Marine Botany Marine Botany

MS4329 Marine Mammals Marine Mammals

MS4333 Invertebrate Zoology Marine Invertebrate Zoology

MS4334 Tropical Marine Ecology Tropical Marine Ecology

MS4342 Marine Microbiology Marine Microbiology

MS4341 Ecological Sustainability Ecological Sustainability

MS3456 Geo. Ocean. Field Experience Geological Oceanography Field Experience

EHSM - Environmental Health & Safety Minor

Description

Program Description

Coordinator: Professor Heather Burton

Open to all majors. To earn a minor in Environmental, Health, and Safety (EHS).

Curriculum

Curriculum

Students must complete six (6) specified courses

MS1111 Occupational Health & Safety *Fundamentals of Occupational Health and Safety (all majors except MSSEP)*

MS4232 MARPOL Introduction to MARPOL

MS4271 Adv. Health/Safety *Advanced Principles of Occupational Health and Safety*

MS4272 Health/Safety Audit *Environmental Health and Safety Audit*

MS4273 Construction Site Safety *Construction Site Safety*

MS4343 Critical Elements of SMS *Critical Elements of Safety Management Systems*

EM2111 Infectious Agents *Infectious Agents (any major except EM)*

EM3213 Public Health Issues in EM *Public Health Issues in Emergency Management (any major except EM)*

EM7227 Strategies in Waste Management *Strategies in Waste Management*

EM - Emergency Management

Description

Program Description

Providing graduates with the education and skills necessary for successful careers in public service and private industry, the Emergency Management science-based curriculum prepares students for positions in fields such as disaster management, law enforcement, fire science, risk management, business continuity, military service, and health care. The EM program requires students to complete at least two co-ops (six credits each).

Students participate in experiential learning programs with Habitat for Humanity, at the Outdoor Leadership School, or in Guatemala. Certificate options include Emergency Medical Technician (EMT) and Massachusetts Firefighter I and II certification through Barnstable County.

Curriculum

Curriculum

Emergency Management Curriculum 2025-2026

YEAR 1	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
EM2212 Emergency Management	Introduction to Emergency Management	3	Major
EM1411 Public Safety	Public Safety	3	Major
MS2221 General Biology	General Biology	3.5	Support
HU1110 Intro. to College Writing or HU1111 College Writing or HU1222 Writing About Literature	Intro to College Writing College Writing Advanced College Writing	3	General Education
SM1111 Precalculus with Trigonometry	Precalculus with Trigonometry	3	General Education
	Total Credits	**15.5**	
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
EM1215 EM Policy & Procedure	EM Policy & Procedure	3	Major
SM2121 College Physics I	College Physics I	3.5	Support
SM1214 Applied Calculus	Applied Calculus	3	General Education
SM1131 Chemistry I	Chemistry I	3.5	General Education
HU1222 Writing About Literature	Writing About Literature	3	General Education
	Total Credits	**16**	
	SUMMER TERM	**CREDITS**	**REQUIREMENT TYPE**

EM1311 Experiential Learning	Experiential Learning: Emergency Management	6	Experiential Learning
YEAR 2	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
EM2120 EM Planning	EM Planning	3	Major
EM2144 Foundational Tech in EM	Foundational Technology in EM	3	General Education
EM4222 Crisis Communications	Crisis Communication	3	Support
SM2233 Organic/Hazmat Chemistry	Organic/Hazardous Materials Chemistry	3.5	General Education
SS1211 Western Civilization	Western Civilization	3	General Education
	Total Credits	**15.5**	
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
EM4225 Emergency Management Ops	Emergency Management Operations	3	Major
EM2213 National Security in EM	National Security in Emergency Management	3	Major
SM2218 Statistics	Statistics	3	Support
SS2121 American Government	American Government	3	General Education
	Social Science Group I	3	General Education
	Total Credits	**15**	
	SUMMER TERM	**CREDITS**	**REQUIREMENT TYPE**

EM3311 Co-Op I Emergency Management	Cooperative I: Emergency Management	6	Co-Op
YEAR 3	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
EM7210 Business Continuity	Business Continuity	3	Major
EM2111 Infectious Agents	Infectious Agents	3	Major
EM3121 Risk Management	Risk Management	3	Major
MS3242 Hazardous Materials Mgmt.	Hazardous Materials Management	3	Major
	Free Elective I	3	Support
	Total Credits	**15**	
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
EM7225 Infrastructure Protection	Infrastructure Protection	3	Major
EM3211 Natural Hazards	Natural Hazards	3	Major
EM3213 Public Health Issues in EM	Public Health Issues in Emergency Management	3	Major
	Humanities Group I	3	General Education
	Free Elective II	3	Support
	Total Credits	**15**	
	SUMMER TERM	**CREDITS**	**REQUIREMENT TYPE**
EM4311 Emergency Management Co-Op II	Cooperative II: Emergency Management	6	Co-Op

YEAR 4	FALL SEMESTER	CREDITS	REQUIREMENT TYPE
EM4133 Exercise Planning	Exercise Planning & Development	3	Major
EM4113 International Relief	International Relief	3	Major
SS4132 Legal Issues in Emer. Mgt.	Legal Issues in Emergency Management	3	General Education
	Humanities Group I or II	3	General Education
	Free Elective III	3	Support
	Total Credits	**15**	
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
EM4224 Emergency Management Capstone	Emergency Management Capstone	3	Major
EM4223 IT in Emerg. Mgt. Operations	IT in Emergency Management & Operations	3	Major
EM4226 Transportation Security	Transportation Security	3	Major
	Social Science Group III	3	General Education
	Free Elective IV	3	Support
	Total Credits	**15**	

Curriculum Flow Chart

Course Flow Chart

[object Object]

Learning Objectives

Learning Outcomes

• Understand the four phases of Emergency Management; mitigation, preparedness, response, and recovery, applied across an All Hazards/Whole Community Approach to Emergency Management.

• Identify the scientific principles involved in the development of mitigation and preparedness policies, strategies and tactics.

• Understand scientific principles involved in the development of multi- level response and recovery policies, strategies, and tactics.

• Evaluate the social science components of Emergency Management related to government, the private sector, to nongovernmental organizations, communities, and to individuals.

• Apply the Incident Command System and analyze its relationship to national preparedness goals.

• Apply new and emerging emergency management technologies across phases of Emergency Management.

Opportunities

Career Opportunities

- Director of Emergency Preparedness
- Law Enforcement
- Risk Management
- Operations Management
- Emergency Medical Technician
- Firefighter
- Military

Additional Opportunities

The Massachusetts Maritime Academy currently maintains an exchange program with the University College, Copenhagen. Eligible cadets may apply in the fall semester of their junior year. Up to three students will study abroad and complete an internship during the spring semester of their junior year.

The study aboard program satisfies 15 credits. University College is located in central Copenhagen. Students have rich opportunities to explore not only Copenhagen, but the rest of Denmark, and other European countries. The course in Denmark is approximately 8 weeks long. Previous coursework was focused on Refugees and Mass Migration.

Minors & Concentrations

Available Minors

Homeland Security Minor

International Maritime Business Minor

Marine Biology Minor

Marine Science, Safety and Environmental Protection Minor

Available Concentrations

Environmental Health & Safety Concentration

Homeland Security Concentration

Marine Biology Concentration

Project Management Concentration

Shipboard Environmental Health and Safety Officer Concentration

EMHS - Emergency Management

ENERM - Energy Management Minor

Curriculum

Curriculum

Required Courses:

SM2218 Statistics *Statistics or* SM3005 Probability and Statistics *Probability and Statistics*

EN3801 Energy Strategy and Management *Energy Strategy and Management*

EN3802 Energy Systems *Energy Systems*

AND THREE COURSES FROM THE FOLLOWING:

EN2701 Introduction to Design *Introduction to Design*

EN3102 System Dynamics and Vibrations *System Dynamics and Vibrations*

EN4121 Elec. Power Distribution *Electrical Power Distribution (ME only)*

EN4222 Heating, Vent. & Air-Cond. *HVAC (ME only)*

EN4224 Facilities Planning & Mgmt. *Facilities Planning and Management (except FE)*

EN7141 - Missing course *Advanced CAD*

EN7142 Diesel Engines *Diesel Engines (FE only)*

EN7144 Nuclear Power *Nuclear Power*

EN7146 Heat and Mass Transfer *Heat and Mass Transfer*

EN7151 Commercial Turbines *Commercial Turbines (ME only)*

EN7214 Industrial Wastewater *Industrial Wastewater Treatment*

EN7241 - Missing course *As-built CAD*

EN7247 Construction Methods *Construction Methods and Materials*

HU6073 Technical Writing *Technical Writing*

SM2214 Differential Equations *Intro to GIS (except MSSEP)*

Opportunities

Career Opportunities

add as a test

ERMSC - Emergency and Risk Management Studies

Curriculum

Curriculum

Curriculum

Mandatory Core Course:

EM2212 Emergency Management Introduction to Emergency Management

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Additional Course Options:(Must complete three electives)

EM1215 EM Policy & Procedure Emergency Management Policy & Procedure

EM2111 Infectious Agents Infectious Agents

EM2120 EM Planning Emergency Management Planning

EM2144 Foundational Tech in EM Foundational Technology in Emergency Management

EM2213 National Security in EM National Security in Emergency Management

EM3121 Risk Management Risk Management

EM3211 Natural Hazards Natural Hazards

EM3213 Public Health Issues in EM Public Health Issues in Emergency Management

EM4113 International Relief International Relief

EM4133 Exercise Planning Exercise Planning & Development

EM4226 Transportation Security Transportation Security

EM7210 Business Continuity Business Continuity

EM7220 Cyber Security Cybersecurity

EM7226 Fundamentals of Leadership Fundamentals of Leadership

EM7227 Strategies in Waste Management Strategies in Waste Management

EM7229 SAR Policy and Practice SAR Policy and Practice

Learning Objectives

Learning Outcomes

The proposed concentration in Emergency and Risk Management Studies (ERMS) integrates principles of emergency and risk management to provide interested MMA students with foundational knowledge, specialized insights, and applied skills for addressing risks and crises in the respective areas of EM studies. The minor and concentration combine emergency management processes with risk identification, mitigation, and resilience strategies, preparing students for leadership roles across diverse industries at sea and ashore. The approach ensures that students from license and non-license majors are able to gain essential emergency and risk management competencies applicable to their fields.

Program Eligibility

No Requirements

Opportunities

Career Opportunities

The concentration in Emergency and Risk Management Studies offers a dynamic and future-focused curriculum that provides students across all majors at Massachusetts Maritime Academy (MMA) with essential competencies in risk assessment, resilience planning, safety, and leadership. As industries across the globe face an increasing number of disruptions—from natural disasters and cyber threats to global supply chain vulnerabilities and regulatory shifts, there is a growing demand for professionals who can proactively identify risks, develop mitigation strategies, and ensure business continuity.

This concentration is strategically designed to enhance the skill set of students in every major at MMA, making them more competitive, adaptable, and effective in their respective fields. Whether their aspirations lie in maritime transportation, infrastructure management, emergency response, global logistics, or corporate risk planning, this program amplifies their expertise and increases career mobility across multiple sectors.

ERMSM - Emergency and Risk Management Studies

Curriculum

Curriculum

Mandatory Core Course:

EM2212 Emergency Management Introduction to Emergency Management

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Additional Course Options:(Must complete five electives)

EM1215 EM Policy & Procedure Emergency Management Policy & Procedure

EM2111 Infectious Agents Infectious Agents

EM2120 EM Planning Emergency Management Planning

EM2144 Foundational Tech in EM Foundational Technology in Emergency Management

EM2213 National Security in EM National Security in Emergency Management

EM3121 Risk Management Risk Management

EM3211 Natural Hazards Natural Hazards

EM3213 Public Health Issues in EM Public Health Issues in Emergency Management

EM4113 International Relief International Relief

EM4133 Exercise Planning Exercise Planning & Development

EM4226 Transportation Security Transportation Security

EM7210 Business Continuity Business Continuity

EM7220 Cyber Security Cybersecurity

EM7226 Fundamentals of Leadership Fundamentals of Leadership

EM7227 Strategies in Waste Management Strategies in Waste Management

EM7229 SAR Policy and Practice SAR Policy and Practice

Learning Objectives

Learning Outcomes

The proposed minor in Emergency and Risk Management Studies (ERMS) integrates principles of emergency and risk management to provide interested MMA students with foundational knowledge, specialized insights, and applied skills for addressing risks and crises. The minor combines emergency management processes with risk identification, mitigation, and resilience strategies, preparing students for leadership roles across diverse industries at sea and ashore. The approach ensures that students from license and non-license majors are able to gain essential emergency and risk management competencies applicable to their respective fields.

Program Eligibility

No Requirements

Opportunities

Career Opportunities

The Minor in Emergency and Risk Management Studies offers a dynamic and future-focused curriculum that provides students across all majors at Massachusetts Maritime Academy (MMA) with essential competencies in risk assessment, resilience planning, safety, and leadership. As industries across the globe face an increasing number of disruptions—from natural disasters and cyber threats to global supply chain vulnerabilities and regulatory shifts, there is a growing demand for professionals who can proactively identify risks, develop mitigation strategies, and ensure business continuity.

This minor is strategically designed to enhance the skill set of students in every major at MMA, making them more competitive, adaptable, and effective in their respective fields. Whether their aspirations lie in maritime transportation, infrastructure management, emergency response, global logistics, or corporate risk planning, this program amplifies their expertise and increases career mobility across multiple sectors

ESE - Energy Systems Engineering

Description

Program Description

The Energy Systems Engineering (ESE) program prepares graduates for careers in engineering design, planning, installation and operations of various power generation and management technologies in the fast-growing energy industry, including conventional, alternative and renewable methods. They learn how to use modern engineering tools and techniques to design, implement and safely operate various energy systems.

Advanced mathematics and applied engineering courses help cadets acquire critical problem-solving skills, as well as an ability to gather, analyze, and interpret data. Design courses and field work focus on the necessary teamwork, communication, critical thinking, and ethical components 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.

This knowledge is reinforced through three required Co-ops and an optional international Experiential Learning course. An optional USCG Marine Engineer license can be attained by completing a dual major in Marine Engineering (MENG) and four sea terms.

Curriculum

Curriculum

Energy Systems Engineering Curriculum 2025-2026

YEAR 1	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN1112 Engineering Systems and Safety	Engineering Systems & Safety	3	C-	Support
SM1131 Chemistry I	Chemistry I	3.5		General Education
SM1212 Calculus I	Calculus I	3	C-	General Education
HU1110 Intro. to College Writing or HU1111 College Writing or HU1112 Adv College Writing	Introduction to College Writing College Writing Advanced College Writing	3	C-	General Education
SS1211 Western Civilization	Western Civilization	3		General Education
	Total Credits	**15.5**		
	SPRING TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN1222 Aux. Machinery - Facilities	Auxiliary Machinery I for FE	3.5	C-	Major
EN1214 Computer Modeling	Computer Modeling	1		Major
HU1222 Writing About Literature	Writing About Literature	3		General Education
SM2113 Calculus II	Calculus II	3		General Education
SM1232 Chemistry II	Chemistry II	3.5		General Education
SM2123 Engineering Physics I	Engineering Physics I	3.5		General Education

	Total Credits	**17.5**		
YEAR 2	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN2901 Computer Methods in Engineerin	Computer Methods in Engineering	1		Major
EN2101 Engineering Statics	Engineering Statics	3	C-	Major
EN2112 Machine Tool Technology	Machine Tool Technology	2		Major
SM2214 Differential Equations	Differential Equations	3		General Education
SM2224 Eng. Physics II	Engineering Physics II	3.5		General Education
SS2121 American Government	American Government	3		General Education
	Total Credits	**15.5**		
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3212 Electronics	Electronics	3	C-	Major
EN3212L Electronics Lab	Electronics Lab	1		Major
EN3112 Strength of Materials	Strength of Materials	3		Major
EN3112L Strength of Materials Lab	Strength of Materials Lab	1		Major
SM6115 Calculus III	Calculus III	3		Support
SM3125 Eng. Physics III	Engineering Physics III	3		Support
	Social Science Group I	3		General Education

	Total Credits	**17**		
	SUMMER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN2242 ESE Co-Op I	Cooperative I: Energy Systems Engineering	6		Co-Op
YEAR 3	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3111 Electrical Machines	Electrical Machines	3	C-	Major
EN3111L Electrical Machines Lab	Electrical Machines Lab	1		Major
EN3201 Fluid Dynamics	Fluid Dynamics	3		Major
EN2701 Introduction to Design	Introduction to Design	3		Major
EN3102 System Dynamics and Vibrations	System Dynamics & Vibration	3		Major
EN7146 Heat and Mass Transfer	Heat & Mass Transfer	3		Support
	Total Credits	**16**		
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3802 Energy Systems	Energy Systems	3		Major
EN3603 Instrumentation & Control	Instrumentation & Control	3		Major
EN3603L I&C Lab	Instrumentation & Control Lab	1		Major
EN4803 Thermodynamics of Power System	Thermodynamics of Power Systems	3		Major

EN4803L Power Systems Lab	Power Systems Lab	1		Major
SM3005 Probability and Statistics	Probability & Statistics	3		Support
	Humanities Group I	3		General Education
	Total Credits	**17**		
	SUMMER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3242 ESE Co-Op II	Cooperative II: Energy Systems Engineering	6		Co-Op
YEAR 4	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3801 Energy Strategy and Management	Energy Strategy & Management	3		Major
EN4704 Energy Systems Design I	Energy Systems Design I	3		Major
EN4222 Heating, Vent. & Air-Cond.	Heating, Ventilation & Air Conditioning	3		Major
	Social Science Group III	3		General Education
	Free Elective I	3		Support
	Total Credits	**15**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN4242 ESE Co-Op III	Cooperative III: Energy Systems Engineering	6		Co-Op

	SPRING SEMESTER	CREDITS	MINIMUM GRADE	REQUIREMENT TYPE
EN4705 Energy Systems Design II	Energy Systems Design II	3		Major
EN4121 Elec. Power Distribution	Electrical Power Distribution	3		Major
	Humanities Group I or II	3		General Education
	Social Science Group II*	3		General Education
	Free Elective II	3		Support
	Total Credits	**15**		

*MS3142 Environmental Law Environmental Law or SS3221 Business Law Business Law

Curriculum Flow Chart

Course Flow Chart

[object Object]

Learning Objectives

Learning Outcomes

• Ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

• 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

• Ability to communicate effectively with a range of audiences

• 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

• 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

• Ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

• Ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program Eligibility

Requirements

Because quantitative reasoning is essential to successfully advance in the Energy Systems Engineering major, a student must be Calculus I ready in order to enroll in the major. To remain in Energy Systems Engineering, a student must

pass EN1112 Engineering Systems and Safety Engineering Systems and Safety with a grade of C- or better,

pass SM1212 Calculus I Calculus I by the end of the second semester with a grade of C- or better,

pass EN2101 Engineering Statics Engineering Statics on the first attempt with a grade of C- or better.

A student failing to meet any of these requirements may remain at the Academy by enrolling in a major for which he or she remains eligible.

Prior to receiving the diploma, an ESE student must sit for the NCEES FE examination, a nationally recognized examination and the first step to becoming a professional engineer.

Note: Energy Systems Engineering students are not permitted to take SM1111 Precalculus with Trigonometry Precalculus with Trigonometry as a free elective.

Opportunities

Career Opportunities

The Energy Systems Engineering program prepares graduates for careers in sustainable production, conversion, delivery, and use of energy. Energy systems engineers are responsible for the safe, economical, compliant and sustainable design and implementation of various energy technologies. MMA Energy Systems Engineers can be found in every energy business sector and in every level of management throughout industry across the globe. Renewable energy firms are always seeking our graduates.

Possible career paths for an Energy Systems Engineering major include:

- Renewable Energy Technology
- Sustainable Building Design and Implementation
- Power Generation and Distribution
- Automation and Control Technology

Minors & Concentrations

Available Minors

Environmental Health & Safety Minor

Facilities Operations Minor

Available Concentrations

Environmental Health & Safety Concentration

Homeland Security Concentration

Homeland Security Minor

International Maritime Business Minor

Marine Biology Minor

Marine Construction Minor

Marine Science, Safety and Environmental Protection Minor

Marine Biology Concentration

Project Management Concentration

ESEN - Energy Systems Engineering

ESHC - Environmental Health & Safety Concentration

Description

Program Description

Coordinator: Professor Heather Burton

Open to all majors. This concentration gives students an opportunity for specialized study in environmental health and safety.

Curriculum

Curriculum

Students must complete four (4) specified courses

MS1111 Occupational Health & Safety *Fundamentals of Occupational Health and Safety (all majors except MSSEP)*

MS4232 MARPOL Introduction to MARPOL

MS4271 Adv. Health/Safety *Advanced Principles of Occupational Health and Safety*

MS4272 Health/Safety Audit *Environmental Health and Safety Audit*

MS4273 Construction Site Safety *Construction Site Safety*

MS4343 Critical Elements of SMS *Critical Elements of Safety Management Systems*

EM2111 Infectious Agents *Infectious Agents (any major except EM)*

EM3213 Public Health Issues in EM *Public Health Issues in Emergency Management (any major except EM)*

EM7227 Strategies in Waste Management *Strategies in Waste Management*

FE - Facilities Engineering

Description

Program Description

The FE program prepares students for careers in facilities engineering, management, and operations. Large facilities, manufacturing plants, office buildings, hospitals, and power plants require safe, economical, compliant, and sustainable operation. Students acquire critical problem-solving skills, as well as an ability to gather, analyze, and interpret data. They learn how to use modern engineering tools and techniques to safely operate and maintain building management systems. This knowledge is reinforced through three required co-ops. Students must pass the Facilities Engineering Qualification Exam (FEQE). If certain electives are taken, cadets are also eligible to take the Massachusetts Stationary Engineer license and the Massachusetts Municipal Wastewater Operator license exams. Cadets in the FE major participate in a first-year sea term for immediate exposure to a working power plant system.

Curriculum

Curriculum

Facilities Engineering Curriculum 2025-2026

YEAR 1	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN1112 Engineering Systems and Safety	Engineering Systems & Safety	3	C-	Support
MT1111 Vessel Fam/Basic Safety Trng.	Vessel Familiarization & Basic Safety Training	4	C-	Support
SM1131 Chemistry I	Chemistry I	3.5		General Education
SM1111 Precalculus with Trigonometry	Precalculus with Trigonometry	3	C-	General Education
HU1110 Intro. to College Writing or HU1111 College Writingor HU1112 Adv College Writing	Introduction To College Writing College Writing Advanced College Writing	3	C-	General Education
	Total Credits	**16.5**		
	SPRING TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN1222 Aux. Machinery - Facilities	Auxiliary Machinery I for FE	3.5	C-	Major
EN1212 Computer Aided Design	Computer-Aided Design (CAD)	1		Major
HU1222 Writing About Literature	Writing About Literature	3		General Education
SM1212 Calculus I	Calculus I	3	C-	General Education
SM1232 Chemistry II	Chemistry II	3.5		General Education

SS1211 Western Civilization	Western Civilization	3		General Education
	Total Credits	**17**		
YEAR 2	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN2121 Aux. Machinery II -Facilities	Auxiliary Machinery II for FE	4	C-	Major
HU6073 Technical Writing	Technical Writing	3		General Education
SM2113 Calculus II	Calculus II	3		General Education
SM2123 Engineering Physics I	Engineering Physics I	3.5		General Education
	Social Science Group I	3		General Education
	Total Credits	**16.5**		
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN2222 Commercial Boilers	Commercial Boilers	3.5	C-	Major
EN2112 Machine Tool Technology	Machine Tool Technology	2		Major
EN2211 Mechanics	Mechanics	3		Major
SM2214 Differential Equations	Differential Equations	3		General Education
SM2224 Eng. Physics II	Engineering Physics II	3.5		General Education
	Total Credits	**15**		

	SUMMER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN2221 FE Cooperative I	Cooperative I: Facilities Engineering	6		Co-Op
YEAR 3	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3212 Electronics	Electronics	3	C-	Major
EN3212L Electronics Lab	Electronics Lab	1		Major
EN3214 Municipal Wastewater	Municipal Wastewater Treatment	3	C-	Major
EN3112 Strength of Materials	Strength of Materials	3		Major
EN3112L Strength of Materials Lab	Strength of Materials Lab	1		Major
SM3125 Eng. Physics III	Engineering Physics III	3		Support
SS2121 American Government	American Government	3		General Education
	Total Credits	**17**		
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3111 Electrical Machines	Electrical Machines	3	C-	Major
EN3111L Electrical Machines Lab	Electrical Machines Lab	1		Major
EN3211 Thermodynamics	Thermodynamics	3		Major
EN3213 Refrigeration EN3213L Refrigeration Lab	Refrigeration +Lab	2.5		Major

EN7151 Commercial Turbines	Commercial Turbines	3		Support
	Humanities Group I	3		General Education
	Total Credits	**15.5**		
	SUMMER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3221 FE Cooperative II	Cooperative II: Facilities Engineering	6		Co-Op
YEAR 4	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN4111 Fluid Mechanics	Fluid Mechanics	3	C-	Major
EN4121 Elec. Power Distribution	Electrical Power Distribution	3		Major
EN3216 Operational Controls	Operational Controls	3	C-	Major
EN3216L Operational Controls Lab	Operational Controls Lab	1	C-	Major
	Social Science Group II*	3		General Education
	Free Elective I	3		Support
	Total Credits	**16**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN4221 Fe Co-Op III	Cooperative III: Facilities Engineering	6		Co-Op

	SPRING SEMESTER	CREDITS	MINIMUM GRADE	REQUIREMENT TYPE
EN4224 Facilities Planning & Mgmt.	Facilities Planning & Management	3		Major
EN4222 Heating, Vent. & Air-Cond.	Heating, Ventilation & Air Conditioning	3		Major
	Humanities Group I or II	3		General Education
	Social Science Group III	3		General Education
	Free Elective II	3		Support
	Total Credits	**15**		

* MS3142 Environmental Law Environmental Law, SS3221 Business Law Business Law, or SS4132 Legal Issues in Emer. Mgt. Legal Issues in Emergency Management

Curriculum Flow Chart

Course Flow Chart
[object Object]

Learning Objectives

Learning Outcomes
The overarching goal of the FE program is to produce a competent and conscientious facilities engineer who will be prepared to take on a responsible role as a contributing member of our highly technical society. FE graduates should be able to:

- Apply general education knowledge to appreciate the impact of engineering solutions on society as a whole.
- Apply mathematics, science and engineering knowledge to solve engineering problems.
- Gather, analyze and interpret data.
- Communicate effectively in English using written, oral and graphic formats.
- Function effectively as a member of a multidisciplinary team.
- Use engineering tools and techniques to safely operate, maintain and repair equipment, machinery and engineering systems typically found in an industrial facility.

- Understand and comply with applicable environmental regulations, building codes, sustainability goals and similar requirements at an industrial facility in accordance with local, state or federal legislative requirements.

Program Eligibility

Requirements

To remain in Facilities Engineering, a student must

pass EN1112 Engineering Systems and Safety Engineering Systems and Safety with a grade of C- or better,

pass SM1111 Precalculus with Trigonometry Precalculus with Trigonometry by the second attempt with a grade of C- or better,

pass SM1212 Calculus I Calculus I by the second attempt with a grade of C- or better,

pass EN2211 Mechanics Mechanics by the third attempt.

*A student failing to meet any of these requirements may remain at the Academy by enrolling in a major for which he or she remains eligible.

Note: The Sea Term degree requirement and its six associated credits for the classes of 2028 and 2029. For students who do participate in Sea Term it will satisfy one of the two required free electives.

Opportunities

Career Opportunities

The Facilities Engineering program prepares graduates for careers in facilities engineering, management, and operations. Facilities engineers are responsible for the safe, economical, compliant and sustainable operation of various equipment and systems in large facilities such as manufacturing plants, office buildings, hospitals, and power plants.

MMA Facilities Engineers can be found in every business sector, in every level of management throughout industry, all across the globe.

Possible positions for a Facilities Engineering major include:

Director of Facilities

Vice President of Operations

President of start-up company (self-employed)

Senior Executive Management

Engineering Systems Specialist

Minors & Concentrations

Available Minors

Energy Management Minor

Environmental Health & Safety Minor

Homeland Security Minor

International Maritime Business Minor

Marine Biology Minor

Marine Construction Minor

Marine Science, Safety and Environmental Protection Minor

Available Concentrations

Environmental Health & Safety Concentration

Homeland Security Concentration

Marine Biology Concentration

Project Management Concentration

FENV - Facilities Engineering

FEOM - Facilities Operations Minor

Description

Program Description

Coordinator: Professor Peter Carroll

Open to Marine Engineering and Energy Systems Engineering majors. This minor prepares students for careers ashore and/or for advanced studies in facilities management and operation, stationary engineering (power generation), or waste water treatment technology, as they relate to the operation of large, complex facilities.

Curriculum

Curriculum

REQUIRED COURSES:

EN2222 Commercial Boilers *Commercial Boilers*

EN3213 Refrigeration *Refrigeration (ESE majors)*

EN3214 Municipal Wastewater *Municipal Wastewater Treatment*

EN4222 Heating, Vent. & Air-Cond. *HVAC (ME majors)*

AND THREE COURSES FROM THE FOLLOWING:

EN2111 Aux Machinery II *Auxiliary Machinery II or EN-2121 Auxiliary*

EN2121 Aux. Machinery II -Facilities *Machinery II for Facilities (ESE only)*

EN4121 Elec. Power Distribution *Electrical Power Distribution (ME only)*

EN4224 Facilities Planning & Mgmt. *Facilities Planning and Management*

EN7141 - Missing course *Advanced CAD*

EN7142 Diesel Engines *Diesel Engines*

EN7144 Nuclear Power *Nuclear Power*

EN7151 Commercial Turbines *Commercial Turbines*

EN7214 Industrial Wastewater *Industrial Wastewater Treatment*

EN7241 - Missing course *As-built CAD*

EN7247 Construction Methods *Construction Methods and Materials*

HU6073 Technical Writing *Technical Writing*

IM3131 Principles of Finance *Principles of Finance*

SM2218 Statistics *Statistics (ME only)*

HOMEC - Homeland Security Concentration

Description

Program Description

Coordinator: Professor George Cadwalader

Open to all majors. This concentration gives Emergency Management students the opportunity to use their four free electives for specialized study of homeland security.

Curriculum

Curriculum

REQUIRED COURSES:

EM3214 International Terrorism *International Terrorism*

EM7220 Cyber Security *Cyber Security*

AND TWO OF THE FOLLOWING ELECTIVES:

EM4112 Fire Dynamics *Fire Dynamics*

EM7221 Military Operations & Security *Military Operations and Security*

EM7222 Legal Issues in Homeland Secur *Legal Issues in Homeland and National Security*

EM7223 Select Issues in Law Enf. *Select Issues in Law Enforcement*

EM7224 Transnational Crime *Transnational Crime*

EM7226 Fundamentals of Leadership *Fundamentals of Leadership*

EM7228 Comparative Homeland Security *Comparative Homeland Security*

EM7230 EM Budgets & Grants *EM Budgets & Grants*

SS2232 World Economic Geography *World Economic Geography*

SS2233 Political Geography *Political Geography*

SS4317 Intelligence and National Secu *Intelligence and National Security Policy*

HOMEM - Homeland Security Minor

Description

Program Description

Coordinator: Professor George Cadwalader

Open to all majors. The minor in Homeland Security is offered to students in all majors. The minor is intended to provide students with a broad understanding of the inter national and domestic security is sues involved in homeland security. Courses provide a focus on various professions and levels of government involved in homeland security and on related topic areas.

Curriculum

Curriculum

Emergency Management students are required to complete any six of the courses listed below. Students in other majors are required to complete three of the courses listed below as well as EM2213 National Security in EM *National Security in Emergency Management*, EM4226 Transportation Security *Transportation Security*, and EM3214 International Terrorism *International Terrorism*.

EM3214 International Terrorism *International Terrorism*

EM4112 Fire Dynamics *Fire Dynamics*

EM7220 Cyber Security *Cyber Security*

EM7221 Military Operations & Security *Military Operations and Security*

EM7222 Legal Issues in Homeland Secur *Legal Issues in Homeland and National Security*

EM7223 Select Issues in Law Enf. *Select Issues in Law Enforcement*

EM7224 Transnational Crime *Transnational Crime*

EM7226 Fundamentals of Leadership *Fundamentals of Leadership*

EM7228 Comparative Homeland Security *Comparative Homeland Security*

EM7229 SAR Policy and Practice *SAR Policy and Practice*

EM7230 EM Budgets & Grants *EM Budgets & Grants*

SS2232 World Economic Geography *World Economic Geography*

SS2233 Political Geography *Political Geography*

SS4317 Intelligence and National Secu *Intelligence and National Security Policy*

IMB - International Maritime Business

Description

Program Description

The International Maritime Business (IMB) program prepares students to be business professionals serving the global marketplace and the complex supply chains that enable the global economy. Students acquire wide-ranging business skills - such as accounting, economics, finance, and negotiations - and maritime industry knowledge -such as admiralty law, port terminal operations, and shipping. These unique skills provide IMB majors with an edge in the increasingly global marketplace. With 90% of goods traveling by ship at some point in the journey from origin to destination, the industry is in need of professionals with this specific focus. In the spirit of the Academy's Learn-Do-Learn philosophy, in addition to traditional academic coursework, all students will complete one IMB experiential learning program (international, domestic, maritime, or online) and two cooperative experiences. Sea Term I (ST-0999) and experiential learning programs from other majors are not considered equivalent to the IMB experiential learning program, but are counted as electives. Accredited by the International Accreditation Council for Business Education(IACBE), the IMB program combines the breadth of high-quality business education with a focus on the maritime sector.

Curriculum

Curriculum

International Maritime Business Curriculum 2025-2026

YEAR 1	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
IM1214 Business Computing	Foundations in Business Computing	3	Major
IM1215 Introduction to Business	Introduction to Business	3	Major
SS2131 Microeconomics	Microeconomics	3	Support
HU1110 Intro. to College Writing or HU1111 College Writing or HU1112 Adv College Writing	Introduction to College Writing College Writing Advanced College	3	General Education
SM1111 Precalculus with Trigonometry	Precalculus with Trigonometry	3	General Education
	Total Credits	**15**	
	SPRING TERM	**CREDITS**	**REQUIREMENT TYPE**
IM3122 Business Data Analysis	Business Data Analysis	3	Major
IM2211 The Business of Shipping	The Business of Shipping	3	Major
HU1222 Writing About Literature	Writing About Literature	3	General Education
SM1214 Applied Calculus	Applied Calculus	3	General Education
SM1131 Chemistry I SM2121 College Physics I	Chemistry I or College Physics I	3.5	General Education
	Total Credits	**15.5**	
YEAR 2	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
IM2123 Financial Accounting	Financial Accounting	3	Major

IM1212 Macroeconomics for Business	Macroeconomics for Business	3	Major
IM3231 Vessel Chartering & Brokerage	Vessel Chartering & Brokerage	3	Major
SM2117 Quantitative Meth. for Mgmt.	Quantitative Methods for Management	3	General Education
	Science & Math Group III	3.5	General Education
	Total Credits	**15.5**	
	WINTER TERM	**CREDITS**	**REQUIREMENT TYPE**
IM3411 IMB Experiential Learning	Experiential Learning: IMB	6	Experiential Learning
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
IM2231 Business Decision and Strategy	Business Decision & Strategy	3	Major
IM2224 Managerial Accounting	Managerial Accounting	3	Major
IM1211 Organizational Behavior	Organization Behavior	3	Major
HU6072 Business Communication	Business Communication	3	Support
SM1131 Chemistry I SM2121 College Physics I	Chemistry I or College Physics I	3.5	General Education
	Total Credits	**15.5**	
YEAR 3	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
IM3133 Finance I	Finance I	3	Major

IM3241 Principles of Marketing	Principles of Marketing	3	Major
IM3111 Transportation Ops. Mgmnt.	Transportation Operations Management	3	Major
SS3225 Admiralty and Maritime Law	Admiralty & Maritime Law	3	General Education
SS1211 Western Civilization	Western Civilization	3	General Education
	Total Credits	**15**	
	WINTER TERM	**CREDITS**	**REQUIREMENT TYPE**
IM3311 IMB Co-Op I	Cooperative I: International Maritime Business	6	Co-Op
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
IM4211 Bus. Ethics and Negotiation	Business Ethics & Negotiation	3	Major
IM3233 Finance II	Finance II	3	Major
SS3221 Business Law	Business Law	3	Support
SS2121 American Government	American Government	3	General Education
	Humanities Group I	3	General Education
	Social Science Group III	3	General Education
	Total Credits	**18**	
YEAR 4	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**

IM4112 Int. Business & Ocean Shipping	International Business & Ocean Shipping	3	Major
IM4111 Marine Insurance	Marine Insurance	3	Major
IM4151 Supply Chain Management	Supply Chain Management	3	Major
MT3252 Port & Terminal Oper. Mgmt	Port & Terminal Operations	3	Support
	IMB Elective I	3	Major
	Free Elective I	3	Support
	Total Credits	**18**	
	WINTER TERM	**CREDITS**	**REQUIREMENT TYPE**
IM4311 IMB Co-Op II	Cooperative II: International Maritime Business	6	Co-Op
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
IM4212 Seminar:Int.Maritime Business	Capstone Seminar in IMB	3	Major
	IMB Elective II	3	Major
	IMB Elective III	3	Major
	Humanities Group I or II	3	General Education
	Free Elective II	3	Support
	Total Credits	**15**	

Curriculum Flow Chart

Course Flow Chart
[object Object]

Learning Objectives

Learning Outcomes
• Demonstrate knowledge of key concepts, principles, and practices in business and maritime domains.

• Apply appropriate analytic techniques to solve problems and support decision making.

• Comprehensively explore issues, ideas, evidence, and perspectives in order to accept or formulate an opinion or conclusion.

• Effectively listen and read to gain information. IMB students will effectively speak and write to share information.

• Perform effectively as a team member and leader.

• Demonstrate ability to perform in professional settings.

Opportunities

Career Opportunities
The IMB major prepares graduates in the foundation of general business, with a focus on the maritime sector, and prepares them for careers in the fields of management, logistics, transportation, operations, shipping, chartering, and maritime business. These unique skills provide cadets with an edge in the increasingly global marketplace. Many IMB graduates go on to work in the following fields:

- General Business (Accounting, Analytics, Marketing, Sales)
- Project Management
- Shipping & Operations
- Vessel Chartering & Brokerage
- Port & Terminal Operations
- Maritime Law & Insurance
- Logistics & Supply Chain Management

Additional Opportunities
The opportunities for professional certifications available to IMB students are vast. For example, after taking business courses, students will be ready to sit for a variety of certification examinations, such as Certificate in Business Analysis, Certified Associate in Project Management, or Certified Managerial Accountant. The showcase certification is offered through the Institute for Chartered Shipbrokers. Starting with Business of Shipping, IMB's

seven maritime courses provide the knowledge necessary to sit for the qualifying exams right on campus in the only exam center in the US. With as little as two exams, students can obtain a Foundation Diploma, and by passing seven exams, students will earn what is known as the Professional Qualifying Examination, a premier, globally recognized, maritime credential.

Minors & Concentrations

Available Minors

Environmental Health & Safety Minor

Homeland Security Minor

Marine Biology Minor

Marine Science, Safety and Environmental Protection Minor

Available Concentrations

Environmental Health & Safety Concentration

Homeland Security Concentration

Marine Biology Concentration

Project Management Concentration

IMBU - Int'l Maritime Business

IMBM - International Maritime Business Minor

Description

Program Description

Coordinator: Dr. Bani Ghosh

Open to all majors except International Maritime Business. For the seagoing majors who plan to start a shore-based career, for those interested in a graduate degree in business or law, or for those inclined towards entrepreneurial ventures, the IMB minor provides a basic business background with specialization in the shipping industry.

Curriculum

Curriculum

REQUIRED COURSES:

IM2123 Financial Accounting *Financial Accounting I*

IM2211 The Business of Shipping *The Business of Shipping*

STUDENTS MUST ALSO TAKE FOUR COURSES FROM THE FOLLOWING:

Any course with an IM designation as long as prerequisites are met

HU6072 Business Communication *Business Communications*

MT3252 Port & Terminal Oper. Mgmt *Port and Terminal Operations Management*

SM2117 Quantitative Meth. for Mgmt. *Quantitative Methods for Management*

SS3225 Admiralty and Maritime Law *Admiralty and Maritime Law*

MCONM - Marine Construction Minor

Description

Program Description

Coordinator: Professor Peter Carroll

Open to all engineering majors. This minor prepares students for careers or advanced studies in the fields of marine construction or construction project management as these fields relate to large and complex construction projects in the shore-side or marine environment.

Curriculum

Curriculum

REQUIRED COURSES:

EN7247 Construction Methods *Construction Methods & Management*

EN7257 Marine Construction I *Marine Construction I*

EN7262 Marine Construction II *Marine Construction II*

AND THREE COURSES FROM THE FOLLOWING:

EN3102 System Dynamics and Vibrations *System Dynamics and Vibrations (ME & FE only)*

EN4121 Elec. Power Distribution*Electrical Power Distribution (ME only)*

EN7271 Construction Industry Co-Op *Construction Industry Cooperative*

EN7141 - Missing course *Advanced CAD*

EN7142 Diesel Engines *Diesel Engines (FE & ESE only)*

EN7151 Commercial Turbines *Commercial Turbines (ME & ESE only)*

EN7241 - Missing course *As-built CAD*

HU6073 Technical Writing *Technical Writing*

MS2244 Intro. to GIS *Introduction to GIS*

MS3121 Physical Geology *Physical Geology*

ME - Marine Engineering

Description

Program Description

The Marine Engineering program prepares graduates for careers as licensed engineering officers in the United States Merchant Marine as well as engineering positions in associated shore-side industries. ME majors gain a firm grasp of mechanical and electrical engineering systems through classroom and hands-on learning. This includes approximately 50 days of practical shipboard training each year, typically during the annual sea term aboard the training ship or on a commercial merchant ship assignment.

Curriculum

Curriculum

Marine Engineering Curriculum 2025-2026

YEAR 1	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN1112 Engineering Systems and Safety	Engineering Systems & Safety	3	C-	Support
MT1111 Vessel Fam/Basic Safety Trng.	Vessel Familiarization & Basic Safety Training	4	C-	Support
SM1131 Chemistry I	Chemistry I	3.5		General Education
SM1111 Precalculus with Trigonometry	Precalculus with Trigonometry	3	C-	General Education
HU1110 Intro. to College Writing or HU1111 College Writing or HU1112 Adv College Writing	Introduction to College Writing College Writing Advanced College Writing	3	C-	General Education
	Total Credits	**16.5**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
ST0999 Sea Term I	Sea Term I	6	C-	Sea Term
	SPRING TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN1211 Auxiliary Machinery I	Auxiliary Machinery I	3.5	C-	Major
HU1222 Writing About Literature	Writing About Literature	3		General Education
SM1212 Calculus I	Calculus I	3	C-	General Education

SM1232 Chemistry II	Chemistry II	3.5		General Education
SS1211 Western Civilization	Western Civilization	3		General Education
	Total Credits	**16**		
MCSTCW0 Orientation STCW	Orientation STCW	0		STCW
MCSTCW1 Mariner Credentialing 1	Mariner Credentialing I (CPR and VPDSD	0		STCW
YEAR 2	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN2111 Aux Machinery II	Auxiliary Machinery II	4	C-	Major
EN2112 Machine Tool Technology	Machine Tool Technology	2	C-	Major
EN1212 Computer Aided Design	Computer-Aided Design (CAD)	1		Major
SM2113 Calculus II	Calculus II	3		General Education
SM2123 Engineering Physics I	Engineering Physics I	3.5		General Education
SS2121 American Government	American Government	3		General Education
	Total Credits	**16.5**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN2231 Sea Term II - Engine	Sea Term II: Marine Engineering	6	C-	Sea Term

	SPRING SEMESTER	CREDITS	MINIMUM GRADE	REQUIREMENT TYPE
EN2232 Internal Combustion Engine I	Internal Combustion Engines I	4	C-	Major
EN2211 Mechanics	Mechanics	3		Major
SM2214 Differential Equations	Differential Equations	3		General Education
SM2224 Eng. Physics II	Engineering Physics II	3.5		General Education
	Social Science Group I	3		General Education
	Total Credits	**16.5**		
MCSTCW2 Mariner Credentialing 2	Mariner Credentialing 2 (Lifeboatman and Exam)	0		STCW
YEAR 3	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3111 Electrical Machines	Electrical Machines	3	C-	Major
EN3111L Electrical Machines Lab	Electrical Machines Lab	1	C-	Major
EN3131 Steam Generators	Steam Generators	3.5	C-	Major
EN3112 Strength of Materials	Strength of Materials	3		Major
EN3112L Strength of Materials Lab	Strength of Materials Lab	1		General Education
SM3125 Eng. Physics III	Engineering Physics III	3		Support
	Total Credits	**14.5**		

	WINTER TERM	CREDITS	MINIMUM GRADE	REQUIREMENT TYPE
EN3232 Commercial Sea Term - Engineer	Commercial Sea Term: Marine Engineering	6		Sea Term
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3212 Electronics	Electronics	3	C-	Major
EN3212L Electronics Lab	Electronics Lab	1		Major
EN3211 Thermodynamics	Thermodynamics	3		Major
EN3233 Steam and Gas Turbines	Steam & Gas Turbines	4	C-	Major
EN3216 Operational Controls	Operational Controls	3		Major
EN3216L Operational Controls Lab	Operational Controls Lab	1	C-	Major
	Humanities Group I	3		General Education
	Total Credits	**18**		
MCSTCW3 Mariner Credentialing 3	Mariner Credentialing 3 (Adv. Firefighting I)	0		STCW
YEAR 4	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN3213 Refrigeration	Refrigeration	2.5	C-	Major
EN4111 Fluid Mechanics	Fluid Mechanics	3	C-	Major
EN4131 Internal Combustion Engines II	Internal Combustion Engines II	4	C-	Major

SS4123 Legislative Compliance	International Law & Legislative Compliance	3	C-	General Education
	Free Elective I	3		Support
	Total Credits	**15.5**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN4231 Sea Term IV - Engine	Sea Term IV: Marine Engineering	6	C-	Sea Term
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN4151 Applied Naval Architecture	Applied Naval Architecture for ME	3	C-	Major
EN4232 License Seminar	License Seminar: Marine Engineering	3		Major
	Humanities Group I or II	3		General Education
	Social Science Group III	3		General Education
	Free Elective II	3		Support
	Total Credits	**15**		
MCSTCW4 Mariner Credentialing 4	Mariner Credentialing 4 (Adv. Firefighting II)	0		STCW
MCSTCW5 Mariner Credentialing 5	Mariner Credentialing 5 (Med Care Provider)	0		STCW

Curriculum Flow Chart

Course Flow Chart
[object Object]

Learning Objectives

Learning Outcomes
In order to to produce competent and conscientious Marine Engineering Officers in accordance with the Standards for Training and Certification of Watchstanders (STCW) and United States Coast Guard (USCG) regulations. graduates must be able to:

- Apply general education knowledge to appreciate the impact of engineering solutions on society as a whole.
- Apply mathematics, science and engineering knowledge to solve engineering problems.
- Gather, analyze and interpret engineering data.
- Communicate effectively in English using written, oral and graphic formats.
- Function effectively as a member of a multidisciplinary team.
- Satisfactorily meet all STCW Competencies (listed separately) required to be licensed as a Marine Engineering Officer on board a ship in accordance with USCG regulations.
- Apply for, be examined for, and receive a Merchant Marine Officer License issued by the USCG for a Third Assistant Engineer of Steam, Motor and Gas Turbine vessels any horsepower.

The U.S. Maritime Administration requires that all senior ME students complete all their academic program requirements and earn their USCG license for a Third Assistant Engineer of Steam, Motor and Gas Turbine vessels any horsepower prior to receiving their ME degree.

Program Eligibility

Requirements
To remain in Marine Engineering, a student must

- pass MT1111 Vessel Fam/Basic Safety Trng. Vessel Familiarization and Basic Safety Training with a grade of C- or better,
- pass EN1112 Engineering Systems and Safety Engineering Systems and Safety with a grade of C- or better,
- pass SM1111 Precalculus with Trigonometry Precalculus with Trigonometry by the second attempt with a grade of C- or better,
- pass SM1212 Calculus I Calculus I by the second attempt with a grade of C- or better,
- pass EN2211 Mechanics Mechanics by the third attempt.

A student failing to meet any of these requirements may remain at the Academy by enrolling in a major for which he or she remains eligible.

Prerequisites for Sea Term I include successful completion of EN1112 Engineering Systems and Safety Engineering Systems and Safety, MT1111 Vessel Fam/Basic Safety Trng. Vessel Familiarization and Basic Safety Training, and SM1111 Precalculus with Trigonometry Precalculus with Trigonometry (with a grade of C- or above).

Additionally, any student who falls below Academic Good Standing will be removed from Sea Term I and reviewed by the Academic Review Board as per the Academic Standards.

Opportunities

Career Opportunities

The ME program prepares graduates for careers as licensed engineering officers in the United States Merchant Marine and for engineering positions in associated shoreside industries. Many graduates later go on to become senior management executives.

Possible positions for a Marine Engineering major include: Chief Engineer on a merchant ship; Port Engineer for a marine related company; Executive management for major corporations; Field service engineers throughout industry.

Minors & Concentrations

Available Minors

Energy Management Minor

Environmental Health & Safety Minor

Facilities Operations Minor

Homeland Security Minor

International Maritime Business Minor

Marine Biology Minor

Marine Construction Minor

Marine Science, Safety and Environmental Protection Minor

Available Concentrations

Environmental Health & Safety Concentration

Homeland Security Concentration

Marine Biology Concentration

Project Management Concentration

MENG - Marine Engineering

MSEM - Master of Science in Emergency Management

Curriculum

Curriculum

The degree is offered in a 17-month executive format with 9 three credit courses and one four-credit capstone course (total 31 credits):

EM5000 Organizational Behavior *Organizational Behavior*

EM5020 *Legal Issues*

EM5060 Hazards Risk Management *Hazards Risk Management*

EM5080 Strategic Planning & Budgeting *Strategic Planning and Budgeting*

EM5120 Emergency Operations *Emergency Operations*

EM5140 Public Health Issues *Public Health Issues*

EM5150 Principles of EM *Principles of Emergency Management*

EM5160 Business Continuity & Disaster *Business Continuity and Disaster Recovery*

EM5180 Transportation Security *Transportation Security Management*

EM5200 Capstone Seminar *Capstone Seminar*

Learning Objectives

Learning Outcomes

The expected learning outcomes of the MSEM program is that the graduate can better:

1. Mitigate
2. Prepare
3. Respond, and
4. Recover from incidents, hazards, and emergencies

Minors & Concentrations

MSEM - Emergency Management

MSEPM - Marine Science, Safety and Environmental Protection Minor

Description

Program Description

Coordinator: Professor Heather Burton

Open to all majors except Marine Science, Safety and Environmental Protection.

Curriculum

Curriculum

Students must complete each of the following six courses:

MS1111 Occupational Health & Safety *Fundamentals of Occupational Health and Safety*

MS1211 Current Environmental Problems *Current Environmental Problems*

MS1252 Earth Science *Earth Science*

MS2244 Intro. to GIS *Intro to GIS*

MS3132 Life Science Lab *Marine Science Fundamentals*

MS4233 Communicat. Ocean/Climate Sci. *Communicating Ocean and Climate Science*

MSFM - Master of Science in Facilities Management

Curriculum

Curriculum

The degree is offered in a 17-month executive format with 9 three-credit courses and one four-credit cap stone course (total 31 credits):

FM5000 Organizational Behavior *Organizational Behavior*

FM5020 Financial Analysis for Fm *Financial Analysis*

FM5200 *Communication in Facilities Management*

FM5090 Emergency Preparedness *Emergency Preparedness*

FM5100 Operations Management *Operations Management*

FM5120 Human Resource Management *Human Resource Management*

FM5150 Business Sustainability *Business Sustainability*

FM5160 Project Management *Project Management*

FM5170 Energy Management *Energy Management*

FM5180 Capstone Seminar *Capstone Seminar*

Learning Objectives

Learning Outcomes

The MSFM program is rooted in improving the following six core learning objectives:

1. Managing People
2. Managing Policies
3. Managing Projects
4. Managing Finance
5. Managing Energy
6. Managing Emergencies

and in doing so provide current and prospective facilities managers with the personal, interpersonal, and group skills necessary to implement creative ideas and thus reduce the gap between good ideas and accepted practices.

Minors & Concentrations

FENM - Facilities Management

MSMB - Master of Science Maritime Business Management

Description

Program Description

The Master of Science in Maritime Business Management (MSMB) is designed to give students the knowledge and skills to become creative problem solvers and thus to succeed in a variety of senior business, management, and leadership positions. The program emphasizes that good ideas are not enough and that implementation is what separates excellence from mediocrity in management and leadership. The MSMB program prepares students for executive leadership responsibilities in maritime business and supply chain management, in both the public and private sectors, by helping students develop technical expertise and a strategic mindset to improve the performance of the many facets of the complex global transportation systems--preparing them for careers in local, regional, or global maritime business and supply chain management.

Curriculum

Curriculum

The degree is offered in a 17-month executive format with 9 three-credit courses and one four-credit cap stone course (total 31 credits):

MB5100 Economics of Maritime Industry *Economics of the Maritime Industry*

MB5110 Maritime Law, Policy and Regs. *Maritime Law, Policy, and Regulations*

MB5120 Project Mgt. in Maritime Bus. *Project Management in Maritime Business*

MB5130 Logistics and Supply Chain *Global Logistics and Supply Chain Management*

MB5140 Financial Analytics *Financial Analytics*

MB5150 Ops. Mgt. in Maritime Business *Operations Management in Maritime Business*

MB5160 Transportation Security Mgt. *Transportation Security Management*

MB5170 Organizational Behavior *Organizational Behavior*

MB5180 Leadership & Risk Mgt. *Maritime Leadership and Risk Management*

MB5200 Capstone Seminar *Capstone Seminar in Maritime Business*

Learning Objectives

Learning Outcomes

The MSMB program is rooted in improving the following six core learning objectives:

1. Managing People
2. Managing Policies
3. Managing Projects

4. Managing Finance
5. Managing Strategy
6. Managing Logistics

and in doing so provide current and prospective maritime business managers with the personal, interpersonal, and group skills necessary to implement creative ideas and thus reduce the gap between good ideas and accepted practices.

Minors & Concentrations

MSMB - Maritime Business Management

MSSEP - Marine Science, Safety and Environmental Protection

Description

Program Description

The Marine Science, Safety, and Environmental Protection (MSSEP) program focuses on environmental safety, marine science, and public health issues. Graduates are prepared for careers that tackle global challenges such as climate change, diminishing natural resources, environmental degradation, ever-increasing safety and environmental regulations, green and sustainable development, and increasing energy demands.

First-year cadets participate in a subtropical ecology field course in Bermuda. Cadets study the complexity of the various ecosystems. They have an opportunity to snorkel on a variety of reef systems and hike through mangroves and forests. This program requires a six credit co-op and a three-credit co-op, with opportunities in industries such as cruise lines, environmental compliance, consumer and industrial goods, federal agencies, and research institutions.

The MSSEP program includes six total electives (four departmental electives and two free electives), which allows students to take six courses for a minor or try a variety of courses both within and outside of the MSSEP program. MSSEP departmental electives include courses listed under the minors/concentrations available for the MSSEP program, such as Marine Biology, Environmental Health & Safety, and Shipboard Environmental Health & Safety Officer.

Curriculum

Curriculum

Marine Science, Safety & Environmental Protection Curriculum 2025-2026

YEAR 1	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
MS1111 Occupational Health & Safety	Fundamentals of Occupational Health & Safety	3	Major
MS1211 Current Environmental Problems	Current Environmental Problems	3	Major
MS1252 Earth Science	Earth Science	3.5	Major
HU1110 Intro. to College Writing or HU1111 College Writing or HU1222 Writing About Literature	Introduction to College Writing College Writing Advanced College Writing	3	General Education
SM1111 Precalculus with Trigonometry	Precalculus with Trigonometry	3	General Education
	Total Credits	**15.5**	
	WINTER TERM	**CREDITS**	**REQUIREMENT TYPE**
MS1311 MSSEP Experiential Learning	Experiential Learning: MSSEP	3	Experiential Learning
	SPRING TERM	**CREDITS**	**REQUIREMENT TYPE**
MS2221 General Biology	General Biology	3.5	Major
MS2244 Intro. to GIS	Introduction to GIS	3	Major
HU1222 Writing About Literature	Writing About Literature	3	General Education
SM1131 Chemistry I	Chemistry I	3.5	General Education

SM1214 Applied Calculus	Applied Calculus	3	General Education
	Total Credits	**16**	
YEAR 2	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**
MS2132 Marine Sci Fund.	Marine Science Fundamentals	3	Major
	Department Elective I	3	Support
SM2115 Applied Environmental Math	Applied Environmental Mathematics	3	General Education
SM2233 Organic/Hazmat Chemistry	Organic/Hazardous Materials Chemistry	3.5	General Education
SS1211 Western Civilization	Western Civilization	3	General Education
	Total Credits	**15.5**	
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
	Department Elective II	3	Support
	Humanities Group I	3	General Education
SM2121 College Physics I	College Physics I	3.5	General Education
SM2218 Statistics	Statistics	3	General Education
SS2121 American Government	American Government	3	General Education
	Total Credits	**15.5**	

YEAR 3	FALL SEMESTER	CREDITS	REQUIREMENT TYPE
MS3141 Coastal Ecology	Coastal Ecology	3	Major
MS3132 Life Science Lab	Life Science Lab	1	Major
MS3121 Physical Geology	Physical Geology	3	Major
	Department Elective III	3	Support
MS3142 Environmental Law	Environmental Law	3	General Education
	Social Science Group I	3	General Education
	Total Credits	**16**	
	WINTER TERM	**CREDITS**	**REQUIREMENT TYPE**
MS3351 MSSEP Co-Op I	Cooperative I: MSSEP	6	Co-Op
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
MS3242 Hazardous Materials Mgmt.	Hazardous Materials Management	3	Major
MS3221 Oceanography	Oceanography	3	Major
MS4263 Oil Spill Management	Oil Spill Management	3	Major
	Department Elective IV	3	Support
SM3234 Environmental Chemistry	Environmental Chemistry	4	Support
	Total Credits	**16**	
YEAR 4	**FALL SEMESTER**	**CREDITS**	**REQUIREMENT TYPE**

MS4141 Coastal Zone Management	Coastal Zone Management	3	Major
MS4111 Environmental Monitoring I	Environmental Monitoring I	3	Major
MS4142 Human Health and Risk	Human Health & Risk	3.5	Major
	Humanities Group I or II	3	General Education
	Free Elective I	3	Support
	Total Credits	**15.5**	
	WINTER TERM	**CREDITS**	**REQUIREMENT TYPE**
MS4411 MSSEP Co-Op II	Cooperative II: MSSEP	3	Co-Op
	SPRING SEMESTER	**CREDITS**	**REQUIREMENT TYPE**
MS4233 Communicat. Ocean/ Climate Sci.	Communicating Ocean & Climate Science	3	Major
MS4211 Environmental Monitoring II	Environmental Monitoring II	3	Major
MS4241 Environmental Risk	Environmental Risk	3	Major
	Social Science Group III	3	General Education
	Free Elective II	3	Support
	Total Credits	**15**	

Curriculum Flow Chart

Course Flow Chart

[object Object]

Learning Objectives

Learning Outcomes

• Understand the principal ecological, geological, and chemical characteristics of marine and coastal environments.

• Understand current environmental problems and risk to effectively manage marine resources, coastal zones, and hazardous materials.

• Be able to utilize geographic information systems (GIS) for planning and management applications.

• Master practices in marine and industrial safety.

• Understand written and oral communication within the environmental profession.

• Use the scientific method to construct and execute research projects in aquatic environments.

• Gain exposure to a career in MSSEP during cooperative experiences and internships.

Opportunities

Career Opportunities

- Environmental and safety officer at sea (on cruise ships, drilling ships, oil rigs, NOAA Corps, Coast Guard) and on land with numerous companies and institutions
- Environmental consultant and remediation specialist
- US Environmental Protection Agency or State Department of Environmental Protection Department scientists and safety specialist
- NOAA Fisheries or State Division of Marine Fisheries scientist and safety specialist
- Environmental manager
- Scientific research technician
- Law enforcement
- GIS professional

Minors & Concentrations

Available Minors

Environmental Health & Safety Minor

Homeland Security Minor

International Maritime Business Minor

Marine Biology Minor

Available Concentrations

Environmental Health & Safety Concentration

Homeland Security Concentration

Marine Biology Concentration

Project Management Concentration

Shipboard Environmental Health and Safety Officer Concentration

MSSP - Mar. Sci., Safety, Env. Prot.

MT - Marine Transportation

Description

Program Description

This program prepares cadets for careers as USCG licensed ship deck officers. Cadets build a foundation to transfer into management and operations positions within the intermodal, transportation, and petroleum industries. Skills are learned through extensive theoretical education that is applied practically via navigation, seamanship, ship construction, ship handling, and stability. Cadets graduate with an ability to stand proper and safe navigational and deck watches at the Third Mate level per STCW requirements. Cadets train on campus in state-of-the-art ship simulators as well as aboard commercial vessels and Academy training vessels. Four sea terms are required and graduates must pass examinations conducted by the United States Coast Guard in order to qualify as third mate, steam, and motor vessels of unlimited tonnage on the oceans. Licensure also requires completing Standards of Training, Certification and Watchkeeping (STCW) requirements.

Curriculum

Curriculum

Marine Transportation Curriculum 2025-2026

YEAR 1	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
EN1112 Engineering Systems and Safety	Engineering Systems & Safety	3	C-	Support
MT1111 Vessel Fam/Basic Safety Trng.	Vessel Familiarization & Basic Safety Training	4	C-	Support
SM1131 Chemistry I	Chemistry I	3.5		General Education
SM1111 Precalculus with Trigonometry	Precalculus with Trigonometry	3		General Education
HU1111 College Writing	College Writing	3	C-	General Education
	Total Credits	**16.5**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
ST0999 Sea Term I	Sea Term I	6	C-	Sea Term
	SPRING TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT1221 Coastal Navigation	Coastal Navigation	3	C-	Major
HU1222 Writing About Literature	Writing About Literature	3		General Education
SM1214 Applied Calculus	Applied Calculus	3		General Education
SM2121 College Physics I	College Physics I	3.5		General Education
SS1211 Western Civilization	Western Civilization	3		General Education

	Total Credits	**15.5**		
MCSTCW0 Orientation STCW	Orientation STCW	0		STCW
MCSTCW1 Mariner Credentialing 1	Mariner Credentialing 1 (CPR and VPDSD)	0		STCW
YEAR 2	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT2121 Deep Sea Navigation	Deep Sea Navigation	3	C-	Major
MT2141 Ship Construction	Ship Construction	3	C-	Major
MT2161 Rules of the Road	Rules of the Road	3	C-	Major
SM2119 Applied Mathematics	Applied Mathematics for Deck Officers	3		General Education
SM2222 Coll. Physics II	College Physics II	3.5		General Education
	Total Credits	**15.5**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT2371 Sea Term II - Deck	Sea Term II: Marine Transportation	6	C-	Sea Term
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT2231 Basic Seamanship	Basic Seamanship	4	C-	Major
MT2225 Integrated Navigation	Integrated Navigation	4	C-	Major
MT3221 Electronic Navigation	Electronic Navigation	4	C-	Major

SS2121 American Government	American Government	3		General Education
	Social Science Group I	3		General Education
	Total Credits	**18**		
MCSTCW2 Mariner Credentialing 2	Mariner Credentialing 2 (Lifeboatman and Exam)	0		STCW
YEAR 3	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT3151 Dangerous Liquid Cargo	Dangerous Liquid Cargo	4	C-	Major
MT3224 ECDIS	Electronic Chart Display & Information System	3	C-	Major
MT4122 GMDSS	Global Maritime Distress & Safety System	4	C-	Major
MT4132 Advanced Seamanship	Advanced Seamanship	4	C-	Major
	Humanities Group I	3		General Education
	Total Credits	**18**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT3372 Commercial Sea Term - Deck	Commercial Sea Term: Deck	6		Sea Term
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT3231 Shiphandling	Applied Shiphandling	3	C-	Major

MT4241 Stability & Trim	Stability & Trim	3	C-	Major
MT2222 Celestial Navigation	Celestial Navigation	4	C-	General Education
	Social Science Group III	3		General Education
	Free Elective	3		Support
	Total Credits	**16**		
MCSTCW3 Mariner Credentialing 3	Mariner Credentialing 3 Advanced Firefighting	0		STCW
YEAR 4	**FALL SEMESTER**	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT3131 Meteorology	Meteorology	3	C-	Major
MT4133 Bridge Resource Management	Bridge Resource Management	4	C-	Major
SS4123 Legislative Compliance	International Law & Legislative Compliance	3	C-	General Education
	Humanities Group I or II	3		General Education
	Free Elective II	3		Support
	Total Credits	**16**		
	WINTER TERM	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**
MT4371 Sea Term IV - Deck	Sea Term IV: Marine Transportation	6	C-	Sea Term
	SPRING SEMESTER	**CREDITS**	**MINIMUM GRADE**	**REQUIREMENT TYPE**

MT3261 Cont. & Modern Cargo Stowage	Containerization & Modern Cargo Stowage	3	C-	Major
MT4251 Marine Safety	Marine Safety	3	C-	Major
MT4252 Licensing Seminar - Deck	Licensing Seminar: Marine Transportation	3		Major
EN7142 Diesel Engines	Diesel Engines	3		Support
	Total Credits	**12**		
MCSTCW4 Mariner Credentialing 4	Mariner Credentialing 4 (Advanced Firefighting II)	0		STCW
MCSTCW5 Mariner Credentialing 5	Mariner Credentialing 5 (Med Care Provider)	0		STCW

Curriculum Flow Chart

Course Flow Chart
[object Object]

Learning Objectives

Learning Outcomes
• Acquired knowledge, experience and training needed to obtain the necessary licenses, certificates and documentation for a Third Mate's position on any U.S. Flag vessel sailing upon Oceans.

• Ability to stand proper and safe Navigational and Deck watches at the Third Mate level.

• An inculcated sense of honor, decency and ethics that will allow our graduates to bring credit to Massachusetts Maritime Academy and the U.S. Merchant Marine.

Program Eligibility

Requirements
To remain in Marine Transportation, a student must

- pass MT1111 Vessel Fam/Basic Safety Trng. Vessel Familiarization and Basic Safety Training with a grade of C- or better,

- pass EN1112 Engineering Systems and Safety Engineering Systems and Safety with a grade of C- or better,
- pass MT1221 Coastal Navigation Coastal Navigation by the second attempt with a grade of C- or better

A student failing to meet any of these requirements may remain at the Academy by enrolling in a major for which he or she remains eligible.

Prerequisites for Sea Term I include successful completion of EN1112 Engineering Systems and Safety Engineering Systems and Safety and MT1111 Vessel Fam/Basic Safety Trng. Vessel Familiarization and Basic Safety Training

Additionally, any student who falls below Academic Good Standing will be removed from Sea Term I and reviewed by the Academic Review Board as per the Academic Standards.

Opportunities

Career Opportunities

- Third Mate or navigation officer on oceangoing ships
- Mate on a tugboat
- Many MMA MT graduates have gone on to work for organizations such Military Sealift Command, Maersk, American Maritime Officers, Kirby Corporation, Moran Towing or McDonough Marine.

Minors & Concentrations

Available Minors

Environmental Health & Safety Minor

Homeland Security Minor

Marine Biology Minor

Marine Science, Safety and Environmental Protection Minor

Available Concentrations

Environmental Health & Safety Concentration

Homeland Security Concentration

Marine Biology Concentration

Project Management Concentration

MTRA - Marine Transportation

PMC - Project Management Concentration

Description

Program Description

Coordinator: Professor Paul Szwed

Open to all majors, this concentration prepares students for careers in project management with wide ranging opportunities in fields such as aerospace, business, construction, energy, engineering, financial services, government, healthcare, information services, pharmaceuticals, and transportation.

Curriculum

Curriculum

REQUIRED COURSES:

• IM4265 Project Mgmt Fundamentals Project Management Fundamentals

• IM4275 Advanced Project Management Advanced Project Management

TWO COURSEs FROM THE FOLLOWING:

• HU6072 Business Communication Business Communications*

• HU6073 Technical Writing Technical Writing++

• SM2117 Quantitative Meth. for Mgmt. Quantitative Methods*

• EN7247 Construction Methods Construction Methods and Management

• EN4224 Facilities Planning & Mgmt. Facilities Planning and Management

• MS4273 Construction Site Safety Construction Site Safety

• MS4272 Health/Safety Audit Environmental Health and Safety Audit

• MS4273 Construction Site Safety Construction Site Safety

• IM1211 Organizational Behavior Organizational Behavior*

• IM2121 Principles of Accounting I Financial Accounting*

• IM2231 Business Decision and Strategy Business Decision and Strategy*

• IM4263 Entrepreneurship Entrepreneurship

• IM4251 E-Business Concepts E-Business Concepts

• IM4270 Sales Engineering Sales Engineering and Management

• IM3352 IM Independent Study IM Independent Study

• SS4113 Engineering Economic Analysis

* Not eligible for IMB students

++ Not eligible course for FE Students

Learning Objectives

Learning Outcomes

The Project Management concentration aligns to the PMI Talent Triangle®, and the learning outcomes are technical expertise, professional behavior, and strategic awareness. Furthermore, the two required "ways of working" courses provide student development in each expected level of academic achievement at the undergraduate level :

• Knowledge – broad and coherent understanding of theoretical and technical project management methods

• Skills – analytical, creative, communicative, and technical project management skills

• Application – autonomy, judgment, and responsibility to manage projects in context (and the self-awareness to continuously improve and grow)

The first course, Project Management Fundamentals, concentrates on predictive, plan-based methods by focusing on knowledge, then skills, and finally application (i.e., reflection as a form of self-awareness). The second course, Advanced Project Management, concentrates on adaptive, agile methods by focusing on application (i.e., a live client project), then skills, and finally knowledge. The two courses provide a balanced approach to project management and complement each other well.

SEHSC - Shipboard Environmental Health and Safety Officer Concentration

Description

Program Description

Coordinator: Professor Heather Burton

Open to Marine Science, Safety and Environmental Protection and Emergency Management majors. This provides students with electives that will enhance their opportunities for being an Environmental Health and Safety Officer aboard cruise and merchant vessels. Students will be required to participate in the Sea Term, generally in their 3rd year. The curriculum will highlight specific environmental topics for which such an officer would be responsible, with particular emphasis on Marine Pollution (MARPOL) Annexes and other regulations.

Curriculum

Curriculum

MT1111 Vessel Fam/Basic Safety Trng. *Vessel Familiarization and Basic Safety Training*

EN3214 Municipal Wastewater *Municipal Wastewater Treatment*

MS1313 Shipboard Environmental Ops. *Shipboard Environmental Operations (6 weeks/full sea term required)*

MS4232 MARPOL *Introduction to MARPOL*

All Courses

AD0900 - MAPS College Study Skills Workshop

General

Course Description

MAPS College Skills will be offered every other week to all students who were admitted to the Academy through the Maritime Academy Preparatory Seminar. The course is designed to help students navigate college-level academic expectations and develop foundational skills necessary for success. The course will introduce students to campus resources, help students strengthen communication skills, and improve time management skills and study skills. The course will help students utilize syllabi effectively and better understand terms and definitions associated with the college experience. Learning Objectives include: ? identify and use academic resources effectively ? communicate professionally with professors and academic staff ? acquire an understanding of higher education terms, definitions, and protocol ? use a syllabus as a planning tool ? understand how to get the most out of a tutoring session and office hours ? organize and prioritize time ? read and study strategically

Credits:
0

EM1215 - EM Policy & Procedure

General

Course Description
Emergency Management operates within a complex framework across the phases of mitigation, preparedness, response and recovery. Students will review and analyze key federal emergency management policies including the National Incident Management System (NIMS),the National Preparedness Goal, the National response Framework, the National Disaster Recovery Framework, and the National mitigation Framework, among others. Students will also compare and contrast these policies with the empirical emergency management research.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM1311 - Experiential Learning in EM

General

Course Description
These programs introduce students to the concepts and purposes of public service. They are designed to provide a broad range of opportunities and experiences related to public service, and on working in the public and private sectors. The programs involve hands-on learning, include structured learning objectives and outcomes, and require a structured written submission. These courses support core EM concepts and give students opportunities to work directly with vulnerable populations and/or with the systems and organizations that support them. These programs are typically scheduled for three to six weeks during the summer or winter break period.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
0

EM1312 - Experiential Learning Rate

General

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
2.5

EM1313 - Additional Experiential Learning

General

Course Description
This course will provide students with an opportunity to connect emergency management theory and concepts to practice through an immersive experience in one of the most disaster-prone placesin the United States. Specifically, students will explore the current state of emergency management in New Orleans and coastal Louisiana. Students will learn about all phases of emergency management (i.e., mitigation, preparedness, response, and recovery) through volunteering and education days over the two week trip.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM1314 - Exp Learning 6 Credits

General

Course Description
These programs introduce students to the concepts and purposes of public service. They are designed to provide a broad range of opportunities and experiences related to public service, and on working in the public and private sectors. The programs involve hands-on learning, include structured learning objectives and outcomes, and require a structured written submission. These courses support core EM concepts and give students opportunities to work directly with vulnerable populations and/or with the systems and organizations that support them. These programs are typically scheduled for three to six weeks during the summer or winter break period.

Credits:
6

Billing Hours

Min:
6

EM1411 - Public Safety

General

Course Description
Public safety refers to the welfare and protection of the general public. This course exposes students to the governmental and non-governmental agencies who are responsible for public safety, and extends beyond discussion of police, fire, and emergency medical response. The course also explores themes such as food and water safety, transportation, infrastructure, and disease. Students will also examine and discuss controversial issues in public safety.

Credits:
3

Billing Hours

Min:
3

EM2111 - Infectious Agents

General

Course Description
This course introduces students to the biology of pathogenic microbes; the disease process; the immune system; the mechanisms by which vaccines, antibiotics, and antivirals work to protect us from disease; and the ways in which humans have unwittingly (and sometimes intentionally) promoted the spread of infectious disease within the United States and around the world. Topics will be presented in the context of emergency management, with focus on public health issues and bioterrorism.

Requisites
Prerequisite: MS2221 General Biology

Credits:
3

Billing Hours

Min:
3

EM2120 - Emergency Management Planning

General

Course Description
The course provides students with an in-depth understanding of the Emergency Management planning process, which provides the foundation for all EM-related activities and functions. Students will gain an in-depth understanding of each stage and function of the five stages of the Planning Cycle, and will become familiar with: EM planning doctrine and guidance used by federal and state agencies; the relationship between planning and preparedness; and the development and support of an Emergency Operations Plan.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM2144 - Foundational Technology in EM

General

Course Description
This course introduces EM students to five broad foundational information technology topic areas, including: basic information technology architecture, including data architecture; information technology management practices and organizational structures; remote sensing and geographic information systems (GIS); unmanned systems (air-, ground-, and sea-based); and data analytics and artificial intelligence (AI). The baseline knowledge acquired in this course is crucial to understanding how current and emerging technologies support and enable emergency operations.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM2212 - Introduction to Emergency Management

General

Course Description
An introduction to the disciplines, authorities, and policies involved in the field of emergency management. Topics include: hazard analysis and underlying social and environmental processes, vulnerability analysis, hazard mitigation, emergency response, and disaster recovery.

Credits:
3

Billing Hours

Min:
3

EM2213 - National Security in EM

General

Course Description
This course is designed to provide students with a comprehensive understanding of topic areas related to homeland and national security. Students will be introduced to decision making organizations and structures, such as the National Security Council, and gain an understanding of the roles and responsibilities of the national defense, national intelligence, and law enforcement communities. Students will be guided by the National Protection Framework and by the National and Homeland Security strategies of the United States.

Credits:
3

Billing Hours

Min:
3

EM3121 - Risk Management

General

Course Description
This course follows the FEMA protocol of organizing resources, assessing risks, developing a mitigation plan, and implementing the plan. Assessing the risk is the major part of the course as it involves identifying the hazards, profiling the hazard events, inventorying assets, and estimating losses.

Requisites
Prerequisites: EM2144 Foundational Tech in EM, EM2120 EM Planning

Credits:
3

Billing Hours

Min:
3

EM3211 - Natural Hazards

General

Course Description
The Strategic National Risk Assessment divides risk into man-made and natural threats. This course will examine natural threats and hazards, including earthquake, flood, animal disease outbreak, human pandemic, hurricane, space weather, tsunami, volcano, and wildfires. Students will use case studies to develop a comprehensive understanding of the public policy and scientific methods used by emergency managers.

Requisites
Prerequisites: EM2144 Foundational Tech in EM, EM2120 EM Planning

Credits:
3

Billing Hours

Min:
3

EM3212 - Toxicology

General

Course Description
This course introduces students to the concepts of human toxicology, mechanisms of toxic action, and detailed processes of the exposure to chemicals. Students will be introduced to the mechanisms responsible for the manifestation of toxicity; that is, how a toxicant enters the organism, how it interacts with target organs and molecules, and how the organism deals with the insult.

Requisites
Prerequisites: SM2233 Organic/Hazmat Chemistry , EM2111 Infectious Agents

Credits:
3

Billing Hours

Min:
3

EM3213 - Public Health Issues in EM

General

Course Description
This course introduces students to the general roles and responsibilities of the public health system in the United States and to the role public health plays in emergency preparedness, response, recovery, and mitigation. Included in this introduction is an examination of the tools that public health agencies use to prepare for and respond to emergencies. Selected topics include traditional and non-traditional disease surveillance; outbreak investigations; isolation and quarantine; emergency dispensing sites, rapid health assessments, sheltering displaced populations; and vector control programs.

Requisites
Prerequisite: EM2111 Infectious Agents

Credits:
3

Billing Hours

Min:
3

EM3214 - International Terrorism

General

Course Description
This course provides a comprehensive introduction to the complex topic of global terrorism. It provides an in-depth analysis of the history of global terrorism, the ideological forces behind global terrorism, terrorism funding networks and systems, and the psychology and processes used to recruit terrorists. The course will also examine past and current policies, programs, and processes designed to combat terrorism.

Credits:
3

Billing Hours

Min:
3

EM3215 - Natural Hazards and Food Security

General

Course Description
Extreme weather events are on the rise and increase economic poverty and food insecurity for many people, especially in the Global South. Climate change influences the frequency and magnitude of such weather events. This course will introduce students to the analysis of the consequences natural hazards have for food and nutrition security in selected case countries, looking at local livelihoods, vulnerabilities, and exposure. The course will examine how humanitarian aid provided by non-governmental organizations and the United Nations can strengthen community resilience using a needs-based approach, and focusing on early warning and anticipatory action

Credits:
3

Billing Hours

Min:
3

EM3311 - Co-Operative I Emergency Management

General

Course Description
The co-op experience requires a student to work approximately six weeks during the winter or summer break period in a field related to emergency management. The co-op requires students to submit a structured academic report at the conclusion of the experience. Emergency management co-ops are coordinated through the Career Services Office and approved by the EM department chairperson.

Credits:
6

Billing Hours

Min:
0

EM3312 - EM Sea Term Co-op

General

Credits:
6

Billing Hours

Min:
6

EM3411 - Em Exp. Learning 6 Credit-

General

Credits:
6

Billing Hours

Min:
6

EM4112 - Fire Dynamics

General

Course Description

This course will provide fundamental information relating to the history of the fire service including formation, organization and operation of a fire prevention bureau. The course will include the recognition of hazards, their corrections and the relationship of prevention measures to built-in fire protection systems. Codes and standards will be discussed and used to help understand their relations to the behavior of fire. Topics of fire behavior will include combustion, chemistry, flames, transmission, burning, ignition, explosions including detonation, deflagration, vapor clouds, and BLEVEs.

Credits:

3

Billing Hours

Min:

3

EM4113 - International Relief

General

Course Description
This course will examine the evolution of both natural and man made humanitarian crises, applying traditional emergency management prevention, mitigation, protection, response, and recovery principles. Students will examine roles played by governments, militaries, non- governmental organizations, the private sector, and the United Nations. The course will also examine humanitarian policies and law as these relate to obligations to respond and support. The course will also examine the roles and relationships between international relief communities and the people they attempt to serve.

Requisites
Prerequisite: EM2120 EM Planning

Credits:
3

Billing Hours

Min:
3

EM4133 - Exercise Planning and Development

General

Course Description

This course is designed to draw on the courses, experiences, and internships students have completed during the EM program at MMA. Students will develop the knowledge and skills to plan, design, develop, and man- age a wide range of exercises related to EM. Using the Homeland Security Exercise Evaluation Program (HSEEP), students will learn the terminology, process, and goals associated with developing real-world scenarios to support community and/or organizational goals and objectives. Instruction will combine lecture, self-study, independent team study, and work. By the end of the course, students will be expected to develop, design, and present a comprehensive table-top exercise that meets the requirements of the HSEEP program.

Requisites

Prerequisite: EM3211 Natural Hazards

Credits:

3

Billing Hours

Min:

3

EM4222 - Crisis Communications

General

Course Description
This course focuses on crisis communication and management, emphasizing the practical application of policies, strategies, and tactics through an emergency management perspective. Students will be guided by the National Emergency Communications Plan and State Communications Interoperability Plans.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM4223 - Info. Tech. in Emergency Mgmt and Ops.

General

Course Description
This course covers the role of information and information technology in all phases of emergency management, determining disaster and crisis information requirements: information technologies can be applied to a crisis, disaster, and emergency management. Case studies will be developed and practical applications modeled on simulators.

Requisites
Prerequisite: EM2144 Foundational Tech in EM

Credits:
3

Billing Hours

Min:
3

EM4224 - Emergency Management Capstone

General

Course Description
Students will have an option to either participate in a directed field level exercise working with local emergency management personnel or complete a structured research paper on an emergency management topic approved by the instructor.

Credits:
3

Billing Hours

Min:
3

EM4225 - Emergency Management Operations

General

Course Description
This course is designed to enable students to understand the ICS/ EOS implementation strategies, or action plans, for communities. The course reviews the ICS and EOC models of emergency management operations, including coordination, communication, and chief executive decision making and places ICS in the context of the National Incident Management System (NIMS) and National Response Framework (NRF).

Requisites
Prerequisite: EM2120 EM Planning

Credits:
3

Billing Hours

Min:
3

EM4226 - Transportation Security

General

Course Description
This course will provide an in-depth analysis of topics and issues related to transportation security. Students will analyze safety, security, and emergency management issues that pertain to transportation networks within the maritime, aviation, and terrestrial domains. They will also discuss and analyze domestic and international threats and solutions associated with various intermodal transportation related networks and systems.

Credits:
3

Billing Hours

Min:
3

EM4227 - Disaster Recovery

General

Course Description
This course serves as a comprehensive review of the phase of recovery with an emphasis on what makes for more effective recoveries. Students will learn how government, businesses, nonprofits, and individuals experience and participate in the disaster recovery process through an exploration of U.S. recovery policy, the empirical recovery literature, and current recovery practice.

Requisites
Introduction to Emergency Management and Emergency Management Policy and Procedures

Credits:
3

STCW

STCW Component
None

EM4311 - Emergency Management Co-Op II

General

Course Description
The co-op experience requires a student to work approximately six weeks during the winter or summer break period in a field related to emergency management. The co-op requires students to submit a structured academic report at the conclusion of the experience. Emergency management co-ops are coordinated through the Career Services Office and approved by the EM department chair.

Credits:
6

Billing Hours

Min:
6

EM4320 - EM Independent Study

General

Course Description
Opportunity for upperclass students to conduct independent study under the guidance of a department faculty member following department guidelines.

Credits:
3

Billing Hours

Min:
3

EM5000 - Organizational Behavior Management

General

Course Description
Organizational Behavior focuses on the diagnosis and improvement of human behavior in an emergency situation, with consideration of the interactions of three levels within organizations: the individual, the group and the organization itself. Students in the course will study leadership, group dynamics, motivation, power, ethics, and organizational structure and change. Recognizing that the effective emergency manager needs both knowledge and skills in organizational behavior, emphasis is placed on practical application of specific theories, models, and cases, along with simulations, exercises and role playing to develop both a conceptual understanding of appropriate managerial behaviors in different contexts and the skills necessary to undertake those activities.

Requisites
Prerequisite: Grad Status

Credits:
3

Billing Hours

Min:
3

EM5020 - Legal Issues

General

Course Description
This course provides a comprehensive review of law and the judicial process; the legal relationships among individuals, society and the emergency management community; and an analysis of the concept and legal consequences of local, state, and federal control. Specific topics include constitutional issues in emergency management; public health and environmental issues associated with contamination of food and water supplies; bioterrorism and quarantine; the liability issues associated with using volunteers; public safety issues surrounding transportation security, maritime security, and chemical and nuclear security; customs and immigration law; information technology and cyber security law; laws relating to government contracts, insurance, liability, and risk.

Requisites
Prerequisite: Grad Status

Credits:
3

Billing Hours

Min:
3

EM5060 - Hazards Risk Management

General

Course Description
This course provides students with an understanding of a process and framework that may be applied at all levels of communities and gov- ernments to mitigate the effects of disasters (e.g., deaths and injuries, property loss, environmental degradation). This hazards risk manage- ment process can be used to identify, analyze, consider, implement and monitor a wide range of measures that can contribute to the public well-being. Risk management plans and mitigations will be developed for the maritime environment as well as for land-based scenarios. The hazards risk management process, as described and applied in this course, provides the general philosophy behind prevention, response, and recovery as well as information about the use of specific tools and methods for managing the risks associated with the hazards facing a community.

Requisites
Prerequisite: Grad Status

Credits:
3

Billing Hours

Min:
3

EM5080 - Strategic Planning and Budgeting Emergency Management

General

Course Description
This course will focus on developing each student's command of the fundamental concepts used by emergency management profes- sionals to conduct sound financial analysis and solve problems using basic and advanced financial analytical tools. The course also covers clear and effective communication of financial concepts, analysis, and conclusions for use by senior management. The course will emphasize concepts, practices, and tools essential for making decisions under routine and non-routine circumstances. Case studies will be examined to illustrate fundamental techniques for budgeting and forecasting, asset management, and maximizing resources. The course will present concepts in a manner that integrates financial analysis with strategic planning, taking a cross-disciplinary approach to budgeting and analysis, accounting, and reporting, and finding the best financial means to achieve strategic objectives.

Requisites
Prerequisite: Grad Status

Credits:
3

Billing Hours

Min:
3

EM5111 - Emergency Management Elective

General

Credits:
3

Max:
6

Billing Hours

Min:
3

EM5120 - Emergency Operations

General

Course Description

This course is designed to enable students to develop Incident Com- mand System (ICS)/Emergency Operations Center (EOC) interface implementation strategies or action plans for their communities. The course reviews the ICS and EOC models of emergency management operations, including coordination, communication, and chief executive decision making, and places ICS in the context of the evolving National Incident Management System (NIMS) and National Response Plan (NRP). It enhances the knowledge and skills needed for clarifying roles, responsibilities, and relationships prior to a disaster through small-group and large-group exercises. The course stresses that final coordination and operational structures are matters for local governments to resolve in the planning process with the state and federal government, not-for- profit organizations and the private sector. It is the intent of the course to stimulate thinking and ultimately, action in this area.

Requisites

Prerequisite: Grad Status

Credits:

3

Billing Hours

Min:

3

EM5140 - Public Health Issues Management

General

Course Description
The course is designed to provide guidance to hospitals, emergency medical services (EMS), health care facilities, and citizens who may become involved in a mass casualty event as a result of a hazardous materials incident, a natural physical or health hazard, or a terrorist's use of a weapon of mass destruction (WMD). The course focuses on the health provider's role and goes beyond organizational charts and checklists to deal with the entire role of the hospital inside and outside the emergency department during such incidents.

Requisites
Prerequisite: Grad Status

Credits:
3

Billing Hours

Min:
3

EM5150 - Principles of Emergency Management

General

Course Description

The course is designed to provide students with a foundation in emergency management related concepts, theories, and principles through an in-depth analysis of past and current emergency management policies, practices, and events. Students will analyze and discuss national, state and local government structure, responsibilities, authorities and relationships. We will analyze and discuss National Security Presidential Directives, Homeland Security Presidential Directives, the National Response Framework, the National Disaster Recovery Framework, and the National Incident Management System. We will also discuss homeland security and emergency management related policy and strategic level decision making, international disaster and relief, business continuity theory and practice, and disaster and emergency management cycles.

Requisites

Prerequisite: Grad Status

Credits:

3

Billing Hours

Min:

3

EM5160 - Business Continuity & Disaster Recovery

General

Course Description

Business area analysis, business impact analysis, risk perception, risk communication, risk mitigation, risk management and the resulting preparedness actions and plans are the tools used to minimize the effect of a disaster. Risk communication, crisis and continuity management, incident response, disaster recovery and business restoration are the concepts and tools applied before, during and after a disaster. These concepts and tools will be developed in the context of maintaining the lifelines of business and industry. This is an introduction to crisis management, contingency planning and organizational continuity and recovery from a public sector emergency management and private sector business crisis management perspective. Course content and sequence are based upon the Federal Emergency Management Agency (FEMA) model of Comprehensive Emergency Management, inter- and intra-governmental relationships for emergency and disaster response, the National Response Plan (NRP), the National Incident Management System (NIMS) and a multi-function model of business crisis management and organizational continuity.

Requisites

Prerequisite: Grad Status

Credits:

3

Billing Hours

Min:

3

EM5180 - Transportation Security Management

General

Course Description

This course focuses on the security of the Marine Transportation System (MTS). Ninety five percent of all U.S. imports and exports are carried by sea aboard ships via hundreds of ports. From the ports, the cargo is then taken to thousands of destinations via air and land transporta- tion modes (e.g., airline, truck, and rail), thus fueling the U.S. economic engine. These sea, air, and land transportation modes, with the port as their hub, make up the MTS. The MTS is critical to our national and economic security and significant legislation and many national policy documents have been produced to secure the system from terrorism. What have we accomplished and will we succeed? To address these questions, the course will briefly review current U.S. homeland security issues. Students will then examine terrorist threats to the MTS and the legal and policy responses to those threats, including U.S. efforts to carry out the daunting task of securing the global supply chain at sea and overseas.

Credits:
3

Billing Hours

Min:
3

EM5200 - Capstone Seminar Design, Evaluation, and Implementation

General

Course Description

The capstone course will provide an opportunity for students to integrate the core curriculum and their personal areas of interest culminating in both a written and oral capstone project presentation that addresses either solving a problem or improving a process in the field of emergency management. Specifically, students choose between the following: 1) Presenting a problem in the field of emergency management, describing what has been heretofore written about the problem, providing multiple solutions to the problem, and making a recommendation for implementation of the optimal solution; or 2) Presenting a methodology for improving a process in the field of emergency management, describing what has been heretofore written about the process, providing multiple solutions to the process, and making a recommendation for implementation of the optimal solution.

Credits:
4

Billing Hours

Min:
4

EM7210 - Business Continuity

General

Course Description
This course is an introduction to business continuity and disaster recovery. The course content and sequence are based on the NFPA 1600 Standard, Federal Emergency Management Agency's Guide for Business, and the 10 Best Practices for Business Continuity Professionals as outlined by the DJI. Course topics include disaster terminology; public and private partnerships for emergency and crisis management; the hazard risk management process; business impact analysis, training and exercises; emergency response; business continuity and recovery; the role of the crisis management team; and crisis communication.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM7220 - Cyber Security

General

Course Description
This course will explore the varying concepts surrounding cyber security in both the public and private sectors. The course will examine current threats and practices, efforts to combat cyber security threats, and the roles of government and private sector organizations.

Credits:
3

Billing Hours

Min:
3

EM7221 - Military Operations & Security

General

Course Description
This course examines the role and organization of the United States Department of Defense. The course will provide students with an in-depth examination of how the U.S. military is organized, trained, equipped, and employed to support and defend homeland and national security interests. Students will examine the role of the National Guard and reserve forces and examine the military's role in supporting civil authorities in times of crisis and emergencies.

Credits:
3

Billing Hours

Min:
3

EM7222 - Legal Issues in Homeland and National Security

General

Course Description
This course examines the domestic legal framework that pertains to the U.S. government's execution of national and homeland security policies. It is a rigorous, upper-level course that will require students to master complex materials related to topic areas that include constitutional separation of powers related to national and homeland security; prosecution of national and homeland security criminal cases in civilian courts; identification of the legal implications of emerging technologies in national and homeland security; and understanding legal issues related to intelligence collection.

Credits:
3

Billing Hours

Min:
3

EM7223 - Select Issues in Law Enforcement

General

Course Description
This course examines the role of law enforcement in emergency management. Students will examine the challenges faced by law enforcement agencies as they seek to protect communities while navigating new threats and safeguarding civil rights. Topics include the theory and ap- plication of community policing; police history and roles; the application and enforcement of criminal laws and procedure; and an overview of criminal justice system procedures and processes.

Credits:
3

Billing Hours

Min:
3

EM7224 - Transnational Crime

General

Course Description
This course will provide an overview of transnational crime and its effects on the political, economic, and social development of the United States and the international community. The links between international crime and terrorism will be addressed, and the course will provide an overview of a broad range of topics, including, but not limited to, drug smuggling, human trafficking, money laundering, and the proliferation of weapons of mass destruction. Also discussed will be impediments to effective control of transnational organized crime arising from globalization and the technological revolution as well as how transnational crime has been facilitated by open trade, travel, and telecommunication.

Credits:
3

Billing Hours

Min:
3

EM7225 - Infrastructure Protection

General

Course Description
This course will provide students with a foundation for protecting infra- structure as part of the business continuity process. The course will provide an overview of DHS critical infrastructure (CI) sectors, enabling legislation, and directives and documents, such as the National Infra- structure Protection Plan (NIPP). Students will be introduced to critical assets, the threat environment, public-private partnership protection efforts, and strategies and methods for protecting infrastructure.

Requisites
Prerequisite: EM7210 Business Continuity

Credits:
3

Billing Hours

Min:
3

EM7226 - Fundamentals of Leadership

General

Course Description
Graduates of Massachusetts Maritime Academy are called upon to be active leaders in their careers and communities. Through case studies, discussion, and guided self-reflection, this course instills in students the skills, strategies, and knowledge to be effective and ethical leaders of themselves and others, with the objective of empowering them to achieve their highest potential in all professional and personal endeavors.

Credits:
3

Billing Hours

Min:
3

EM7227 - Strategies in Waste Management

General

Course Description
This course provides an overview of solid waste management systems and emergency and debris management, including a historical perspective. Topics include the history of American solid waste, World War II and the birth of industrialization and urbanization, effects of globalism as it pertains to per-capita consumerism, environmental legislation, global perspective on solid waste management, history of American emergency management systems, emergency classification, systems of response during a disaster, FEMA and other federal response, technology, and information sharing during an emergency.

Credits:
3

Billing Hours

Min:
3

EM7228 - Comparative Homeland Security

General

Course Description
This course provides students a detailed examination of the national counterterrorism and homeland security strategies, policies, and practices employed by a variety of countries in Europe and Western Asia. Understanding howother countries cope with the terrorism phenomenon while balancing the need for security and the demands of a free society is the central theme of the course. The course includes a survey of counterterrorism policy responses in liberal democracies across the globe.

Credits:
3

Billing Hours

Min:
3

EM7229 - SAR Policy and Practice

General

Course Description
An in-depth look of the history of search and rescue (SAR), international and national policies and practices. Students will learn the organizations and strategies in different SAR domains including: maritime, urban, wilderness, aeronautical, and combat. Students will learn about the different agency authorities detailed in Emergency Support Function #9 and their responsibilities entail. Case studies will be analyzed and practical applications of the diverse technologies, which support SAR planning and tactics will be modeled. Students will learn about the wide variety of SAR resources, assets, planning, capabilities used by emergency managers.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM7230 - EM Budgets & Grants

General

Course Description
This course is designed to provide emergency managers and homeland security experts with the knowledge and skills needed to create, balance, and manage budgets. This includes exploration of the budgetary process, innovations in budget preparation with an emphasis on using the budget as a tool for financial management, improving program performance, and policy making. This course will also include an introduction to emergency management grant writing and grant management as they relate to federal, state, nonprofit, and private grants.

Requisites
Prerequisite: EM2212 Emergency Management

Credits:
3

Billing Hours

Min:
3

EM7231 - Nonprofits and Volunteers in Disasters

General

Course Description

The Nonprofits and Volunteers in Disasters course examines the full landscape of the nonprofit and voluntary sectors during disasters. Students will learn the roles played by local, state, national, and international non-profits during each phase of emergency management. Students will also learn about the role of volunteers, approaches to volunteer management, and about volunteer coordinating structures used in emergency management. Students will also examine how Nonprofits are funded. A special focus will be on the development of emergent groups and the management of spontaneous volunteers. Case studies of various organizations will be used throughout the course along with the latest empirical research.

Requisites

Prerequisite: EM2212 Emergency Management

Credits:

3

Billing Hours

Min:

3

EM7232 - Disaster Film: Fact V. Fiction

General

Course Description

The public's perception of disasters and emergency management is shaped, in part, by Hollywood Disaster Movies. This course will introduce students to the evolution of the disaster film genre and its interplay with real-life historical events. Students will view classic disaster films and provide critical analysis from an emergency management perspective. Students will consider how these films reinforce misunderstandings and myths about disasters and emergency management. Finally, students will be challenged to explore how disaster films can be used to educate the public about disasters and emergency management.

Credits:
3

Billing Hours

Min:
3

EM7233 - Disaster Site Safety

General

Course Description
This academically rigorous course provides students with a foundational and applied understanding of occupational safety and disaster site operations through an integration of regulatory education, professional training, and leadership development. Designed to meet the demands of both academic and industry standards, the course incorporates the OSHA 30-Hour General Industry certification and the OSHA 7600 Disaster Site Worker training. Students engage in critical analysis of workplace and disaster-related hazards, regulatory frameworks, and risk mitigation strategies.Course content emphasizes hazard recognition, risk assessment and controls, the selection and use of personal protective equipment (PPE), incident management principles, and leadership in high-risk and emergency environments. Through a blend of lectures, case studies, practical exercises, and certification coursework, students are prepared to assume supervisory roles in general industry, emergency preparedness, and disaster response operations.Upon successful completion, students will earn two nationally recognized OSHA certifications, enhancing their qualifications for leadership roles across a range of industrial, public safety, and emergency management settings. The course supports academic inquiry into the intersection of occupational health, disaster science, and safety leadership, providing a critical foundation for advanced study and professional development.

Requisites
None

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
None

EM7240 - Emergency Medical Technician- Basic

General

Course Description
This course will cover the scope of practice for an Emergency Medical Technician (EMT). EMTs provide out of hospital emergency medical care and transportation for critical and emergent patients who access the emergency medical services (EMS) system. EMTs have the basic knowledge and skills necessary to stabilize and safely transport patients ranging from non-emergency and routine medical transports to life threatening emergencies. Emergency Medical Technicians function as part of a comprehensive EMS response system, under medical oversight. Emergency Medical Technicians perform interventions with the basic equipment typically found on an ambulance. Emergency Medical Technicians are a critical link between the scene of an emergency and the health care system.

Credits:
4

EM7240L - Emergency Medical Technician- Basic Lab

General

Course Description
This course will cover the scope of practice for an Emergency Medical Technician (EMT). EMTs provide out of hospital emergency medical care and transportation for critical and emergent patients who access the emergency medical services (EMS) system. EMTs have the basic knowledge and skills necessary to stabilize and safely transport patients ranging from non-emergency and routine medical transports to life threatening emergencies. Emergency Medical Technicians function as part of a comprehensive EMS response system, under medical oversight. Emergency Medical Technicians perform interventions with the basic equipment typically found on an ambulance. Emergency Medical Technicians are a critical link between the scene of an emergency and the health care system.

Credits:
0

EM7311 - 3rd Em Co-Op (optional)

General

Credits:
3

Max:
6

Billing Hours

Min:
6

EM8400 - EM Elective I

General

Credits:
3

Billing Hours

Min:
3

EM8401 - EM Elective II

General

Credits:
3

Billing Hours

Min:
3

EM8402 - EM Elective III

General

Course Description
Transfer Elective

Credits:
3

Billing Hours

Min:
3

EM9888 - Em Exchange

General

Credits:
12

Billing Hours

Min:
12

EN1112 - Engineering Systems and Safety

General

Course Description
This course will teach students the fundamental engineering concepts related to the steam and water cycle and steam generation. The students will also learn about various primary and auxiliary engineering systems. The lab familiarizes the students with the safe operation of the engine room and engineering systems on board the training ship and provides students with basic first aid and occupational safety certification. [Lab time required]
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

EN1112L - Engineering Systems and Safety Lab

General

Course Description
This is the lab for Engineering Systems and Safety.

Credits:
0

Billing Hours

Min:
0

EN1211 - Auxiliary Machinery I

General

Course Description
Lays the foundation for future marine engineering courses. It covers the construction, operation, maintenance, and repair of piping systems, fittings, joints, packing, and valves including basic control valves. Basic pressure, temperature, and level measurements and instruments are also discussed. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisites: EN1112 Engineering Systems and Safety Minimum grade C- , SM1111 Precalculus with Trigonometry Minimum grade C-

Credits:
3.5

Billing Hours

Min:
3.5

STCW

STCW Component
Knowledge & Practical

EN1211L - Auxiliary Machinery I Lab

General

Course Description
This is the lab for Auxiliary Machinery I.

Credits:
0

Billing Hours

Min:
0

EN1212 - Computer Aided Design

General

Course Description
Teaches students to create drawings, using a computer in the following general areas: mechanical, electrical/ electronic, hydraulic, architectural, surveying, flow charts, and process diagrams.

Requisites
Prerequisite: SM1111 Precalculus with Trigonometry

Credits:
1

Billing Hours

Min:
1

EN1214 - Computer Modeling

General

Course Description

This course is an introduction to the use of Computer-Aided Design (CAD), Dimensional Solid Modeling (3D), and Building Information Modeling to prepare working drawings of basic components and design assemblies. With a focus on Geometric Dimensioning and Tolerance (GD&T), students will sketch and develop computer-based solid models to produce para- metric designs and design drawings. Students will also be introduced to 3D printing and assembly.

Requisites

Prerequisite: SM1212 Calculus I

Credits:

1

Billing Hours

Min:

1

EN1222 - Aux. Machinery - Facilities

General

Course Description
The course provides the operating engineering foundation for future facilities engineering courses. It covers the installation, operation, main- tenance, and repair of equipment found in today's modern facilities. The use of different hand tools, fasteners, and measuring instruments are discussed, along with the repair of piping systems, fittings, joints, pack- ing, valves, and basic control valves. Varieties of pressure, temperature, and level indication are also discussed. The lab makes use of on-campus operating facilities and introduces students to on-campus alternative and renewable energy systems. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisites: EN1112 Engineering Systems and Safety Minimum grade C- , SM1111 Precalculus with Trigonometry Minimum grade C-

Credits:
3.5

Billing Hours

Min:
3.5

STCW

STCW Component
Knowledge & Practical

EN1311 - ENG Experiential Learning

General

Course Description

This course provides students a first-hand look at how Costa Rica has used its natural resources to implement sustainable energy technologies at both the local and national levels. Students will learn how this tropical community is balancing the preservation of their natural resources with the agricultural and energy needs of their society. Costa Rica offers a unique opportunity to observe a diverse spectrum of sustainable energy technologies in action, including wind, solar, geothermal, hydroelectric, carbon capture and energy storage, as well as sustainable agricultural technologies including farm-scale composting, bio-digestion and biomass-to-electricity cogeneration. The environmental and societal impacts of sustainable energy generation and distribution will be assessed.

Requisites

Prerequisites: EN1112 Engineering Systems and Safety Minimum grade C- , SM1212 Calculus I Minimum grade C-

Credits:

3

Billing Hours

Min:

3

EN1312 - EN1312 Experiential Learning

General

Course Description
This course provides students a first-hand look at how land use in Massachusetts has evolved from indigenous hunting, farming and transportation to the current pressures on land utilization for energy, housing, transportation, agriculture and recreation. Students will learn how Massachusetts is attempting to balance their energy needs with competing demands for increasingly scarce land resources. Massachusetts offers a diverse spectrum of sustainable energy technologies in action, including wind, solar, hydroelectric, pumped storage, carbon capture and energy storage, as well as sustainable agricultural technologies including agrivoltaics, bio-digestion and biomass-to-electricity cogeneration. The energy effectiveness, environmental impacts and societal impacts of sustainable energy generation, storage and distribution will be assessed.

Requisites
EN1112

Credits:
3

STCW

STCW Component
None

EN1313 - FENG Experiential Learning

General

Course Description
This course provides cadets with practical, real-world experience in Facilities Engineering through project-based learning, site visits, technical reporting, and collaborative teamwork?including opportunities to engage in international settings and explore diverse cultures. Cadets will apply core engineering principles to real facility systems, including?but not limited to?HVAC, power distribution, wastewater management, and control systems. In collaboration with campus facilities and under faculty supervision, cadets will identify engineering challenges, propose viable solutions, and implement or simulate corrective actions. The course emphasizes troubleshooting, effective communication, and professional practices through hands-on, experiential projects.

Requisites
- HU1110 Intro. to College Writing, HU1111 College Writing, or HU1112 Adv College Writing
- EN1112 Engineering Systems and Safety

Credits:
3

STCW

STCW Component
None

EN2101 - Engineering Statics

General

Course Description

Course covers static analysis of two- and three-dimensional bodies in equilibrium; determination of forces, moments, couples, and equivalent force systems; forces in members due to concentrated and distributed loads; analysis of trusses, frames, and machines; shear and bending moment diagrams; frictional forces; determination of centers of gravity and moment of inertia. The course is a more thorough treatment of the material in EN-2211, emphasizing vector algebra and application of integral calculus.

Credits:

3

Billing Hours

Min:

3

EN2111 - Auxiliary Machinery II

General

Course Description
A continuation of EN-1211 and covers the construction, operation, maintenance, and repair of basic power plant systems, steam traps, strainers, pumps, heat exchangers, condensers, air ejectors, deaerators, hydraulic systems and components, and air compressors and systems. The lab consists of CAD use to draw specific training ship systems; the use of cutaway equipment, operational trainers, and simulators; and the use of actual ship's equipment to enhance the understanding of material presented in the course. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisites: EN1211 Auxiliary Machinery I , SM1212 Calculus I ,

Corequisites EN2111L Aux Machinery II Lab

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge & Practical

EN2111L - Auxiliary Machinery II Lab

General

Course Description
This is the lab for Auxiliary Machinery II.

Credits:
0

Billing Hours

Min:
0

EN2112 - Machine Tool Technology

General

Course Description
This course provides practical experience in the use of machine tools. Emphasis is on shop safety, use of measuring instruments, hand tools, horizontal band saw, drill press, screw cutting lathe, electric arc welding, oxyfuel welding, and oxyfuel cutting. The lab also consists of a half semester of "hands-on" introduction to electric arc welding and machine tool operation, including safety. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisites: EN1211 Auxiliary Machinery I or EN1222 Aux. Machinery - Facilities and EN2111L Aux Machinery II Lab

Credits:
2

Billing Hours

Min:
2

STCW

STCW Component
Knowledge & Practical

EN2112L - Machine Tool Tech and Welding Lab

General

Course Description
This is the lab for Machine Tool Technology, and also includes welding.

Credits:
0

Billing Hours

Min:
0

EN2121 - Aux. Machinery II -Facilities

General

Course Description
The course is a continuation of EN-1222 and covers the installation, operation, maintenance, and repair of operating machinery including steam traps, strainers, pumps, compressors, heat exchangers, vacuum pumps, air injectors, deaerators, hydraulic and pneumatic systems, and basic operating characteristics of combined-cycle operation. The lab consists of the breakdown and repair of operating pumps and compressors including the electrical demand parameters of the machinery both loaded and unloaded. The lab uses cutaway equipment and operational trainers and simulators to enhance the understanding of the material presented in the course. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisites: EN1211 Auxiliary Machinery I or EN1222 Aux. Machinery - Facilities, SM1212 Calculus I, EN2111L Aux Machinery II Lab

Credits:
4

Billing Hours

Min:
4

EN2211 - Mechanics

General

Course Description
Includes static analysis of rigid bodies; determination of forces in mem- bers due to concentrated and distributed loads; analysis of trusses, frames, and machines; shear and bending moment diagrams; and determination of centers of gravity and moment of inertia. Credit will not be given for both EN-2211 and EN-2101.

Requisites
Prerequisites: SM2113 Calculus II , SM2123 Engineering Physics I

Credits:
3

Billing Hours

Min:
3

EN2221 - FE Cooperative I

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the summer session, in industry for academic credit. The student will be exposed to "real life" experiences through these co-ops and will gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Requisites
Prerequisites: EN2121 Aux. Machinery II -Facilities or EN2111 Aux Machinery II, SM2123 Engineering Physics I

Credits:
6

Billing Hours

Min:
6

EN2222 - Commercial Boilers

General

Course Description
Covers the construction, operation, maintenance, and code regulations pertinent to conventional power plant boilers, steam engines, and turbines. Emphasis is placed on the ASME Code; Massachusetts General Laws, Chapter 146; and the National Board Inspection Code [Lab time required]

Requisites
Prerequisites: EN2121 Aux. Machinery II -Facilities or EN2111 Aux Machinery II, SM1212 Calculus I

Corequisite: EN2222L Commercial Boilers Lab

Credits:
3.5

Billing Hours

Min:
3.5

EN2222L - Commercial Boilers Lab

General

Course Description
This is the lab for Commerical Boilers.

Credits:
0

Billing Hours

Min:
0

EN2231 - Sea Term II - Engine

General

Course Description
Provides an opportunity for cadets to obtain sea service and engineering watchstanding experience in a structured shipboard training program which is compliant with Chapter III of STCW and the requirements of 46 CFR. The training uses a building-block approach, bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy which includes a range of simulation and practical lab experiences. All phases of training are conducted by STCW Qualified Instructors and Designated Examiners.
STCW: Knowledge & Practical

Requisites
Prerequisites: ST0999 Sea Term I, EN2111 Aux Machinery II,SM1212 Calculus I; Minimum grade C- for all classes

Credits:
6

Billing Hours

Min:
6

STCW

STCW Component
Knowledge & Practical

EN2232 - Internal Combustion Engine I

General

Course Description
Covers the construction, running gear functions, and operating principles of the diesel engine, as applied to marine installations. The lab sessions will involve the student in diesel engine operation and maintenance both in the shop and aboard the various Academy vessels. [Lab time required]
STCW: Knowledge

Requisites
Prerequisites: EN2111 Aux Machinery II,SM1212 Calculus I

Corequisite: EN2232L Int. Comb. Engine I Lab

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge

EN2232L - Internal Combustion Engine I Lab

General

Course Description
This is the lab for Internal Combustion Engine I.

Credits:
0

Billing Hours

Min:
0

EN2241 - Sophomore Commercial Shipping

General

Course Description
Replaces Sea Term II. Qualified cadets are afforded the opportunity to train aboard commercially-operated vessels for approximately 60 days. The student must satisfy sophomore status to be considered.

Credits:
6

Billing Hours

Min:
6

EN2242 - ESE Co-Op I

General

Course Description

The co-op experience requires a student to work in industry a minimum of 240 hours in the summer or winter for academic credit. The student will be exposed to real-life experiences and gain firsthand knowledge of practices and technologies presently used. The co-op requires the student to submit a technical report and requires an evaluation by the student's supervisor.

Credits:
6

Billing Hours

Min:
6

EN2701 - Introduction to Design

General

Course Description
The purpose is to introduce students to the design process by having them participate in a semester-long design project. The project goals and design constraints will be well-defined by the instructor, but multiple solutions to the problem will be possible. Students will be required to make technical decisions, some of which may be based on incomplete information. Student teams will be expected to design, build, and test an electromechanical device. Using tools in the machine shop, students will be expected to manufacture components they have designed, and they will be expected to provide design and component drawings in CAD. The course will culminate with a working prototype. [Lab time required]

Requisites
Prerequisites: EN1214 Computer Modeling, EN2112 Machine Tool Technology, EN2101 Engineering Statics, SM2224 Eng. Physics II

Corequisite: EN2701L Intro to Design Lab

Credits:
3

Billing Hours

Min:
3

EN2701L - Intro to Design Lab

General

Course Description
This is the lab for Introduction to Design.

Credits:
0

Billing Hours

Min:
0

EN2901 - Computer Methods in Engineerin

General

Course Description

Introduction to the design of computer programs to address engineering problems. Basic program concepts, including variables and arrays, functions, looping, branching, input/output techniques, file management, and data structures. Application of programming to solve mathematical problems in algebra, linear algebra, calculus, and linear and differential equations is emphasized. Data is displayed and analyzed through computer-based plotting and curve fitting techniques.

Requisites

Prerequisites: SM2113 Calculus II and SM2123 Engineering Physics I

Credits:

1

Billing Hours

Min:

1

EN3102 - System Dynamics and Vibrations

General

Course Description

This course covers kinematics and kinetics of rigid bodies, including energy and momentum methods, and free and forced vibrations of rigid bodies, with and without damping. The course emphasizes a systems approach, which involves analysis of a given situation followed by application of the principles studied. Design considerations will be discussed.

Requisites

Prerequisites: EN2101 Engineering Statics, SM2214 Differential Equations, EN3212 Electronics,EN3212L Electronics Lab

Credits:

3

Billing Hours

Min:

3

EN3111 - Electrical Machines

General

Course Description
Students study AC and DC theory as applied to motors, generators, and power distribution systems. The course also considers preventative maintenance and repair of rotating and static electrical equipment; turboelectric drive principles and operation; and U.S. Coast Guard electrical engineering rules and regulations. The lab component covers ship and shore-side machinery.
STCW: Knowledge

Requisites
Prerequisite: SM2224 Eng. Physics II

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

EN3111L - Electrical Machines Lab

General

Course Description
This is the lab for Electrical Machines. It includes the theoretical and practical aspects of the operation and maintenance of electrical machinery, including: electric circuits and wiring, AC and DC motors andgenerators, transformers,motor controls,and troubleshooting.
STCW: Practical

Requisites
Prerequisite: EN3111 Electrical Machines

Credits:
1

Billing Hours

Min:
1

STCW

STCW Component
Practical

EN3112 - Strength of Materials

General

Course Description
Studies the fundamental concepts of the mechanics of materials, including stress, strain, and deformation due to tensile and compressive forces, torsion, bending moments, transverse shear, and temperature changes. It also studies statically indeterminate problems, power transmission, stress concentration factor, beam design, columns, and buckling.

Requisites
Prerequisites: EN2211 Mechanics or EN2101 Engineering Statics , SM2214 Differential Equations

Credits:
3

Billing Hours

Min:
3

EN3112L - Strength of Materials Lab

General

Course Description
This is the lab for Strength of Materials. This lab reinforces the basic concepts of normal stress, shear stress, torsion, beam bending and deflection, and beam design as taught in the Strength of Materials course. Formal engineering reports are required with emphasis on writing and spreadsheet skills.

Requisites
Corequisite: EN3112 Strength of Materials

Credits:
1

Billing Hours

Min:
1

EN3131 - Steam Generators

General

Course Description
Covers the design, construction, and operation of steam generators (boilers). It also considers fuels and their combustion, combustion equipment, combustion control, feedwater regulators, air heaters, economizers, superheaters, reheaters, boiler water treatment, and auxiliary boilers. A lab aboard the Academy's training ship is included, emphasizing boiler external fittings, safety valves, fuel oil systems, and main and auxiliary steam systems. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisite: SM2113 Calculus II,

Corequisite: EN3131L Steam Generators Lab

Credits:
3.5

Billing Hours

Min:
3.5

STCW

STCW Component
Knowledge & Practical

EN3131L - Steam Generators Lab

General

Course Description
This is the lab for Steam Generators.

Credits:
0

Billing Hours

Min:
0

EN3201 - Fluid Dynamics

General

Course Description
In this course, more in depth than in EN-4111, students study the fundamentals of fluid dynamics. Topics include hydrostatics (pressure distribution, forces on submerged surfaces, Archimedes' principle), Newton's law of viscosity, use of differential and finite control volume analysis with the basic laws (conservation of mass, momentum, and energy), differential formulation of basic laws (Navier-Stokes), piping systems, vorticity, boundary layers, drag coefficient, and turbulence.

Requisites
Prerequisites: EN2101 Engineering Statics, SM2214 Differential Equations

Credits:
3

Billing Hours

Min:
3

EN3211 - Thermodynamics

General

Course Description
Covers the application of the basic laws of thermodynamics to open and closed systems including refrigeration, air conditioning, and various power cycles with special emphasis on the steam power cycle.

Requisites
Prerequisite: SM3125 Eng. Physics III

Credits:
3

Billing Hours

Min:
3

EN3212 - Electronics

General

Course Description
Theory of basic solid-state electron devices. Power circuits. Use of analog and digital integrated circuits in control systems for logic, interlocks, and automated machinery control.
STCW: Knowledge

Requisites
Prerequisite: SM2224 Eng. Physics II

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

EN3212L - Electronics Lab

General

Course Description
This is the lab for Electronics (EN-3212). Participants learn to use electronic instruments by taking measurementson analogand digital circuits constructed during the lab period. The measurements are then used to verify the analytical relationships developed in the classroom.

Requisites
Corequisite: EN3212 Electronics

Credits:
1

Billing Hours

Min:
1

EN3213 - Refrigeration

General

Course Description
An in-depth study of refrigeration and the design, operation, maintenance, and repair of environmental control systems. The impact of refrigerants regarding ozone depletion and global warming is covered in detail. [Lab time required.]
STCW: Knowledge & Practical

Requisites
Prerequisite: SM3125 Eng. Physics III

Corequisite: EN3213L Refrigeration Lab

Credits:
2.5

Billing Hours

Min:
2.5

STCW

STCW Component
Knowledge & Practical

EN3213L - Refrigeration Lab

General

Course Description
This is the lab for Refrigeration.

Requisites
Corequisite: EN3213 Refrigeration

Credits:
0

Billing Hours

Min:
0

EN3214 - Municipal Wastewater Treatment

General

Course Description
A survey course of municipal wastewater treatment from the equipment, operations, and management viewpoints. Also included are several lab sessions to demonstrate standard monitoring tests such as settleable solids, BOD, total suspended solids, residual chlorine, trend analysis, and fecal coliform.

Requisites
Prerequisites: SM1212 Calculus I or SM1214 Applied Calculus, SM1232 Chemistry II or SM2233 Organic/Hazmat Chemistry

Credits:
3

Billing Hours

Min:
3

EN3216 - Operational Controls

General

Course Description
A study of the principles of industrial measurement and control with an emphasis on practical applications aboard ship and in industry. Methods of sensing, measuring and transmitting data from industrial processes; feedback, automatic control systems, closed loop systems, controllers, control modes, and control configurations. Mechanical, electronic, analog and digital control mechanism will be discussed, as will programmable logic controllers.
STCW: Knowledge

Requisites
Previous or Concurrent: EN3212 Electronics, EN3212L Electronics Lab

Corequisite: EN3216L Operational Controls Lab

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

EN3216L - Operational Controls Lab

General

Course Description
This is the lab for Operational Controls. This lab provides an opportunity to work with instruments and control hardware found aboard ship and in industry, and supplements the content of EN-3216. Students will select, install, and calibrate various sensors and instruments; build and tune PID control loops; design and implement control circuits using Programmable Logic Controllers and Ladder Logic.

Requisites
Corequisite: EN3216 Operational Controls

Credits:
1

Billing Hours

Min:
1

EN3221 - FE Cooperative II

General

Course Description

The co-op experience requires a student to work a minimum of six weeks, during the summer or winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co- ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Requisites

Prerequisites: EN2221 FE Cooperative I, EN2112 Machine Tool Technology, EN2222 Commercial Boilers, SM2224 Eng. Physics II, EN2211 Mechanics

Credits:

6

Billing Hours

Min:

0

EN3231 - Sea Term III - Engine

General

Course Description

Provides an opportunity for cadets to obtain sea service and engineering watchstanding experience in a structured shipboard training program which is compliant with Chapter III of STCW and the requirements of 46 CFR. The training uses a building-block approach bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy which includes a range of simulation and practical lab experiences. All phases of training are conducted by STCW Qualified Instructors and Designated Examiners.

Requisites

Prerequisites: EN2231 Sea Term II - Engine, EN2112 Machine Tool Technology, EN2232 Internal Combustion Engine I

Credits:

6

Billing Hours

Min:

6

EN3232 - Commercial Sea Term - Engineer

General

Course Description
Replaces Sea Term III. Qualified cadets are afforded an opportunity to train aboard a commercially-operated vessel in an engineering capacity for a maximum of sixty days in lieu of sailing aboard the Academy training ship. The student must have had junior status during the previous academic term.

Requisites
Prerequisites: EN2231 Sea Term II - Engine, SM2224 Eng. Physics II, EN2112 Machine Tool Technology, EN2232 Internal Combustion Engine I, EN2211 Mechanics,STCWVPDSD VPDSD Minimum grade P

Credits:
6

Billing Hours

Min:
0

EN3233 - Steam and Gas Turbines

General

Course Description
Covers the principles, design, operation, maintenance, and repair of marine steam turbines including their reduction gears, thrust bearings, couplings, governors, and lubrication systems. Line shafting, bearings, and propellers are other topics included. This course also includes an intro- duction to the design and operation of gas turbines. [Lab time required]
STCW: Knowledge & Practical

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge & Practical

EN3233L - Steam & Gas Turbines Lab

General

Course Description
This is the lab for Steam and Gas Turbines.

Credits:
0

Billing Hours

Min:
0

EN3242 - ESE Co-Op II

General

Course Description

The co-op experience requires a student to work in industry a minimum of 240 hours in the summer or winter for academic credit. The student will be exposed to real-life experiences and gain firsthand knowledge of practices and technologies presently used in the engineering field. The co-op requires the student to submit a technical report and requires an evaluation by the student's supervisor.

Requisites

Prerequisites: SM3125 Eng. Physics III, SM6115 Calculus III, EN2242 ESE Co-Op I, EN3112 Strength of Materials, EN3212 Electronics

Credits:

6

Billing Hours

Min:

0

EN3603 - Instrumentation & Control

General

Course Description
Covers instrumentation and control fundamentals and applications to facility systems including documentation. Both analog and digital control systems are covered. It is also an introduction to programmable logic controllers.

Requisites
Prerequisites: EN3212 Electronics, EN3212L Electronics Lab, EN2901 Computer Methods in Engineerin

Corequisite: EN3603L I&C Lab

Credits:
3

Billing Hours

Min:
3

EN3603L - Instrumentation and Control Lab

General

Course Description
This is the lab for Instrumentation and Control. This lab is designed to put the instrumentation part of instrumentation and control (INC) into practice. In the INC,the instrumentation is tied to the software. A controller is designed by adding closed-loop feedback and controller dynamics to improve the quality of the system response to a variety of inputs. The focus of this lab will be on digital electronics. The core of the controller work will be based on Matlab (using C-like commands) and Simulink (using graphical, block diagram programming). This course will prepare the student for work in automatic control system design and advanced controller applications.

Requisites
Corequisite: EN3603 Instrumentation & Control

Credits:
1

Billing Hours

Min:
1

EN3604 - Introduction to Microcontroller

General

Credits:
1

Billing Hours

Min:
1

EN3801 - Energy Strategy and Management

General

Course Description

Students will examine and analyze how "energy" impacts the decision- making process from a strategic and operational perspective in today's business sectors and how current events impact the global energy arena. Topics include types of power generating systems; procurement of energy commodities; the energy market; commercial versus residential energy systems issues; commercial energy audits; energy conservation measures; incorporation of LEED in building design; long-range energy strategies; and how analysis of energy consumption patterns impact management's financial decisions.

Requisites

Prerequisites: EN3802 Energy Systems, EN3211 Thermodynamics or EN4803 Thermodynamics of Power System

Credits:

3

Billing Hours

Min:

3

EN3802 - Energy Systems

General

Course Description

This course presents technical, environmental, social, political, and economic aspects of current and future energy systems used to meet the demands of a global society with regard to electrical power, transportation, manufacturing, agriculture, and more. Fossil fuel power and transportation technologies and their impacts on the environment and climate are discussed, as are present and future development of alternative and/or renewable electrical power generation technologies (including nuclear, wind, solar, hydropower, and geothermal). Students will make engineering estimates of various resources and match them with energy requirements for various uses/ applications, and will complete a project which involves developing a moderately complex energy system and analyzing it for feasibility. Required course for ESEN majors.

Requisites

Prerequisite: SM3125 Eng. Physics III

Credits:

3

Billing Hours

Min:

3

EN4111 - Fluid Mechanics

General

Course Description
Covers the fundamental principles of fluid statics, pipe flow, open channel flow, lift and drag, pumps and turbines, and flow measuring devices.
STCW: Knowledge

Requisites
Prerequisites: EN2211 Mechanics or EN2101 Engineering Statics, SM3125 Eng. Physics III

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

EN4121 - Electrical Power Distribution

General

Course Description
Provides an understanding of industrial electrical power distribution systems. Emphasis is placed on the load subsystem and fault protection. Design calculations are based on the methods of the National Electrical Code.

Requisites
Prerequisite: EN3111 Electrical Machines

Credits:
3

Billing Hours

Min:
3

EN4131 - Internal Combustion Engines II

General

Course Description
Studies diesel engine systems and various methods of application. Engine operation, installation, and maintenance are also considered, as well as diesel engine drive trains and torque conversion. The lab is divided between shipboard systems and the diesel lab ashore. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisite: EN2232 Internal Combustion Engine I

Corequisite: EN4131L Int. Comb. Engines II Lab

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge & Practical

EN4131L - Internal Combustion Engines II Lab

General

Course Description
This is the lab for Internal Combustion Engines II.

Credits:
0

Billing Hours

Min:
0

EN4151 - Applied Naval Architecture

General

Course Description
The course includes general naval architecture nomenclature, geometry, hydrostatic curves, longitudinal stability calculations, identification of principal structural members, and calculations for ship strength curves. The course also studies resistance relationships between an actual ship and a ship model, ship propulsion design requirements, and sizing of a ship's engine and power plant.
STCW: Knowledge

Requisites
Prerequisite: EN3112 Strength of Materials

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

EN4220 - Engineering Independent Study

General

Credits:
6

Billing Hours

Min:
6

EN4221 - Cooperative III Facilities Engineering

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the summer or winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co- ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Requisites
Prerequisites: EN3221 FE Cooperative II, EN3213 Refrigeration

Credits:
6

Billing Hours

Min:
0

EN4222 - Heating, Ventilation & Air-Conditioning

General

Course Description
Covers the theory, design, construction, operation, and maintenance of conventional eating, ventilating, and air-conditioning systems.

Credits:
3

Billing Hours

Min:
3

EN4224 - Facilities Planning & Management

General

Course Description

Designed to enhance the skills required of a future facilities engineer or manager by providing a comprehensive introduction to the responsibilities facing facilities management professionals and the techniques used to meet these challenges. Topics include; project management, planning, budgeting, engineering economics, and human resource principles required to effectively design, operate, and maintain complex facilities.

Credits:
3

Billing Hours

Min:
3

EN4225 - Alternative Cooperative for FE and ESE

General

Credits:
3

Billing Hours

Min:
0

EN4230 - Senior Commercial Shipping

General

Credits:
6

Billing Hours

Min:
6

EN4231 - Sea Term IV - Engine

General

Course Description
Provides an opportunity for cadets to obtain sea service and engineering watchstanding experience in a structured shipboard training program which is compliant with Chapter III of STCW and the requirements of 46 CFR. The training uses a building-block approach bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy which includes a range of simulation and practical lab experiences. All phases of training are conducted by STCW Qualified Instructors and Designated Examiners.
STCW: Knowledge & Practical

Requisites
Prerequisites: EN3231 Sea Term III - Engine or EN3232 Commercial Sea Term - Engineer, EN3213 Refrigeration,EN4131 Internal Combustion Engines II, LB-0201 Minimum grade P

Credits:
6

Billing Hours

Min:
6

STCW

STCW Component
Knowledge & Practical

EN4232 - License Seminar

General

Course Description
A comprehensive review of all marine engineering science subject matter on which cadets are examined by the U.S.Coast Guard to qualify for licensing as third assistant engineer, steam and diesel unlimited horsepower. Includes Engineroom Resource Management and Fatigue Training.

Requisites
Prerequisite: EN3232 Commercial Sea Term - Engineer or EN3231 Sea Term III - Engine

Credits:
3

Billing Hours

Min:
3

EN4234 - Engineroom Resource Management

General

Course Description
Principles of engineroom resource management, including: allocation assignment and prioritization or resources; effective communications; assertiveness and leadership; obtaining and maintaining situational awareness; and consideration of the team experience.

Credits:
0

EN4242 - ESE Co-Op III

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co-ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Requisites
Prerequisites: EN3242 ESE Co-Op II, EN3802 Energy Systems,EN4803 Thermodynamics of Power System

Credits:
6

Billing Hours

Min:
6

EN4444 - Coast Guard License Exams - Meng

General

Course Description
Indicates whether the student has passed Coast Guard exams.

Credits:
0

EN4704 - Energy Systems Design I

General

Course Description
In this design-oriented course, students obtain practical experience in the application of engineering skills and project management in the solution of various engineering problems.

Requisites
Prerequisites: EN2701 Introduction to Design, EN3802 Energy Systems, EN4803 Thermodynamics of Power System, EN4803L Power Systems Lab

Credits:
3

Billing Hours

Min:
3

EN4705 - Energy Systems Design II

General

Course Description
The course emphasizes team design, construction, and testing of an energy system device. Creation of CAD drawings, fabrication with tools in the Machine Shop, critical design reviews, technical report and presentation. Application and constraints are determined by the student, but the design project and prototype must be related to an energy system. Continuation of the design project from EN-4704 is projected. Open-ended projects are encouraged.

Requisites
Prerequisite: EN4704 Energy Systems Design I

Credits:
3

Billing Hours

Min:
3

EN4705L - Systems Design Lab

General

Course Description
This is the lab for Energy Systems Design.

Credits:
0

Billing Hours

Min:
0

EN4803 - Thermodynamics of Power Systems

General

Course Description
More in depth than EN-3211, this course will cover the 2nd Law of Thermodynamics and its effect on the thermal efficiency of heat engines and power plants. It will also introduce the property of entropy and its use in analyzing power cycles and subsidiary components, such as turbines, compressors, pumps and pistons. These concepts will be applied to analyze engineering power cycles, including the Otto, Diesel and Brayton gas cycles, the Rankine vapor power cycle used in steam power plants, binary and combined cycles, and cogeneration. Fuel combustion and compressible flows in nozzles will also be covered.

Requisites
Prerequisites: SM3125 Eng. Physics III, EN7146 Heat and Mass Transfer

Credits:
3

Billing Hours

Min:
3

EN4803L - Power Systems Laboratory

General

Course Description
This is the lab for Thermodynamics of Power Systems. This course provides students with hands-on experience in thermo-fluid aspects of industrial power systems. The lab will demonstrate selected topics covered in EN-4803 and EN-3201. Topics include applications of the 1st and 2nd Laws of Thermodynamics, compressible ideal gases, fluid pumps, internal combustion engines, and steam cycles and properties. Students will learn experimental methods and the concepts of measurement accuracy, precision, bias, and aliasing. They will become familiar with the use of computer-linked data acquisition systems, digital thermocouples and pressure transducers, as well as analog pressure gages, manometers, flow meters, and dynamometers and stroboscopes for torque and shaft rotational speed measurement. Students will maintain a detailed lab notebook and will communicate the results of these experiments in written engineering technical reports and memoranda. A summary group design project will be assigned to foster teamwork and professional engineering communications, both written and verbal.

Requisites
Corequisite: EN4803 Thermodynamics of Power System

Credits:
1

Billing Hours

Min:
1

EN4900 - Coast Guard Exam - Meng

General

Credits:
0

EN7142 - Diesel Engines

General

Course Description

Required for the Marine Transportation major starting with the Class of 2019. Open to Facilities Engineering and Energy Systems Engineering majors on a space-available basis. This course covers diesel engine theory, operation, components, and systems. Systems include lubrication, cooling, fuel, electrical, air and exhaust, and drive train. Troubleshooting and maintenance are also covered. This course is equivalent to the Masters, Mates, and Pilots Union MITAGS Diesel Engines Control course.

Requisites

Prerequisites: MT3371 Sea Term III - Deck, MT3372 Commercial Sea Term - Deck, EN2211 Mechanics or EN3112 Strength of Materials

Credits:

3

Billing Hours

Min:

3

EN7144 - Nuclear Power

General

Course Description
An introduction to nuclear power including basic theory, reactor fuel and cores types of reactors, radiation hazards, and safeguards.

Requisites
Prerequisite: SM3125 Eng. Physics III

Credits:
3

Billing Hours

Min:
3

EN7146 - Heat and Mass Transfer

General

Course Description
Studies transient and steady-state heat conduction in one and two dimensions, free and forced convection, and radiation from simple bodies. Special topics include heat exchangers and numerical methods.

Requisites
Prerequisites: SM3125 Eng. Physics III, EN3201 Fluid Dynamics

Credits:
3

Billing Hours

Min:
3

EN7151 - Commercial Turbines

General

Course Description
This course provides the student with an understanding of steam and gas turbine principles, theory, construction concepts, operation maintenance, and safety practices. The course will discuss the various types of power generation facilities including conventional steam plants, gas turbine simple and combined cycle, and co-generation using reciprocating engines.

Requisites
Prerequisites: EN2222 Commercial Boilers or EN3131 Steam Generators, SM3125 Eng. Physics III

Credits:
3

Billing Hours

Min:
3

EN7155 - Programming for Eng Applications

General

Course Description
This course is to introduce and apply computer programming to solve common engineering problems. Engineering applications, such as engineering models and simulation, motion animations, image processing, network communications etc. will be discussed.

Requisites
Prerequisite: SM1212 Calculus I or SM2123 Engineering Physics I

Credits:
3

Billing Hours

Min:
3

EN7155L - Prog. for Engineering Application Lab

General

Credits:
0

EN7156 - Introduction to Robotics

General

Course Description
It is an introductory course to robotics along with the applications of the internet-of-things (IoT) and arti?cial intelligence (AI) on a mobile robot. It covers the contents of Linux operating system, vehicle model and control, smart sensors, camera, Email and Web applications, etc. It also discusses robot trajectory following, obstacle avoidance, etc.

Requisites
SM1212 Calculus I

Credits:
3

STCW

STCW Component
None

EN7157 - Nuclear Engineering

General

Course Description

Nuclear physics introduces the atomic nature of matter, the chart of the nuclides, radioactivity and radioactive decay, neutron interactions and fission.

Reactor theory includes topics such as neutron sources, neutron flux, neutron cross sections, reaction rates, neutron moderation, and prompt and delayed neutrons.

Successful completion of this course will provide the student an understanding of nuclear power engineering applicable to commercial electricity generators and navy propulsion systems.

Credits:

3

Billing Hours

Min:

3

EN7214 - Industrial Wastewater Treatment

General

Course Description
Provides an overview of the basic concepts of physical and chemical treatment, the function of related equipment and support systems; and the environmental responsibilities required to safely and properly operate, maintain, and manage an industrial wastewater treatment facility.

Requisites
Prerequisites: SM1232 Chemistry II, SM2113 Calculus II, EN2121 Aux. Machinery II -Facilities or EN2111 Aux Machinery II

Credits:
3

Billing Hours

Min:
3

EN7221 - Additional Facilities Co-Op

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the summer or winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co- ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
6

EN7247 - Construction Methods and Materials

General

Course Description
This course covers the fundamental concepts of construction methods, materials, and equipment as they are employed in construction and assembly. The course also gives students the opportunity to conduct an analytic study of a large project under construction. The course covers the application and utilization of various types of construction equipment, the calculation of the production of equipment usage, the evaluation and selection of equipment, and the planning and analysis of earthwork construction. In addition, the course addresses site planning, including plane, topographic, and construction surveying.

Requisites
Prerequisite: EN2211 Mechanics or EN2101 Engineering Statics

Credits:
3

Billing Hours

Min:
3

EN7248 - Fundamentals of Eng. Seminar

General

Credits:
3

Billing Hours

Min:
3

EN7257 - Marine Construction I

General

Course Description
This course covers the environmental and geotechnical aspects as well as the ecological impacts of coastal and offshore marine construction, seafloor modifications, and dredging. The course will also provide in- depth coverage of the unique engineering methods and the operational, material, and equipment challenges encountered in the installation or construction of various harbor, coastal, and near-shore structures.

Requisites
Prerequisite: EN3112 Strength of Materials

Credits:
3

Billing Hours

Min:
3

EN7262 - Marine Construction II

General

Course Description
This course is a continuation from Marine Construction I and focuses on the construction of offshore platforms, floating structures, and other offshore technologies. Also covered will be submarine pipelines and cables, repairs and improvements to existing marine structures, and the disposal and salvage of obsolete, deteriorated, or damaged offshore structures.

Requisites
Prerequisites: EN7257 Marine Construction I, EN3201 Fluid Dynamics or EN4111 Fluid Mechanics

Credits:
3

Billing Hours

Min:
3

EN7271 - Construction Industry Co-Op

General

Course Description
This is an optional summer or winter cooperative experience for students enrolled in the Marine Construction minor. It requires a student to work for a minimum prescribed time period in the construction or marine construction industry for academic credit. The student will be exposed to real-life experiences and gain firsthand knowledge of practices and technologies used by construction professionals. The cooperative experience requires the submission of a technical project report and evaluation by the supervisor.

Requisites
Prerequisite: EN7247 Construction Methods

Credits:
6

Billing Hours

Min:
6

EN7979 - NCEES Exam

General

Credits:
0

Billing Hours

Min:
0

EN8000 - Engineering Independent Study

General

Course Description
This course provides an opportunity for students to conduct an independent study under the guidance of a department faculty member, while following specific guidelines. Approval of department chair is required.

Credits:
3

Billing Hours

Min:
3

ES1112 - Engineering Systems and Safety

General

Course Description
This course will teach students the fundamental engineering concepts related to the steam and water cycle and steam generation. The students will also learn about various primary and auxiliary engineering systems. The lab familiarizes the students with the safe operation of the engine room and engineering systems on board the training ship and provides students with basic first aid and occupational safety certification. [Lab time required]
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ES1112L - Engineering Systems and Safety Lab

General

Course Description
This is the lab for Engineering Systems and Safety.

Credits:
0

Billing Hours

Min:
0

ES1211L - Auxiliary Machinery I Lab

General

Course Description
This is the lab for Auxiliary Machinery I.

Credits:
0

Billing Hours

Min:
0

ES1214 - Computer Modeling

General

Course Description
This course is an introduction to the use of Computer-Aided Design (CAD), Dimensional Solid Modeling (3D), and Building Information Modeling to prepare working drawings of basic components and design assemblies. With a focus on Geometric Dimensioning and Tolerance (GD&T), students will sketch and develop computer-based solid models to produce para- metric designs and design drawings. Students will also be introduced to 3D printing and assembly.

Credits:
1

Billing Hours

Min:
1

ES1222 - Aux. Machinery - Facilities

General

Course Description
The course provides the operating engineering foundation for future facilities engineering courses. It covers the installation, operation, main- tenance, and repair of equipment found in today's modern facilities. The use of different hand tools, fasteners, and measuring instruments are discussed, along with the repair of piping systems, fittings, joints, pack- ing, valves, and basic control valves. Varieties of pressure, temperature, and level indication are also discussed. The lab makes use of on-campus operating facilities and introduces students to on-campus alternative and renewable energy systems. [Lab time required]
STCW: Knowledge & Practical

Credits:
3.5

Billing Hours

Min:
3.5

ES1222L - Auxiliary Machinery I Lab

General

Course Description
This is the lab for Auxiliary Machinery I.

Credits:
0

Billing Hours

Min:
0

ES1311 - ESE Experiential Learning

General

Course Description
This course provides students a first-hand look at how Costa Rica has used its natural resources to implement sustainable energy technologies at both the local and national levels. Students will learn how this tropical community is balancing the preservation of their natural resources with the agricultural and energy needs of their society. Costa Rica offers a unique opportunity to observe a diverse spectrum of sustainable energy technologies in action, including wind, solar, geothermal, hydroelectric, carbon capture and energy storage, as well as sustainable agricultural technologies including farm-scale composting, bio-digestion and biomass-to-electricity cogeneration. The environmental and societal impacts of sustainable energy generation and distribution will be assessed.

Credits:
3

Billing Hours

Min:
3

ES2101 - Engineering Statics

General

Course Description
Course covers static analysis of two- and three-dimensional bodies in equilibrium; determination of forces, moments, couples, and equivalent force systems; forces in members due to concentrated and distributed loads; analysis of trusses, frames, and machines; shear and bending moment diagrams; frictional forces; determination of centers of gravity and moment of inertia. The course is a more thorough treatment of the material in EN-2211, emphasizing vector algebra and application of integral calculus.

Credits:
3

Billing Hours

Min:
3

ES2112 - Machine Tool Technology

General

Course Description
This course provides practical experience in the use of machine tools. Emphasis is on shop safety, use of measuring instruments, hand tools, horizontal band saw, drill press, screw cutting lathe, electric arc welding, oxyfuel welding, and oxyfuel cutting. The lab also consists of a half semester of "hands-on" introduction to electric arc welding and machine tool operation, including safety. [Lab time required]
STCW: Knowledge & Practical

Credits:
2

Billing Hours

Min:
2

ES2112L - Machine Tool Tech and Welding Lab

General

Course Description
This is the lab for Machine Tool Technology, and also includes welding.

Credits:
0

Billing Hours

Min:
0

ES2242 - ESE Co-Op I

General

Course Description
The co-op experience requires a student to work in industry a minimum of 240 hours in the summer or winter for academic credit. The student will be exposed to real-life experiences and gain firsthand knowledge of practices and technologies presently used. The co-op requires the student to submit a technical report and requires an evaluation by the student's supervisor.

Credits:
6

Billing Hours

Min:
6

ES2701 - Introduction to Design

General

Course Description
The purpose is to introduce students to the design process by having them participate in a semester-long design project. The project goals and design constraints will be well-defined by the instructor, but multiple solutions to the problem will be possible. Students will be required to make technical decisions, some of which may be based on incomplete information. Student teams will be expected to design, build, and test an electromechanical device. Using tools in the machine shop, students will be expected to manufacture components they have designed, and they will be expected to provide design and component drawings in CAD. The course will culminate with a working prototype. [Lab time required]

Credits:
3

Billing Hours

Min:
3

ES2701L - Intro to Design Lab

General

Course Description
This is the lab for Introduction to Design.

Credits:
0

Billing Hours

Min:
0

ES2901 - Computer Methods in Engineerin

General

Course Description
Introduction to the design of computer programs to address engineering problems. Basic program concepts, including variables and arrays, functions, looping, branching, input/output techniques, file management, and data structures. Application of programming to solve mathematical problems in algebra, linear algebra, calculus, and linear and differential equations is emphasized. Data is displayed and analyzed through computer-based plotting and curve fitting techniques.

Credits:
1

Billing Hours

Min:
1

ES3102 - System Dynamics and Vibrations

General

Course Description
This course covers kinematics and kinetics of rigid bodies, including energy and momentum methods, and free and forced vibrations of rigid bodies, with and without damping. The course emphasizes a systems approach, which involves analysis of a given situation followed by application of the principles studied. Design considerations will be discussed.

Credits:
3

Billing Hours

Min:
3

ES3111 - Electrical Machines

General

Course Description
Students study AC and DC theory as applied to motors, generators, and power distribution systems. The course also considers preventative maintenance and repair of rotating and static electrical equipment; turboelectric drive principles and operation; and U.S. Coast Guard electrical engineering rules and regulations. The lab component covers ship and shore-side machinery.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ES3111L - Electrical Machines Lab

General

Course Description
This is the lab for Electrical Machines. It includes the theoretical and practical aspects of the operation and maintenance of electrical machinery, including: electric circuits and wiring, AC and DC motors andgenerators, transformers,motor controls,and troubleshooting.
STCW: Practical

Credits:
1

Billing Hours

Min:
1

ES3112 - Strength of Materials

General

Course Description
Studies the fundamental concepts of the mechanics of materials, including stress, strain, and deformation due to tensile and compressive forces, torsion, bending moments, transverse shear, and temperature changes. It also studies statically indeterminate problems, power transmission, stress concentration factor, beam design, columns, and buckling.

Credits:
3

Billing Hours

Min:
3

ES3112L - Strength of Materials Lab

General

Course Description
This is the lab for Strength of Materials. This lab reinforces the basic concepts of normal stress, shear stress, torsion, beam bending and deflection, and beam design as taught in the Strength of Materials course. Formal engineering reports are required with emphasis on writing and spreadsheet skills.

Credits:
1

Billing Hours

Min:
1

ES3201 - Fluid Dynamics

General

Course Description
In this course, more in depth than in EN-4111, students study the fundamentals of fluid dynamics. Topics include hydrostatics (pressure distribution, forces on submerged surfaces, Archimedes' principle), Newton's law of viscosity, use of differential and finite control volume analysis with the basic laws (conservation of mass, momentum, and energy), differential formulation of basic laws (Navier-Stokes), piping systems, vorticity, boundary layers, drag coefficient, and turbulence.

Credits:
3

Billing Hours

Min:
3

ES3212 - Electronics

General

Course Description
Theory of basic solid-state electron devices. Power circuits. Use of analog and digital integrated circuits in control systems for logic, interlocks, and automated machinery control.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ES3212L - Electronics Lab

General

Course Description
This is the lab for Electronics (EN-3212). Participants learn to use electronic instruments by taking measurementson analogand digital circuits constructed during the lab period. The measurements are then used to verify the analytical relationships developed in the classroom.

Credits:
1

Billing Hours

Min:
1

ES3242 - ESE Co-Op II

General

Course Description
The co-op experience requires a student to work in industry a minimum of 240 hours in the summer or winter for academic credit. The student will be exposed to real-life experiences and gain firsthand knowledge of practices and technologies presently used in the engineering field. The co-op requires the student to submit a technical report and requires an evaluation by the student's supervisor.

Credits:
6

Billing Hours

Min:
0

ES3603 - Instrumentation & Control

General

Course Description
Covers instrumentation and control fundamentals and applications to facility systems including documentation. Both analog and digital control systems are covered. It is also an introduction to programmable logic controllers.

Credits:
3

Billing Hours

Min:
3

ES3603L - Instrumentation and Control Lab

General

Course Description
This is the lab for Instrumentation and Control. This lab is designed to put the instrumentation part of instrumentation and control (INC) into practice. In the INC,the instrumentation is tied to the software. A controller is designed by adding closed-loop feedback and controller dynamics to improve the quality of the system response to a variety of inputs. The focus of this lab will be on digital electronics. The core of the controller work will be based on Matlab (using C-like commands) and Simulink (using graphical, block diagram programming). This course will prepare the student for work in automatic control system design and advanced controller applications.

Credits:
1

Billing Hours

Min:
1

ES3604 - Introduction to Microcontroller

General

Credits:
1

Billing Hours

Min:
1

ES3801 - Energy Strategy and Management

General

Course Description
Students will examine and analyze how "energy" impacts the decision- making process from a strategic and operational perspective in today's business sectors and how current events impact the global energy arena. Topics include types of power generating systems; procurement of energy commodities; the energy market; commercial versus residential energy systems issues; commercial energy audits; energy conservation measures; incorporation of LEED in building design; long-range energy strategies; and how analysis of energy consumption patterns impact management's financial decisions.

Credits:
3

Billing Hours

Min:
3

ES3802 - Energy Systems

General

Course Description
This course presents technical, environmental, social, political, and economic aspects of current and future energy systems used to meet the demands of a global society with regard to electrical power, transportation, manufacturing, agriculture, and more. Fossil fuel power and transportation technologies and their impacts on the environment and climate are discussed, as are present and future development of alternative and/or renewable electrical power generation technologies (including nuclear, wind, solar, hydropower, and geothermal). Students will make engineering estimates of various resources and match them with energy requirements for various uses/applications, and will complete a project which involves developing a moderately complex energy system and analyzing it for feasibility. Required course for ESEN majors.

Credits:
3

Billing Hours

Min:
3

ES4121 - Electrical Power Distribution

General

Course Description
Provides an understanding of industrial electrical power distribution systems. Emphasis is placed on the load subsystem and fault protection. Design calculations are based on the methods of the National Electrical Code.

Credits:
3

Billing Hours

Min:
3

ES4220 - Engineering Independent Study

General

Credits:
6

Billing Hours

Min:
6

ES4222 - Heating, Ventilation & Air-Conditioning

General

Course Description
Covers the theory, design, construction, operation, and maintenance of conventional eating, ventilating, and air-conditioning systems.

Credits:
3

Billing Hours

Min:
3

ES4242 - ESE Co-Op III

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co-ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
6

ES4704 - Energy Systems Design I

General

Course Description
In this design-oriented course, students obtain practical experience in the application of engineering skills and project management in the solution of various engineering problems.

Credits:
3

Billing Hours

Min:
3

ES4705 - Energy Systems Design II

General

Course Description
The course emphasizes team design, construction, and testing of an energy system device. Creation of CAD drawings, fabrication with tools in the Machine Shop, critical design reviews, technical report and presentation. Application and constraints are determined by the student, but the design project and prototype must be related to an energy system. Continuation of the design project from EN-4704 is projected. Open-ended projects are encouraged.

Credits:
3

Billing Hours

Min:
3

ES4705L - Systems Design Lab

General

Course Description
This is the lab for Energy Systems Design.

Credits:
0

Billing Hours

Min:
0

ES4803 - Thermodynamics of Power Systems

General

Course Description

More in depth than EN-3211, this course will cover the 2nd Law of Thermodynamics and its effect on the thermal efficiency of heat engines and power plants. It will also introduce the property of entropy and its use in analyzing power cycles and subsidiary components, such as turbines, compressors, pumps and pistons. These concepts will be applied to analyze engineering power cycles, including the Otto, Diesel and Brayton gas cycles, the Rankine vapor power cycle used in steam power plants, binary and combined cycles, and cogeneration. Fuel combustion and compressible flows in nozzles will also be covered.

Credits:
3

Billing Hours

Min:
3

ES4803L - Power Systems Laboratory

General

Course Description
This is the lab for Thermodynamics of Power Systems. This course provides students with hands-on experience in thermo-fluid aspects of industrial power systems. The lab will demonstrate selected topics covered in EN-4803 and EN-3201. Topics include applications of the 1st and 2nd Laws of Thermodynamics, compressible ideal gases, fluid pumps, internal combustion engines, and steam cycles and properties. Students will learn experimental methods and the concepts of measurement accuracy, precision, bias, and aliasing. They will become familiar with the use of computer-linked data acquisition systems, digital thermocouples and pressure transducers, as well as analog pressure gages, manometers, flow meters, and dynamometers and stroboscopes for torque and shaft rotational speed measurement. Students will maintain a detailed lab notebook and will communicate the results of these experiments in written engineering technical reports and memoranda. A summary group design project will be assigned to foster teamwork and professional engineering communications, both written and verbal.

Credits:
1

Billing Hours

Min:
1

ES7144 - Nuclear Power

General

Course Description
An introduction to nuclear power including basic theory, reactor fuel and cores types of reactors, radiation hazards, and safeguards.

Credits:
3

Billing Hours

Min:
3

ES7146 - Heat and Mass Transfer

General

Course Description
Studies transient and steady-state heat conduction in one and two dimensions, free and forced convection, and radiation from simple bodies. Special topics include heat exchangers and numerical methods.

Credits:
3

Billing Hours

Min:
3

ES7248 - Fundamentals of Eng. Seminar

General

Credits:
3

Billing Hours

Min:
3

ES7979 - NCEES Exam

General

Credits:
0

Billing Hours

Min:
0

ES8000 - Engineering Independent Study

General

Course Description
This course provides an opportunity for students to conduct an independent study under the guidance of a department faculty member, while following specific guidelines. Approval of department chair is required.

Credits:
3

Billing Hours

Min:
3

ES8900 - Engineering Technical Elective

General

Course Description
Any Engineering Electicve course approved by the Department Chair to fulfill a Technical Elective.

Credits:
3

Billing Hours

Min:
3

ES9999 - Engineering Exchange

General

Credits:
12

Billing Hours

Min:
12

FE1112 - Engineering Systems and Safety

General

Course Description
This course will teach students the fundamental engineering concepts related to the steam and water cycle and steam generation. The students will also learn about various primary and auxiliary engineering systems. The lab familiarizes the students with the safe operation of the engine room and engineering systems on board the training ship and provides students with basic first aid and occupational safety certification. [Lab time required]
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

FE1112L - Engineering Systems and Safety Lab

General

Course Description
This is the lab for Engineering Systems and Safety.

Credits:
0

Billing Hours

Min:
0

FE1211L - Auxiliary Machinery I Lab

General

Course Description
This is the lab for Auxiliary Machinery I.

Credits:
0

Billing Hours

Min:
0

FE1212 - Computer Aided Design

General

Course Description
Teaches students to create drawings, using a computer in the following general areas: mechanical, electrical/ electronic, hydraulic, architectural, surveying, flow charts, and process diagrams.

Credits:
1

Billing Hours

Min:
1

FE1222 - Aux. Machinery - Facilities

General

Course Description
The course provides the operating engineering foundation for future facilities engineering courses. It covers the installation, operation, main- tenance, and repair of equipment found in today's modern facilities. The use of different hand tools, fasteners, and measuring instruments are discussed, along with the repair of piping systems, fittings, joints, pack- ing, valves, and basic control valves. Varieties of pressure, temperature, and level indication are also discussed. The lab makes use of on-campus operating facilities and introduces students to on-campus alternative and renewable energy systems. [Lab time required]
STCW: Knowledge & Practical

Credits:
3.5

Billing Hours

Min:
3.5

FE1222L - Auxiliary Machinery I Lab

General

Course Description
This is the lab for Auxiliary Machinery I.

Credits:
0

Billing Hours

Min:
0

FE1311 - FENG Experiential Learning

General

Course Description
This course provides students a first-hand look at how Costa Rica has used its natural resources to implement sustainable energy technologies at both the local and national levels. Students will learn how this tropical community is balancing the preservation of their natural resources with the agricultural and energy needs of their society. Costa Rica offers a unique opportunity to observe a diverse spectrum of sustainable energy technologies in action, including wind, solar, geothermal, hydroelectric, carbon capture and energy storage, as well as sustainable agricultural technologies including farm-scale composting, bio-digestion and biomass-to-electricity cogeneration. The environmental and societal impacts of sustainable energy generation and distribution will be assessed.

Credits:
3

Billing Hours

Min:
3

FE2111L - Auxiliary Machinery II Lab

General

Course Description
This is the lab for Auxiliary Machinery II.

Credits:
0

Billing Hours

Min:
0

FE2112 - Machine Tool Technology

General

Course Description
This course provides practical experience in the use of machine tools. Emphasis is on shop safety, use of measuring instruments, hand tools, horizontal band saw, drill press, screw cutting lathe, electric arc welding, oxyfuel welding, and oxyfuel cutting. The lab also consists of a half semester of "hands-on" introduction to electric arc welding and machine tool operation, including safety. [Lab time required]
STCW: Knowledge & Practical

Credits:
2

Billing Hours

Min:
2

FE2112L - Machine Tool Tech and Welding Lab

General

Course Description
This is the lab for Machine Tool Technology, and also includes welding.

Credits:
0

Billing Hours

Min:
0

FE2121 - Aux. Machinery II -Facilities

General

Course Description

The course is a continuation of FE-1222 and covers the installation, operation, maintenance, and repair of operating machinery including steam traps, strainers, pumps, compressors, heat exchangers, vacuum pumps, air injectors, deaerators, hydraulic and pneumatic systems, and basic operating characteristics of combined-cycle operation. The lab consists of the breakdown and repair of operating pumps and compressors including the electrical demand parameters of the machinery both loaded and unloaded. The lab uses cutaway equipment and operational trainers and simulators to enhance the understanding of the material presented in the course. [Lab time required]

STCW: Knowledge & Practical

Credits:

4

Billing Hours

Min:

4

FE2211 - Mechanics

General

Course Description

Includes static analysis of rigid bodies; determination of forces in mem- bers due to concentrated and distributed loads; analysis of trusses, frames, and machines; shear and bending moment diagrams; and determination of centers of gravity and moment of inertia. Credit will not be given for both EN-2211 and EN-2101.

Credits:

3

Billing Hours

Min:

3

FE2221 - FE Cooperative I

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the summer session, in industry for academic credit. The student will be exposed to "real life" experiences through these co-ops and will gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
6

FE2222 - Commercial Boilers

General

Course Description
Covers the construction, operation, maintenance, and code regulations pertinent to conventional power plant boilers, steam engines, and turbines. Emphasis is placed on the ASME Code; Massachusetts General Laws, Chapter 146; and the National Board Inspection Code [Lab time required]

Credits:
3.5

Billing Hours

Min:
3.5

FE2222L - Commercial Boilers Lab

General

Course Description
This is the lab for Commerical Boilers.

Credits:
0

Billing Hours

Min:
0

FE3111 - Electrical Machines

General

Course Description
Students study AC and DC theory as applied to motors, generators, and power distribution systems. The course also considers preventative maintenance and repair of rotating and static electrical equipment; turboelectric drive principles and operation; and U.S. Coast Guard electrical engineering rules and regulations. The lab component covers ship and shore-side machinery.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

FE3111L - Electrical Machines Lab

General

Course Description
This is the lab for Electrical Machines. It includes the theoretical and practical aspects of the operation and maintenance of electrical machinery, including: electric circuits and wiring, AC and DC motors andgenerators, transformers,motor controls,and troubleshooting.
STCW: Practical

Credits:
1

Billing Hours

Min:
1

FE3112 - Strength of Materials

General

Course Description
Studies the fundamental concepts of the mechanics of materials, including stress, strain, and deformation due to tensile and compressive forces, torsion, bending moments, transverse shear, and temperature changes. It also studies statically indeterminate problems, power transmission, stress concentration factor, beam design, columns, and buckling.

Credits:
3

Billing Hours

Min:
3

FE3112L - Strength of Materials Lab

General

Course Description
This is the lab for Strength of Materials. This lab reinforces the basic concepts of normal stress, shear stress, torsion, beam bending and deflection, and beam design as taught in the Strength of Materials course. Formal engineering reports are required with emphasis on writing and spreadsheet skills.

Credits:
1

Billing Hours

Min:
1

FE3211 - Thermodynamics

General

Course Description
Covers the application of the basic laws of thermodynamics to open and closed systems including refrigeration, air conditioning, and various power cycles with special emphasis on the steam power cycle.

Credits:
3

Billing Hours

Min:
3

FE3212 - Electronics

General

Course Description
Theory of basic solid-state electron devices. Power circuits. Use of analog and digital integrated circuits in control systems for logic, interlocks, and automated machinery control.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

FE3212L - Electronics Lab

General

Course Description
This is the lab for Electronics (EN-3212). Participants learn to use electronic instruments by taking measurementson analogand digital circuits constructed during the lab period. The measurements are then used to verify the analytical relationships developed in the classroom.

Credits:
1

Billing Hours

Min:
1

FE3213 - Refrigeration

General

Course Description
An in-depth study of refrigeration and the design, operation, maintenance, and repair of environmental control systems. The impact of refrigerants regarding ozone depletion and global warming is covered in detail. [Lab time required.]
STCW: Knowledge & Practical

Credits:
2.5

Billing Hours

Min:
2.5

FE3213L - Refrigeration Lab

General

Course Description
This is the lab for Refrigeration.

Credits:
0

Billing Hours

Min:
0

FE3214 - Municipal Wastewater Treatment

General

Course Description
A survey course of municipal wastewater treatment from the equipment, operations, and management viewpoints. Also included are several lab sessions to demonstrate standard monitoring tests such as settleable solids, BOD, total suspended solids, residual chlorine, trend analysis, and fecal coliform.

Credits:
3

Billing Hours

Min:
3

FE3216 - Operational Controls

General

Course Description
A study of the principles of industrial measurement and control with an emphasis on practical applications aboard ship and in industry. Methods of sensing, measuring and transmitting data from industrial processes; feedback, automatic control systems, closed loop systems, controllers, control modes, and control configurations. Mechanical, electronic, analog and digital control mechanism will be discussed, as will programmable logic controllers.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

FE3216L - Operational Controls Lab

General

Course Description
This is the lab for Operational Controls. This lab provides an opportunity to work with instruments and control hardware found aboard ship and in industry, and supplements the content of EN-3216. Students will select, install, and calibrate various sensors and instruments; build and tune PID control loops; design and implement control circuits using Programmable Logic Controllers and Ladder Logic.

Credits:
1

Billing Hours

Min:
1

FE3221 - FE Cooperative II

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the summer or winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co- ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
0

FE4111 - Fluid Mechanics

General

Course Description
Covers the fundamental principles of fluid statics, pipe flow, open channel flow, lift and drag, pumps and turbines, and flow measuring devices.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

FE4121 - Electrical Power Distribution

General

Course Description
Provides an understanding of industrial electrical power distribution systems. Emphasis is placed on the load subsystem and fault protection. Design calculations are based on the methods of the National Electrical Code.

Credits:
3

Billing Hours

Min:
3

FE4220 - Engineering Independent Study

General

Credits:
6

Billing Hours

Min:
6

FE4221 - Cooperative III Facilities Engineering

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the summer or winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co- ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
0

FE4222 - Heating, Ventilation & Air-Conditioning

General

Course Description
Covers the theory, design, construction, operation, and maintenance of conventional eating, ventilating, and air-conditioning systems.

Credits:
3

Billing Hours

Min:
3

FE4224 - Facilities Planning & Management

General

Course Description
Designed to enhance the skills required of a future facilities engineer or manager by providing a comprehensive introduction to the responsibilities facing facilities management professionals and the techniques used to meet these challenges. Topics include; project management, planning, budgeting, engineering economics, and human resource principles required to effectively design, operate, and maintain complex facilities.

Credits:
3

Billing Hours

Min:
3

FE7151 - Commercial Turbines

General

Course Description
This course provides the student with an understanding of steam and gas turbine principles, theory, construction concepts, operation maintenance, and safety practices. The course will discuss the various types of power generation facilities including conventional steam plants, gas turbine simple and combined cycle, and co-generation using reciprocating engines.

Credits:
3

Billing Hours

Min:
3

FE7155 - Programming for Eng Applications

General

Course Description
This course is to introduce and apply computer programming to solve common engineering problems. Engineering applications, such as engineering models and simulation, motion animations, image processing, network communications etc. will be discussed.

Credits:
3

Billing Hours

Min:
3

FE7155L - Prog. for Engineering Application Lab

General

Credits:
0

FE7214 - Industrial Wastewater Treatment

General

Course Description
Provides an overview of the basic concepts of physical and chemical treatment, the function of related equipment and support systems; and the environmental responsibilities required to safely and properly operate, maintain, and manage an industrial wastewater treatment facility.

Credits:
3

Billing Hours

Min:
3

FE7221 - Additional Facilities Co-Op

General

Course Description
The co-op experience requires a student to work a minimum of six weeks, during the summer or winter session, in industry for academic credit. The student will be exposed to "real life" experiences through these co- ops and gain firsthand knowledge of practices and technology presently being used by the facilities professional. The co-op requires a technical report to be submitted and requires an evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
6

FE7247 - Construction Methods and Materials

General

Course Description
This course covers the fundamental concepts of construction methods, materials, and equipment as they are employed in construction and assembly. The course also gives students the opportunity to conduct an analytic study of a large project under construction. The course covers the application and utilization of various types of construction equipment, the calculation of the production of equipment usage, the evaluation and selection of equipment, and the planning and analysis of earthwork construction. In addition, the course addresses site planning, including plane, topographic, and construction surveying.

Credits:
3

Billing Hours

Min:
3

FE7257 - Marine Construction I

General

Course Description
This course covers the environmental and geotechnical aspects as well as the ecological impacts of coastal and offshore marine construction, seafloor modifications, and dredging. The course will also provide in- depth coverage of the unique engineering methods and the operational, material, and equipment challenges encountered in the installation or construction of various harbor, coastal, and near-shore structures.

Credits:
3

Billing Hours

Min:
3

FE7262 - Marine Construction II

General

Course Description
This course is a continuation from Marine Construction I and focuses on the construction of offshore platforms, floating structures, and other offshore technologies. Also covered will be submarine pipelines and cables, repairs and improvements to existing marine structures, and the disposal and salvage of obsolete, deteriorated, or damaged offshore structures.

Credits:
3

Billing Hours

Min:
3

FE7271 - Construction Industry Co-Op

General

Course Description
This is an optional summer or winter cooperative experience for students enrolled in the Marine Construction minor. It requires a student to work for a minimum prescribed time period in the construction or marine construction industry for academic credit. The student will be exposed to real-life experiences and gain firsthand knowledge of practices and technologies used by construction professionals. The cooperative experience requires the submission of a technical project report and evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
6

FE7272 - Construction Industry Co-Op

General

Course Description
This is an optional summer or winter cooperative experience for students enrolled in the Marine Construction minor. It requires a student to work for a minimum prescribed time period in the construction or marine construction industry for academic credit. The student will be exposed to real-life experiences and gain firsthand knowledge of practices and technologies used by construction professionals. The cooperative experience requires the submission of a technical project report and evaluation by the supervisor.

Credits:
6

Billing Hours

Min:
6

FE8000 - Engineering Independent Study

General

Course Description
This course provides an opportunity for students to conduct an independent study under the guidance of a department faculty member, while following specific guidelines. Approval of department chair is required.

Credits:
3

Billing Hours

Min:
3

FE8900 - Engineering Technical Elective

General

Course Description
Any Engineering Electicve course approved by the Department Chair to fulfill a Technical Elective.

Credits:
3

Billing Hours

Min:
3

FE9999 - Engineering Exchange

General

Credits:
12

Billing Hours

Min:
12

FF0101 - 4/C Firefighting Lecture

General

Credits:
0

FF0102 - Freshmen Firefighting Practicum

General

Course Description
Provides minimum standard of competence in fire prevention and fire- fighting. Instruction and practical training in the use of fire extinguishers, hoses and self-contained breathing apparatus. Emphasis on the chemistry of a fire and emergency evacuation. A component of STCW Basic Training; first component of four year's training for Basic and Advanced Marine Firefighting certification (Table A-VI/3).

Credits:
0

STCW

STCW Component
Knowledge & Practical

FF0103 - 3/C Firefighting Lecture

General

Credits:
0

FF0104 - Sophomore Firefighting Practicum

General

Course Description
Second component of training for Basic and Advanced Firefighting certification (Table A-VI/3). Instruction in fire behavior, fire attacks, personal protective equipment and fire fighting equipment on ship. Practical training at the Barnstable training site.

Credits:
0

STCW

STCW Component
Knowledge & Practical

FF0104L - 3/C Firefighting Lecture

General

Credits:
0

FF0105 - 2/C Firefighting Lecture

General

Credits:
0

FF0106 - Junior Firefighting Practicum

General

Course Description
Third component of training for Basic and Advanced Firefighting certification (Table A-VI-3). Instruction in fire protection systems, fire detection, main engineroom fires and flammable liquids and gases. Practical training on site at the Barnstable training site.

Credits:
0

STCW

STCW Component
Knowledge & Practical

FF0106L - Junior Firefighting Lecture

General

Credits:
0

FF0107 - 1/C Firefighting Lecture

General

Credits:
0

FF0108 - Senior Firefighting Practicum

General

Course Description
Final component of training for Basic and Advanced Marine Firefighting certification (Table A-VI/3). Instruction in shipboard firefighting tactical hazards, fire party drills and organization, and hazardous materials. Advanced practical training in the shipboard fire simulator at the Barnstable training site.

Credits:
0

STCW

STCW Component
Knowledge & Practical

FM5000 - Organizational Behavior

General

Course Description
Organizational issues lie at the core of operational effectiveness in facilities management. Management of individuals, teams and organizations requires a keen understanding of the principles of leadership, vision and motivation under sometimes stressful circumstances. This course provides extensive instruction in organizational behavior in the context of the modern business environment.

Credits:
3

Billing Hours

Min:
3

FM5020 - Financial Analysis for Facility Managers

General

Course Description
This course covers in depth the principles of financial accounting and engineering economic analysis and includes such topics as accounting statements; assets and liabilities; corporate financial reporting; inventory valuation and cost procedures; investments (stocks, bonds, land, building, and equipment); evaluation of equipment, acquisition, and depreciation; cash flow analysis; and budgetary control. Economic analysis techniques are used to evaluate alternatives for potential solutions to engineering problems. Measures such as present worth, annual worth, rate of return, and cost benefit are considered. Economic analysis as a decision-making tool will be examined.

Credits:
3

Billing Hours

Min:
3

FM5060 - Legal & Regulatory Issues Facilities Managers

General

Course Description

The course provides a comprehensive review of law and the judicial process; the legal relationships among society and the business com- munity; an analysis of the concept and legal consequences of contracts; business torts and crimes; consumer protection; and personal property. The course also covers environmental laws and regulations as they apply to industrial organizations. Students explore the relationships between technology, community development, and the long-term sustainability of natural resources. Special topics include ISO 14000 standards, the role of private industry in developing new technology and the responsibilities of both business and government in the economy.

Credits:
3

Billing Hours

Min:
3

FM5090 - Emergency Preparedness

General

Course Description

The emphasis of the course is on providing facilities managers with the strategic knowledge and tactics to prepare for, manage, and recover from an emergency or disaster. The course will require participants to ultimately create an organization-wide comprehensive integrated emergency management plan for a hypothetical corporation, and through interactive table-top exercises, test their plan's performance against internal and external threats and emergencies. Students will gain knowledge of the concepts of contingency planning, crisis management, risk assessment and mitigation, organizational continuity and incident command. They will better understand the principles and challenges of disaster planning and coordination from a business and regulatory perspective. These concepts will be of use to the students in develop- ing effective integrated emergency preparedness and recovery plans for their own organizations.

Credits:
3

Billing Hours

Min:
3

FM5100 - Operations Management

General

Course Description

The class will provide a comprehensive overview of the entire operations management (OPM) area, including specific application examples in the form of case studies (from text, instructor, and guest speakers). OPM topics include global operations; project management; forecasting; design of goods & services; managing quality, process, capacity, location, and layout strategies; HR & job design; supply-chain management; MRP & scheduling; and maintenance & reliability. A detailed module on probability and statistics will include applications to TQM, SPC, and inventory management. Real-time and video case studies (and the OPM project below) will directly explore the issues encountered by the facilities manager on topics ranging from product/process/service design to the implementation and control of ongoing operations in service and manufacturing facilities. An in-depth self-selected, OPM project provides the unique opportunity to apply OPM tools and skills to a specific facilities management topic.

Credits:

3

Billing Hours

Min:

3

FM5120 - Human Resource Management

General

Course Description
The course will be a detailed introduction to the critical human resource issues faced by facilities managers. It will examine and explore issues concerning organizational and personnel policies and practices in such areas as the human resource environment, employee relations, employment, development and performance systems, reward systems, and work systems. The course is intended to guide current and potential facilities managers in analyzing the HRM impact on both individual performance and organizational effectiveness.

Credits:
3

Billing Hours

Min:
3

FM5150 - Business Sustainability

General

Course Description
This course explores the nature of the "triple bottom line"-the simultaneous delivery of financial, social, and environmental performance, teaching students to apply new strategic models, tools, and frameworks to incorporate social and environmental dimensions in a competitive manner. Course design will enable current and future business and facilities managers to provide guidance, leadership and support to organizations in the development and successful execution of initiatives in sustainable development. The course will include lectures, case studies, hands-on exercises, role-play simulations and active learning projects to illustrate issues related to sustainable development as well as mod- ules on selected topics in environmental science to ground students in the science of sustainability and the related environmental challenges.

Credits:
3

Billing Hours

Min:
3

FM5160 - Project Management

General

Course Description
Project management involves conception, design, planning, implementation and evaluation of everything from cutting-edge capital intensive projects to implementation of new IT systems. The course will cover different methodologies that are commonly employed to effectively manage projects from project identification through project implementation and evaluation. The course also covers optimization techniques, system life cycles, needs analysis and critical paths and comparisons using specific software.

Credits:
3

Billing Hours

Min:
3

FM5170 - Energy Management

General

Course Description
The course will explore energy for the 21st century by looking at the supply side first including conventional, alternative and renewable energy, distributed generation, the forward capacity market, and demand response programs. Then the course will explore the demand side of energy including energy strategies, the USGBC and the LEED phenomenon, carbon trading, carbon footprints, renewable energy credits and zero net energy buildings.

Credits:
3

Billing Hours

Min:
3

FM5180 - Capstone Seminar

General

Course Description
This capstone course develops an integrated understanding of generally accepted facilities management principles along with the underlying concepts of engineering systems. Emphasis is placed on current developments within the profession. The course explores current topics in organizational development and change, including the practical and ethical issues arising in the context of national and multinational organizations, and the conduct of international business. Guest speakers augment case study analyses, seminar discussions, and student presentations. The capstone course will be integrated across the overall program of instruction.

Credits:
4

Billing Hours

Min:
3

FM5200 - Communications in Facilities Management

General

Credits:
3

Billing Hours

Min:
3

FM9999 - Masters Degree in Facilities Management

General

Course Description
USED TO BILL MASTERS STUDENTS

Credits:
0

Billing Hours

Min:
0

HU1100 - Writing Proficiency Exam

General

Credits:
0

Billing Hours

Min:
0

HU1110 - Introduction to College Writing

General

Course Description

This course is an introduction to writing at the academy. Students in this course will focus on the micro- and macro-levels of writing, from sentence structure and word choice to global organization and analysis. Students will be supported through opportunities to read and examine various texts, to explore and analyze different rhetorical strategies, to develop and support a controlling idea and/or thesis statement, to unpack the writing process, and to revise meaningfully. Students in this course will also be simultaneously enrolled in HU-1111L Writing Lab for more intensive writing support [Lab time required]. (Minimum C- grade required to receive course credit).

STCW- Knowledge

Requisites

Corequisite: HU1111L Writing Lab

Credits:

3

Billing Hours

Min:

3

HU1111 - College Writing

General

Course Description

English Composition guides students in discovering and creating meaning through language and writing and provides further guidance as they generate ideas and organize structures for reflection, persuasion, analysis, and argument. The course provides opportunities to critically read and examine various texts, to explore and analyze different rhetorical strategies, to develop and support a controlling idea and/or thesis statement, to study the writing process, and to revise meaningfully and independently. It gives guidance in synthesizing and documenting information and offers suggestions for effective grammar, usage, punctuation, spelling, or other mechanics, as needed. The course asks students to collaborate with their classmates and instructor through team assignments, discussion, presentations, individual conferences and, when appropriate, peer review. By focusing first on fluency, then on clarity, then on correctness, the course gives students ample opportunity to develop and refine their writing skills for various audiences and purposes, both in and beyond college. (Minimum C- grade required to receive course credit).

STCW: Knowledge

Credits:

3

Billing Hours

Min:

3

HU1111L - Writing Lab

General

Course Description
This is the lab for English Composition. Writing Labs provide two hours per week to Fall HU-1111 English Composition students who may need extra time to work with a faculty instructor on their writing. The labs are offered without credits, and without grading. Instead, the labs are purely a tool to improve student writing in a pressure-free and dedicated environment. Students will work on writing assignments from their classes, develop tools and strategies for their writing, and actively reflect on the process of writing.

Credits:
0

Billing Hours

Min:
0

HU1112 - Advanced College Writing

General

Course Description
This course assumes advanced skills with writing at the college level. Students in this course build on existing proficiency and have ppportunities to practice writing in a variety of genres and research assignments. Students will read and examine demanding texts, explore and analyze complex rhetorical strategies, develop and support a controlling idea and/or thesis statement, unpack the writing process, and revise meaningfully and independently. (Minimum C- grade required to receive course credit).

Credits:
3

Billing Hours

Min:
3

HU1222 - Writing About Literature

General

Course Description
This course provides an introduction to the understanding and appreciation of prose, poetry and drama. Students will read, analyze, and write about the genres from different critical perspectives. Students will study representative authors and be exposed to a variety of forms and styles from a wide range of historical periods.

Requisites
Prerequisites: HU1111 College Writing or HU1110 Intro. to College Writing or HU1112 Adv College Writing Minimum grade C-

Co-Requisite: previous or concurrent,HU1100 Writing Proficiency Exam or HU6062 Applied Writing Minimum grade P

Credits:
3

Billing Hours

Min:
3

HU2141 - Spanish I

General

Course Description
An introduction to the essentials of Spanish pronunciation and gram- mar with concentration on the development of listening and speaking skills. Reading and writing proficiency also will be stressed, as well as the development of an understanding of the culture of the Spanish- speaking people.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU2341 - Elementary Chinese I

General

Course Description
An introduction to the Chinese language and culture, with emphasis on the basic skills of understanding, reading, speaking, and writing Chinese.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5021 - Literature of the Sea

General

Course Description
This course examines a variety of prose and poetry where the sea acts as setting, symbol, and microcosm for human experience. Works by such authors as Cooper, London, Verne, Conrad and Melville may be included.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5022 - Literature and Film

General

Course Description
This course involves the study of selected literary works and the viewing of their film productions. Students will compare and analyze the

transformation from literature to film.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5023 - Irish Literature

General

Course Description
This course is a survey of major Irish writers, which may include the works of such writers as James Joyce, W.B. Yeats,J.M. Synge, G.B. Shaw, Sean O'Casey, Frank O'Connor, and Seamus Heaney. The course focuses on the religion, politics, social justice, and culture in Irish literature.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5024 - Shakespeare & Film

General

Course Description
An examination of the principal tragedies and comedies of Shakespeare with an emphasis on the literary value of the plays as opposed to the theatrical elements of Shakespeare's art.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5025 - Short Stories

General

Course Description
This course explores the development of the short story form and how it reflects societal and cultural changes from the nineteenth century to the present. Students will read, analyze and discuss different forms and techniques by a variety of representative authors.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5026 - Literature and Mythology

General

Course Description
This course focuses on folklore and mythology of western society in literature and film. Students will examine readings from a psychological and sociopolitical perspective and trace the variations that have occurred over the centuries.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5027 - Literature of the Supernatural

General

Course Description
Students study the tale of terror, a form also known as Gothic. Among the most important and popular of these works are: Frankenstein: The Modern Prometheus, The Strange Case of Dr. Jekyll and Mr. Hyde, and Dracula. The literature of the supernatural provides a foundation from which to examine mankind's moral, social, and intellectual struggles or responsibilities within the context of our fascination with mystery, evil, and horror.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5028 - Drama

General

Course Description
This coursewill examine the history and development of dramawith an emphasis upon literary analysis of plays to illustrate the major themes, styles, and historical periods of dramatic literature.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5029 - Contemporary Literature

General

Course Description
This course will introduce the student to a variety of literary forms and genres from the late twentieth and early twenty-first centuries. Students will be expected to read, analyze and write about the literary works and movements.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5030 - Poetry

General

Course Description
This course will examine the history and development of poetry. Students will be introduced to the basic elements of prosody and will study a variety of forms and styles.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5031 - War Literature

General

Course Description
Students explore the literature of war through the writings of memoirists, novelists, poets, and journalists. Various conflicts will be covered during the semester, from ancient battles to revolutionary, civil, and world wars. The experiences of front-line troops will be emphasized. Readings will include nonfiction, fiction, and poetry; representative films may be watched. Students will analyze and discuss various narratives, as well as examine political and moral dilemmas raised by the texts.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5032 - American Literature: Colonial Period to Civil War

General

Course Description
This course explores the development of a distinctly American literature from the time of the settlement of the colonies to the Civil War period. Canonical works will be examined with a focus on form, theme, and cultural context.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5033 - American Literature: Civil War to Present

General

Course Description
This course introduces students to the growth and development of American Literature from the Civil War to the present. Students will study literary texts from representative authors and literary movements written in a variety of forms, styles, and genres. Special attention will be paid to the development of our national identity through literary experience.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5034 - Writers of the American South

General

Course Description

This course is focused on Southern writers, Southern literature, and Southern culture. Students will read such authors as William Faulkner, Frederick Douglass, Zora Neale Hurston, Maya Angelou, Thomas Jefferson, and Mark Twain. We will cover themes and topics in a variety of genres, including novels, short stories, poems, and autobiographies; attempt to position these works within their social contexts; and explore how class, race, gender, sexuality, and religion, among other axes of identity, have factored into Southern literary production. Specific sites of interrogation will include slavery-its legacies and impact on race and ethnicity; the politics of women's writing; the creation and deployment of the Southern Gothic; the omnipresence of class tensions; and the recurring penchant for agrarianism. Questions explored will include the following: What is the South? Where does our notion of the South come from? Is there such a thing as Southern literature?

Requisites

Prerequisite: HU1222 Writing About Literature

Credits:

3

Billing Hours

Min:

3

HU5035 - American Theater

General

Course Description
This course will pursue American Theater from its nineteenth-century imitations of British popular theater to its development and emergence as a unique and vital theater during the twentieth century. The focus will be on how Americans portrayed and projected an American identity through theater, exploring playwrights who transformed and created a western theater native to the United States. American playwrights to be surveyed will include, but not be limited to, Eugene O'Neill, Lillian Hellman, Langston Hughes, Tennessee Williams, and William Gillette.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5036 - Survival Literature

General

Course Description
Students will examine the literature of survival through the writings of explorers, adventurers, and POWs. Both factual and fictional works will be discussed and may include some of the following: Into Thin Air, In the Heart of the Sea, The Great Escape, Shackleton's Boat Journey, In the Land of White Death, Kolyma Tales, and The Long Walk. We will also examine the psychology of survival through the works of Epictetus, Bruno Bettelheim, Viktor Frankl, and Primo Levi. Representative films may be included in the course. Students will analyze and discuss survival narratives and the political and moral dilemmas raised by the clash of man with nature or man with man.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5038 - Moby Dick: the Great American Sea Novel

General

Course Description

Why is Moby-Dick considered the greatest sea novel in literature and by many to be the greatest American novel despite the many challenges it poses to readers? In this course, we will carefully read Moby-Dick in order to analyze and interpret the novel's social, political, economic,

psychological, environmental, religious, mythological, and literary issues, as well as the biography of Herman Melville, in order to address this question.

Requisites

Prerequisite: HU1222 Writing About Literature

Credits:

3

Billing Hours

Min:

3

HU5039 - Detective Literature

General

Course Description

This course introduces students to the history and development of mod- ern detective literature, namely mystery fiction that revolves around a detective. The course will focus on the emergence and development of the detective as a product of modernist society that satisfies the need for a superior being, or unique individual who can solve the seemingly unsolvable. Students will read and analyze representative works in order to explore the major themes and recurring popularity of the literary detective.

Requisites

Prerequisite: HU1222 Writing About Literature

Credits:

3

Billing Hours

Min:

3

HU5040 - Graphic Novel

General

Course Description
This course will examine graphic literature as a storytelling medium. We will look at the history of graphic narrative through a study of the development of this "new" graphic genre beginning with early pictorial storytelling through comics in the mid-twentieth century and ending with the "modern" graphic narrative of the twenty-first century. Narrative theory on comics and sequential art will be considered, and (graphic) literary texts will be examined in terms of their visual and narrative points of view and in their historical and cultural contexts.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5041 - Afr/Am Literature Pre-Harlem Renaissance

General

Course Description
This course addresses African American literary works from their beginnings up until the Harlem Renaissance of the 1920s. We will examine a variety of textual representations of African American identity, race in America, slavery, resistance to slavery, white supremacy, African American masculinity, African American femininity, multiracialism, racial oppression, and racial justice. We will also investigate the relationship of these texts to epochal events in American history, such as the Middle Passage, the Civil War, The Anti-Slavery Movement, the Anti-Lynching Movement, the Women's Movement, and the Great Migration. In addition, we will explore several genres of literature, including autobiography, poetry, essays, and speeches.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5042 - African-American Lit. Through the Blues

General

Course Description
This course invites students to see popular culture-blues, in particular-as a rich site for cultural interpretation. Students will look at the interplay between music and literature in the African American tradition, beginning roughly with the rise of commercially recorded blues in the1920s and continuing into the present. Students will consider two aesthetic exchanges between music and literature: first, the way in which musical form provides the basis for a distinct literary aesthetic; and second, the way in which the cultural figure of the blues (and later, jazz) performer serves as an image that is crucial to characterization and voice in African American literature. Along the way, students will listen to the blues, watch several films and video clips that engage the blues either implicitly or explicitly, and think about how an aural form like the blues exerts influence on written texts.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5043 - Af/Am Lit Post-Harlem Renaissance

General

Course Description

This course addresses African American literary works that mainly were created after the Harlem Renaissance of the 1920s. We will examine a variety of textual representations of African American identity, race in America, slavery, resistance to slavery, white supremacy, African American masculinity, African American femininity, biracialism, racial oppression, and racial justice. We will also investigate the relationship of these texts to epochal events in American history, such as the Civil War and the Great Migration. In addition, we will explore several genres of literature, including autobiography (Frederick Douglass and Malcolm X), novella (Nella Larsen), novel (Maya Angelou, Ernest Gaines, Zora Neale Hurston, Toni Morrison), drama (Lorraine Hansberry), and film (Imitation of Life). We will also, more briefly, consider African American art, music, and dance, especially in relation to African American literature.

Requisites

Prerequisite: HU1222 Writing About Literature

Credits:

3

Billing Hours

Min:

3

HU5044 - Post-Humanism Literature

General

Course Description

According to David Eagleman, "We're at a moment in human history when the marriage of our biology and our technology will transcend the brain's limitations. We can hack our own hardware to steer a course into the future. This is poised to fundamentally change what it will mean to be human." In this course we study in literature, film, and other media what it means to be human as we evolve beyond the humanist view of humans as autonomous, self-willed, individual agents separate from other life forms. Viewing humans as co-evolving and enmeshed with other forms of life, the environment, and technology leads to speculation as to what the transhuman and/or posthuman future may look like.

Requisites

Prerequisite: HU1222 Writing About Literature

Credits:

3

Billing Hours

Min:

3

HU5046 - Contemporary Literature: Hunger Games

General

Course Description
Suzanne Collins' Hunger Games trilogy explores a wide variety of contemporary american fears, anxieties, and hopes for the United States projected into a dystopian future. Through class discussion, discussion board posts, small group presentations, a web site project, and essays, students will analyze and interpret the trilogy in terms of contemporary cultural, political, social, economic, and psychological issues.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5047 - Science and Literature

General

Course Description
The course will focus on the interplay of British literature, science, and culture in the long nineteenth century. While primarily a literature course focused on the close reading and analysis of poems, short stories, and novels, students will also read excerpts of nineteenth-century texts from fields such as natural philosophy, natural history, geology, evolutionary theory, archaeology, and paleontology. This emphasis on primary sources will allow students to expand their historical and cultural knowledge by examining not only what was said, but also how new scientific theories were framed by scientists, reimagined by fiction writers, and debated by the public. Students will learn about the contributions of women and working-class folks who helped shape the public?s understanding of science in the nineteenth century, but who are too often left out of official histories. They will also critically analyze how both literary and scientific works function as cultural artifacts, alternately reinforcing, challenging, and changing nineteenth-century cultural discourses.

Requisites
HU1110 Intro. to College Writing

HU1112 Adv College Writing

HU1112 Adv College Writing

Credits:
3

STCW

STCW Component
None

HU5055 - Irish Fiction

General

Course Description
This course explores modern and/or contemporary Irish fiction. The course will focus on either one Irish fiction writer or a sampling of such writers. This flexibility to move entirely from one writer to a collection of writers will allow the course to breathe over time and remain fresh. Irish fiction writers who might be considered, to name only of few, include James Joyce, Elizabeth Bowen, Edna O'Brien, Maeve Binchy, Roddy Doyle, and Colm Toibin. The course will, in many respects, represent a continuation of the current Irish Literature course, which primarily focuses on the significant Irish literature represented by Ireland's great playwrights and poets.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5056 - Sports Literature

General

Course Description
About two-thirds of Americans describe themselves as sports fans, and hundreds of billions of dollars are spent on American sports annually, including on ticket sales, merchandise, gambling, and more. But what does this obsession with sports say about us as a nation? How do sports help to shape our national and individual identities? How are issues of class, race, and gender in the US heightened in or mitigated by the sports arena? Why has so much literature focused on sports? And what can those texts show us about ourselves, about the sports themselves, and about our culture in general? In order to explore these questions and others, students will read fiction, non-fiction, and poetry, and will view two films that deal with sports.

Credits:
3

Billing Hours

Min:
3

HU5057 - Science Fiction

General

Course Description
This course introduces science fiction as a genre dedicated to interrogating and inspiring the human experience. Students will consider science fiction from a wide range of historical periods, authors, themes, and mediums. More than aliens and spaceships, special attention will be paid to exploring how fictional worlds can comment on our social and cultural experiences. Students will reflect on the writing of and the ideas in the texts as well as how even imagined technology can shape and motivate us today.

Credits:
3

Billing Hours

Min:
3

HU5090 - Special Topics: Humanities Group I

General

Course Description
Students will have the opportunity to study a variety of literary topics not listed in the course catalog. Such topics may include: Survey of Women Authors or Gender Issues in Literature; Multiethnic Literature in America; Irish Theater, World Literature, etc.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU5091 - Special Topics: Humanities Group I

General

Course Description
Students will have the opportunity to study a variety of literary topics not listed in the course catalog. Such topics may include: Survey of Women Authors or Gender Issues in Literature; Multiethnic Literature in America; Irish Theater, World Literature, etc.

Credits:
3

Billing Hours

Min:
3

HU6045 - Environmental Writing

General

Course Description
Through close reading, rhetorical and literary analysis, students will learn how authors from a wide variety of backgrounds and contexts have explored the human relationship with nature and environmental problems. Students will then draw upon their own research and experience to craft original compositions about their relationship to and care for specific natural places. Students will write in a variety of styles and forms.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6051 - Philosophy

General

Course Description
A general introduction to major issues in the four central areas of philosophical inquiry: theory of knowledge, philosophy of mind, ethics, and political philosophy. Topics include the nature of perception and knowledge, conflicting definitions of truth, the scientific method and the growth of knowledge, free will and responsibility, artificial intelligence, pleasure and happiness, the foundations of our moral beliefs, the legitimation of political authority, the tension between liberty and equality in a democracy, and social justice.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6054 - Ethics

General

Course Description
An introduction to various approaches to moral reasoning, this course includes both an overview of the history of Western moral philosophy and practical applications of moral theory to real-world case studies. Topics include how an issue becomes a moral issue, moral blindness, the evolutionary foundations of humans' moral attitudes, and the relationship between ethics and social customs. Four major historical approaches are considered: Ancient Greek Virtue Ethics, Judeo-Christian and Feminist Ethics of Care, the Utilitarian focus on consequences, and the rights-based approach of Immanuel Kant. The course concludes by reviewing a nine-step procedure for making moral decisions in business and personal life.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6055 - World Religions

General

Course Description
Focusing on the role that religion plays as people try to understand the meaning of their lives, this course is an introduction to basic ideas in seven of the world's major religions: Hinduism, Buddhism, Confucianism, Daoism, Judaism, Christianity, and Islam. The atheist critique of religion also is considered, as is the nature of justified belief in science and religion.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6057 - Composing in New Media

General

Course Description

This paperless writing course is taught in a computer-mediated class- room. Although much of the course will be dedicated to learning the technical skills required to create and publish web documents, the focus is on practical applications. In a combination workshop/discussion for- mat, the course explores the history, development, theories, concepts, and skills involved in web-based communication and asks students to think critically about many of the issues and problems which these new composing technologies have introduced. All written documents produced in this course will be presented in an electronic format. Prior web design or creation experience is not necessary to be successful.

Requisites

Prerequisite: HU1222 Writing About Literature

Credits:

3

Billing Hours

Min:

3

HU6058 - Appalachian Cultures

General

Course Description
Often called America's other, Appalachia is an American geographic region, culture and heritage that much of the time is reduced to stereotypes of white rednecks, hillbillies, and the uneducated poor. This course challenges those narratives, expanding on the history of Appalachia to garner a deeper understanding of a place in the U.S. that has contributed to the shaping of our nation and society. Students will spend time with the history, cultural practices, literature, art, folkways, and other ways of living in the mountains to gain a more nuanced knowledge of what it means to be Appalachian.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6060 - Creative Writing: Poetry

General

Course Description
This course introduces students to the basic elements of reading and writing poetry. Students will divide their time between discussions of craft-analyzing the work of published writers-and critiquing one another's poetry. By the conclusion of the course, students will have written and revised poems in a wide variety of styles and forms.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6061 - Creative Writing: Fiction

General

Course Description
In this course, students are introduced to the reading and writing of literary fiction. Through a workshop format, students will learn to give and receive criticism with tact and precision. By the conclusion of the course, students will have learned how to reveal character, heighten drama, craft dialogue, and manipulate point of view in order to write compelling fiction.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6062 - Applied Writing

General

Course Description

This course is designed to help students from all majors to examine and analyze their own writing styles and to adapt those styles to suit a variety of audiences, particularly audiences within their own disciplines. Whether preparing for degrees in engineering, emergency management, environmental science, or business, students will become familiar with ways to write effectively and persuasively for their own majors and beyond. Through readings, research, writing, discussions, and presentations, students will explore the conventions and purposes of their own discourse communities and will become familiar with the rhetorical strategies needed for persuasive writing within these communities. This course satisfies the additional writing course requirement for the Writing Proficiency Examination (WPE) support. (Minimum C- grade required to receive course credit). Does not fulfill HU Group II.

Requisites

Prerequisite: HU1111 College Writing or HU1110 Intro. to College Writing

Credits:

3

Billing Hours

Min:

3

HU6063 - Intro to Women's/Gender Studies

General

Course Description
The course draws on feminist ideas and scholarship in developing historical, theoretical, and cross-cultural frameworks for the comparative study of women and gender. Questions addressed include: What does it mean to study "women" as a group? When is it useful to focus on commonalities among women, and when is it necessary to stress differences? In what ways do gender differences and gendered power relations organize the social world and shape people's experiences and self-perceptions? The course aims to sharpen students' critical awareness of how gender operates in institutional and cultural contexts and in their own lives, and to give them an opportunity to imagine participating in social change.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6064 - Women and Film

General

Course Description
This course will examine the representation and construction of women in American film. Readings and screenings will guide students through rigorous investigations of gender, sexuality, and feminism. We will employ and interrogate the following analytical approaches: images of women theories, feminist film theory, queer theory, industry studies, and historical film analysis. Screenings may include: The Women, Mildred Pierce, Now, Voyager, Gentlemen Prefer Blondes, Imitation of Life, The Children's Hour, 9 to 5, Aliens, and Thelma and Louise. The course will consist of lecture, discussion, and screenings. By the end of the course, students should be able to identify and understand the application of various theoretical approaches ranging from semiotics to psychoanalysis to intertextual negotiation and beyond to both film and other media.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6065 - Creative Writing: Non Fiction

General

Course Description
This course introduces students to the reading and writing of creative nonfiction. Through writing memoirs, essays, and investigations, students will learn how to shape compelling narratives to reveal larger truths about themselves and the world. By the conclusion of the course, students will be able to unite facts with figurative language, sensory details, and artful syntax to create memorable nonfiction.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6071 - Public Speaking

General

Course Description
Designed to give students training and practice in speaking before large or small groups. It includes organization of materials, speaking from notes or manuscripts, and using effective rhetorical devices. Techniques of delivery, including stage presence, articulation, voice control, and parliamentary rules are also included.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6072 - Business Communication

General

Course Description
This course introduces the basic forms of professional communication skills, from memos and basic summaries to resumes, informal reports, polished formal investigations, and oral presentations. A substantial amount of writing is assigned, and class time will be spent discussing techniques of effective writing and conducting workshops on collaborative projects.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6073 - Technical Writing

General

Course Description
Technical Writing is designed for students preparing for careers in the sciences and applied sciences, particularly engineering. This writing course familiarizes students with the conventions and design strategies practiced in their disciplinary and institutional communities and introduces them to basic disciplinary formats, including memos, formal reports and presentations, Gantt charts, instructions, letters, résumés, and visual documents-for both electronic and hard copy. This course satisfies a Humanities Group II elective.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6074 - Surveillance & Prof. Communication

General

Course Description
Connotations of surveillance are labeled as largely nefarious, complicated by the ways in which surveillance is poised as a "necessity" for ?safety,? ?security,? and ?compliance."Public response is often to dismiss issues of surveillance, security, and privacy; however, as writers, professional and technical communicators, and members of society, it is important to understand how we may become more empowered citizens. We become more empowered by understanding the impact of surveillance technologies in our lives, in our writing, and in our practices. In this Humanities II elective, we will examine sites of surveillance as they relate to professional and technical writing. We will read and respond to topics including (but not limited to), algorithmic bias, disability and AI, data mining, surveillance capitalism, privacy, and more. This course will emphasize critical reading, writing, and listening to scholarly and popular texts that center historically excluded and silenced voices. Assignments will include original research writing; responses to readings, case scenarios, and peer writing; collaborative discussions; and multimodal projects. Students will rhetorically analyze sites of surveillance as they relate to professional and technical writing and their career goals/trajectories, responding to them in socially relevant ways for a range of audiences.

Requisites
HU-1222

Credits:
3

STCW

STCW Component
None

HU6080 - Introduction to Art

General

Course Description
This course provides an introduction to the understanding and appreciation of art. The course will cover the basic principles of design, form, and technique as well as a brief history of art across the centuries and from different cultures. The course will further provide an understanding of how art functions as a means by which we can come to know and comprehend the world around us.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6090 - Special Topics: Humanities Group II

General

Course Description
Students will have the opportunity to study a variety of non-literary topics in the Humanities.

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU6091 - Special Topic-Humanities Gr 2

General

Requisites
Prerequisite: HU1222 Writing About Literature

Credits:
3

Billing Hours

Min:
3

HU8310 - Foreign Language Elective II

General

Credits:
3

Billing Hours

Min:
3

HU8311 - Humanities Group I Elective

General

Course Description
Transfer course meeting requirements for Humanitie Group I.

Credits:
3

Billing Hours

Min:
3

HU8312 - Humanities Group II Elective

General

Course Description
Transfer course meeting requirements for Humanities Group II.

Credits:
3

Billing Hours

Min:
3

IM42XX - Crisis Leadership

General

Course Description
The focus of this course is to examine the crisis response of organizations across a variety of industries to understandspecifically how leaders and teams respond to extreme and emerging crises. The new normal of leadership in any organizationinvolves seeing the early warning signs of larger crises looming. This course will leverage crisis leadership simulations (e.g., ?Sea Change: Re-writing the Rules For Port Security?), military (e.g., Benghazi & Bosnia) and non-military case studies across seven industries: aerospace, automotive, aviation, banking, biotech, energy and healthcare, and will explore how leaders have operated under an extreme crisis and what lessons we can learn from them.

Credits:
3

IM1211 - Organizational Behavior

General

Course Description
An introduction to the dynamic world of the manager. In addition to presenting principles and techniques of management in various organizational settings, the course provides focus on the development of leadership and decision-making skills. As appropriate, case studies of management issues in the maritime industry are analyzed.

Credits:
3

Billing Hours

Min:
3

IM1212 - Macroeconomics for Business

General

Course Description
This course provides an exposure to the economic way of thinking, with a focus on the macro economy, geared towards business students. Topics include marginal analysis, optimization, equilibrium, business cycles, aggregate demand and aggregate supply models, determination of output, price levels and interest rates, monetary and fiscal policies, unemployment and inflation.

Credits:
3

Billing Hours

Min:
3

IM1214 - Foundations in Business Computing

General

Course Description
This course emphasizes various skills that students must develop to effectively use computerized decision tools to track trends, make forecasts, and solve business problems. It is designed to proved students with a good working knowledge of Microsoft Office Excel 2013. Using these tools, students will be able to analyze spreadsheet data, compute business statistics and chart functionality.

Credits:
3

Billing Hours

Min:
3

IM1215 - Introduction to Business

General

Course Description
This course is an introductory study to understand the primary functions of a business, the relationship between risk and profits as well as the importance of not-for-profit organizations. The major components of the business environment and how changing economic, demographic, social, political, legal and competitive factors affect all business organizations will be studied. We will explore the key trends in the business environment and the need for organizations to be cognizant of the trends and adapt to change will be emphasized. Particular attention will be paid to the areas of human resources management in a diverse, multicultural world as well as the role of technology and innovation in modern business enterprises. The course will also cover the basic principles of entrepreneurship and ethical decision-making. A key take away from this class is the application of business theories to modern challenges facing an organization, using specific cases and practical examples.

Credits:
3

Billing Hours

Min:
3

IM2121 - Principles of Accounting I

General

Course Description
An introduction to the basic principles of accounting, providing the first educational exposure to many business topics, including forms of business organization; typical business practices; and financial statements.

Credits:
3

Billing Hours

Min:
3

IM2123 - Financial Accounting

General

Course Description
This course covers the fundamental concepts and principles of financial accounting for a business enterprise and provides students with their first educational exposure to what is essentially the language of business. Emphasis is placed on accounting and the business environment, analysis of financial transactions, matching concept and adjusting process through the Accounting cycle, financial statements construction, current assets, plant assets, accounting for investments, current & long-term liabilities, stockholders' equity, the statement of cash flows, and financial statement analysis. The course also emphasizes on practice business applications.

Credits:
3

Billing Hours

Min:
3

IM2211 - The Business of Shipping

General

Course Description
This is an introductory course that explores the organization and workings of the global shipping industry. The emphasis is on the commercial and economic factors involved and how they impact the decision making process. It examines the supply/demand equation for maritime transportation, shipping cycles, shipping markets, ship finance, operating costs, regulatory agencies and market projections. The course combines historical perspective with economic theory and practical analysis of industry performance and changes.

Credits:
3

Billing Hours

Min:
3

IM2221 - Principles of Accounting II

General

Course Description
This is the second half of the yearlong accounting course. It emphasizes advanced accounting education. Topics covered include financial statements and accounting for equities, liabilities, and corporation accounting.

Requisites
Prerequisite: IM2121 Principles of Accounting I

Credits:
3

Billing Hours

Min:
3

IM2224 - Managerial Accounting

General

Course Description

This course introduces students to managerial accounting as distinguished from financial accounting. Students learn about the information that managers?the decision makers inside the business?must know and use in to effectively plan and control the business. Emphasis is placed upon financial statement construction and evaluation, applying a variety costing approaches, delving into the budgeting process using Excel and making use of a wide variety of financial tools to improve organizational effectiveness and efficiency. Managerial accounting is acompany's internal language, and is used for decision? making, production management, product design and pricing and marketing. This course focuses on ?hands-on? application and builds upon and reinforces skills and concepts introduced in Financial Accounting.

Requisites

Prerequisite: IM2123 Financial Accounting or IM2121 Principles of Accounting I

Credits:

3

Billing Hours

Min:

3

IM2231 - Business Decision and Strategy

General

Course Description
This course will enable students to formulate, model, solve and create decision support systems for various business problems that can be approached analytically and quantitatively. The applications will cover diverse problem areas, such as production planning, workforce scheduling, and transportation and logistics. The course will focus on game theory and strategic behavior and on building spreadsheet-based decision support systems.

Requisites
Prerequisites: SM2117 Quantitative Meth. for Mgmt., IM1214 Business Computing

Credits:
3

Billing Hours

Min:
3

IM3111 - Transportation Operations Management

General

Course Description
The concepts and techniques used by logistics/transportation firms to support their fundamental task of providing logistics services to their customers. Topics include product and process strategy, quality management, production planning for manufacturing and for service organizations, and inventory management. Also includes an examination of the interactions of operations management, quantitative decision-making techniques, and information technology.

Requisites
Prerequisite: IM2211 The Business of Shipping

Credits:
3

Billing Hours

Min:
3

IM3122 - Business Data Analysis

General

Course Description
This course provides a sound conceptual introduction to the field of statistics and its many applications in business and economics. Topics covered include probability distributions, inferential statistics, analysis of variance, regression analysis, and time series forecasting. Excel's Data Analysis Tools will be utilized in hypothesis testing, ANOVA, covariance and correlation, random number generation and regression. These analytical frameworks and tools will enable students to analyze and interpret business data and experimental results and apply all of the above to questions involving business and economics for the purpose of better decision-making.

Requisites
Prerequisite: IM1214 Business Computing

Credits:
3

Billing Hours

Min:
3

IM3131 - Principles of Finance

General

Course Description

A broad introduction to finance covering various aspects of financial institutions and markets, personal finance, corporate finance and financial risk management. Students are introduced to the workings of equity, debt and derivative instruments and markets, taught the basics about asset acquisition, tax planning and investment principles. On the corporate finance side, capital budgeting, debt vs. equity financing and working capital management are discussed. Throughout, the course emphasizes important financial principles such as time value of money, diversification, arbitrage and leverage. The course also places heavy emphasis on the use of spreadsheets to perform various numerical calculations. Note: Credit will not be given for both IM-3131 and IM-3133.

Credits:

3

Billing Hours

Min:

3

IM3133 - Finance I

General

Course Description
Finance I focuses on introductory concepts in the field as well as on financial markets and instruments. The introductory concepts include business organizations, time value of money, interest rates and yield curves, the role of the central bank in financial markets and bond and stock valuation. Institutional features of money market, bond market, stock market and derivative markets are covered as well.

Requisites
Prerequisites: IM1214 Business Computing, IM2121 Principles of Accounting I

Credits:
3

Billing Hours

Min:
3

IM3231 - Vessel Chartering & Brokerage

General

Course Description
Operational and legal environment of ship brokerage and chartering; responsibilities of owner and charterer under various charter forms; rules and regulations concerning loading and discharging.

Requisites
Prerequisite: IM2211 The Business of Shipping

Credits:
3

Billing Hours

Min:
3

IM3232 - Supervisory Management

General

Course Description
Designed to improve the management skills required of entry-level supervisors, and to provide current and prospective managers with the personal, interpersonal, and group skills necessary to reduce the gap between good ideas and accepted practices. Emphasis is placed on participation in practical exercises and role playing. A seminar format is utilized.

Credits:
3

Billing Hours

Min:
3

IM3233 - Finance II

General

Course Description
Finance II covers topics in three areas: corporate finance, personal finance, and investments. Under corporate finance, topics such as capital budgeting, cost of capital, financing mix and leverage as well as creation of pro-forma financial statements are discussed. Under personal finance, typical topics covered are home purchasing, insurance planning, credit management and retirement planning. Under investments, topics covered include introduction to risk and return along with their measurement, portfolio management, mutual funds and exchange traded funds. The course stresses numerical/quantitative analysis and extensive use of spreadsheet techniques.

Requisites
Prerequisite: IM3133 Finance I

Credits:
3

Billing Hours

Min:
3

IM3241 - Principles of Marketing

General

Course Description
A focus on the marketing management process and business strategic planning. The role of market research and analysis will be examined, as will consumer behavior, marketing strategies, channels of distribution, physical distribution, promotion, and pricing.

Credits:
3

Billing Hours

Min:
3

IM3311 - Cooperative I IMB

General

Course Description
The MMA International Maritime Business Cooperative Program (co-op) gives the student an opportunity to observe and experience the "real" world of business operations. The student is required to complete a mini- mum of six full work weeks. Preparation for the co-op includes class work, articulation of clear and measurable internship goals, informed selection of an appropriate business location that will meet those goals, and a commitment to discipline and hard work once on site. The co-op grade will be based in large part upon a formal project report submitted no later than 30 school days after the beginning of the following semester.

Credits:
6

Billing Hours

Min:
0

IM3352 - IM Independent Study

General

Course Description
This course is an opportunity for upper class students to conduct an independent study under the guidance of a department faculty member according to IMB department guidelines.

Credits:
3

Billing Hours

Min:
3

IM3411 - Experiential Learning in IMB

General

Course Description
In an increasingly global world, it is critical that business professionals learn about globalization and international business practices in the shipping and maritime industries. This course, designed specifically for upper division IMB students, provides a first-hand international experience. In the learn-do-learn tradition, the centerpiece of this course will be a 3 week overseas field study in the area of maritime business. It will enhance cultural awareness, communication skills and business competencies of students in a global platform.

Requisites
Prerequisite: IM1215 Introduction to Business and IM2211 The Business of Shipping

Credits:
6

Billing Hours

Min:
6

IM3411A - IMB Exp Learning -Maritime

General

Course Description
In an increasingly global world, it is critical that business professionals learn about globalization and international business practices in the shipping and maritime industries. This course, designed specifically for upper division IMB students, provides a first-hand international experience aboard the Academy?s training ship. In the learn-do-learn tradition, the centerpiece of this course will be a 6 week experience working and learning about maritime business in various ports during Sea Term. This course will enhance cultural awareness, communication skills and business competencies of students in a global platform.

Requisites
Prerequisite: IM1211 Organizational Behavior

Credits:
6

Billing Hours

Min:
6

IM3415 - Online Experiential Learning in IMB

General

Course Description
This 4-week online course explores a specialized area of IMB through live lectures, independent learning modules, guest speakers, and a variety of independent and group assignments. A key feature of this course is a live business case where students work in virtual groups on a project to solve an actual business challenge for an actual client. This course will provide students with the foundation necessary for professional certification.

Requisites
Prerequisite: IM1211 Organizational Behavior

Credits:
6

Billing Hours

Min:
6

IM4111 - Marine Insurance

General

Course Description
History of marine insurance, analysis of ocean marine cargo and hull policies, categories of losses, general average, protection and indemnity insurance, and third part liability.

Requisites
Prerequisite: SS3225 Admiralty and Maritime Law

Credits:
3

Billing Hours

Min:
3

IM4112 - International Business & Ocean Shipping

General

Course Description
The global business environment and its implications for operations, management, pricing, promotion, and financial strategies. The liner and tramp segments of the international marine transportation industry and their role in international trade.

Requisites
Prerequisites:SS2131 Microeconomics, IM2211 The Business of Shipping

Credits:
3

Billing Hours

Min:
3

IM4151 - Supply Chain Management

General

Course Description
This course provides an introduction to global business logistics and supply chain management. Studentswill be introduced to supply chain strategy, design, planning, coordination, and integration. Students will develop techniques for forecasting demand, sourcing supplies, manag- ing inventory, optimizing transportation, and enabling communication within a global supply chain.

Requisites
Prerequisite: IM3111 Transportation Ops. Mgmnt.

Credits:
3

Billing Hours

Min:
3

IM4211 - Business Ethics and Negotiation

General

Course Description

This course provides an overview of two critical and interrelated dimensions in the formation of business agreements and development of contractual relationships. The first involves business ethics, which explores various aspects of business conduct in relation to principles and philosophy of morality and responsibility. The second involves negotiation, which examines how agreements between two or more interested parties are secured. Ethics and negotiation both address questions that range across the functional areas of business, including marketing, human resource management, finance and accounting, and entrepreneurship. Special attention will be given to these issues in relation to the conduct of business in the global arena, which requires appreciation of local situations, norms and cultures.

Requisites

Prerequisite: IM1211 Organizational Behavior

Credits:

3

Billing Hours

Min:

3

IM4212 - Seminar:int. Maritime Business

General

Course Description
This capstone course integrates learning from previous IMB courses. Using concepts and models from those courses, students will examine current IMB issues through weekly case studies, independent readings, guest speakers, and seminar discussions. Students will also demonstrate their IMB proficiency through a semester-long research project on a relevant IMB issue or challenge.

Requisites
Prerequisites: IM3233 Finance II, IM3122 Business Data Analysis,IM3231 Vessel Chartering & Brokerage

Credits:
3

Billing Hours

Min:
3

IM4214 - Critical Issues in Human Resources Mgt.

General

Course Description
Human resource management (HRM) plays a critical role in shaping the type of people who are attracted to an organization, their attitudes and behavior, and ultimately their performance. This, in turn, contributes significantly to the competitive advantage and sustainability of an organization. This course seeks to offer students a perspective on contemporary issues and themes in HRM and their impact on the organization and workplace.

Requisites
Prerequisite: IM1211 Organizational Behavior

Credits:
3

Billing Hours

Min:
3

IM4216 - Investments

General

Course Description
This hands-on course allows students an opportunity to manage an actual investment portfolio. Initial training will cover markets, security analysis, financial data repositories, and ethical issues of portfolio management for clients. Students will divide into teams to research and periodically present to an Investment Advisory Board comprised of experts in various areas of finance. The best recommendations will be chosen and implemented.

Credits:
3

Billing Hours

Min:
3

IM4218 - Crisis Leadership

General

Course Description
The focus of this course is to examine the crisis response of organizations across a variety of industries to understandspecifically how leaders and teams respond to extreme and emerging crises. The new normal of leadership in any organizationinvolves seeing the early warning signs of larger crises looming. This course will leverage crisis leadership simulations (e.g., ?Sea Change: Re-writing the Rules For Port Security?), military (e.g., Benghazi & Bosnia) and non-military case studies across seven industries: aerospace, automotive, aviation, banking, biotech, energy and healthcare, and will explore how leaders have operated under an extreme crisis and what lessons we can learn from them.

Requisites
IM1215 Introduction to Business

Credits:
3

STCW

STCW Component
None

IM4251 - E-Business Concepts and Development

General

Course Description

This course explores the business opportunities and challenges that come with emerging technologies in e-business. Students will critically assess the application and implications of such technologies in business management, global logistics, inventory control, and other sectors in the maritime shipping industry. An understanding of the technologies in which e-business is built will be gained through labs focusing onweb development and content management systems. The final group project involves creating an e-business enterprise.

Credits:

3

Billing Hours

Min:

3

IM4252 - Financial Derivatives in Shipping

General

Course Description
This course provides an overview of derivatives and their applications in the shipping industry. A derivative is a financial contract whose value depends on an underlying asset (e.g., financial asset, commodity, or indices). Students will learn about key derivative instruments, such as forwards, futures, options, and swaps, and how these instruments are used to manage the impact of adverse price movements of freight rates, bunker fuel prices, interest rates, and foreign exchange rates due to the volatile nature of the shipping industry in rates and prices.

The course employs case studies and practical applications to equip maritime students with the knowledge and skills necessary to utilize derivatives for effective risk management and to stabilize their companies' financial performance in the shipping industry.

Credits:
3

Billing Hours

Min:
3

IM4253 - Maritime Biz Technology & Innovation

General

Course Description
The course explores the role of AI inoptimizing business results and focuses on where human input is vital in complementing AI?s contributions. Students will also apply strategic innovation frameworks and tools in developing creative solutions to challenges within their organizations.

Credits:
3

STCW

STCW Component
None

IM4261 - Special Topics in International Business

General

Course Description

This course offers a perspective on current ideas and issues within a specialized track in global business/ management. The objective is to allow for a deeper engagement of the student in a more focused topic. This may involve, for example, critically assessing the business dimensions and impacts of a specific event (e.g., 2008-09 financial crisis); a scholar, school of thought, or business leader (e.g., Warren Buffett); a new methodology or application; or a scholarly piece of work. The course will have an interactive seminar orientation, requiring students to carry out research independently and in groups as well as to make professional presentations. Every attempt will be made to invite industry experts to share up-to-date information on various facets of the business world.

Requisites

Prerequisites: IM3122 Business Data Analysis, IM4211 Bus. Ethics and Negotiation

Credits:

3

Billing Hours

Min:

3

IM4262 - Special Topics

General

Course Description

This course offers a perspective on current ideas and issues within a specialized track in maritime business/ management. The objective is to allow for a deeper engagement of the student in a more focused topic. This may involve, for example, critically assessing the business and policy dimensions and impacts of a specific event (e.g., the Panama Canal expansion); a scholar, school of thought, or business leader (e.g., John Fredriksen); a new methodology or application; or a scholarly piece of work. The course will have an interactive seminar orientation, requiring students to carry out research independently and in groups as well as to make professional presentations. Every attempt will be made to invite industry experts to share up-to-date information on various facets of the world of maritime business.

Credits:

3

Billing Hours

Min:

3

IM4263 - Entrepreneurship

General

Course Description
This course provides an overview of the entrepreneurial process of creating sustainable new businesses, both for-profit and non-profit. Students learn about the roles and attributes of successful entrepreneurs while undergoing a rigorous self-assessment process. Students will interview a local entrepreneur, participate in case studies related to new ventures and have the opportunity to learn directly from a variety of speakers invited to class to share their start-up experiences, including management, marketing, financial, ethical dilemmas and many other obstacles they face as entrepreneurs.

Credits:
3

Billing Hours

Min:
3

IM4265 - Project Management Fundamentals

General

Course Description
This is a first course in project management, one in which students will learn the knowledge, skills, and abilities necessary to be an effective project manager. They will learn how to plan, execute, and monitor a project. The course will cover the latest theories and concepts on scoping, stakeholder management, team leadership, budgeting and contracting, scheduling, quality control and assurance, and risk management. The course will include field studies, and students will experience managing a real-world project.

Credits:
3

Billing Hours

Min:
3

IM4266 - The Business of US LNG Trade

General

Course Description
This course will explore the economics of global and North American gas markets and U.S. export projects, leading up to an examination of liquefied natural gas (LNG) shipping economics and the considerations that must inform the shipping strategy of a hypothetical U.S. export venture. Students will work in small groups to assemble data, construct forecasts, and produce a paper recommending an optimal strategy for the shipping component of a hypothetical U.S. LNG export project. Coursework will reinforce concepts from economics (use of supply and demand projections to forecast market prices in the shipping industry), financial risk management in shipping, and the development and use of spreadsheet models.

Credits:
3

Billing Hours

Min:
3

IM4267 - Regulatory Compliance in IMB

General

Course Description
In this course, students will learn how various authorities interact with the shipping world to ensure compliance with state, regional, federal, or international laws as expressed in several regulatory instruments or policy documents. Students will also have an opportunity to learn how matters related to the regulation of imports and exports, seaborne and land-borne transportation, handling hazardous cargo, the shipping company and its support system, ports and terminals, passenger carriage, commercial and non-commercial pleasure and fishing vessels are affected by the rules.

Credits:
3

Billing Hours

Min:
3

IM4268 - Leadership

General

Course Description
This course examines leadership and management concepts at the interpersonal and organizational levels, from both a theoretical and applied perspective. Students will explore their own leadership style and development level and how they can influence the performance of others. They will reflect upon their leadership strengths and development needs to increase their leadership potential and understanding. The class will attempt to learn and appreciate leadership lessons from the experience of others, and students will apply leadership and management concepts to their lives as leaders.

Requisites
Prerequisite: IM1211 Organizational Behavior

Credits:
3

Billing Hours

Min:
3

IM4269 - Polar Shipping

General

Course Description

The progressive diminution of sea ice due to climate change and the consequential increase in maritime traffic in the polar regions are well underway. The Arctic region, in particular, presents a vast commercial opportunity for trade within the region and provides the shortest route to transcontinental shipping from the high north. The emerging maritime transport routes in the ecologically fragile Arctic present monumental challenges, ranging from governance to infrastructure, to sustainable maritime commerce. The course provides holistic insight into the op-opportunities and challenges for global maritime commerce in this region. The technical feasibility and economic viability of the Arctic shipping routes are analyzed based upon current regulatory regimes, the evolving digital platform, and risk mitigation techniques.

Credits:

3

Billing Hours

Min:

3

IM4270 - Sales Engineering

General

Course Description

Sales engineers are specialist sales experts who apply engineering knowledge and business consulting skills in order to understand how to plan and present complex engineered systems to their customers, including implementation advice and after-market support. Highly successful sales engineers learn to build and maintain expertise in business acumen, presentation skills, building customer relationships, engagement activities up and down customer organizations, and knowledge of target industries. This course includes the study of textbook materials, class lectures, class discussions, mock interviews, and team PowerPoint presentations.

Credits:

3

Billing Hours

Min:

3

IM4271 - Sustainable Blue Economy

General

Course Description
The blue economy comprises a range of economic sectors and policies involving oceanic and coastal resources. The course makes students aware of the major challenges, such as overcoming current economic trends that degrade marine resources and ecosystems; climate change; inadequate human, institutional, and technical capacity; and unsatisfactory implementation of existing policies, regulations, and instruments. Students will learn some of the tolls of environmental economics to assess the impact of market-based decisions on the sustainability of the blue economy. The course combines conceptual and experiential approaches. It involves case studies, lectures, and participation in current seminars and discussions.

Requisites
Prerequisites: IM2211 The Business of Shipping, IM1212 Macroeconomics for Business

Credits:
3

Billing Hours

Min:
3

IM4275 - Advanced Project Management

General

Course Description
This course introduces students to advanced project management concepts, including agile frameworks/ methodologies and business analysis frameworks. It satisfies the educational requirement to be eligible to sit for the Certified Associate in Project Management® examination. Students will have the opportunity to demonstrate mastery of adaptive project management by delivering a product to a client using agile methods.

Requisites
Prerequisite: IM4265 Project Mgmt Fundamentals

Credits:
3

Billing Hours

Min:
3

IM4311 - Cooperative II IMB

General

Course Description
This cooperative, the second mandated by the IMBU curriculum, has the same requirements of duration and submission deadlines as the first co-op, IM-3311. Students are expected to acquire additional in-depth, hands-on knowledge of operating and managing a business successfully and efficiently using the tools learned in the classroom.

Credits:
6

Billing Hours

Min:
0

IM4312 - Alternative IMB Co-Op

General

Credits:
6

Billing Hours

Min:
6

IM4321 - IMBU Sea Term Rate

General

Credits:
0

Max:
6

Billing Hours

Min:
6

IM4410 - ICS Cred. Sem.: Comm Ship & Chartering

General

Course Description
Industry-wide credentials are widely recognized as an effective means for students to demonstrate skills and mastery in key areas. In the world of IMB, the globally recognized Institute for Chartered Shipbrokers (ICS) offers a range of diplomas and credentials. This course will focus on the chartering and management of commercial ships. Students will independently study the ICS course materials and then meet in a seminar to discuss key aspects of commercial ship management. Students will prepare multiple essays and are encouraged to sit for the ICS exam at the end of the semester.

Credits:
3

Billing Hours

Min:
3

IM4420 - ICS Credentialing Seminar: Liner Trades

General

Course Description
Industry-wide credentials are widely recognized as an effective means for students to demonstrate skills and mastery in key areas. In the world of IMB, the globally recognized Institute for Chartered Shipbrokers (ICS) offers a range of diplomas and credentials. This course will focus on the liner trades. Students will independently study the ICS course materials and then meet in a seminar to discuss key aspects of commercial ship management. Students will prepare multiple essays and are encouraged to sit for the ICS exam at the end of the semester.

Credits:
3

Billing Hours

Min:
3

IM4430 - IC Credentialing Seminar: Offshore Supp

General

Course Description
Industry-wide credentials are widely recognized as an effective means for students to demonstrate skills and mastery in key areas. In the world of IIMB, the globally recognized Institute for Chartered Shipbrokers (ICS) offers a range of diplomas and credentials. This course will focus on the Offshore Support Industry. Students will independently study the ICS course materials and then meet in a seminar to discuss key aspects of commercial ship management. Students will prepare multiple essays and are encouraged to sit for the ICS exam at the end of the semester.

Credits:
3

Billing Hours

Min:
3

IM4440 - Ics Credentialing Seminar: Port Agency

General

Course Description
Industry-wide credentials are widely recognized as an effective means for students to demonstrate skills and mastery in key areas. In the world of IMB, the globally recognized Institute for Chartered Shipbrokers (ICS) offers a range of diplomas and credentials. This course will focus on Port Agency. Students will independently study the ICS course materials and then meet in a seminar to discuss key aspects of commercial ship management. Students will prepare multiple essays and are encouraged to sit for the ICS exam at the end of the semester.

Credits:
3

Billing Hours

Min:
3

IM4450 - ICS Credentialing Sem.: Ship Operations

General

Course Description
Industry-wide credentials are widely recognized as an effective means for students to demonstrate skills and mastery in key areas. In the world of IMB, the globally recognized Institute for Chartered Shipbrokers (ICS) offers a range of diplomas and credentials. This course will focus on the liner trades. Students will independently study the ICS course materials and then meet in a seminar to discuss key aspects of commercial ship management. Students will prepare multiple essays and are encouraged to sit for the ICS exam at the end of the semester.

Credits:
3

Billing Hours

Min:
3

IM4460 - ICS Credentialing Sem.: Sale & Purchasw

General

Course Description
Industry-wide credentials are widely recognized as an effective means for students to demonstrate skills and mastery in key areas. In the world of IMB, the globally recognized Institute for Chartered Shipbrokers (ICS) offers a range of diplomas and credentials. This course will focus on ship sale and purchase. Students will independently study the ICS course materials and then meet in a seminar to discuss key aspects of commercial ship management. Students will prepare multiple essays and are encouraged to sit for the ICS exam at the end of the semester.

Credits:
3

Billing Hours

Min:
3

IM4470 - ICS Seminar in Ship Financing

General

Course Description

Industry-wide credentials are widely recognized as an effective means for students to demonstrate skills and mastery in key areas. In the world of IIMB, the globally recognized Institute for Chartered Shipbrokers (ICS) offers a range of diplomas and credentials. This course will focus on shipping finance. Students will independently study the ICS course materials and then meet in a seminar to discuss key aspects of commercial ship management. Students will prepare multiple essays and are encouraged to sit for the ICS exam at the end of the semester.

Credits:
3

Billing Hours

Min:
3

LB0002 - Testing II

General

Credits:
3

LB0201 - Stcw Lifeboat Practical

General

Course Description
Provides the minimum standard of competence in survival craft and rescue boats other than fast rescue boats (Table A-VI/2-1). Practical assessments conducted in launching-taking charge of a lifeboat during and afterlaunch using proper commands and safety methods, starting the lifeboat engine, and recovering the lifeboat; steering-by magnetic compass; and rowing-commanding and landing the lifeboat using proper commands in various sea conditions.
STCW: Practical and Knowledge

Credits:
0

Billing Hours

Min:
0

LB0202 - STCW Lifeboat Exam

General

Course Description
United States Coast Guard multiple choice exam to assess knowledge based competencies for lifeboat proficiencies. Testing is conducted during spring semester.

STCW: Knowledge

Credits:
0

LB0203 - Immersion Suit Practical

General

Course Description
Together with PS-0301 provides minimum standard of competence in personal survival techniques (Table A-VI/1-1). Assessments in water survival using approved immersion suits and/or Type I-PFD. Training in escaping from burning liquids on the surface of the water with or without approved Type I-PFD, water entry for man overboard, and shark attack precautions and deterrents.
STCW: Practical

Credits:
0

MB5100 - Economics of the Maritime Industry

General

Course Description
This course provides an economic analysis of the different segments of the maritime industry, including an assessment of market characteristics (supply and demand), factors affecting pricing and profitability (cost and revenue), industry structure and competition, economic impacts of globalization on industry growth, and the effects of various sources of market intervention at different scales (national and international).

Credits:
3

Billing Hours

Min:
3

MB5110 - Maritime Law, Policy and Regulations

General

Course Description
This course focuses on the principles of maritime law that are of great concern to any maritime business manager. Students will gain an un- derstanding of admiralty jurisdiction and the interplay with foreign and state laws and international treaties. There will be an examination of personal injury as it pertains to seamen, oil rig works, and longshoremen. Contracts concerning cargo,towing, and charters will be explored for drafting and the frequently litigated issues. Marine insurance will be explored in depth as will maritime liens, mortgages, and salvage. Finally, with the ever-growing environmental concerns, maritime pollution liabilities, and crimes will be covered.

Credits:
3

Billing Hours

Min:
3

MB5120 - Project Management in Maritime Business

General

Course Description
This course introduces the tasks fundamental to project management. Project managers need to possess the skills to manage their teams, schedules, risks, and resources to produce a desired outcome. Students will learn the skills and tools of project management using a hands-on approach. There will be a focus on stakeholder management, as well as some of the causes of project failure and how to mitigate the causes in the planning stages of the project.

Credits:
3

Billing Hours

Min:
3

MB5130 - Global Logistics and Supply Chain Mgt.

General

Course Description
This course focuses on effective logistics and supply chain strategies for companies that operate globally, with an emphasis on how to plan and integrate supply chain components into a coordinated system. Stu- dents are exposed to concepts and models important in supply chain planning, with emphasis on key trade-offs and phenomena. The course introduces and utilizes key tactics, such as risk pooling and inventory placement, integrated planning and collaboration, and information sharing. Lectures, videos, simulation exercises, and case discussions introduce various models and methods for logistics and supply chain analysis and optimization.

Credits:
3

Billing Hours

Min:
3

MB5140 - Financial Analytics

General

Course Description
This course will impart powerful, fundamental concepts and analytical techniques that will be used by maritime business management professionals in both routine, day-to-day financial and risk analysis and for major capital budgeting and asset allocation processes. The case studies chosen for this course will focus on application of fundamental techniques in the context of physical asset, asset utilization, and as- set allocation problems. The material will be presented to draw on the students' experiences and work environments.

Credits:
3

Billing Hours

Min:
3

MB5150 - Operations Mgt. in Maritime Business

General

Course Description
The course exposes students to best-practice conceptual and decision models to develop solutions for managing operations and maritime supply chain challenges from the business world. The topics covered include scheduling, process analysis, materials management, quality, productivity, technology, critical thinking,rational decision making, and strategic planning.

Credits:
3

Billing Hours

Min:
3

MB5160 - Transportation Security Mgt.

General

Course Description
This course provides a layered, multi-disciplinary systems approach to transportation security management, including operational considerations that influence security management decisions. The course will provide an overview of security managementin all modes of passenger and freight transportation, including maritime, aviation, public transit, rail, pipeline, intermodal cargo, and highway transportation.

Credits:
3

Billing Hours

Min:
3

MB5170 - Organizational Behavior

General

Course Description
Strategic management of individuals, teams, and organizations in the maritime business environment requires a keen understanding of the principles of leadership, vision, and motivation under stressful circumstances. This course provides, in executive format, extensive and intense instruction in organizational behavior, organizational design, emotional intelligence, and the effective motivation and management of a variety of types of organizations.

Credits:
3

Billing Hours

Min:
3

MB5180 - Maritime Leadership $ Risk Mgt.

General

Course Description
This course introduces managers to emergency response regulatory framework within the U.S., shipboard emergency response planning requirements, response funding mechanisms and associated management practices, risk communication, interorganizational response management and decision-making processes, mass rescue operations, marine transportation system recovery practices, ship salvage operations, resource damage assessment, legal considerations, the role of the Qualified Individual(Q.I.), how government measures and tests industry's preparedness, as well as operational best practices and management techniques when working with impacted communities.

Credits:
3

Billing Hours

Min:
3

MB5200 - Capstone Seminar

General

Course Description
It is the goal of the four-credit capstone project to challenge the students to inquire into what they perceive as a problem or a process that could be improved in the field of maritime business, describe the problem or flawed process, ask a hypothetical question that will be their research road map, provide alternative solutions, and provide a detailed analysis and summary of their approach and why they chose a certain solution.

Credits:
4

Billing Hours

Min:
3

MCSTCW0 - Orientation Stcw

General

Credits:
0

STCW

STCW Component
None

MCSTCW1 - Mariner Credentialing 1

General

Credits:
0

MCSTCW2 - Mariner Credentialing 2

General

Course Description
Formerly LIfeboatman and Lifeboatman Exam

Credits:
0

STCW

STCW Component
None

MCSTCW3 - Mariner Credentialing 3

General

Course Description
(Advanced Marine Fire Fighting Part I)

Credits:
0

MCSTCW4 - Mariner Credentialing 4

General

Course Description
(Advanced Marine Fire Fighting Part II)

Credits:
0

STCW

STCW Component
None

MCSTCW5 - Mariner Credentialing 5

General

Course Description
previously called Medical Care Provider, PE-0032

Credits:
0

STCW

STCW Component
None

ME1112 - Engineering Systems and Safety

General

Course Description
This course will teach students the fundamental engineering concepts related to the steam and water cycle and steam generation. The students will also learn about various primary and auxiliary engineering systems. The lab familiarizes the students with the safe operation of the engine room and engineering systems on board the training ship and provides students with basic first aid and occupational safety certification. [Lab time required]
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ME1112L - Engineering Systems and Safety Lab

General

Course Description
This is the lab for Engineering Systems and Safety.

Credits:
0

Billing Hours

Min:
0

ME1211 - Auxiliary Machinery I

General

Course Description
Lays the foundation for future marine engineering courses. It covers the construction, operation, maintenance, and repair of piping systems, fittings, joints, packing, and valves including basic control valves. Basic pressure, temperature, and level measurements and instruments are also discussed. [Lab time required]
STCW: Knowledge & Practical

Credits:
3.5

Billing Hours

Min:
3.5

ME1211L - Auxiliary Machinery I Lab

General

Course Description
This is the lab for Auxiliary Machinery I.

Credits:
0

Billing Hours

Min:
0

ME1212 - Computer Aided Design

General

Course Description
Teaches students to create drawings, using a computer in the following general areas: mechanical, electrical/ electronic, hydraulic, architectural, surveying, flow charts, and process diagrams.

Credits:
1

Billing Hours

Min:
1

ME2111 - Auxiliary Machinery II

General

Course Description
A continuation of ME-1211 and covers the construction, operation, maintenance, and repair of basic power plant systems, steam traps, strainers, pumps, heat exchangers, condensers, air ejectors, deaerators, hydraulic systems and components, and air compressors and systems. The lab consists of CAD use to draw specific training ship systems; the use of cutaway equipment, operational trainers, and simulators; and the use of actual ship's equipment to enhance the understanding of material presented in the course. [Lab time required]
STCW: Knowledge & Practical

Credits:
4

Billing Hours

Min:
4

ME2111L - Auxiliary Machinery II Lab

General

Course Description
This is the lab for Auxiliary Machinery II.

Credits:
0

Billing Hours

Min:
0

ME2112 - Machine Tool Technology

General

Course Description
This course provides practical experience in the use of machine tools. Emphasis is on shop safety, use of measuring instruments, hand tools, horizontal band saw, drill press, screw cutting lathe, electric arc welding, oxyfuel welding, and oxyfuel cutting. The lab also consists of a half semester of "hands-on" introduction to electric arc welding and machine tool operation, including safety. [Lab time required]
STCW: Knowledge & Practical

Credits:
2

Billing Hours

Min:
2

ME2112L - Machine Tool Tech and Welding Lab

General

Course Description
This is the lab for Machine Tool Technology, and also includes welding.

Credits:
0

Billing Hours

Min:
0

ME2211 - Mechanics

General

Course Description
Includes static analysis of rigid bodies; determination of forces in mem- bers due to concentrated and distributed loads; analysis of trusses, frames, and machines; shear and bending moment diagrams; and determination of centers of gravity and moment of inertia. Credit will not be given for both EN-2211 and EN-2101.

Credits:
3

Billing Hours

Min:
3

ME2231 - Sea Term II - Engine

General

Course Description
Provides an opportunity for cadets to obtain sea service and engineering watchstanding experience in a structured shipboard training program which is compliant with Chapter III of STCW and the requirements of 46 CFR. The training uses a building-block approach, bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy which includes a range of simulation and practical lab experiences. All phases of training are conducted by STCW Qualified Instructors and Designated Examiners.
STCW: Knowledge & Practical

Credits:
6

Billing Hours

Min:
6

ME2232 - Internal Combustion Engine I

General

Course Description
Covers the construction, running gear functions, and operating principles of the diesel engine, as applied to marine installations. The lab sessions will involve the student in diesel engine operation and maintenance both in the shop and aboard the various Academy vessels. [Lab time required]
STCW: Knowledge

Credits:
4

Billing Hours

Min:
4

ME2232L - Internal Combustion Engine I Lab

General

Course Description
This is the lab for Internal Combustion Engine I.

Credits:
0

Billing Hours

Min:
0

ME3111 - Electrical Machines

General

Course Description
Students study AC and DC theory as applied to motors, generators, and power distribution systems. The course also considers preventative maintenance and repair of rotating and static electrical equipment; turboelectric drive principles and operation; and U.S. Coast Guard electrical engineering rules and regulations. The lab component covers ship and shore-side machinery.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ME3111L - Electrical Machines Lab

General

Course Description
This is the lab for Electrical Machines. It includes the theoretical and practical aspects of the operation and maintenance of electrical machinery, including: electric circuits and wiring, AC and DC motors andgenerators, transformers,motor controls,and troubleshooting.
STCW: Practical

Credits:
1

Billing Hours

Min:
1

ME3112 - Strength of Materials

General

Course Description
Studies the fundamental concepts of the mechanics of materials, including stress, strain, and deformation due to tensile and compressive forces, torsion, bending moments, transverse shear, and temperature changes. It also studies statically indeterminate problems, power transmission, stress concentration factor, beam design, columns, and buckling.

Credits:
3

Billing Hours

Min:
3

ME3112L - Strength of Materials Lab

General

Course Description
This is the lab for Strength of Materials. This lab reinforces the basic concepts of normal stress, shear stress, torsion, beam bending and deflection, and beam design as taught in the Strength of Materials course. Formal engineering reports are required with emphasis on writing and spreadsheet skills.

Credits:
1

Billing Hours

Min:
1

ME3131 - Steam Generators

General

Course Description
Covers the design, construction, and operation of steam generators (boilers). It also considers fuels and their combustion, combustion equipment, combustion control, feedwater regulators, air heaters, economizers, superheaters, reheaters, boiler water treatment, and auxiliary boilers. A lab aboard the Academy's training ship is included, emphasizing boiler external fittings, safety valves, fuel oil systems, and main and auxiliary steam systems. [Lab time required]
STCW: Knowledge & Practical

Credits:
3.5

Billing Hours

Min:
3.5

ME3131L - Steam Generators Lab

General

Course Description
This is the lab for Steam Generators.

Credits:
0

Billing Hours

Min:
0

ME3211 - Thermodynamics

General

Course Description
Covers the application of the basic laws of thermodynamics to open and closed systems including refrigeration, air conditioning, and various power cycles with special emphasis on the steam power cycle.

Credits:
3

Billing Hours

Min:
3

ME3212 - Electronics

General

Course Description
Theory of basic solid-state electron devices. Power circuits. Use of analog and digital integrated circuits in control systems for logic, interlocks, and automated machinery control.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ME3212L - Electronics Lab

General

Course Description
This is the lab for Electronics (EN-3212). Participants learn to use electronic instruments by taking measurementson analogand digital circuits constructed during the lab period. The measurements are then used to verify the analytical relationships developed in the classroom.

Credits:
1

Billing Hours

Min:
1

ME3213 - Refrigeration

General

Course Description
An in-depth study of refrigeration and the design, operation, maintenance, and repair of environmental control systems. The impact of refrigerants regarding ozone depletion and global warming is covered in detail. [Lab time required.]
STCW: Knowledge & Practical

Credits:
2.5

Billing Hours

Min:
2.5

ME3213L - Refrigeration Lab

General

Course Description
This is the lab for Refrigeration.

Credits:
0

Billing Hours

Min:
0

ME3216 - Operational Controls

General

Course Description
A study of the principles of industrial measurement and control with an emphasis on practical applications aboard ship and in industry. Methods of sensing, measuring and transmitting data from industrial processes; feedback, automatic control systems, closed loop systems, controllers, control modes, and control configurations. Mechanical, electronic, analog and digital control mechanism will be discussed, as will programmable logic controllers.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ME3216L - Operational Controls Lab

General

Course Description
This is the lab for Operational Controls. This lab provides an opportunity to work with instruments and control hardware found aboard ship and in industry, and supplements the content of EN-3216. Students will select, install, and calibrate various sensors and instruments; build and tune PID control loops; design and implement control circuits using Programmable Logic Controllers and Ladder Logic.

Credits:
1

Billing Hours

Min:
1

ME3231 - Sea Term III - Engine

General

Course Description
Provides an opportunity for cadets to obtain sea service and engineering watchstanding experience in a structured shipboard training program which is compliant with Chapter III of STCW and the requirements of 46 CFR. The training uses a building-block approach bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy which includes a range of simulation and practical lab experiences. All phases of training are conducted by STCW Qualified Instructors and Designated Examiners.

Credits:
6

Billing Hours

Min:
6

ME3232 - Commercial Sea Term - Engineer

General

Course Description
Replaces Sea Term III. Qualified cadets are afforded an opportunity to train aboard a commercially-operated vessel in an engineering capacity for a maximum of sixty days in lieu of sailing aboard the Academy training ship. The student must have had junior status during the previous academic term.

Credits:
6

Billing Hours

Min:
0

ME3233 - Steam and Gas Turbines

General

Course Description
Covers the principles, design, operation, maintenance, and repair of marine steam turbines including their reduction gears, thrust bearings, couplings, governors, and lubrication systems. Line shafting, bearings, and propellers are other topics included. This course also includes an intro- duction to the design and operation of gas turbines. [Lab time required]
STCW: Knowledge & Practical

Credits:
4

Billing Hours

Min:
4

ME3233L - Steam & Gas Turbines Lab

General

Course Description
This is the lab for Steam and Gas Turbines.

Credits:
0

Billing Hours

Min:
0

ME4111 - Fluid Mechanics

General

Course Description
Covers the fundamental principles of fluid statics, pipe flow, open channel flow, lift and drag, pumps and turbines, and flow measuring devices.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ME4131 - Internal Combustion Engines II

General

Course Description
Studies diesel engine systems and various methods of application. Engine operation, installation, and maintenance are also considered, as well as diesel engine drive trains and torque conversion. The lab is divided between shipboard systems and the diesel lab ashore. [Lab time required]
STCW: Knowledge & Practical

Credits:
4

Billing Hours

Min:
4

ME4131L - Internal Combustion Engines II Lab

General

Course Description
This is the lab for Internal Combustion Engines II.

Credits:
0

Billing Hours

Min:
0

ME4151 - Applied Naval Architecture

General

Course Description
The course includes general naval architecture nomenclature, geometry, hydrostatic curves, longitudinal stability calculations, identification of principal structural members, and calculations for ship strength curves. The course also studies resistance relationships between an actual ship and a ship model, ship propulsion design requirements, and sizing of a ship's engine and power plant.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

ME4220 - Engineering Independent Study

General

Credits:
6

Billing Hours

Min:
6

ME4231 - Sea Term IV - Engine

General

Course Description
Provides an opportunity for cadets to obtain sea service and engineering watchstanding experience in a structured shipboard training program which is compliant with Chapter III of STCW and the requirements of 46 CFR. The training uses a building-block approach bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy which includes a range of simulation and practical lab experiences. All phases of training are conducted by STCW Qualified Instructors and Designated Examiners.
STCW: Knowledge & Practical

Credits:
6

Billing Hours

Min:
6

ME4232 - License Seminar

General

Course Description
A comprehensive review of all marine engineering science subject matter on which cadets are examined by the U.S.Coast Guard to qualify for licensing as third assistant engineer, steam and diesel unlimited horsepower. Includes Engineroom Resource Management and Fatigue Training.

Credits:
3

Billing Hours

Min:
3

ME4234 - Engineroom Resource Management

General

Course Description
Principles of engineroom resource management, including: allocation assignment and prioritization or resources; effective communications; assertiveness and leadership; obtaining and maintaining situational awareness; and consideration of the team experience.

Credits:
0

ME4444 - Coast Guard License Exams - Meng

General

Course Description
Indicates whether the student has passed Coast Guard exams.

Credits:
0

ME4900 - Coast Guard Exam - Meng

General

Credits:
0

ME7142 - Diesel Engines

General

Course Description
Required for the Marine Transportation major starting with the Class of 2019. Open to Facilities Engineering and Energy Systems Engineering majors on a space-available basis. This course covers diesel engine theory, operation, components, and systems. Systems include lubrication, cooling, fuel, electrical, air and exhaust, and drive train. Troubleshooting and maintenance are also covered. This course is equivalent to the Masters, Mates, and Pilots Union MITAGS Diesel Engines Control course.

Credits:
3

Billing Hours

Min:
3

ME8000 - Engineering Independent Study

General

Course Description
This course provides an opportunity for students to conduct an independent study under the guidance of a department faculty member, while following specific guidelines. Approval of department chair is required.

Credits:
3

Billing Hours

Min:
3

ME8900 - Engineering Technical Elective

General

Course Description
Any Engineering Electicve course approved by the Department Chair to fulfill a Technical Elective.

Credits:
3

Billing Hours

Min:
3

ME9999 - Engineering Exchange

General

Credits:
12

Billing Hours

Min:
12

MS1111 - Fundamentals of Occupat. Health/Safety

General

Course Description
This course introduces the fundamental concepts of safety- and health- related topics required for a major in MSSEP. Organizations must provide safe, healthy, and environmentally friendly working conditions to protect individual workers and the general public. Health, safety, and risk management are essential for the successful and profitable operation of industries and businesses. The primary concepts at occupational safety and health will incorperate the historical development of occupational protection, evolution of protective standards, and regulations relating to concepts in the safe management of hazards and risks associated with work operations and physical and health hazards.

Credits:
3

Billing Hours

Min:
3

MS1211 - Current Environmental Problems

General

Course Description
This is the first course taken by students majoring in Marine Science, Safety and Environmental Protection (MSSEP). It introduces freshmen students to current and pressing global issues in the fields of environ- mental science, environmental protection and health and safety in the workplace. Topics will provide students with a broad, general perspective of issues in these fields.

Credits:
3

Billing Hours

Min:
3

MS1252 - Earth Science

General

Course Description
This course evaluates natural materials and processes that make up and shape planet Earth. Students will learn the fundamental principles of geology, oceanography, and meteorology. The course covers Earth's structure, plate tectonics, natural hazards, the water cycle, andoceanic and atmospheric composition. [Lab time required]

Requisites
Co-requisite: MS1252L Earth Science Laboratory

Credits:
3.5

Billing Hours

Min:
3.5

MS1252L - Earth Science Laboratory

General

Course Description
This is the lab for Earth Science.

Credits:
0

Billing Hours

Min:
0

MS1311 - MSSEP Experiential Learning - Freshmen

General

Course Description
This experiential field course is designed to train students in field methods and integrative problem solving related to environmental sciences.

It covers such topics as terrestrial and marine ecology, sustainability, geology, and fisheries of tropical systems. Students will gain an understanding of the scientific method and apply modern scientific techniques in the field by observing, collecting, and analyzing data through guided scientific excursions.

Credits:
3

Billing Hours

Min:
3

MS1312 - MSEP Experiential Learning Rate

General

Credits:
0

MS1313 - Shipboard Environmental Operations

General

Course Description
This course will explore shipboard international environmental compliance as well as onboard operations. The course will emphasize record keeping, onboard environmental operations, and voyage planning. Students will review basic shipboard safety, including incident response, confined space entry procedures, Lock Out / Tag Out, and hot work. Students will gain firsthand compliance experience with regard to NPDES permit and VGP reporting aboard ships and at shoreside.

Requisites
Prerequisite: MT1111 Vessel Fam/Basic Safety Trng.

Credits:
6

Billing Hours

Min:
3

MS2132 - Marine Sci Fund.

General

Course Description
Students are introduced to a wide range of topics within marine science. This is a survey course intended to provide students with a foundation ion which to build. Topics include marine biology, chemistry, physics, geology, field methods, marine policy, and sustainability at an introductory level. This course incorporates hands-on learning, peer-to-peer learning, and a variety of projects, science writing practices, and collaboration.

Credits:
3

Billing Hours

Min:
3

MS2221 - General Biology

General

Course Description
An introduction to the principles of life at the cellular and organismal levels, including such topics as the chemical basis of life, cell structure and function, photosynthesis, respiration, cell reproduction, the molecular basis of genetics, DNA technology, evolution, and ecology. It includes a brief survey of living organisms. [Lab time required]

Requisites
Co-requisite: MS2221L General Biology Lab

Credits:
3.5

Billing Hours

Min:
3.5

MS2221L - General Biology Lab

General

Course Description
This is the lab for General Biology.

Credits:
0

Billing Hours

Min:
0

MS2244 - Introduction to GIS

General

Course Description
A Geographic Information Information System is a computer system that allows the user to create, capture, store, analyze, and display geospatial data. This course introduces students to the ESRI suite of GIS software and primarily focuses on ArcGIS Pro/ArcGIS Online to explore these functionalities.

Credits:
3

Billing Hours

Min:
3

MS2246 - Applied Gis

General

Course Description
This course will enhance your knowledge of ArcGIS Pro/ESRI online applications learned from the pre-requisite Introduction to GIS course and provide opportunities to build novel datasets. You will design projects to collect, analyze, visualize, and present geospatial data to engage a broad audience. We will explore GIS topics related to current environmental issues which are relevant to other Marine Science, Safety, and Environmental Protection courses.

Credits:
3

Billing Hours

Min:
3

MS3121 - Physical Geology

General

Course Description
Introductory study of the materials, structure, and surface features of the earth. Students will examine the physical and chemical processes that modify the earth's internal and surficial features, the concept of geologic time, and the application of geologic knowledge to human environmental and resource problems.

Requisites
Prerequisite: MS1252 Earth Science

Credits:
3

Billing Hours

Min:
3

MS3132 - Life Science Lab

General

Course Description
This one-credit course is designed to give students practical, hands-on experience in the field and in the lab, exploring principles related to their life science classes in General Biology, Biological Oceanography, Coastal Ecology, and Conservation Biology. Seven field trips and lab exercises will be conducted during the semester.

Requisites
Prerequisite: MS2221 General Biology

Credits:
1

Billing Hours

Min:
1

MS3141 - Coastal Ecology

General

Course Description
This course explores the interactions among organisms and between organisms and their coastal environments. Students will evaluate the physical, geological, chemical, and biological processes influencing life in the coastal zone. Coastal environments considered include rocky shores, salt marshes, mangroves, and coral reefs. Field trips to local coastal areas.

Requisites
Prerequisite: MS2221 General Biology

Credits:
3

Billing Hours

Min:
3

MS3142 - Environmental Law

General

Course Description
This introductory law course will familiarize students with the statutes, government regulations, and agreements that protect natural resources, human health, and the local, domestic, and international transboundary environment. Students will study the role of the American legal system as it functions to control and remediate environment problems; evaluate opportunities to use judicial, administrative, legislative, and economic political processes to address these problems; analyze a number of U. S. environments statutes; and examine international laws and organizations that target environmental issues of the global commons.

Requisites
Prerequisite: SS2121 American Government

Credits:
3

Billing Hours

Min:
3

MS3221 - Oceanography

General

Course Description
This course introduces students to concepts in geologic, chemical, and physical oceanography. Students will examine the composition of marine sediments, the chemistry of seawater, forces driving shallow-water and deep-ocean currents, wave behavior, and tides. Evaluation of the scientific literature and oceanographic datasets are key components.

Requisites
Prerequisite: MS3121 Physical Geology

Credits:
3

Billing Hours

Min:
3

MS3241 - Marine Resource Management

General

Course Description
Examines the myriad of issues surrounding the exploitation and governance of marine and coastal resources. These include the resources of fisheries, marine flora, mariculture, oil and gas deposits, shallow-water and deep seabed minerals, transportation, and recreation. This course also analyze each resource's jurisdictional or ownership status, applicable laws and regulations, economic and technological viability, and multiple-level (local, State, Federal, regional, and international) governance regime.

Credits:
3

Billing Hours

Min:
3

MS3242 - Hazardous Materials Management

General

Course Description
This course will focus on hazardous materials through the study of management techniques, law and policy, and scientific disciplines. The initial focus will be on the classification, handling and regulation of hazardous materials through traditional disciplines, shifting later to the exploration of methods that may be used to influence hazardous materials management. Students will be given the opportunity to study present hazardous materials management programs developed at a variety of businesses and government agencies.

Credits:
3

Billing Hours

Min:
3

MS3351 - MSSEP Co-Op I

General

Course Description
A cooperative experience in an environmentally related field wherein each student is responsible for a daily log, a report, and a presentation of the report. This cooperative is a minimum of six weeks, or thirty working days.

Credits:
6

Billing Hours

Min:
0

MS3352 - MSSEP Independent Study

General

Course Description
Opportunity for upperclass students to conduct independent study

under the guidance of a department faculty member following depart- mental guidelines.

Credits:
1.5

Max:
3

Billing Hours

Min:
3

MS3353 - MSEP Sea Term Rate

General

Credits:
0

Max:
6

Billing Hours

Min:
6

MS3354 - MSEP Sea Term Co-op

General

Credits:
3

Billing Hours

Min:
3

MS3456 - Geological Oceanography Field Experience

General

Course Description
Geological oceanography field experience with pre-and post-trip meetings focusing on volcanism, marine and beach processes, geohazards, safety, environmental proction of marine and coastal resources.

Requisites
Prerequisite: MS1252 Earth Science

Credits:
3

Billing Hours

Min:
3

MS4111 - Environmental Monitoring I

General

Course Description

This is the capstone course of the MSSEP major. Students bring all of the knowledge and skills learned in their other classes to bear on their own year-long, environmental monitoring project. The course provides an opportunity for students to design and conduct their field projects and enables students to become familiar with various techniques of environmental monitoring. Students work in small teams and conduct their field studies on a weekly basis throughout the fall semester and then continue their studies throughout the spring semester as course MS-4211, Environmental Monitoring II. Students meet regularly with faculty instructors for the course. Faculty will assist students by providing scientific and technical guidance and advice for the field projects. Students will prepare formal posters for public presentations at the end of the semester showcasing the results of their work.

Requisites

Prerequisite: MS4142 Human Health and Risk

Credits:

3

Billing Hours

Min:

3

MS4141 - Coastal Zone Management

General

Course Description
This course examines the many issues surrounding the governance of the coastal zone. This includes the physical setting and ecological characteristics, the public and private rights in coastal land and waters, and the various legal regimes responsible for management.

Requisites
Prerequisites: MS3142 Environmental Law, MS3141 Coastal Ecology

Credits:
3

Billing Hours

Min:
3

MS4142 - Human Health and Risk

General

Course Description
This course provides students with an introduction to the concepts and implementation of occupational health problems and policy. The focus off the course is a working understanding of the regulatory environment and assessment of risk associated with various chemicals and substances in the workplace. The use of group projects enhances all of the practical details of the course and provides an excellent "hands-on" experience. [Lab time required]

Requisites
Prerequisite: SM3234 Environmental Chemistry

Corequisite: MS4142L Health/Risk Lab

Credits:
3.5

Billing Hours

Min:
3.5

MS4142L - Human Health and Risk Lab

General

Course Description
This is the lab for Human Health and Risk.

Credits:
0

Billing Hours

Min:
0

MS4211 - Environmental Monitoring II

General

Course Description
This course is a continuation of MS-4111, Environmental Monitoring I. Students will continue their team-based, environmental monitoring field studies throughout the spring semester. Students meet regularly with faculty instructors for the course. Faculty will assist students by providing scientific and technical guidance and advice for the field projects. Students will prepare formal posters for public presentations at the end of the semester showcasing the results of their work.

Requisites
Prerequisite: MS4111 Environmental Monitoring I

Credits:
3

Billing Hours

Min:
3

MS4232 - MARPOL Introduction to MARPOL

General

Course Description
This course will explore shipboard international environmental compliance. It will review the different levels of environmental regulations pertaining to IMO and MARPOL as well as Flag State, Port State, and NPDES/VGP. Emphases will be on record keeping and auditing of log books, such as garbage record book, oil record book, and fuel logs. Cadets will be exposed to examples of new technology in the industry and the different methods companies use to stay compliant. They will receive a basic introduction to oil spill response and response plans, internal auditing, and the self-reporting process for accidental discharges.

Credits:
3

Billing Hours

Min:
3

MS4233 - Communicating Ocean & Climate Science

General

Course Description
Students will evaluate the ways in which ocean and climate science are communicated to the scientific community, the public, and policy makers. Students will discuss peer-reviewed scientific literature, climate change reports, and online resources. Students will engage in effective communication through oral presentations, scientific writing, and digital communication.

Credits:
3

Billing Hours

Min:
3

MS4241 - Environmental Risk

General

Course Description
The ecological risk assessment framework (ERA) can be retroactive and predictive. A retroactive ERA estimates the risk from an existing situation, such as a contaminated site, while a predictive ERA predicts the same for a future situation, such as the proposed licensing of a new housing development. ERA integrates many scientific disciplines in estimating the probabilities of undesired ecological impacts. Industry develop ERA to determine future risk and liabilities associated with the development, use, and disposal of new or existing products. With increasing demand on our ecological resources and decreasing government budgets, resource managers and regulators use environmental risk assessment to organize scientific information and prioritize the decision-making process. Students will learn to focus and interpret scientific information that reduces uncertainty in risk assessment and helps ensure that research emphasis is placed on problems posing the greatest risks. Case studies will be used extensively to illustrate how ecological risk principles are applied to a wide range of situations.

Requisites
Prerequisite: MS4142 Human Health and Risk

Credits:
3

Billing Hours

Min:
3

MS4263 - Oil Spill Management

General

Course Description

This course is an introductory examination of the many issues surrounding marine oil spills and response measures that can be implemented. Emphasis is placed on practical guidance and management. Following scientific descriptions of petroleum products and their behavior in the marine environment, the effects of oil on various ecosystems and their uses will be studied. Next, the containment, recovery, and clean up of oil spills will be analyzed in detail, as will pre- and post-spill planning and management efforts. Finally, the state, domestic, and international laws and regulations, along with efforts of the oil industry, will be examined.

Credits:

3

Billing Hours

Min:

3

MS4264 - Conservation Biology

General

Course Description
We are in the midst of an extinction crisis. This course explores the far-reaching problem of the decrease in the diversity of life (biodiversity). Topics include environmental degradation and habitat destruction as a result of human activities, endangered species, alien species, overexploitation, the dynamics and genetics of populations, wildlife protection, and ecological restoration. The course introduces students to techniques in conservation biology that are aimed at maintaining biodiversity.

Requisites
Prerequisite: MS2221 General Biology

Credits:
3

Billing Hours

Min:
3

MS4271 - Adv. Principles of Occupational Health &

General

Course Description
This course with lab further develops those areas introduced in Fundamentals of Occupational Health and Safety. The course covers an area of science devoted to the recognition, evaluation, and control of environ- mental and workplace hazards that may result in damage, destruction, illness, injury, or death. It covers key concepts, theories and practices, control procedures, relevant legislation, development and evaluation of sampling methods, and OSHA program development and implementation. Coursework and laboratory exercises will illustrate the understanding of some field sampling equipment and procedures as well as their uses and limitations, conducting job hazard analysis, and concepts of effectively determining and integrating OSHA workplace programs.

Credits:
3

Billing Hours

Min:
3

MS4272 - Environmental Health and Safety Audit Program

General

Course Description
This course provides students with the knowledge and skills needed to design audit procedures and practices. An audit program is first and foremost a verification program. Safety audits are fact-finding missions which provide verified feedback to management on the actual procedures and equipment in an operation. Occupational safety audit programs are meant to verify that environmental, health and safety systems exist, are in use, and are effective.

Credits:
3

Billing Hours

Min:
3

MS4273 - Construction Site Safety

General

Course Description
Construction is a high-hazard industry that comprises a wide range of activities involving construction, alteration, or repair. There is a current and growing need for construction safety professionals who are proficient at identifying and mitigating potential risks. We will explore current regulatory and safety requirements associated with the construction industry. Partnering with industry leaders, this blended learning course will include strong academic theories related to construction standards and will cover key concepts, theories, practices, control procedures, environmental considerations, relevant legislation, and development and implementation of required OSHA programs. Coursework and exercises will focus on OSHA regulations, hazard recognition, problem solving, safety and regulatory compliance, mitigation methods, loss control, and risk reduction. Upon successful completion of the course, students will receive an OSHA 30-Hour Construction Card

Credits:
3

Billing Hours

Min:
3

MS4274 - Challenges in EHS Seminar

General

Course Description
In this course we will be exploring the challenges of the implementation of and enforcement of environmental, health and safety regulations. We will be focusing on EHS operations within the marine sector using vessels, ports, and repair yards as examples. During this course we will have MMA grads guest lectures who are EHS subject matter experts share with us some of their methods to success.

Credits:
3

MS4305 - Aquaculture

General

Course Description
This course introduces students to the aquaculture industry and to practical issues associated with bivalve and finfish aquaculture. Students will examine the past and present role of aquaculture in society and investigate issues surrounding aquaculture programs around the world. Students will apply learned concepts to bivalve or finfish cultivation projects conducted in the Massachusetts Maritime Aquaculture Lab.

Credits:
3

Billing Hours

Min:
3

MS4321 - Biology of Fishes

General

Course Description
Students inthis coursewill explore thegreat diversityof fisheswhile learning about the taxonomy,anatomy, andphysiology of major fishgroups. The course will focus on adaptations fishes have developed for meeting the challenges of life underwater.

Requisites
Prerequisite: MS2221 General Biology

Credits:
3

Billing Hours

Min:
3

MS4322 - Marine Botany

General

Course Description
This course is an introduction to marine plants: the microalgae, the seaweeds, and the flowering plants. The course consists of a survey of marine plants and discussions of their morphology, systematic relations, life histories, ecology, physiology, and economic uses. The course also covers marine primary productivity and the importance of plants to all other life in the ocean. There is a lab component and a field component. Students will learn how to take samples for algae and to identify and enumerate the algae. Field trips will include visits to local coasts and to the Gray Herbarium in Woods Hole.

Credits:
3

Billing Hours

Min:
3

MS4329 - Marine Mammals

General

Course Description
This course provides an introduction to the biology of the diverse group of animals known as marine mammals (whales, dolphins, porpoises, seals, sea lions, walruses, manatees, sea otters, and polar bears), including evolution, diversity, life history, physiology, ecology, communication, and behavior, Current research, events, and policy issues will also be ad- dressed. Special attention will be given to marine environmental protection measures to avoid ship collisions with the North Atlantic right whale.

Credits:
3

Billing Hours

Min:
3

MS4333 - Invertebrate Zoology

General

Course Description

Invertebrates represent 34 of the 35 phyla of animals, and comprise the preponderance of animal life in the ocean. This introductory course consists of a survey of marine invertebrates, following a phylogenetic approach, and discussions of morphology, systematic relations, life histories, and ecology. The course also summarizes marine secondary productivity (i.e., shellfish and finfish fisheries). Because there are so many invertebrates and so many phyla, the emphasis will be on the nine major invertebrate phyla. Guest speakers will include scientists from the Woods Hole scientific community.

Credits:

3

Billing Hours

Min:

3

MS4334 - Tropical Marine Ecology

General

Course Description

Tropical marine ecosystems include some of the most diverse and productive communities on Earth, and efforts to understand and protect them are priorities for marine conservation. Students in this course will learn about the ecology of tropical marine habitats and their associated biological communities. Topics will include the geology, biology, and biodiversity of coral reefs, seagrass beds, and mangrove forests; physical factors affecting the distribution and productivity of each habitat; ecological connectivity among habitats; and major threats challenging organisms that depend upon them for survival. In addition, students will become familiar with conservation programs currently underway to protect tropical marine ecosystems by exploring online databases, scientific reports, and other products developed by organizations that are charged with protecting the health of these important ecosystems.

Credits:

3

Billing Hours

Min:

3

MS4341 - Ecological Sustainability

General

Course Description
This course is designed to acquaint students with concepts and practices of using basic ecological principles to develop ecologically sound and sustainable methods for remediating the environmental impact of nutrients, sewage, wastewater, stormwater, and habitat degradation. The course has two major themes: ecological design and ecological restoration. Within these themes, we will discuss such topics as 'eco- machines,' organic gardening, composting, composting toilets, organic architecture, blue roofs, green roofs, bioswales, infiltration landscapes, pervious pavement, etc. The course has a strong practical component. Students will conduct and present their own projects in ecological design and ecological restoration.

Credits:
3

Billing Hours

Min:
3

MS4342 - Marine Microbiology

General

Course Description
This course explores marinemicroorganisms (bacteria and archaea) in marine systems. Students discuss and evaluate the role of marine microorganisms in altering the chemistry of the ocean, particularly recycling carbon and essential nutrients. This interdisciplinary course evaluates microbial interactions, marine viruses, and extremophiles.

Credits:
3

Billing Hours

Min:
3

MS4343 - Critical Elements of Safety Mgmt System

General

Course Description

This course explores the critical elements necessary to successfully implement safety management systems in small and large organizations. Critical elements include: Leadership, Accountability, Risk Management, Personnel, Non-conformance Control, Risk, Management of Change and Measurement, incident investigation and measurement and improvement. Case studies and standards are explored to learn how these elements can reduce the likelihood of incidents and therefore reduce enterprise risk. Aspects of the ISM Code, ISO 45001, ANSI Z10 are discussed and explored with an emphasis on how organizations can implement these into integrated management systems that to reduce the likelihood of serious incidents and fatalities. Students taking this course will have a working understanding of what is critical to make a safety management system (SMS) effective and continually improve. This course enables MMA graduates to have an immediate positive effect in the work place and thus provides a competitive advantage when seeking employment.

Credits:
3

Billing Hours

Min:
3

MS4351 - 2nd Msep Co-Op

General

Credits:
6

Billing Hours

Min:
0

MS4411 - MSSEP Co-Op II

General

Course Description
A cooperative experience in an environmental and/or safety related field wherein each student is responsible for a daily log, a report, and a presentation of the report. This cooperative is a minimum of three weeks, or fifteen working days.

Credits:
3

MS4411A - MSSEP Co-Op II - Sea Term

General

Credits:
3

Billing Hours

Min:
3

MS4450 - MSSEP Independent Study

General

Credits:
3

Billing Hours

Min:
3

MS7411 - MSSEP Additional Co-Op

General

Credits:
3

Billing Hours

Min:
0

MS8901 - MSSEP Elective II Msep Technical Elective

General

Credits:
3

Billing Hours

Min:
3

MS9999 - MSEP Exchange

General

Credits:
12

Billing Hours

Min:
12

MSMS-4274 - Challenges in EHS Seminar

General

Course Description
In this course we will be exploring the challenges of the implementation of and enforcement of environmental, health and safety regulations. We will be focusing on EHS operations within the marine sector using vessels, ports, and repair yards as examples. During this course we will have MMA grads guest lectures who are EHS subject matter experts share with us some of their methods to success.

Credits:
3

MT1111 - Vessel Familiarization/Basic Safety Trng

General

Course Description
This course will teach students to react in a correct manner during fire and other emergency situations and teach them how to identify and correct deficiencies and thus prevent emergencies from occurring. The student will learn the proper use of fire fighting equipment and the measures to take in the event of a fire. The student will learn the proper use of survival equipment, and how to respond to emergency situations and take measures appropriate to his own survival and to the survival of others. The student will demonstrate the necessary knowledge, understanding in these areas. [Lab time required.]
STCW: Knowledge & Practical

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge & Practical

MT1111L - Ves.Fam./Basic Safety Training Lab

General

Course Description
This is the lab for Vessel Familiarization and Basic Safety Training.

Credits:
0

Billing Hours

Min:
0

MT1221 - Coastal Navigation

General

Course Description
This course introduces a student to the knowledge and practices necessary to carry out the routine, day-to-day navigational watchkeeping duties in a proper and safe manner. The student will be able to read and understand information from a chart, fix the ship's position in coastal waters, understand Earth's magnetism, buoyage systems, check and compare magnetic and gyro compasses, obtaining and applying compass error. In addition, the student will be introduced to the basic concepts and obtain an understanding of electronic navigational aids, Global Positioning System and Radar. Classwork is supplemented by practical chart plot exercises in the weekly labs. [Lab time required]
STCW: Knowledge

Requisites
Corequisite: MT1221L Coastal Navigation Lab

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

MT1221L - Coastal Navigation Lab

General

Course Description
This is the lab for Coastal Navigation.

Credits:
0

Billing Hours

Min:
0

MT2121 - Deep Sea Navigation

General

Course Description
This course reinforces and continues the learning of the navigational processes acquired in Coastal Navigation, that are used daily while at sea. In addition to applying the previous knowledge learned, the student will learn and understand the concepts of Tides and Currents and how to calculate them. The student will also learn the concepts and calculations for the navigational sailings, voyage planning, record keeping and use of navigational publications. Classwork is supplemented by practical chart plot exercises in the weekly labs. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisite: MT1221 Coastal Navigation and ST0999 Sea Term I with minimum grade C-

Corequisite: MT2121L Deep Sea Navigation Lab

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge & Practical

MT2121L - Deep Sea Navigation Lab

General

Credits:
0

Billing Hours

Min:
0

MT2141 - Ship Construction

General

Course Description
A basic knowledge of ship construction and design, the principal structural members of a ship, and the proper nomenclature for the various components are taught in this course. Construction materials and fabrication techniques will be studied. Students will be taught to sue ship's plans and the deadweight scale to extract pertinent data. The history of ship development will be discussed, with a focus on the various tonnages used as a measurement of a ship's size and capacity. Common loading conditions and terms will be taught and proved a base of knowledge for discussion in other courses and use in related maritime industries.
STCW: Knowledge

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

MT2161 - Rules of the Road

General

Course Description
This course is designed to meet all Rules of the Road knowledge-based assessments and the three performance-based assessments, each of which forms part of the requirements for Officer in Charge of a Navigation Watch (STCW 10). The objective of this rigorous program of study is to provide the student with a thorough knowledge of the content, application, and intent of the International Regulations for Preventing Collisions at Sea (COLREGS) and the Unified Inland Navigation Rules and Regulations (INLAND RULES).
STCW: Knowledge & Practical

Requisites
Prerequisite: MT1221 Coastal Navigation and ST0999 Sea Term I with minimum grade C-

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge & Practical

MT2222 - Celestial Navigation

General

Course Description
This course covers the requirements of the 1978 STCW Convention as amended in 1995 and 2010. The course covers the theory and practice of navigation necessary for the effective and safe navigation of a vessel, including the use of charts, position fixing by celestial observations and the extraction of information from relevant navigational publications. It introduces and focuses on the theory and practice of the use of observations of celestial bodies for determining lines of position and checking compass errors.[Lab time required]
STCW: Knowledge

Requisites
Prerequisite: MT2121 Deep Sea Navigation with minimum grade C-

Corequisite: MT2222L Celestial Navigation Lab

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge

MT2222L - Celestial Navigation Lab

General

Course Description
This is the lab for Celestial Navigation.

Credits:
0

Billing Hours

Min:
0

MT2225 - Integrated Navigation

General

Course Description
The student will learn the methods of target acquisition, determining the position of the ship, and analyzing and applying the resources of the integrated bridge to make and manage proper command decisions. Successful completion of the course will result in the students receiving the required certifications leading to licensing as a third mate.STCW: Knowledge and Practical

Requisites
Prerequisite: MT1221 Coastal Navigation

Previous or Concurrently: MT2161 Rules of the Road

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge & Practical

MT2231 - Basic Seamanship

General

Course Description
This course teaches marlinspike, lifesaving and safety equipment, advanced fire fighting techniques, use of deck machinery, boat handling, and watchstanding procedures for deck and/or bridge watchkeeping. Students will be able to apply these skills appropriately when in charge of a navigational watch. Course consists of classroom and practical experience on T.S. Kennedy and Academy small boats.[Lab time required]
STCW: Knowledge

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge

MT2231L - Basic Seamanship Lab

General

Course Description
This is the lab for Basic Seamanship.

Credits:
0

Billing Hours

Min:
0

MT2371 - Sea Term II - Deck

General

Course Description
Provides an opportunity for cadets to obtain sea service as an officer in charge of a navigational watch in a structured shipboard training pro- gram. The training uses a building block approach, bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy. The Sophomore Sea Term focuses upon all facets of shipboard operations and provides cadets an opportunity to practice terrestrial navigation skills.
STCW: Knowledge

Requisites

Prerequisite: ST0999 Sea Term I

Prerequisite: MT1221 Coastal Navigation with minimum grade C-

Credits:
6

Billing Hours

Min:
6

STCW

STCW Component
Knowledge

MT2501 - Intro to Offshore Operations

General

Course Description
This introductory course covers the offshore oil exploration industry, its associated equipment, and its technology, including information on the production and support functions within the offshore industry. After completing the course, students will have a basic understanding of the offshore industry, its terminology, and its career options.

Requisites
Prerequisite: SM1212 Calculus I or SM1214 Applied Calculus

Prerequisite: ST0999 Sea Term I and MT2121 Deep Sea Navigation with minimum grade C-

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
None

MT3122 - Radar Observer Certification

General

Course Description

This course is designed to meet all RADAR Observer knowledge-based assessments and the twelve performance-based assessments, which form part of the requirements for Officer in Charge of a Navigation Watch (STCW 10). Students who successfully complete the course will be able to recognize when radar should be in use, select a suitable mode and range setting for the circumstances, set the controls for optimal performance, and will understand the accuracy limitations of the equipment in detecting targets. Students will also be able to compare the radar display with the chart, select suitable land targets, and use these targets to fix position. In addition, students will understand the need to maintain a continuing plot of ship targets that may pose a potential threat of collision, be able to derive from the plot the necessary information about the courses, speeds and closest points of approach of other ships, enabling timely action in accordance with72-COLREGS and Inland Rules and preventing a close-quarters situation. This course satisfies the requirements for a USCG RADAR endorsement. [Lab time required]

STCW: Knowledge & Practical

Requisites

Prerequisite: MT2161 Rules of the Road with minimum grade C-

Credits:

3

Billing Hours

Min:

3

STCW

STCW Component

Knowledge & Practical

MT3122L - Radar Certification Observer Lab

General

Course Description
This is the lab for Radar Observer Certification.

Credits:
0

Billing Hours

Min:
0

MT3131 - Meteorology

General

Course Description
This course gives a basic understanding of meteorology, and its ap- plication to shipboard operations. The student will have a knowledge of meteorological instruments and their application, knowledge of the characteristics of various weather systems, reporting procedures and recording systems, and the ability to apply the meteorological information available. In addition, the knowledge gained in this subject will serve as the basis for further training to the level of chief mate and master.
STCW: Knowledge

Requisites
Prerequisite: MT2225 Integrated Navigation

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

MT3151 - Dangerous Liquid Cargo

General

Course Description
Within this course, the student will learn the characteristics, hazards and safe practices for the handling of petroleum and chemical products. Students may practice the actual loading of cargo/ballast aboard the Academy's 40-foot tank barge. In the lab, using the liquid loading simulator, students practice loading, discharging and tank cleaning. This course satisfies the knowledge-based assessments necessary for endorsements as tankerman-PIC, Tankerman-PIC (barge), Tankerman Assistant, and Tankerman-Engineer. Each student is issued a Dangerous Liquid Cargo Certificate upon satisfactory completion of this course. [Lab time required]
STCW: Knowledge

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge

MT3151L - Dangerous Liquid Cargo Lab

General

Course Description
This is the lab for Dangerous Liquid Cargo.

Credits:
0

Billing Hours

Min:
0

MT3171 - Tugs and Towing I

General

Course Description
An introductory course on the towing industry. This course encompasses the design, construction, and use of towing vessels. Also examined are the various uses of modern tugs, including ship handling, shifting, escort services, and inland and offshore towing. In addition, emphasis is placed on the development of basic skills for handling tugs, barges, and limited-tonnage vessels.[Lab time required]

Requisites

Prerequisite: MT1111 Vessel Fam/Basic Safety Trng. and MT2231 Basic Seamanship with minimum grade C-

Corequisite: MT3122L Radar Cert. Obs. Lab

Credits:
3

Billing Hours

Min:
3

MT3171L - Tugs & Towing I Lab

General

Course Description
This is the lab for Tugs and Towing I.

Requisites
Prerequisite: MT2231 Basic Seamanship

Credits:
0

Billing Hours

Min:
0

MT3221 - Electronic Navigation

General

Course Description
This course contains knowledge of basic signaling and radiotelephone communications, including Morse code, flashing light, International Code of Signals, and of distress, urgent, safety, and navigational messages. Students will gain knowledge of basic theory of electronic navigational aids and instruments, such as GPS, DGPS, AIS, SARIS, NAVTEX, EPIRB, fathometers, lifeboat, radios, and speed logs. At completion, students will appreciate the danger of exclusive reliance on information gained from instruments. [Lab time required]
STCW: Knowledge

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge

MT3221L - Electronic Navigation Lab

General

Course Description
This is the lab for Electronic Navigation.

Credits:
0

Billing Hours

Min:
0

MT3222 - Automatic Radar Plotting Aids

General

Course Description
This course is designed to meet all ARPA knowledge-based assessments and the fourteen performance-based assessments, which form part of the requirements for Officer in Charge of a Navigation Watch (STCW 10). Students who successfully complete the course will be able to choose an appropriate mode of display, select plotting graphics controls suitable to the circumstances, make appropriate use of operational alarms, acquire and track those targets which present a potential threat of collision, extract the information needed on course, speed, and closest point of approach to enable early action and prevent a close-quarters situation, and use ARPA to confirm and monitor their actions. Students will be aware of the dangers of over reliance on automatic acquisition and tracking of targets and on operational alarms. They will also be aware of factors (including errors in course and speed inputs) which may affect accuracy and the correct functioning of the ARPA. This course satisfies the requirements for a USCG ARPA endorsement.
STCW: Knowledge & Practical

Requisites
Prerequisite: MT3122 Radar Observer Certification with minimum grade C-

Credits:
2

Billing Hours

Min:
2

STCW

STCW Component
Knowledge & Practical

MT3223 - International Intermodal Transportation

General

Course Description

Examines the modern, intermodal transportation and distribution systems used in the movement of international and domestic cargo. The evolution, development, and use of rail, air, truck, and maritime transportation systems, and their dynamics impacting international trade are discussed.

Credits:

3

Billing Hours

Min:

3

MT3224 - Electronic Chart Display & Information

General

Course Description
This course is designed to enhance navigational safety through the correct operation of ECDIS equipment by the officer in charge of a navigational watch. The integrated lecture/lab experience will allow each student to practice each required proficiency task on individual ECDIS/ simulation stations as the topic is covered. Course content covers the theory of ECDIS, IMO regulations, and requirements and performance standards governing the use of ECDIS. This course meets the STCW requirements for ECDIS certification.[Lab time required]
STCW: Knowledge & Practical

Requisites

Prerequisite: MT2225 Integrated Navigation with minimum grade C-

Corequisite: MT3224L ECDIS Lab

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge & Practical

MT3224L - ECDIS Lab

General

Course Description
This is the lab for ECDIS.

Credits:
0

Billing Hours

Min:
0

MT3231 - Applied Shiphandling

General

Course Description
Using the Full Mission Ship Simulator (FMSS) and the training vessel Ranger, students will gain experience in handling vessels under all conditions. Students will gain familiarization with the use of engines and helm for ship maneuvering and of the effects on ship behavior of wind, current, shallow water, banks, narrow channels, and conditions of loading. They will also acquire a greater awareness of the importance of planning a passage or maneuver and of the need for alternative plans.

Requisites
Prerequisites: MT4132 Advanced Seamanship Previous or Concurrently MT3224 ECDIS

Credits:
3

Billing Hours

Min:
3

MT3251 - Maritime Security Management

General

Course Description
This course provides the basic framework and knowledge to perform the duties and responsibilities of a Company Security Officer (CS0), Port Facility Security Officer (PFSO), or Ship Security Officer (SSO) as defined by the ISPS Code. Includes duties and responsibilities of a security officer, creating, implementing and maintaining a security plan, working with other security officers.

Credits:
3

Billing Hours

Min:
3

MT3252 - Port & Terminal Operations Management

General

Course Description
Studies the history, growth, organization, and operation of major ports and transportation terminals. Emphasis is placed on the day-to-day operational, financial, and labor issues of ports and terminals. Both private and public ports are examined.

Credits:
3

Billing Hours

Min:
3

MT3261 - Containerization & Modern Cargo Stowage

General

Course Description
Students will be able to supervise the preparation of holds and the operation of ships' cargo gear, and will be aware of the importance of adequately securing cargo to prevent damage to the ship or cargo aboard break-bulk, container, LASH, Seabee, bulk, and neo-bulk cargo vessels. Students will identify dangerous goods and know that they are to be stowed and separated according to the requirements of the IMDG Code. They will also know the hazards related to some bulk cargoes and the precautions to take during their loading and carriage.

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

MT3262 - Pollution Control & Tanker Operations

General

Course Description

Students will be able to supervise the preparation of holds and the operation of ships' cargo gear and will be aware of the importance of adequately securing cargo to prevent damage to the ship or cargo aboard break-bulk, container, bulk and other types of dry cargo vessels, including an introduction to underway replenishment operations. Students will identify dangerous goods and know that they are to be stowed and separated according to the requirements of the IMDG Code. They will also know the hazards related to some bulk cargoes and the precautions to take during their loading and carriage. Knowledge of various water ballast systems and hatch cover systems will be imparted. Students will know the responsibilities for carrying cargo and cargo MT-3262 Containerization and Modern Cargo Stowage claim prevention principles.
STCW: Knowledge

Credits:

3

Billing Hours

Min:

3

MT3371 - Sea Term III - Deck

General

Course Description

The sea term provides an opportunity for cadets to obtain sea service as an officer in charge of a navigational watch. Shipboard training focuses on all aspects of shipboard operations, the Junior Sea Term is an op- opportunity for the Marine Transportation Cadet to explore the vessel and learn its systems in a manner similar to that by which they would do so on a commercial sea term. The cadet will then utilize that information while assisting in the operation of the vessel and while standing daily watches. The Commercial Sea Term project is used to determine the Sea Term III grade.

Requisites

Prerequisites: MT2371 Sea Term II - Deck , MT2222 Celestial Navigation, and MT3122 Radar Observer Certification with minimum grade C-

Credits:

6

Billing Hours

Min:

6

MT3372 - Commercial Sea Term - Deck

General

Course Description
Replaces Sea Term III. Qualified deck-cadets are afforded an opportunity to train aboard commercially operated vessels in the deck-cadet rating in lieu of sailing aboard the Academy's training ship. Candidates must attain junior status during the previous academic term. A comprehensive Sea Project is due upon completion of Commercial Sea Term.

Requisites
Prerequisites: MT2371 Sea Term II - Deck , MT3224 ECDIS with minimum grade C-

Prerequisite: MCSTCW1 Mariner Credentialing 1with minimum grade P

Credits:
6

Billing Hours

Min:
6

MT3451 - Introduction to Yacht Operations

General

Course Description
Introductory course to the exciting field of yacht operations intended to be an overall introduction to working on and around yachts. Topics include career options onboard and ashore; relations with crews, owners and charterers; onboard duties and responsibilities; yacht systems, such as households, engineering, communications, and entertainment; yacht business, including storing and supply, shore-side operations; insurance; and port clearance.

Requisites
Prerequisite: ST0999 Sea Term I

Credits:
3

Billing Hours

Min:
3

MT3453 - Ships Operation

General

Course Description
This course familiarizes non-license track students with the fundamental principles of Marine Transportation and vessel operations. Through this eight-week course, students will be introduced to navigation techniques, meteorology, maintenance, watch standing, shipboard deck operations, seamanship, shipboard safety, and firefighting training. Students will rotate through divisional responsibilities of watch, maintenance, training, and liberty when in port.

Requisites
Prerequisite: MT1111 Vessel Fam/Basic Safety Trng.

Credits:
6

Billing Hours

Min:
6

MT4122 - Global Maritime Distress and Safety System

General

Course Description
Students will be taught to operate the radio communications required on board GMDSS-compliant vessels. Students will become proficient with GMDSS equipment and procedural operation along with developing a knowledge of radio wave propagation. The Electronic Navigation and GMDSS Solo courses contain all of the elements contained in the GMDSS model course developed in the United States. This course satisfies the requirements necessary to earn the STCW-10 endorsement as a Global Maritime Distress and Safety System Operator. [Lab time required]
STCW: Knowledge & Practical

Requisites

Prerequisite: MT3221 Electronic Navigation with minimum grade C-

Corequisite: MT4122L GMDSS Laboratory

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge & Practical

MT4122L - Global Maritime Distress and Safety

General

Course Description
This is the lab for GMDSS.

Credits:
0

Billing Hours

Min:
0

MT4132 - Advanced Seamanship

General

Course Description
Operating a vessel safely and efficiently under all weather conditions requires a skill set for operating and maintaining a vessel and a knowledge of a vessel's fittings and equipment. Under the supervision of experienced master mariners, students in this program develop seaman- ship skills through hands-on experience and learn critical thinking and problem-solving skills through the use of case studies of marine casualty investigations. This capstone course provides the new deck officer with a strong foundation in the fundamentals of traditional seamanship and exposes the individual to best practices in the ever-evolving shipboard technologies and operations necessary to compete in the global marine industry. Topics include search and rescue, damage control, marine salvage, tug and towing fundamentals, ice navigation, anchoring/mooring, heavy weather precautions, ship/helicopter operations, and advanced ship handling techniques. An intensive, hands-on seamanship lab program complements the classroom experience.[Lab time required]
STCW: Knowledge

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge

MT4132L - Advanced Seamanship Lab

General

Course Description
This is the lab for Advanced Seamanship.

Credits:
0

Billing Hours

Min:
0

MT4133 - Bridge Resource Management

General

Course Description
A capstone assessment program allowing deck, undergraduate students an opportunity to demonstrate competency in Bridge Resource Management and Watchstanding for STCW 10 and USCG licensing requirements. Students successfully completing these competencies are capable of undertaking all of the duties and responsibilities expected of a deck watchkeeping officer. Upon successful completion of this course, a U.S. Coast Guard approved certificate is issued certifying that the holder demonstrates appropriate competence in watchkeeping, bridge team management, and bridge resource management, meeting the standards prescribed by IMO/STCW and the U.S. Coast Guard. [Lab time required]
STCW: Knowledge & Practical

Requisites
Prerequisites: MT3231 Shiphandling, MT3371 Sea Term III - Deck or MT3372 Commercial Sea Term - Deck, MT3224 ECDIS

Corequisite: MT4133L Bridge Resource Management Lab

Credits:
4

Billing Hours

Min:
4

STCW

STCW Component
Knowledge & Practical

MT4133L - Bridge Resource Management Lab

General

Course Description
This is the lab for Bridge Rescource Management.

Credits:
0

Billing Hours

Min:
0

MT4151 - Advanced Dangerous Liquid Cargo

General

Course Description
This elective reinforces and supplements MT-3151 Dangerous Liquid Cargo. Utilizing the Liquid Cargo Handling Simulator and/orthe Dangerous Liquid Cargo Floating Lab, the course will raise the basic level of knowledge and understanding of tanker operations to the advanced level. The course will cover all types and aspects of tanker operations.

Requisites
Prerequisites:SM2222 Coll. Physics II, MT3371 Sea Term III - Deck

Prerequisite: MT3151 Dangerous Liquid Cargo with minimum grade C-

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
None

MT4171 - Tugs and Towing II

General

Course Description
Designed to follow Tugs and Towing I, this course builds upon the skills previously developed in its prerequisite, and is designed to elevate the student to a more advanced level. It uses the theory previously studied, and put it to practical use on the water and in the state-of-the-art tug simulator. Students make use of all the Academy's limited-tonnage training vessels with heavy emphasis placed on the practical aspects of towing, pushing cargo barges, and ship-assist work. [Lab time required]

Requisites
Prerequisite: MT3171 Tugs and Towing I

Credits:
3

Billing Hours

Min:
3

MT4172 - Azimuth Drive Tug Handling

General

Requisites
Prerequisite: MT3171 Tugs and Towing I

Credits:
3

Billing Hours

Min:
3

MT4241 - Stability & Trim

General

Course Description
This course is designed to meet all stability knowledge requirements for Officer in Charge of a Navigation Watch defined by STCW Regulation II/1. Building on the principles of stability, the student will use tables and diagrams of stability and trim data to calculate initial stability, drafts and trim for any given configuration of loading. The student will compute both longitudinal and transverse stability for any condition during the load-out or discharge using both the traditional stability booklet and stability software. The student will interpret stability information and identify factors adversely affecting stability. Finally, the student will become familiar with damage stability assessment and fundamental actions to be taken in the event of partial loss of intact buoyancy.
STCW: Knowledge

Requisites
Pre Requisites: MT2141 Ship Construction, SM2121 College Physics ISM1214 Applied Calculus,

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

MT4251 - Marine Safety

General

Course Description
A study of the rules and regulations that govern marine inspection, lifesaving, fire fighting, and environmental pollution. This course pre- pares future licensed officers for shipboard responsibilities including: maintenance and use of lifesaving equipment, maintenance and use of fire fighting equipment, confined space entry, emergency situations, and pollution prevention and abatement. Case studies of marine casual- ties are used to apply the concepts and theories of marine safety. The course provides the student with a mix of critical analysis, application, and communication.
STCW: Knowledge

Requisites
Prerequisite: MT3231 Shiphandling with minimum grade C-

Credits:
3

Billing Hours

Min:
3

STCW

STCW Component
Knowledge

MT4252 - Licensing Seminar - Deck

General

Course Description

Prospective deck license candidates will be prepared for the United States Coast Guard license examination for Officer In Charge of a Navigation Watch (OICNW) and for Third Mate, Steam and Motor Vessels of any gross tons upon oceans. This objective will be achieved through a structured curriculum which includes a comprehensive review of all the nautical science disciplines. Classroom lectures, discussions, and student assignments, as well as a rigorous weekly objective testing program, will be utilized.

Requisites

Prerequisite: MT3372 Commercial Sea Term - Deck or MT3371 Sea Term III - Deck

Credits:

3

Billing Hours

Min:

3

MT4253 - Watchkeeping for Undergraduates

General

Course Description

A capstone assessment program allowing deck, undergraduate students an opportunity to demonstrate competency in Bridge Resource Management and Watchstanding for STCW 95 and USCG licensing requirements. Students successfully completing these competencies are capable of undertaking all of the duties and responsibilities expected of a deck watchkeeping officer. Upon successful completion of this course, a U.S. Coast Guard approved certificate is issued certifying that the holder demonstrates appropriate competence in watchkeeping, bridge team management, and bridge resource management, meeting the standards prescribed by IMO/STCW and the U.S. Coast Guard.

Credits:
0

Billing Hours

Min:
1

MT4260 - US Coast Guard Exam

General

Credits:
0

MT4371 - Sea Term IV - Deck

General

Course Description
Provides an opportunity for cadets to obtain sea service as an officer in charge of a navigational watch in a structured shipboard training pro- gram. The training uses a building-block approach bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy. Particularly focusing on watch standing and celestial navigation, the senior cruise is an opportunity for the Marine Transportation cadet to put together all facets of shipboard operations and to utilize them while in charge of the vessel and watches.
STCW: Knowledge & Practical

Requisites

Prerequisites: MT3372 Commercial Sea Term - Deck or MT3371 Sea Term III - Deck

Prerequisite: MT2222 Celestial Navigationwith minimum grade C-

Credits:
6

Billing Hours

Min:
6

STCW

STCW Component
Knowledge & Practical

MT4372 - Cal Maritime Sea Term - Deck

General

Credits:
6

Billing Hours

Min:
6

MT4451 - Marine Operations and ISM Code

General

Course Description
This online elective course introduces students to the requirements of the International Safety Management Code and provides a foundation in the operational safety requirements necessary for effective operation and management of ships and tugboats. Ships of 500 GRT operating outside the boundary line are required to meet the code and undergo audits by flag state or Class to the ISM requirements. Deck officers, engineering officers, and office staff will benefit from a solid understanding of this international standard. The ISM code operational elements will be explored using a set of online lectures, discussions, reading assignments and case studies.

Credits:
3

Billing Hours

Min:
3

MT4900 - Coast Guard Exam - MTRA

General

Credits:
0

MT6901 - Marine Transportation Independent Study

General

Credits:
1

Billing Hours

Min:
1

MT8600 - Marine Transportation Elective

General

Credits:
3

Billing Hours

Min:
3

NS1000 - Leadership Lab

General

Credits:
0

Billing Hours

Min:
0

NS2111 - Naval Science for the Strategic

General

Course Description
An introduction to the Merchant Marine/U.S. Naval relationship. The concept of sea power, the national importance of a viable U.S. Merchant Marine, and the mission of the U.S. Navy are among the major points covered. The basic administrative and operational organization of the U.S. Navy is examined and discussed. This course is mandatory for the Strategic Sealift Midshipman Program and prospective strategic sealift (SSMP) midshipmen. The course may also be taken as a free elective.

Credits:
3

Billing Hours

Min:
3

NS3111 - Strategic Sealift Officer I

General

Course Description
Provides instruction for future Strategic Sealift Officers or active duty Navy commissioning candidates. Topics of study include an introduction to naval warfare, policies, procedures, weapons systems, career opportunities, and the fundamentals of military leadership. This course is mandatory for all students seeking an SSOP-USNR reserve commission or a USN active duty commission.

Credits:
3

Billing Hours

Min:
3

NS4111 - Leadership & Ethics

General

Course Description
This course is an advanced leadership and management seminar designed to prepare newly commissioned naval officers with the tools necessary for effective military leadership. The course integrates an intellectual exploration of Western moral traditions and ethical philosophy with military leadership, core values, professional ethics, the Uniform Code of Military Justice, and Navy regulations. The purpose of this capstone course is to provide our future naval leaders with a sound moral leadership foundation for "real-life" military decision making. The course is mandatory for all senior SSMP Midshipmen.

Requisites
Prerequisites: NS3111 Strategic Sealift Officer I, NS2111 Naval Science

Credits:
3

Billing Hours

Min:
3

NS4211 - Strategic Sealift Officer II

General

Course Description
This course builds upon Leadership and Ethics. It constitutes the commissioning preparation for SSOP and active duty Ensigns. The course is adapted from the SSOP Post-Commissioning Indoctrination (PCI) course, and includes an in-depth study of Naval Officer practices, future responsibilities as a Naval Officer in the SSOP or active duty Navy, and practical application of officer functions. The course is mandatory for all senior SSMP Midshipmen.

Credits:
2

Billing Hours

Min:
1

PE0031 - Basic Safety CPR

General

Course Description
Provides minimum standard of competence in elementary first aid (Table A-VI/1-3). A component of Basic Safety Training certification. Also provides American Red Cross First Aid/CPR certification.
STCW: Knowledge & Practical

Credits:
0

Billing Hours

Min:
0

STCW

STCW Component
Knowledge & Practical

PE0032 - STCW Medical Care Provider

General

Course Description
Provides American Red Cross First Aid/CPR certification and STCW Medical Care Provider certification. Provides minimum standard of proficiency for persons designated to provide medical first aid on board ship.
STCW: Knowledge & Practical

Credits:
0

Billing Hours

Min:
0

STCW

STCW Component
Knowledge & Practical

PS0301 - Stcw Personal Survival

General

Course Description
Together with LB-0203, this course provides minimum standard of competence in personal survival techniques (STCW Table A-VI/1-1). Instruction and assessment in water survival during shipboard emergency to abandon ship. Instruction in dangers to the survivor in the water and the use of personal survival clothing and lifesaving devices. A component of Basic Safety Training certification.
STCW: Knowledge & Practical

Credits:
0

STCW

STCW Component
Knowledge & Practical

SM0100 - Preparing for College Mathematics

General

Course Description
This is a review of college preparatory mathematics topics to prepare students for college-level mathematics. Topics include rational, radical, and quadratic equations, introduction to conics, exponential, and logarithmic functions.

Credits:
0

SM0112 - Intermediate Algebra

General

Course Description
This is a review of high school algebra to prepare students for college- level mathematics. Topics include rational, radical, and quadratic equa- tions, introduction to conics, exponential, and logarithmic functions.

Credits:
3

Billing Hours

Min:
4

SM1100 - Problem Solving in Mathematics

General

Course Description
This course will review all the algebraic concepts necessary to be successful in college-level mathematics courses. This course is to be taken concurrently with SM1111. This course is designed to develop foundational skills and further reinforce problem solving and algebraic skills.

Credits:
0

Billing Hours

Min:
0

SM1111 - Precalculus with Trigonometry

General

Course Description
An introduction to algebraic, trigonometric, logarithmic, and exponential functions with applications. Analytic, graphic, and numerical methods to solve polynomial, trigonometric, exponential, and logarithmic equations and systems of linear and non-linear equations are explored. Also taught is the solution of triangles, including right triangle trigonometry, the law of sines, and the law of cosines. The use of a graphics calculator is an integral part of this course. Note: ESE students are not permitted to take this course as a free elective.

Credits:
3

Billing Hours

Min:
3

SM1131 - Chemistry I

General

Course Description
An introduction to general chemistry, emphasizing descriptive chemistry, fundamental principles, and problem-solving techniques. Topics include measurements, periodic properties, chemical bonding, nomenclature, chemical reactions, and stoichiometry. [Lab time required]

Requisites
Prerequisites: SM1111 Precalculus with Trigonometry, SM1212 Calculus I or SM1214 Applied Calculus

Corequisite: SM1131L Chemistry I Lab

Credits:
3.5

Billing Hours

Min:
3.5

SM1131L - Chemistry I Lab

General

Course Description
This is the lab for Chemistry I.

Credits:
0

Billing Hours

Min:
0

SM1212 - Calculus I

General

Course Description
This course introduces fundamental skills from both differential and integral calculus. The differential calculus topics include limits, continuity, the derivative, rules for derivatives of certain algebraic and transcendental functions, applications of the derivative (such as velocity and acceleration, related rates, optimization problems), higher derivatives, the chain rule, and implicit differentiation. The integral calculus topics include anti-derivatives, the area bounded by a curve, indefinite and definite integrals, the Fundamental Theorem of Calculus, integration by substitution, the Trapezoid Rule and other methods of numerical integration. Topics are explored analytically, graphically, and numerically. The use of a graphics calculator is an integral part of this course.

Requisites
Prerequisites: SM1111 Precalculus with Trigonometry Minimum grade C-

Credits:
3

Billing Hours

Min:
3

SM1214 - Applied Calculus

General

Course Description
This one-semester course will present differential and integral calculus using algebraic, exponential and logarithmic functions. These topics will be used to study selected applications in business and the sciences, including motion and environmental problems. This course does not fulfill the prerequisite for SM-2113. Credit will not be given for both SM-1212 and SM-1214.

Requisites
Prerequisites: SM1111 Precalculus with Trigonometry Minimum grade D -

Credits:
3

Billing Hours

Min:
3

SM1232 - Chemistry II

General

Course Description
A continuation of Chemistry I. Topics include gas laws, solutions, acid-base theory, redox reactions, nuclear chemistry, and organic chemistry. [Lab time required]

Requisites
Prerequisite: SM1131 Chemistry I

Corequisite:SM1232L Chemistry II Lab

Credits:
3.5

Billing Hours

Min:
3.5

SM1232L - Chemistry II Lab

General

Course Description
This is the lab for Chemistry II.

Credits:
0

Billing Hours

Min:
0

SM2113 - Calculus II

General

Course Description
A continuation of SM-1212 with an emphasis on engineering applications such as rectilinear motion, areas, volumes, centroids, work, and arc length. Also covered are the calculus of transcendental functions and methods of integration such as substitution, integration by parts, and partial fractions. The use of a graphics calculator is an integral part of this course.

Requisites
Prerequisites: SM1212 Calculus I Minimum grade C-

Credits:
3

Billing Hours

Min:
3

SM2115 - Applied Environmental Mathematics

General

Course Description
Applications of calculus and related mathematics to problems associated with environmental science and emergency management. Topics include exponential growth and decay, predator-prey problems, using counting techniques to determine probabilities, regression analysis, and difference equation modeling.

Requisites
Prerequisite: SM1212 Calculus I or SM1214 Applied Calculus

Credits:
3

Billing Hours

Min:
3

SM2117 - Quantitative Methods for Management

General

Course Description
This course studies selected mathematical techniques, including calculus, for the analysis of business and economic problems as an aid to decision-making in management. Topics may include marginal analysis, optimization, models and applications of decision theory, linear program- ming, the transportation problem, and network models.

Requisites
Prerequisite: SM1212 Calculus I or SM1214 Applied Calculus

Credits:
3

Billing Hours

Min:
3

SM2119 - Applied Mathematics for Deck Officers

General

Course Description
An introduction to spherical trigonometry: solution methods for both right and oblique spherical triangles including applications in great circle sailing and dead reckoning. Additional topics include applications of calculus, linear programming, and an introduction to statistics. The use of a graphics calculator is an integral part of this course.

Requisites
Prerequisite: SM1212 Calculus I or SM1214 Applied Calculus

Credits:
3

Billing Hours

Min:
3

SM2121 - College Physics I

General

Course Description
An introduction to the basic concepts of physics utilizing algebra and trigonometry to study the fundamental principles of vectors, statics, dynamics, energy, momentum, and circular motion. Credit will not be given for both SM-2121 and SM-2123. [Lab time required]

Requisites
Prerequisites: SM1111 Precalculus with Trigonometry, SM1214 Applied Calculus or SM1212 Calculus I

Corequisite: SM2123L Physics I Lab

Credits:
3.5

Billing Hours

Min:
3.5

SM2121L - College Physics I Lab

General

Credits:
0

SM2123 - Engineering Physics I

General

Course Description
An introduction to the fundamental principles of physics with an emphasis on rigid body mechanics. Newton's laws and the conservation principles of energy and momentum are included. [Lab time required]

Credits:
3.5

Billing Hours

Min:
3.5

SM2123L - Physics I Lab

General

Course Description
Laboratory component of both Engineering Physics I and College Physics I.

Credits:
0

Billing Hours

Min:
0

SM2130 - Introduction to Astronomy

General

Course Description
In this course will present an overview of the Universe with an emphasis on understanding concepts rather than memorizing facts. We'll begin in the solar system, studying the Moon, the Sun, and the planets, and learning how to trace the motions of objects through the sky. We'll explore the evolution of stars like the Sun within our own Milky Way galaxy, and then take a grand step outward and observe the multitude of other galaxies which make up the Universe.

Credits:
3

Billing Hours

Min:
3

SM2214 - Differential Equations

General

Course Description
Includes solution techniques for separable and linear first-order and linear second-order differential equations, with applications to various physical problems. It also includes graphical and numerical solutions with the graphics calculator and/or computer software. Additional topics may include systems of differential equations, nonlinear dynamics, modeling, Laplace transforms, and series solutions.

Requisites
Prerequisite: SM2113 Calculus II

Credits:
3

Billing Hours

Min:
3

SM2218 - Statistics

General

Course Description
An introduction to the basic concepts of statistics with an emphasis on working with real-world data and statistical ideas. Topics include data analysis of one and two variables, confidence intervals, hypothesis testing and comparison of two means using the t-test. Technology used includes the graphics calculator, spreadsheets, and/or statistical soft- ware. Credit will not be given for both SM-2218 and SM-3005.

Requisites
Prerequisite: SM1212 Calculus I or SM1214 Applied Calculus

Credits:
3

Billing Hours

Min:
3

SM2222 - College Physics II

General

Course Description
A continuation of College Physics I with topics including fluids, heat, wave motion, sound, light, electricity and magnetism, AC circuits. [Lab time required]

Requisites
Prerequisite: SM2121 College Physics I or SM2123 Engineering Physics I

Corequisite: SM2222L College Physics II Lab

Credits:
3.5

Billing Hours

Min:
3.5

SM2222L - College Physics II Lab

General

Course Description
This is the lab for College Physics II.

Credits:
0

Billing Hours

Min:
0

SM2224 - Engineering Physics II

General

Course Description
This course is an introduction to the basic principles of electricity and magnetism with emphasis on the theory of DC and AC circuits. The topics include electric field and Coulomb's law, series and parallel circuit analysis using Ohm's law and Kirchhoff's laws, transient behavior of capacitive and inductive circuits, magnetic field and electromagnetic induction based on Faraday's law and Lenz's law, AC circuit analysis using the concepts of impedance and phasors, and AC power analysis. [Lab time required]

Requisites
Prerequisites: SM2113 Calculus II, SM2214 Differential Equations

Corequisite: SM2224L Eng Physics II Lab

Credits:
3.5

Billing Hours

Min:
3.5

SM2224L - Engineering Physics II Lab

General

Course Description
This is the lab for Engineering Physics II.

Credits:
0

Billing Hours

Min:
0

SM2233 - Organic & Hazardous Materials Chemistry

General

Course Description
An introduction to organic and inorganic chemistry with an emphasis on the materials likely to appear as a hazardous material or weapon of mass destruction. Topics include Organic Chemistry: -naming, structure, properties, reactions and decomposition mechanisms; chemistry of hazardous organic compounds; flammable gases and liquids; chemistry of corrosive materials; heats of reaction, including explosive materials; concentrations and chemistry of toxic substances; chemistry of water- reactive substances; and chemistry of explosive polymeric materials. Inorganic Chemistry: metals, non-metals, gases; and redox chemistry. [Lab time required]

Requisites
Prerequisite: SM1131 Chemistry I

Corequisite: SM2233L Organic/Hazmat Chemistry Lab

Credits:
3.5

Billing Hours

Min:
3.5

SM2233L - Organic/Hazmat Chemistry Lab

General

Course Description
This is the lab for Organic/Hazmat Chemistry.

Credits:
0

Billing Hours

Min:
0

SM3005 - Probability and Statistics

General

Course Description
This course provides an emphasis on statistical methods and how they can be applied to problems in science and engineering. Examples include real, contemporary data sets to show connections to industry and scientific research. The course emphasizes applications rather than theory. Topics covered include descriptive statics, probability, confidence intervals, hypothesis testing, linear correlation and regression, factorial experiments, and statistical quality control.

Requisites
Prerequisite: SM2113 Calculus II

Credits:
3

Billing Hours

Min:
3

SM3006 - Materials Science

General

Course Description
This course will be co-taught with the Engineering Department. It will cover a wide range of materials, and involve studies of their chemical and engineering properties. Materials to be covered include crystals, semiconductors, polymers, composites and coatings. Physical and chemical properties will be discussed as a function of composition. Electrochemistry, corrosion, crystal structures, fracture mechanics, and strengthening methods are some of the topics to be covered. Real-world applications will be a focus of discussions.

Requisites
Prerequisite: SM1232 Chemistry II or SM2233 Organic/Hazmat Chemistry

Credits:
3

Billing Hours

Min:
3

SM3111 - Radiological Materials

General

Course Description

This course provides an introduction to nuclear physics, chemistry, nuclear processes, and chart of nuclides. Topics include: nuclear chemistry; radioactivity; naturally occurring radioactive isotopes; nuclear reactions; trans uranium elements; energetics of nuclear reactions; nuclear fission; effect of radiation on matter; radioactive waste disposal; nuclear physics; nuclear structure; radioactivity, decay rate/half life; nuclear stability and safety; radiation detection and applications.

Requisites

Prerequisites: SM1131 Chemistry I, SM2123 Engineering Physics I or SM2121 College Physics I

Credits:

3

Billing Hours

Min:

3

SM3125 - Engineering Physics III

General

Course Description
An introduction to the basic laws of engineering-based thermodynamics with an emphasis on open and closed systems. Some topics covered include processes and cycles, the use of property tables, the first law of thermodynamics, and the analysis of several steady- and unsteady- flow devices.

Requisites
Prerequisites: SM2123 Engineering Physics I, SM1232 Chemistry II,SM2113 Calculus II

Credits:
3

Billing Hours

Min:
3

SM3234 - Environmental Chemistry

General

Course Description
A study of the inorganic and organic chemical principles which relate to an understanding of our nonliving and living environment. Emphasis is placed on the interdependence of these natural processes. Issues relating to the disruption of these systems and the synthesis, mode of action, and mechanisms of removal of specific pollutants are among the topics discussed. [Lab time required]

Requisites
Prerequisite: SM2233 Organic/Hazmat Chemistry

Corequisite: SM3234L Environmental Chem. Lab

Credits:
4

Billing Hours

Min:
4

SM3234L - Environmental Chemistry Lab

General

Course Description
This is the lab for Environmental Chemistry.

Credits:
0

Billing Hours

Min:
0

SM6115 - Calculus III

General

Course Description
An extension of material in the introductory calculus sequence that includes L'Hopital's rule for limits, sequences, and series; power series; Taylor's formula; series solutions of differential equations; polar coordinates; L'Hopital's rule; functions of several variables; partial derivatives; vector functions; optimization including Lagrange multipliers; and integration.

Requisites
Prerequisite: SM2214 Differential Equations

Credits:
3

Billing Hours

Min:
3

SM8000 - Directed Study

General

Credits:
3.5

Billing Hours

Min:
3.5

SR0401 - STCW Personal Safety and Social Responsibility

General

Course Description
Provides minimum standards of competence in personal safety and social responsibility. Instruction in emergency procedures on board ship, precautions to prevent pollution of the marine environment, observing safe working practices, understanding shipboard orders and contributing to effective human relationships on board ship. A component of Basic Safety Training certification.
STCW: Knowledge

Credits:
0

STCW

STCW Component
Knowledge

SS1211 - Western Civilization

General

Course Description
A survey of Western civilization from the early modern period through the industrial revolution to the present. Changes in the social, intellectual, and political structure of Western civilization are stressed.

Credits:
3

Billing Hours

Min:
3

SS2121 - American Government

General

Course Description
Teaches American governmental organization: local, State, and Federal offices; United States democratic processes; political organizations; and State and Federal constitutions.

Credits:
3

Billing Hours

Min:
3

SS2131 - Microeconomics

General

Course Description
An examination of the structure of the market is presented, including product and factor pricing, allocation of resources and distribution of income, market equilibrium, and analysis of domestic and international problems and policies.

Credits:
3

Billing Hours

Min:
3

SS2231 - Macroeconomics

General

Course Description
A survey of economic theory with an emphasis on the dynamics of the capitalist system, the role of the government, the banking structure, and international economics. Note: Credit will not be given for both IM-1212 and SS-2231.

Credits:
3

Billing Hours

Min:
3

SS2232 - World Economic Geography

General

Course Description
This course focuses on the location and distribution of production, marketing, and consumption activities to a region, through an analysis of population characteristics, technological innovation, transportation systems, urban/rural interaction, and energy production and consumption.

Credits:
3

Billing Hours

Min:
3

SS2233 - Political Geography

General

Course Description
This course is designed to examine the geographical basis of political conflict and international relations. Emphasis will be on power and conflict in the regional framework. Topics include governing bodies from NATO to local government; terrorism, conflict and succession movements non-governmental organizations; geopolitics; power, territory, and the nation state; policy and governance.

Credits:
3

Billing Hours

Min:
3

SS3141 - Introduction to Psychology

General

Course Description
This course is an introduction to human behavior with a concentration on groups and the behavior of groups under the leadership of a tyrant. Topics include the brain; localization of functions in the brain; sensory psychology; taste, smell, and hearing; vision; sensory depravation; introduction to motivation; sexual motivation; stress; conditioning and desensitization; memory; hypnosis and pain; genetic psychology; personality; abnormal psychology/group psychology; persuasion, propaganda, and attitude change.

Credits:
3

Billing Hours

Min:
3

SS3211 - American Maritime History

General

Course Description
History of America and the sea from the age of discovery and exploration to the Civil War. Course will cover settlement of American continents by Europeans; 18th century worldwide trading empires; slavery; American Revolution and the new American Republic, among other topics.

Requisites
Prerequisite:SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3212 - U.S. Foreign Policy Since 1945

General

Course Description
A study of United States foreign policy, since World War II. Emphasis is placed on current foreign policy issues in their historical context.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3213 - Seapower in World History

General

Course Description
Power in connection with maritime states and peoples is traced as a thread inworld history. An analysis of various components in sea power, such as agriculture, commerce, geopolitics, industry, political organization, population, natural resources, technology, and military and naval science are made.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3214 - Europe in the Middle Ages

General

Course Description
This seminar course covers the period from the contraction of the Roman Empire to the first stirrings of the Renaissance, circa 1450. Political events such as the consolidation and growth of national monarchies in France and England are discussed, but emphasis is placed on the intellectual, economic, and social currents of the age.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3216 - Ancient History Seminar

General

Course Description
This course covers the development of western civilization from the Paleolithic era through the contraction of the Roman Empire to approximately 450 A.D. Although the early civilizations of Mesopotamia and Egypt are covered in some detail, emphasis is placed on the Hebrew, Greek, and Roman civilizations.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3217 - Vietnam & United States Policy

General

Course Description
An analysis of the Vietnam conflict as an instrument of United States foreign policy to contain and turn back the communist insurgency. To examine the roots of the conflict, this course begins with a study of communism as a social and political philosophy. Analysis of the United States involvement in Vietnam will begin with the post World War II period (1945) and continue to the fall of Saigon (1975).

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3218 - Civil War and Reconstruction

General

Course Description
An in-depth look at the events leading up to the Civil War, analysis of the war itself, and a study of the Reconstruction period.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3219 - American History I

General

Course Description
This survey of American History from exploration through the Civil War will focus on the political, social, economic, religious and legal aspects of American life. Topics explored will be the motives and means of exploration in the New World, early English settlement, colonial conflicts and the eventual move toward the American Revolution, the Constitution period and Early Republic, the Era of Good Feelings, the Age of Jackson and the antebellum years of America. The course will culminate in the Civil War which immeasurably changed America.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3220 - American History II

General

Course Description

This survey of American history from the Civil War to the Present will focus on the political, social, economic, religious, and legal aspects of American life after the Civil War. Topics explored will be Reconstruction, Indian Wars, Urbanization, Immigration and American Imperialism, and the Reform of the Progressive Era. The course will examine America's entry into World War I and the economic boom and bust of the 1920s and 1930s. One of the main foci of the course will be the experience of the Second World War and how it has shaped American and world history since. The Cold War, the Korean and Vietnam wars and the momentous year of 1989 will be used to demonstrate how the events of World War II have changed America. The course will end by examining the 1990s and America's future.

Credits:
3

Billing Hours

Min:
3

SS3221 - Business Law

General

Course Description
An introductory, one-semester, elective course that provides students with a foundation on the legal system of the United States both on a State and Federal level, in addition to comparing briefly the civil and common law systems of jurisprudence.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3225 - Admiralty and Maritime Law

General

Course Description
In addition to examining the history and origins of maritime law and medieval sea codes, the course will cover the jurisdiction elements of present day federal admiralty practice. Additional areas to be covered include the Carriage of Goods by Sea Act, Salvage, Rights of Seamen, Limitation of Liability, and international aspects of maritime law such as the United Nations Convention on the Law of the Sea and Oil Pollution Liability.

Credits:
3

Billing Hours

Min:
3

SS3234 - International Economics

General

Credits:
3

Billing Hours

Min:
3

SS3241 - Sociology

General

Course Description
This course is an introduction to religions and politics and the back- ground rationale for terrorism. Topics include: Social Inequality (Marxist

Perspective, Ethnicity and Inequality, Social Class and Gender Strati- fication); Education and Training (The Role of Education, The Hidden

Curriculum, Differential Achievement); Religion (Religious Organizations,

Functionalist Theories, Marxist Theories, Interactionist Theories, Secu- larism); Deviance and Social Control (Basic Concepts, Non-Sociological

Theories, Functionalist Theories, Interactionist Theories); and Power and Politics (Basic Concepts, Theories of the State, Theories of Power, Voting Behavior).

Credits:
3

Billing Hours

Min:
3

SS3242 - Ancient Greece Seminar

General

Course Description
The ancient Greeks are among the most fascinating people of history. An understanding of our own present civilization and culture requires a solid comprehension of the Greeks' role in shaping Western philosophy, institutions, and our basic beliefs about ourselves, society, and the universe. This course will cover the beginnings of ancient Greek civilization with the Mycenaeans and explore its evolution through the death of Alexander the Great in the early 4th century B.C. Recent archeological discoveries will be incorporated into the course presentation. Along with the main events of Greek history and society, this class will discuss Greek contributions in the areas of politics, drama, philosophy, war, science, and more. The course will conclude with Alexander the Great's conquests and the remarkable scientific contributions of Hellenism to the West.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3243 - Ancient Rome Seminar

General

Course Description
This course is designed to give the student a solid understanding of the history, people, and contributions to the West of ancient Rome. Covering the period from Rome's founding and concluding with the collapse of the western Roman Empire during the 6th century A.D., this class will examine the history and character of the Roman people, their wars and adversaries, such as Hannibal, society, politics, ideas, the rise of Christianity, and how these affected the later development of our society. The course will conclude with an exploration of one of the great questions of history: Why did Rome ultimately collapse and does this hold any lessons for the present?

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3245 - Medieval History

General

Course Description
This seminar course covers the period from the contraction of the Roman Empire to the first stirrings of the Renaissance, circa 1450. Political events such as the consolidation and growth of national monarchies in France and England are discussed, but emphasis is placed on the intellectual, economic, and social currents of the age.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3246 - US Energy Policy: Global and Domestic

General

Course Description
This course will focus on the history, economics and politics, both domestic and foreign, of U.S. energy policy over the last half century. The course explores each sector of the energy industry: coal, oil, natural gas, nuclear power, hydro, and renewables.

Credits:
3

Billing Hours

Min:
3

SS3247 - Modern Irish History

General

Course Description
This course focuses primarily from the 17th and 18th centuries into the 20th century. Key periods in Ireland's history will be examined, including the emergence of modern nationalism during the 1700s, culminating in the 1798 rebellion and the Act of Union 1801, the 1803 rebellion, Catholic Emancipation, the Great Famine, Fenianism, Charles Stewart Parnell and Home Rule, the Dublin Lockout 1913, the Easter Rising 1916, the War of Independence 1919-1921, Partition and the Irish Civil War 1922, the Republic of Ireland, and the "Troubles" 1968-1998. The various forms of Irish nationalism, violent and non-violent, will be explored. The course will focus on the above Irish movements while considering their European and Western historical contexts.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS3248 - New England History

General

Course Description

For nearly four centuries, this region has managed to maintain an identity broadly American and distinctly New England. This course examines the New England region's social, cultural, political, and maritime history, with particular attention to the Boston area in periods of momentous change. Topics explored include witchcraft in Salem; the Minutemen and the American Revolution; nineteenth-century industrialization and immigration from Ireland; Boston's Civil War; urban and suburban growth, and the social crises of the twentieth century. Analysis of local historical sites serves to deepen understanding of New Englanders' enduring attachment to their past.

Credits:
3

Billing Hours

Min:
3

SS3249 - Polar Affairs

General

Course Description

Polar Affairs provides cadets with an introduction to the Polar Regions in an age of rapid change. Students will examine the Arctic and Antarctic in an interdisciplinary manner, examining both the history and politics of engagement at the Poles. The course begins with the geography and peoples of the regions, and then focuses upon environmental challenges, US policy, international organizations and diplomacy, maritime issues, and security studies. Topics may vary per student interests and current developments.

Requisites

Prerequisite: SS1211 Western Civilization

Credits:

3

Billing Hours

Min:

3

SS3250 - Cultural Isolation in the Past Settling Mars: Lessons From Russian Amer

General

Course Description
This unique course addresses key questions concerning the severe isolation of selected historical communities, and subsequent lessons learned for possible use in the on- and off-world planning and management phases of the extremely isolated settlements of the future. Drawing form historical archaeological research dealing with the isolated and relatively ignored colonial Russian presence in North America, and including modern psychological material probing loneliness and social isolation, the course examines lessons learned related to human behavior under severe cultural stress. The course expands our knowledge of the past while helping to clarify and resolve issues involved in future space travel and settlement.

Credits:
3

Billing Hours

Min:
3

SS3251 - Offshore Wind: Lgl and Policy

General

Course Description
This course will introduce the student to federal and state laws governing permitting and construction of offshore wind installations along with the roles of numerous administrative agencies in regulating these activities. In addition, this course will explore topics including environmental justice, the Cape Wind project and the participation of foreign-flag and Jones Act-compliant vessels in activities on the Outer Continental Shelf.

Credits:
3

Billing Hours

Min:
3

SS4123 - International Law and Legislative Compliance for Mariners

General

Course Description

This course explores the basic foundations of International Law: its nature, history, theoretical underpinnings, and the players that make it all happen, such as states, international organizations, non-governmental groups, and corporations. In addition, because the Law of the Sea is a specialized area of International Law, much of this course will be de- voted to the laws and regulations as they apply to the merchant mariner, including the International Convention for the Prevention of Pollution from Ships (MARPOL); International Convention for the Safety of Life at Sea (SOLAS); International Safety Management (ISM) Code; Oil Pollution Act of 1990 (OPA 90) and the U.S. Code of Federal Regulations (CFR). Finally, this course will explore the basic requirements in training, certification and watchkeeping for seafarers on an international level.

STCW: Knowledge

Requisites

Prerequisite: SS2121 American Government

Credits:

3

Billing Hours

Min:

3

SS4131 - Engineering Economic Analysis

General

Course Description
Examines principles of equivalence of time value of money, return on investment, evaluation of alternative investments, replacement analysis, depreciation and tax factors, optimization of engineering design, and break-even analysis.

Credits:
3

Billing Hours

Min:
3

SS4132 - Legal Issues in Emergency Management

General

Course Description
An introductory examination of the many legal issues involved in Emergency Management, the agencies which supervise them, and the programs and policies which are in place. Topics include the American political system with respect to disasters; American hazards and disaster agents; the fundamentals of emergency management; disaster laws; disaster budgeting; the federal and state organization and policy issues; intergovernmental relations; hazard mitigation within the cycle of emergency management; federal disaster assistance programs and policies; and international experience.

Credits:
3

Billing Hours

Min:
3

SS4211 - American Maritime History II

General

Course Description
The history of America and the sea from the Civil War to the present day. The enormous technological changes in the 19th century which transformed American maritime life as well as the human interaction with the sea sets the stage for the study of the 20th century with three significant worldwide conflicts: World War I, World War II, and the Cold War. The profound changes in the maritime world with the advent of containerization will be assessed.

Credits:
3

Billing Hours

Min:
3

SS4311 - 20th Century History

General

Course Description
This survey course traces the major social, economic, and political developments in American society. Special attention is given to the reform movements associated with the Progressive Era and the New Deal, and to America's development as a world power.

Requisites
Prerequisite: SS1211 Western Civilization

Credits:
3

Billing Hours

Min:
3

SS4317 - Intelligence and National Security

General

Course Description

This course assists students in understanding the national intelligence collection process and the use of the finished intelligence product by the policy makers. Students will examine the organization and management of the U.S. intelligence process from the generation of policy information requirements through collection, analysis, and reporting to the end user. Key concepts and lessons to be learned will be explored through case studies from the American Revolution to the current policy requirements for combating the international terrorist threat. An examination of the role of clandestine intelligence activities in a constitutional society will also be examined.

Credits:

3

Billing Hours

Min:

3

SS4320 - Marine Policy and Ocean Management

General

Course Description

Marine policy is an academic field in which approaches from social science disciplines are applied to problems arising out of the human use of the oceans. This course will focus on the science-policy interface and offer the opportunity for students to explore topics in marine policy and ocean management and to connect their area of study and career goals to policy problems and solutions in the context of coupled natural human systems. The course will present a general overview of marine policy research topics (e.g., fisheries and aquaculture, offshore wind, coastal hazards, and marine transportation), an introduction to basic marine resource economics methods for policy analysis (e.g., ecosystem service valuation, cost- benefit analysis, economic impact analysis, decisions under risk and uncertainty), and selected case studies in ocean management (e.g., marine protected areas, marine spatial planning, and oceans and human health). The course will include formal lectures in most sessions as well as class discussions and activities. Prerequisite: SS-2121

Credits:
3

Billing Hours

Min:
3

SS8400 - Social Science Elective

General

Credits:
3

Billing Hours

Min:
3

SS8900 - Special Topics

General

Credits:
3

Billing Hours

Min:
3

SS9900 - Special Topics

General

Credits:
3

Billing Hours

Min:
3

ST0888 - Non MMA Cadets Shiping on Sea Term

General

Credits:
0

ST0999 - Sea Term I

General

Course Description
Sea Term I is a common sea term for freshmen USCG license track majors. All cadets will stand bridge and engine room watches and receive training in basic deck and engine skills. All cadets will participate in maintenance of the vessel: deck, engine, and stewards. Cadets will also have the opportunity to visit foreign and domestic ports. Prerequisites: EN-1112, MT-1111 (both with grade of C- or better) and SM-1111 (with grade of C- or better for ME or FE and D- or better for all other majors)
STCW: Knowledge & Practical

Credits:
6

Billing Hours

Min:
6

STCW

STCW Component
Knowledge & Practical

ST2321 - Sea Term Independent Study

General

Course Description
Opportunity for upperclass students to conduct independent study aboard the training ship during the annual training cruise, under the guidance of a faculty member.

Credits:
6

Billing Hours

Min:
6

ST3000 - Additional Sea Days Course

General

Course Description
This course provides an opportunity for students to gain additional sea service days should regular progress through the ME or MT curriculum result in a shortage of the sea service days required for an applicant for an unlimited horsepower oceans 3rd Assistant Engineer / unlimited tonnage oceans 3rd Mate USCG License/ Merchant Mariner Credential.

Requisites
PREREQUISITE

Sea Term I (ST-0999) and Sea Term II (EN-2231/MT-2371)

Credits:
0

STCW

STCW Component
None

ST3311 - Sea Term Follow the Voyage Cadet

General

Course Description
Non-Credit. For student who serves as Follow the Voyage Blogger.

Credits:
0

STCW0099 - Vessel Fam - Short Course

General

Course Description
Basic Safety course for Sea Term - Does not fill academic requirement for degree completion

Credits:
0

STCW0702 - Management of Electrical and Electronic

General

Credits:
0

STCWVPDSD - Vessel Security for Persons With Designated Security Duties

General

Course Description
The course covers the International Maritime Organization and its efforts related to maritime security. It provides an introduction to maritime security policy/regulation contained in the Safety of Life at Sea Convention and the International Code for Security of Ships and Port Facilities. The course also covers the purpose of transportation security cards and maritime security levels; the roles and responsibilities of the vessel security officer, the company security officer, and the port security officer; vessel security assessment; the vessel security plan; threat identification; threat recognition and response; and security equipment.
STCW: Knowledge

Credits:
0

STCW

STCW Component
Knowledge

STTRANS - Other Academy Sea Term

General

Credits:
6

Billing Hours

Min:
6