MARITIME COLLEGE
STATE UNIVERSITY OF NEW YORK

COLLEGE CATALOG

FOR STUDENTS ENTERING MARITIME COLLEGE DURING THE 2024-25 ACADEMIC YEAR

OFFICE OF THE PROVOST

Updated September 2024

Please Note:

The information provided in this catalog reflects the most up-to-date information available at the time of publication. Supplementary material will be provided when possible in the event of a change. The College reserves the right to revise any material provided herein at any time, including course and program offerings.

TABLE OF CONTENTS

A Message from the President of Maritime College **8**
Mission, Vision, and Core Values **9**
SUNY & Maritime College Leadership **10**
SUNY Board of Trustees 10
SUNY Chancellor's Cabinet 10
SUNY Maritime College Council 11
SUNY Maritime College President's Cabinet 11
Accreditation **12**
Non-Discrimination Policy **13**
Admissions **14**
Application and Evaluation Procedures 14
Freshmen Applicants *14*
Freshman Evaluation *14*
Decision Plan *15*
Requirements for Admission 15
Scholastic Requirements *15*
General Health Requirements *15*
License Program Candidate Health Requirements *16*
Vision Requirements (Licensing Programs) *16*
Drug Testing (Licensing Programs) *16*
Cadet Not Physically Qualified (Licensing Programs) *17*
Additional Candidacy Categories 17
Transfer Students *17*
International Students *17*
Educational Opportunity Program (EOP) *18*
Pre-Freshman Testing 18
Undergraduate Transfer Credit Policies and Procedures **19**
Sources of Transfer Credit 19
Transfer Credit Procedures 20
Transfer Credit for SUNY General Education Requirements *20*
Grades *21*
Credits *21*
Credit Earned While in High School 21
Advanced Placement Examinations *21*
International Baccalaureate *21*
College Courses Taken Through a College *22*
Experiential Learning 22
College Level Examination Program (CLEP) *22*
Dantes Subject Standardized Tests (DSST) and Excelsior College Exams (ECE) (formerly Regents College Exams) *22*
Military Service *22*
Corporate and Governmental Training *23*
Additional Prior Learning Assessment (PLA) *23*
Articulation Agreements 23

Transfer Credit Appeal 25
Graduate Transfer Credit Policies and Procedures 26
Advanced Placement (AP) Exam – Credit Table 27
College Level Examination Program (CLEP) – Credit Table 29
Tuition, Fees, and Refund Policies 30
2023-24 Tuition and Fees 30
New York State Residency 30
Acceptable Documentation for NYS Residency – Summary Table 31
Regional Status 32
Health Insurance 32
Meal Plans 32
Past Due Accounts 32
Refund Schedules 33
Financial Aid 34
Applicant Eligibility 34
Application and Procedures 34
Satisfactory Academic Progress Policy for Financial Aid 35
Academic Schools, Departments and Contact Information 36
School of Business, Science and Humanities (BSH) 36
Global Business and Transportation (GBAT) Department 36
Science Department 36
Humanities Department 37
School of Engineering 37
Electrical Engineering Department 37
Mechanical and Facilities Engineering Department 37
Naval Architecture and Marine Engineering Department 37
School of Maritime Education and Training 38
Marine Transportation (MT) Department 38
Maritime Technology and Operations (MTO) Department 38
Naval Science Department and NROTC Program 38
Stephen B. Luce Library 39
Academic Policies and Procedures 40
Academic Advising 40
Academic Board 40
Academic Distress and Sanctions Policy 40
Undergraduate 40
Graduate 41
Academic Integrity 41
Faculty Responsibilities 42
Student Responsibilities 43
Examples 43
Accommodations Services 44
Administrative Disenrollment 45
Auditing a Course 45
Course Load Credit Limits 45
Undergraduate students 45
Graduate Students 46

Declaring a Major 46
Double Majors 46
Drop/Add a Course 46
Education Law (224-A) 47
FERPA 47
Final Examinations 48
Forgiveness Policy 49
Repeated Courses *49*
Change of Curriculum / Fresh Start *50*
Good Academic Standing 50
Graduate Programs *50*
Undergraduate Programs *51*
Grade Appeal 51
Graduation Honors 51
Undergraduate Students *51*
Graduate Students *52*
Graduation Requirements 52
Application to Graduate Procedures *52*
GPA and Other Considerations *53*
Graduation Checkout Procedures *53*
Commencement Ceremonies *54*
Diplomas *54*
Leave of Absence 54
Lines of Communication 54
Medical Leave of Absence 55
Official Grades and Calculation of GPA 55
Numerical Values for Letter Grades *55*
Additional Grade Entries and Descriptions *55*
Additional Notations *56*
Grades Not Used Under Certain Circumstances: *56*
Readmission after a Withdrawal, Academic Disenrollment, or Administrative Disenrollment 56
Readmission to a License Program 56
Readmission after Suspension from the College for Disciplinary Reasons 58
Registration 58
Repeat a Course 58
Semester Honors 58
STCW (Standards of Training, Certification and Watchkeeping) 59
Issuance of STCW Training Certificates *59*
Sitting for the USCG Exam *59*
SUNY Cross-Registration 59
Maritime College Policy *59*
Guidance for Maritime Students *60*
Guidance for Visiting Students *60*
Syllabus 60
Withdrawal from School 61
Credit Hour Policy 62

State University of New York – Credit/Contact Hour Policy 62
Summary *62*
Policy *62*
New York State Education Department – Guidelines 63
NYSED – Determining Time on Task in Online Education *63*
Middle States Commission on Higher Education – Credit Hour Policy 64
Context *64*
Definition *65*
Policy *65*
SUNY Maritime College – Credit Hour Policy 65
Independent Study *66*
Internships *67*
Accelerated Courses *67*
Online/Hybrid Courses *67*
Maritime Education and Training Courses *67*
Class Schedule *68*
Procedures *68*
General Education at SUNY Maritime College 70
Undergraduate Degree Curricula 71
Degrees, Majors, and Professional Experience Options 71
Degree Curricula Notes 73
General Remarks *73*
Rules about Curriculum Changes *73*
Elective Categories for Undergraduate Degree Curricula 73
Free Electives *73*
Engineering (ENGR) Electives *74*
Global Business and Transportation (GBAT) Electives *74*
Humanities (HUMN) Electives *74*
Law Electives *74*
Liberal Arts & Sciences (LAS) Electives *74*
Marine Environmental Science (MES) Electives *74*
Marine Transportation (MT) Electives *74*
MTO Electives *75*
Physical Education (PE) Electives *75*
Minors Policy 75
Approved Minors – Requirements and Courses 75
Environmental Science Minor *75*
Humanities Minor *76*
Intermodal and Maritime Security Minor *76*
Law Minor *76*
Management Minor *77*
Naval Science Minor *77*
Graduate Degree Curricula 78
Graduate Degree Curricular Programs 78
Graduate Degree Curricula 78
General Remarks *78*
Policies Regarding Curriculum Changes *79*

Undergraduate Courses **80**
Course Prefixes and Courses 80
General Notes on the Scheduling of Courses 80
Definition of Prerequisite and Corequisite Courses 80
Graduate Courses **81**
Course Prefixes and Courses 81
General Notes on the Scheduling of Courses 81
Definitions of Prerequisite and Corequisite Courses 81

APPENDIX A: UNDERGRADUATE DEGREE CURRICULA

APPENDIX B: UNDERGRADUATE COURSE DESCRIPTIONS

APPENDIX C: GRADUATE DEGREE CURRICULA

APPENDIX D: GRADUATE COURSE DESCRIPTIONS

A MESSAGE FROM THE PRESIDENT OF MARITIME COLLEGE

Dear Maritime College Community,

Maritime College is a distinguished institution of higher learning with a very specific mission: educating and developing dynamic leaders for the maritime industry. As the oldest maritime academy in the country, founded in 1874, we are a small school with a big presence and have a long tradition of ensuring our graduates are well-prepared for exciting career opportunities in the maritime, engineering, energy, marine environmental, and business sectors. The key to your success will be resiliency, stewardship, and hard work. I know this first-hand because I am a product of our College.

This Catalog provides a one-stop source of information for students, prospective students, faculty, and staff about Maritime College's admissions; academic curricula and requirements; the academic calendar; student services; rules, regulations, and policies; and a list of administrative officers and faculty. I encourage you to review this catalog, refer to it often, and provide feedback regarding how we can improve it to make it more useful for you and others.

I hope you have the same positive and rewarding experience at SUNY Maritime College that I did and look forward to seeing you around the Peninsula of Opportunity!

Students First, Maritime Always

John A. Okon, '91

Rear Admiral, United States Navy (ret)
President, SUNY Maritime College

MISSION, VISION, AND CORE VALUES

Mission Statement

First and foremost, Maritime College educates dynamic leaders for the global maritime industry.

Vision Statement

Maritime College will be recognized as the leading maritime educational institution.

Core Values

Academic Excellence - Maritime College is committed to the pursuit of excellence in teaching, scholarship, and research

Student-Centeredness - Maritime College is committed to an environment that values student success, development and personal growth

Integrity - Maritime College is committed to principles of integrity and ethics in all aspects of our operations

Respect - Maritime College embraces diversity & inclusion, and celebrates the unique contributions of all

Leadership - Maritime College is committed to providing multiple leadership development opportunities for all students

Applied Learning - Maritime College programs and majors are infused with hands-on, experiential learning opportunities

Relevance - Maritime College has an adaptive curriculum that responds to the complex and evolving needs of the maritime industry

SUNY & MARITIME COLLEGE LEADERSHIP

SUNY Board of Trustees

Merryl Tisch, *Chair*
Cesar Perales, *Vice Chair*
Joseph Belluck
Courtney Eagles Burke
Eric Corngold
Marcos Crespo
Robert Duffy
James Haddon
Giovanni Harvey, *President, SUNY Student Assembly (SUNYSA)*
Keith Landa, *President, UFS*
Eunice Lewin
Stanley Litow
Edward Spiro
Cary Staller
Candice Vacin
Camille Joseph Varlack
Christy Woods, *President, FCCC*

SUNY Chancellor's Cabinet

John B. King, *Chancellor*
Ian Rosenblum, *Senior Vice Chancellor for Policy Implementation & Chief of Staff*
Melur K. "Ram" Ramasubramanian, *Executive Vice Chancellor for Academic Affairs and Provost*
F. Shadi Sandvik, *Senior Vice Chancellor for Research, Innovation & Economic Development*
Beth Berlin, *Senior Vice Chancellor for Operations and Management and Chief Operating Officer*
Johanna Duncan-Poitier, *Senior Vice Chancellor for Community Colleges and the Education Pipeline*
Valerie Grey, *Senior Vice Chancellor & Chief Hospital and Healthcare Operations Officer*
Cheryl Hamilton, *Associate Vice Chancellor for Student Life, Opportunity Programs, & Student Advocate*
Travis Proulx, *Vice Chancellor for Government Affairs & Marketing*
Aaron Gladd, *Chief Strategy Officer and Senior Advisor for Operations and Management*
Valerie Dent, *Associate Vice Chancellor and Chief Deputy for Student Success*
Kapil Longani, *Senior Vice Chancellor for Legal Affairs & General Counsel*
Donna Linderman, *Senior Vice Chancellor for Student Success*
Ricardo Nazario-Colón, *Senior Vice Chancellor for Diversity, Equity, and Inclusion and Chief Diversity Officer*
Carter Strickland, *Chief Sustainability Officer and Executive Director of Climate Action*

SUNY Maritime College Council

Thomas J. Higgins, *Chair*
Christina Liviakis Gianopulos
Patrick Guidice
William Jefferson
Deborah Kravchuk, Ed.D.
James McDonough
Matthew Nolty
Benjamin Voce-Gardner
Susan Jordan Wayne
Erik Areklett (SGA President)

SUNY Maritime College President's Cabinet

Rear Admiral John A. Okon, USN (ret.), USMS, '91, *President*

Douglas Hasbrouck*, Vice President of Institutional Advancement*

Pam Jones, *Director of Communications*

Todd M. Lidh, *Interim Provost and Vice President for Academic Affairs*

Captain Morgan McManus, *Master of the Training Ship and VP for Regimental Affairs*

CAPT Thomas P Murphy, USN (Ret), 93', *Chief of Staff*

Lu-Ann Plaisance, *AVP for Human Resources and Chief Diversity Officer*

Danielle "Danny" Robinson, *Dean of Admissions*

Arianne Romeo, *Interim Dean of Student Affairs*

Roxanne Thompson, *Vice President of Finance & Campus Operations*

ACCREDITATION

SUNY Maritime College is accredited by the Middle States Commission on Higher Education (www.msche.org). The Middle States Commission on Higher Education (MSCHE) is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation. SUNY Maritime College has been a member of MSCHE since 1952, and was most recently reaffirmed after the 2021-2022 evaluation.

In addition, SUNY Maritime College's Bachelor of Engineering programs (Electrical, Facilities, Marine, Mechanical and Naval Architecture) are also accredited by ABET, Inc. (formerly known as the Accreditation Board for Engineers and Technology). ABET is a non-profit and non-governmental accrediting agency for academic programs in the disciplines of applied science, computing, engineering, and engineering technology. ABET is a recognized accreditor in the United States (U.S.) by the Council for Higher Education Accreditation. SUNY Maritime College's engineering programs have been accredited since 1972, with Facilities Engineering and Marine Engineering accredited through 2029; and Electrical Engineering, Mechanical Engineering, and Naval Architecture accredited through 2025.

The Global Business and Transportation Department (GBAT) at the State University of New York Maritime College has been awarded full accreditation for its International Transportation and Trade (ITT) program by the International Accreditation Council for Business Education (IACBE) located at 11374 Strang Road in Lenexa, Kansas, USA.

NON-DISCRIMINATION POLICY

It is the policy of SUNY Maritime College to ensure equality without discrimination or harassment on the basis of race, color, national origin, religion, creed, age, sex, sexual orientation, disability, gender identity or expression, familial status, pregnancy, predisposing genetic characteristics, military status, domestic violence victim status or criminal conviction. It is also the policy of SUNY Maritime College that employees, students and guests respect diversity and react to one another with civility.

Any and all forms of discrimination or harassment which involve or affect SUNY Maritime College ("the College") or which occur on the College's campus, or in any off-campus location that could be considered an extension of the College, (i.e., the Empire State Training Ship even at times it is away from the campus, or when employees, students, and others are in official travel status as representatives of the College, etc.), are prohibited by this policy.

ADMISSIONS

Admission to Maritime College is based on the qualifications of the applicant, and is granted without regard to race, color, gender, religious beliefs, sexual orientation, gender identity, or national origin. Successful applicants must meet the requirements for admission as stated below. Applicants are welcome to provide the Admissions Office with additional information regarding their achievements or with a statement concerning their exceptional circumstances.

Application and Evaluation Procedures

Freshmen Applicants

Application for admission to Maritime College may be obtained online through the SUNY Application or the Common Application at www.sunymaritime.edu/admissions. All candidates must submit the following:

- Application for Admission
- Transcript of high school record (forwarded by your HS to SUNY Maritime College, Office of Admissions, 6 Pennyfield Avenue, Throggs Neck, NY 10465)
- Transcript of college record (forwarded by previous college to SUNY Maritime College, Office of Admissions, 6 Pennyfield Avenue, Throggs Neck, NY 10465)
- Results of the SAT/ACT (forwarded by the testing agency directly to the SUNY Maritime College)*
- Two Letters of Recommendations (to be sent directly to SUNY Maritime College, Office of Admissions, 6 Pennyfield Avenue, Throggs Neck, NY 10465)
- Essay (essays are to be submitted through the SUNY application or the Common Application)

Candidates for admission through the Educational Opportunity Program (EOP) must indicate so on the application and submit the Free Application for Federal Student Aid (FAFSA) so that eligibility can be verified.

International applicants should follow instructions in the International Students section that follows in this section of the catalog.

Freshman Evaluation

Freshman admissions decisions are based on the strength of the high school curriculum completed, SAT or ACT, extra-curricular activities and letters of recommendation. Below are reviewed as key components of the admissions decision.

- high school average
- mathematics/science average
- level of difficulty of high school courses attempted and completed
- teacher/counselor recommendations.
- SAT or ACT scores

- All freshman applicants should take the SAT or ACT.* We look at the combined score of evidence based reading & writing and mathematics sections on the SAT or composite ACT score.
- Our exam codes are:
  - SAT: 2536
  - ACT: 2954

Decisions fall into the following categories: accept, deny, and waitlist. Students are considered for acceptance if they meet the below requirements at the time of application. Deferred status must be approved and is granted for up to a year.

Decision Plan

The fall early decision application deadline is Nov. 1. The regular deadline to apply for fall admission is Jan. 31. Spring application deadline is Nov. 1.

** Note that the SAT or ACT score submission may be optional; please check with the Office of Admissions for the most current policy and guidance.*

Requirements for Admission

Scholastic Requirements

Applicants must be high school graduates, recipients of a high school equivalency diploma (GED) or expect same by the time of enrollment. At the time of graduation, HS students must have completed at least 14 units of credit unless state or local requirements for graduation differ. These include the following:

- 4 years of English
- 4 years of social studies
- 3 years of mathematics (pre-calculus is required for engineering)
- 3 years of science (chemistry and physics are strongly recommended)

Students are encouraged to pursue mathematics and science beyond the required minimum. The remaining required units can be in social studies, science, mathematics, and foreign languages. Units in other subjects will be individually evaluated. Some experience and familiarity with computer applications and/or a programming language is suggested, particularly for engineering applicants.

General Health Requirements

New York State law requires all college students born on or after January 1, 1957 to be immunized against measles, mumps and rubella. All undergraduate and graduate students have to show proof of immunity. Immunization for measles requires two doses of vaccine. Exemption from this requirement is possible for those documenting valid religious or medical reasons.

Students are also required to comply with the current COVID-19 Vaccination Policy. Current policy and guidance is available on the suny.edu website; the link to the July

2023 update is https://www.suny.edu/media/suny/content-assets/documents/health-alert/Updated-COVID-Vaccine-Policy-072823.pdf and states (in part):

All students are strongly recommended to stay up to date on their vaccinations as defined by the Center for Disease Control and Prevention (CDC), including obtaining any booster authorized by the FDA and recommended by the CDC for their age group. While not required at this time, SUNY reserves the authority to impose a requirement for any vaccination or booster at any time because of changes in local conditions or requirements imposed by Federal, State, or local authorities. All SUNY faculty and staff are also strongly recommended to get vaccinated.

Accepted students are required to complete a physical examination by a physician of their choice prior to enrollment. Medical forms to be used for this examination will be sent to all students by the College. Completed physical examination forms are to be returned to the Admissions Office by the student. Applicants who have applied for ROTC scholarship competition, or for admission to a service academy, may request a copy of their physical examination report from the Department of Defense Medical Review Board and forward it to the Health Services Office.

License Program Candidate Health Requirements

In general, recognized illnesses or physical defects, such as epilepsy and diabetes, that would render the applicant incapable to perform the regular duties or interfere with the ordinary duties of an officer at sea are disqualifying. A complete list of disqualifying illnesses may be obtained from the Health Services Office.

Vision Requirements (Licensing Programs)

Coast Guard regulations concerning the original licensing of Merchant Marine Officers require applicants to have uncorrected vision of at least 20/100 in both eyes, correctable to at least 20/20 in one eye and 20/40 in the other eye for Deck Officers. For Engineering Officers, vision must be 20/100 in both eyes, correctable to at least 20/30 in one eye and 20/50 in the other. Inadequate color perception may disqualify an applicant for licensure. The vision of all prospective cadets will be confirmed by the college. (The Coast Guard routinely authorizes waivers of uncorrected vision up to 20/200 and will consider waivers for vision below that level.)

Drug Testing (Licensing Programs)

All cadets, and all students enrolling in any program aboard the Training Ship, are required to submit to a federally mandated drug test prior to each Summer Sea Term, and again with application for licensure.

Additionally, prior to taking the license examinations, First Class cadets must make application to the U.S. Coast Guard. Several College officials must attest to the character and temperate habits of the cadet on their application. Questions concerning drugs and court convictions must also be answered under oath by the cadet.

Cadets may be removed from the license program for inaptitude.

Cadet Not Physically Qualified (Licensing Programs)

Applicants who do not meet the physical requirements for license as an officer for the Merchant Marine but who are otherwise fully capable of participating in all facets of the program without endangering themselves or others may enroll in a Degree/License program at the Maritime College, take degree and license courses including Summer Sea Terms, and participate fully in all facets of the Maritime College program. Graduates may request a waiver of physical requirements from the Coast Guard. Since physical waivers for license are determined on an individual basis at the time of applying for the license during the senior year, cadets who are not physically qualified should not anticipate receiving a waiver. While a cadet may not be physically qualified for license in the Merchant Marine, the cadet may be eligible for commission in the Naval Reserve through NROTC as physical requirements for the two programs differ, especially with regard to vision.

Additional Candidacy Categories

Transfer Students

Transfer students are selected primarily on the basis of all college level academic performance. To be considered a transfer applicant, submit the following credentials:

- A completed application (available through the SUNY Application online at www.sunymaritime.edu/admissions)
- Official college transcripts documenting all post-secondary work, sent directly from the institution to the SUNY Maritime College, Office of Admissions, 6 Pennyfield Avenue, Throggs Neck, NY 10465

Transfer students pursuing the Degree/License Program are required to complete the Indoctrination Program (see "Student Life") in August, prior to commencement of the fall semester. Upon completion of the Indoctrination Program, transfer students from sea service academies and other maritime institutions may request upgrade of class status. All other transfer students into Degree/License Programs will enroll as Fourth Class cadets for their first year at Maritime. Transfer students pursuing a Degree Program are required to attend the new student orientation, but will enroll directly at the appropriate class level.

A separate section on transfer credit policies and procedures can be found in this catalog following the admissions section.

International Students

Admission for international students is based on a review of the appropriate educational documents as well as proficiency in English as measured by the Test of English as a Foreign Language (TOEFL) or International English Testing System (IELTS). Freshman applicants must also submit SAT or ACT scores.

Prospective transfer and graduate degree candidates must arrange to have a course-by-course evaluation of all college coursework completed outside the U.S. sent to the

Office of Admissions. Those individuals who have completed courses in the U.S. must arrange for official transcripts to be sent directly to the Office of Admissions.

- TOEFL (Test of English as a Foreign Language) minimum scores are: 79 for the internet-based test, 213 for the computer-based test and 550 for the paper-based test.
- IELTS (International English Language Testing System) minimum score is: 6.5.

International students who enroll as cadets pursuing the Degree/License Program participate in all facets of campus life, including regimental responsibilities ashore, and as cadet officers during Summer Sea Terms. At graduation, international students receive the B.S. or B.E. Degree and may be certified by the Coast Guard (issued a letter) that they meet all requirements for licensure. International students who enroll as students pursuing the degree programs are eligible for all leadership roles within that program, including Resident Assistantships.

Educational Opportunity Program (EOP)

SUNY's Educational Opportunity Program provides access, academic support and financial aid to students who show promise for succeeding in college but who may not have otherwise been offered admission. Available primarily to full-time, matriculated students, the program supports students throughout their college careers. EOP is designed for students who need special academic assistance as well as financial aid. You will be asked to complete additional application materials and financial aid forms by the colleges to which you are applying.

Educational Opportunity Program students may receive support services, such as academic, career, and personal counseling; tutoring and supplemental instruction. As part of a student's overall financial aid package, the Educational Opportunity Program provides financial assistance for non-tuition related expenses (e.g. books, supplies, etc.). Questions should be directed to either the Office of Admissions or the Director of the EOP program.

Pre-Freshman Testing

Testing in mathematics is required of all entering freshmen. These examinations are administered during the summer before entrance. Students may have the opportunity to be re-tested.

Since all 4-year programs at the Maritime College require at least two semesters of mathematics, it is important for the student to be placed at the appropriate level to maximize success in the mathematics sequence of their major program. The mathematics placement test is designed to assess whether additional mathematics preparation is required and at what level. Some students may be advised to take the appropriate remedial mathematics course at Maritime over the summer or an equivalent program at another institution before the start of the fall semester. Failure to do so may prevent a student from graduating in a timely manner.

UNDERGRADUATE TRANSFER CREDIT POLICIES AND PROCEDURES

Transfer of credit to SUNY Maritime College involves consideration of the comparability of coursework and applicability of that coursework to a Maritime degree program. This section on transfer policies and procedures will help you transition to the program of your choice at SUNY Maritime College.

There are two limitations on the number of transfer credits that can be awarded to a student:

- The maximum number of transfer credits from all sources described in this document, whether for courses taken before arrival or while a student at SUNY Maritime College, is 90 credits for a bachelor degree, 45 credits for an associate degree.
- All bachelor degree students must take a minimum of 42 credits at SUNY Maritime College, at least 18 of which must be upper-division major courses as identified by the major department; all associate degree students must take a minimum of 30 credits at SUNY Maritime College, at least 12 of which must be via major courses as identified by the major department.

Sources of Transfer Credit

SUNY Maritime College evaluates and may award transfer credit from postsecondary institutions that are regionally accredited. The regional accrediting agencies are:

- Middle States Commission on Higher Education (MSCHE, www.msche.org)
- Northwest Commission on Colleges and Universities (NASC, www.nwccu.org)
- New England Association of Schools and Colleges, Inc.—Commission on Institutions of Higher Education (NEASC-CIHE, www.neasc.org)
- North Central Association of Colleges and Schools (NCA, www.ncahigherlearningcommission.org)
- Southern Association of Colleges and Schools/Commission on Colleges (SAS-CC, www.sacscoc.org)
- Western Association of Schools and Colleges (WASC, www.wascweb.org)

Students with prior college-level course work at institutions without regional accreditation may request meeting with the Associate Provost for Academic Programs, Planning and Assessment (or his/her designee) for an evaluation; detailed syllabi may be required in order to receive transfer credit.

SUNY Maritime College also transfers credit completed at recognized postsecondary institutions outside the United States. In most cases, foreign institutions are chartered and authorized to grant degrees by their national governments, usually through a Ministry of Education or similar ministerial body. SUNY Maritime College does not

evaluate these credits. Students must have the credits evaluated by World Education Services (WES) or an equivalent professional credential evaluation organization. (www.wes.org).

Credit by standardized exams is also accepted. These exams are: Advanced Placement (AP), International Baccalaureate (IB), College Level Examination Program (CLEP), DANTES Subject Standardized Tests (DSST), and Excelsior College Exams (ECE, formerly Regents Exams). Details about earning credit for these exams are found in PART TWO below.

Transfer credit may be awarded for work completed outside a college setting if that work has been evaluated and approved for credit by ACE. This includes credit for military service and credit from corporate and governmental trainings. The credit must have been ACE-approved at the time it was earned. If the credit recommendation states that credit may be granted on the "basis of institutional evaluation," Maritime College does not grant credit as it does not perform such evaluations of transfer credit.

Credit for courses more than ten years old may be denied based on currency issues, e.g., course content may be outdated, new technology considerations, student review of subject matter may be necessary.

Transfer Credit Procedures

Transfer credit for all courses is determined by the Associate Provost for Academic Programs, Planning and Assessment (or his/her designee), in consultation with the School Dean and Chair of the relevant department. For Deck or Engine license courses, strict equivalency and appropriate recency must be established before transfer credit is awarded. The U.S. Coast Guard's policy is that the academy from which a student graduates is responsible for documenting completion of all program requirements in accordance to approval granted to that academy. Therefore, students who wish to transfer certain license or STCW courses from another maritime academy must provide a transcript, training record book (if appropriate) and any other pertinent documentation to be evaluated on a case-by-case basis, to determine whether such training and education was successfully completed, and is thus transferable. The Dean of Maritime Education and Training, in consultation with the appropriate license Department Chair (or designee), will conduct a review of this information, in accordance with current U.S. Coast Guard and MARAD national and international regulations and policy, and provide a determination regarding acceptable transfer credit.

Note that transfer credits may be awarded for courses that do not meet the requirements of a student's chosen degree program. Thus, a student's transfer credits may include some that apply towards the degree and some that do not. If a student changes his/her degree program, the applicability of credits may also change.

To assure that credit will be awarded for courses taken after matriculation at SUNY Maritime College, students should seek prior approval from the appropriate department.

Transfer Credit for SUNY General Education Requirements

On November 9, 2021, the SUNY Board of Trustees passed Resolution 2021-48 establishing the new SUNY General Education Framework (SUNY GE). The new

SUNY GE policy is consistent with SUNY's continuing commitment to a strong general education program—now applicable to all SUNY undergraduate degree programs—that addresses the fundamental aims of postsecondary undergraduate education.

The SUNY General Education Framework is effective fall 2023, for new first-time students entering baccalaureate-degree programs; and effective fall of 2024, for new first-time students entering AAS- degree programs.. More information may be found online at https://system.suny.edu/academic-affairs/acaproplan/general-education/suny-ge/. A course at one SUNY college that has been approved by SUNY Central as meeting as specific General Education requirement meets that requirement at all SUNY institutions. Transfer courses from non-SUNY institutions will be evaluated for General Education credits upon entry to SUNY Maritime College. Generally, no single course may be used to fill more than one category.

Courses taken at other institutions are applied toward the degree program at SUNY Maritime College only after receipt of final, official transcripts from all other institutions attended.

Grades

Grades of "C" and above are transferrable to SUNY Maritime College. Grades of "C-" and below will be accepted within a completed associate degree, but students may be encouraged to repeat low grades in courses that lay the foundation for success in subsequent coursework. The cumulative GPA at SUNY Maritime College includes only courses taken at Maritime College; transfer grades are not included, though they may be used to make admission and academic decisions and recommendations.

Credits

Credit hours awarded for transferred courses are based on the number of credits earned at Maritime College for equivalent courses. If a three-credit Calculus I course was successfully completed and transferred from another institution, Maritime College will record four credits on a student transcript, since Calculus I at Maritime College is a four-credit course. Conversely, if a four-credit Statistics course was successfully completed and transferred from another institution, Maritime will record three credits since Statistics at Maritime College is a three-credit course.

Credit Earned While in High School

Advanced Placement Examinations

An official score report from the College Board showing the score on any AP examination is required for credit. A table showing credits earned by an AP exam and minimum score is found in the *Advanced Placement (AP) Exam – Credit Table* below.

International Baccalaureate

Students who completed higher-level (HL) exams with scores of 4 or better may receive credit after the submission of an official report from the International Baccalaureate Organization. No credit is awarded for Standard Level Examinations. No credit is

awarded for IB English language exams taken in a non-native English-speaking country or by a student whose native language is not English.

College Courses Taken Through a College

A final official transcript must be sent to SUNY Maritime College directly from the college offering courses taken while in high school. Upon receipt, transcripts will be evaluated on a course-by-course basis.

Experiential Learning

College Level Examination Program (CLEP)

The CLEP Program makes it possible for an individual to earn college credit for learning that has taken place outside the college classroom. An official score report from the College Board showing the score on any CLEP examination is required for credit. A table showing credits earned by CLEP exams and minimum required scores is provided below.

Note that, even if taken while a student at Maritime, CLEP exams will not meet residency requirements and may not be used to meet full-time enrollment status.

Dantes Subject Standardized Tests (DSST) and Excelsior College Exams (ECE) (formerly Regents College Exams)

If appropriate, credit may be awarded for Dantes Subject Standardized Tests and Excelsior College Exams. The American Council on Education determines examination scores for which credit may be awarded.

Military Service

Transcripts from the military service are evaluated according to recommendations in the American Council on Education's Guide to the Evaluation of Educational Experiences in the Armed Services.

The first step to claiming the credits you have earned is to request a transcript from your military service. Each service will provide unofficial personal copies and will send schools an official copy of your transcript at no charge. Each service branch has their own system for recording your military education and experience credits:

Army, Navy, Marine Corps, Coast Guard: The Joint Services Transcript (JST) lists academic credits from military training and standardized tests. It is available to both active personnel and veterans from all Army components, Coast Guard, Marine Corps and Navy. Information about obtaining a JST is available at https://jst.doded.mil/smart/singIn.do

Air Force: The Community College of the Air Force (CCAF) automatically captures your training, experience and standardized test scores. Information about obtaining a CCAF transcript is available at http://www.airuniversity.af.mil.Barnes/CCAF/

SUNY Maritime College's Office of Veteran and Military Affairs can assist in obtaining transcripts.

Corporate and Governmental Training

Companies and agencies may ask to have training programs evaluated by the American Council on Education. If you know your training has been evaluated, you may request an ACE transcript by visiting https://www.acenet.edu/Programs-Services/Pages/Credit-Transcripts/Request-Transcripts.aspx

Additional Prior Learning Assessment (PLA)

Additional prior learning assessments may be possible for consideration for college credit. Please contact the Office of the Registrar for more information.

Articulation Agreements

SUNY Maritime College prides itself on being a transfer-friendly institution. Our faculty and staff work hard to make the transition from another college to SUNY Maritime College as smooth and seamless as possible. The College assures all transfer students the best possible application of their transfer credits to the degree requirements at Maritime College in order to facilitate degree completion in a timely manner.

Transfer most often takes place without articulation, with credits being awarded on a course-to-course basis as outlined above. However, to further enhance the transfer process, Maritime College has formalized transfer relationships with many community colleges in the form of dual admissions agreements, articulation agreements, or general cooperative agreements. A dual admission agreement will allow a student to simultaneously enroll in the two-year college and SUNY Maritime College. An articulation agreement matches coursework between a community college and SUNY Maritime College. A general cooperative agreement outlines the transfer policies endorsed by both institutions.

Below is a listing of institutions with which Maritime College has agreements. If you do not see your school listed, you may still transfer your coursework to SUNY Maritime College on a course-by-course basis.

Dual Admission Agreements:

- Monroe Community College
- Valley Forge Military College

Current Articulation Agreements:

- Atlantic Cape Community College
    - A.S., Business Administration to B.S., International Transportation and Trade
    - A.S., Engineering Science to B.E., Mechanical Engineering
    - A.S., Environmental Science to B.S., Marine Environmental Science
    - A.S., General Studies to B.S., Maritime Studies
- Bergen Community College

    - A.S., Professional Studies, International Business to B.S., International Transportation and Trade
- Bronx Community College
    - A.S., Business Administration, Management Option to B.S., International Transportation and Trade
    - A.S., Engineering Science to B.E., Electrical Engineering
- Community College of Rhode Island
    - General Cooperative Agreement with all applicable programs off study
- Herkimer Community College
    - A.S., Business Administration to B.S., International Transportation and Trade
- Jamestown Community College
    - A.S., Environmental Science to B.S., Marine Environmental Science
- Monroe Community College
    - A.S., Business Administration to B.S., International Transportation and Trade
    - A.S., International Business to B.S., International Transportation and Trade
- Nassau Community College
    - A.S., Accounting to B.S., International Transportation and Trade
    - A.S., Business Administration to B.S., International Transportation and Trade
    - A.S., Liberal Arts and Science, Mathematics to B.S., Marine Environmental Science
    - A.S., Liberal Arts and Science, Mathematics and Science to B.S., Marine Environmental Science
    - A.S., Engineering Science to B.E., Electrical Engineering,
    - A.S., Engineering Science to B.E., Facilities Engineering,
    - A.S., Engineering Science to B.E., Mechanical Engineering,
    - A.S., Engineering Science to B.E., Naval Architecture
- Queensborough Community College
    - A.S., Engineering Science to B.E., Electrical Engineering
    - A.S., Engineering Science to B.E., Facilities Engineering
    - A.S., Engineering Science to B.E., Mechanical Engineering
    - A.S., Engineering Science to B.E., Naval Architecture
    - A.S., Environmental Science to B.S., Marine Environmental Science
- Schenectady Community College:
    - A.S., Business Administration to B.S., International Transportation and Trade
- Valley Forge Military College
    - A.A., Business to B.S., International Transportation and Trade
    - A.S., Life Sciences to B.S., Marine Environmental Science
    - A.S., Physical Sciences to B.S., Marine Environmental Science
- Westchester Community College:
    - A.S., Engineering Science to B.E., Electrical Engineering
    - A.S., Engineering Science to B.E., Facilities Engineering

- A.S., Engineering Science to B.E., Mechanical Engineering
- A.S., Engineering Science to B.E., Naval Architecture
- A.S., Liberal Arts: Math and Science to B.S., Marine Environmental Science
- A.S., Business Administration to B.S., International Transportation and Trade

Information about additional agreements may be obtained by consulting the Office of the Registrar or the Associate Provost for Academic Programs, Planning and Assessment.

Transfer Credit Appeal

A student may appeal a transfer credit decision, by requesting and completing a form from the Registrar's office. The catalog description from the year the course was completed should be submitted with the appeal. Other relevant supporting materials (syllabus, textbook titles, projects completed) may be required.

GRADUATE TRANSFER CREDIT POLICIES AND PROCEDURES

Transfer of credit to SUNY Maritime College involves consideration of comparability of coursework and applicability of that coursework to a Maritime graduate degree program. Review of transfer policies and procedures will help you transition to the program of your choice at SUNY Maritime College.

The maximum number of transfer credits awarded towards a graduate degree, whether for courses taken before arrival or while a student at SUNY Maritime College, is 9 credits. In addition, the following applies:

1. Graduate courses completed before entering graduate study at Maritime College for which transfer credit is desired should, upon admission, be presented for consideration to the School Dean.
2. Candidates in graduate programs at Maritime College are required to receive the approval of their Department Chair or Graduate Program Coordinator before registering for graduate courses at other colleges if they plan to present them for transfer credit.
3. Graduate courses presented must be appropriate to the student's graduate program.
4. Graduate courses presented must have been given by an institution authorized to grant graduate degrees.
5. Graduate courses presented for transfer credit completed while the student was in undergraduate status shall be eligible for transfer.
6. Graduate courses presented must be completed with grades of B or better.
7. Unless submitted as part of the application for program admission, an official transcript of the student's record in the graduate course(s) presented for transfer credit should be sent to the Office of the Registrar.
8. An official description of the graduate course(s) should accompany the request for transfer credit.
9. Graduate courses accepted for transfer credit are not used in computing the student's academic average.
10. Credit for courses more than five years old may be denied based on currency issues, e.g., course content may be outdated, new technology considerations, student review of subject matter may be necessary.

ADVANCED PLACEMENT (AP) EXAM – CREDIT TABLE

AP EXAMINATION	MIN SCORE	MARITIME COLLEGE COURSE	CREDITS
Art History	3	HUMN 400 History of Art	3
Biology	5	BIO 201 & 202 General Biology I & II	4 + 4
	4	BIO 201 General Biology I	4
	3	GERN 000 General Education: Natural Sciences	3
Calculus AB	4	MATH 101 Calculus I	4
	3	GERM 000 General Education: Mathematics	3
Calculus BC	4	MATH 101 & 102 Calculus I & II	4 + 4
	3	GERM 000 General Education: Mathematics	3
Chemistry	5	CHEM 121 /122 & 123/124 General Chemistry + Lab I & II	(3+1) + (3+1)
	4	CHEM 121 /122 General Chemistry + Lab I	3 + 1
	3	GERN 000 General Education: Natural Sciences or CHEM 100	3
Chinese Language & Culture	5	CHIN 101 & 102 Mandarin I & II	3 + 3
	3	CHIN 101 Mandarin I	3
Computer Science A	4	CS 131 Introduction to Computer Programming	3
	3	SCI 000 Science Elective	3
Computer Science Principles	4	CS 131 Introduction to Computer Programming	3
	3	SCI 000 Science Elective	3
English Language	3	ENGL 101 Freshman English I	3
English Literature	3	ENGL 101 Freshman English I	3
English Language AND English Literature	3 on each	ENGL 101 Freshman English I & GERC 000 General Education: Communication	3 +3
Environmental Science	4	ES 101 Introduction to Environmental Science	3
	3	GERN 000 General Education: Natural Sciences	3
European History	3	GERU 000 General Education: Humanities	3
French Language & Culture	5	2 GERF 000 General Education: World Languages	3 + 3
	3	GERF 000 General Education: World Languages	3
German Language & Culture	5	2 GERF 000 General Education: World Languages	3 + 3
	3	GERF 000 General Education: World Languages	3
Government & Politics Comp	3	GERS 000 General Education: Social Sciences	3
Government & Politics US	3	GERH 000 General Education: US History OR GERS 000 General Education: Social Sciences	3
Human Geography	3	GERG 000 General Education: World History and Global Awareness	3
Italian Language & Culture	5	2 GERF 000 General Education: World Languages	3 + 3
	3	GERF 000 General Education: World Languages	3

Japanese Language & Culture	5	2 GERF 000 General Education: World Languages	3 + 3
	3	GERF 000 General Education: World Languages	3
Latin	5	2 GERF 000 General Education: World Languages	3 + 3
	3	GERF 000 General Education: World Languages	3
Macroeconomics	3	GBEC 121 Macroeconomics	3
Microeconomics	3	GBEC 122 Microeconomics	3
Music Theory	3	GERA 000 General Education: The Arts	3
Physics 1	4	PHYS 211 & 213 General Physics I & Lab	3 + 0.5
	3	GERN 000 General Education: Natural Sciences	3
Physics 2	4	PHYS 214 & 216 General Physics I & Lab	4 + 0.5
	3	GERN 000 General Education: Natural Sciences	3
Physics B	4	PHYS 211 & 213 General Physics I & Lab	3 + 0.5
	3	GERN 000 General Education: Natural Sciences	3
Physics C: Mechanics	4	PHYS 102 & 104 Engineering Physics I & Lab	4 + 0.5
	3	GERN 000 General Education: Natural Sciences	3
Physics C: Electricity & Magnetism	4	PHYS 201 & 203 Engineering Physics II & Lab	4 + 0.5
	3	GERN 000 General Education: Natural Sciences	3
Psychology	3	GERS 000 General Education: Social Sciences	3
Spanish Language & Culture	5	SPAN 101 & 102 Spanish I & II	3 + 3
	3	SPAN 101	3
Spanish Literature & Culture	3	GERU 000 General Education: Humanities	3
Statistics	4	MATH 251 Statistics	3
	3	GERM 000 General Education: Mathematics	3
Studio Art	3	HUMN 401 Studio Drawing and Painting	3
U. S. History	5	HIST 101 & 102 US History to 1865 & US History Since 1865	3 + 3
	3	HIST 101 US History to 1865	3
World History	3	GERG 000 General Education: World History and Global Awareness	3

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP) – CREDIT TABLE

AP EXAMINATION	MIN SCORE	MARITIME COLLEGE COURSE	CREDITS
American Government	60	GERH 000 General Education: US History or GERS 000 General Education: Social Sciences	3
American Literature	50	Humanities elective	3
Introductory Business Law	50	GBLW 431 Business Law	3
Calculus	50	MATH 101 Calculus I	4
Chemistry	50	CHEM 121 General Chemistry I	3
English Literature	50	Humanities elective	3
Financial Accounting	50	GBAC 311 Financial Accounting	3
French Language	60	2 GERF 000 General Education: World Languages	3 + 3
	50	GERF 000 General Education: World Languages	3
German Language	60	2 GERF 000 General Education: World Languages	3 + 3
	50	GERF 000 General Education: World Languages	3
Principles of Macroeconomics	50	GBEC 121 Macroeconomics	3
Principles of Management	50	GBMG 341 Organizational Management	3
Principles of Marketing	50	GBMG 345 Fundamentals of Marketing	3
Principles of Microeconomics	50	GBEC 122 Microeconomics	3
Precalculus	50	MATH 090 Introduction to College Mathematics	4
Introductory Psychology	50	Liberal Arts & Sciences elective	3
Introductory Sociology	50	Liberal Arts & Sciences elective	3
Spanish Language	60	SPAN 101 & 102 Spanish I & II	3 + 3
	50	SPAN 101 Spanish 101	3
History of the United States I	60	HIST 101 US History to 1865	3
History of the United States II	60	HIST 102 US History Since 1865	3
Western Civilization I	50	Humanities or International Studies elective	3
Western Civilization II	50	Humanities or International Studies elective	3

If a CLEP exam is not listed in the table above, then it is not accepted for transfer credit.

TUITION, FEES, AND REFUND POLICIES

2024-25 Tuition and Fees

Details regarding tuition and fees can be found on our website at https://www.sunymaritime.edu/cost-aid/tuition-fees

New York State Residency

If you are charged tuition at the out-of-state rate and believe you are eligible for in-state tuition rates, you will need to apply for New York State Residency for Tuition Billing Purposes. The application is available on the Student Accounts page of the Maritime website. The fall semester application deadline is October 1 and the spring semester deadline is March 1.

Completing the Application:

- If you are financially independent (emancipated) and no longer receive any financial support from your parents or legal guardians, complete Sections A and B of the application.
- If you receive financial support from your parents, legal guardians or spouse, complete Sections A and C of the application.

Signing the Application:

- Applications must be signed before a notary public by anyone whose personal information appears on the application. All students must sign the attestation on page 2; all parents, legal guardians or spouses must sign the attestation on page 3.

Providing documentation:

- A minimum of three (3) documents from the list below must be submitted. Documents must bear issue dates of one year or more prior to the start date of the semester, term or module for which you are applying for residency. Students claiming financial independence must provide evidence of both financial independence as well as a New York State domicile (see "Independent Student" column). *The definition of domiciled is a fixed, permanent home for legal purposes to which a person returns after a period of absence.*

Acceptable Documentation for NYS Residency – Summary Table

Acceptable Document Type	**Independent Student** (Application Sections A&B)	**Dependent Student** (Application Sections A&C)
Alien Registration Card or Visa (Non-U.S.Citizens only) Permanent Residents, Refugees and Asylees, including those with pending applications, certain visa holders** and some undocumented aliens may establish NYS residency in accordance with these policies. **A1-A3, E1, E2, G1-G5, H1B, H1C, H4, I,K1-K4, L1, L2, N8, N9, O1, O3, S5-S7, T1- T4, U1-U4, and V1-V3.	Student	Student and Parent
The following documents may be used as evidence of domicile:		
NYS Driver License, NYS Learner Permit, or NYS Identification Card	Student	Student and Parent
NYS Vehicle Registration	Student	Parent/Guardian
NYS Voter Registration	Student	Parent/Guardian
Signed NYS Residential Lease, Deed, or Property Taxes	Student	Parent/Guardian
Utility Bill, e.g.: Electric / Gas / Heating / Water / Sewer / Cable (currently held account: one current statement and one issued 12 months prior to the start of the semester.)	Student	Parent/Guardian
The following documents may be used to demonstrate financial independence, and in some cases, domicile*:		
*Signed NYS and Federal Income Tax Returns (from prior year.)	Student	Parent/Guardian
* NYS Bank Account (Currently held account: one current statement and one issued 12 months prior to the start of the semester.)	Student	Parent/Guardian
TA/RA/GA departmental offer letter with signatures	Student	N/A
Form 1099; Form W-2; Trust Documents, etc.	Student	N/A
Exceptions to Domicile Rule:		
Military Home of Record – Form DD-4 (Dependents and spouses of Full-Time Active Members of the U.S. Armed Forces stationed out-of-state, whose Home of Record is NYS.)	N/A	Parent/Guardian
Active Duty Military Orders (Members of U.S. Armed Forces on Full-Time Active Duty and stationed in NYS, and their spouse and dependents.)	Student	Parent/Guardian
Official/Final High School Transcript w/award of degree.	Student	N/A
Affidavit of Intent to Legalize Immigration Status	Student	Student
**Documents must support the claim to have resided in New York State for at least 12 consecutive months prior to the beginning of the semester of application.*		

Regional Status

New York's Maritime College is now the Regional Maritime Academy for students from Alabama, Connecticut, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Virginia, and Washington D.C. **Students from these states pay a discounted in-region tuition rate to attend SUNY Maritime College.**

Health Insurance

All full-time undergraduate students must carry comprehensive health insurance. SUNY Maritime offers insurance to our students through Aetna Health Insurance. Students are required to take action during the enrollment/waiver period to either enroll in or waive out of the student health insurance. Students who choose to waive out of the health insurance must provide Aetna with current health insurance information during the waiver application process.

Students who do not take an action - that is, enroll or waive – during the enrollment/waiver period will be automatically enrolled in the Aetna Health Insurance Plan. The annual insurance fee will be included in the fall semester tuition bill provided you are registered for at least 12 credits. (If a student is registered for less than 12 credits, the insurance will not be billed until registration reaches full-time status.)

Meal Plans

All Resident Students are assigned Meal Plan A (19 swipes/week) by default. Students may select Meal Plan B or Meal Plan E by submitting the Resident Meal Plan Selection form found below. Commuter students have the option of purchasing ANY meal plan. More information on the meal plans and policies may be found online at https://www.sunymaritime.edu/cost-aidpay-your-bill/meal-plan

Mandatory for Resident Students

- Meal Plan A – 19 swipes per week, including weekends – all locations
- Meal Plan B – 14 swipes per week, weekdays only – all locations
- Meal Plan E – 19 swipes per week, including weekends – all locations. No restrictions as to when you can swipe

Only Available for Purchase by Commuter Students

- Meal Plan C – 30 swipes per semester – all locations. No restrictions as to when you can swipe (Monday – Friday only).
- Meal Plan D – 60 swipes per semester – all locations. No restrictions as to when you can swipe (Monday – Friday only).

Past Due Accounts

Balances on student accounts are due by the specified payment due date. When a student account becomes late or delinquent, the following actions are taken.

Holds: The Students Account office places a "hold" on student accounts that have an outstanding balance. The hold prevents the student from accessing their grades on-line, registering for the subsequent semesters and obtaining a transcript/diploma. Students

can view holds on their account through the internet. When payment is received the hold will be removed.

Late Payment Charge: A late payment charge is placed on the student's account when payment is not received by the specified payment due date.

Attorney General: Delinquent accounts over 120 days are transferred to the Office of the Attorney General. The college will send a minimum of three notices of payment requests to the student prior to the release of the account to the Attorney General Office. Once the account is with the Attorney General Office (AG), all payments and correspondences must be addressed to the office of the Attorney General.

Refund Schedules

The following refunds are issued based on the type of academic term and the week of withdrawal from the College:

Fall or Spring – Full Semester

Withdrawal During:	Refund Percent:
1st Week	100%
2nd Week	70%
3rd Week	50%
4th Week	30%
4th Week or Later	0%

Fall or Spring – Online 8-Week Session I or II

Withdrawal During:	Refund Percent:
1st Week	100%
2nd Week	40%
3rd Week	20%
4th Week or Later	0%

Summer Ashore Graduate I or II

Withdrawal During:	Refund Percent:
1st Week	100%
2nd Week	40%
3rd Week	20%
4th Week or Later	0%

Summer Ashore Undergraduate I or II

Withdrawal During:	Refund Percent:
1st Week	100%
2nd Week	25%
3rd Week or Later	0%

FINANCIAL AID

The Office of Financial Aid is open year-round to assist students and their families in identifying scholarship and other financing options for educational costs. The office provides information about financial aid programs available through SUNY Maritime and the federal/state governments, as well as various financing options including external student loans, scholarships, and parent loan programs.

In most cases, to receive financial aid, students must demonstrate financial need. Financial need is the difference between the total cost of attendance and the amount that a student and or family can reasonably be expected to contribute as determined by Federal guidelines using the Free Application for Federal Student Aid (FAFSA). Financial aid awards are "packaged" to meet the needs of the recipient within the framework of the funds available and may include:

- Scholarships and grants such as New York State Tuition Assistance Program (TAP) and SUNY Tuition Credit or Federal Pell Grants, which do not have to be repaid;
- Federal Direct Loans which must be repaid to Department of Education, and Federal Work-Study, which requires that the student work for monies awarded.

Applicant Eligibility

To be considered for financial aid at SUNY Maritime, an applicant must:

- Be accepted for admission to the college
- Be enrolled in an eligible program of study
- Be a US citizen or permanent resident of the United States.
- Have completed the annual FAFSA application
- Have completed the annual TAP application (for Undergraduate New York Residents)
- Not be in default on a federal student loan
- Not owe a refund on a federal grant.
- Demonstrate financial need. (Financial Need = Cost of Attendance minus Expected Family Contribution)
- Students must re-apply for financial assistance every year by completing the requirements stated above. The award does not continue automatically beyond award period.
- Meet the requirements of the Satisfactory Academic Progress (SAP) Policy.

Application and Procedures

SUNY Maritime College requires students to file their FAFSA application electronically at www.fafsa.ed.gov (school code **002853**). Filing the FAFSA also initiates the TAP application process for undergraduate New York residents. The TAP application may be completed www.tapweb.org (school code 0955). These applications must be filed/renewed on an annual basis. The financial aid year at the College covers the

summer, fall, and spring semesters – in that order. Therefore, the summer semester is the first semester in the financial aid year.

It is not necessary to file federal income tax return(s) prior to filing for financial aid. Income information required to apply for financial aid is based on the prior tax year information so there is minimal delay in processing financial aid awards.

The staff is available to assist in completing applications and to explain eligibility criteria for the various programs. Note invoices include approved financial aid awards, which are deducted from the balance due. Students will periodically receive electronic notice of the status of their financial aid file, award, and student bill via their College email account and/or Self-Service account.

Satisfactory Academic Progress Policy for Financial Aid

Withdrawing from classes could have an effect on eligibility for federal financial aid. The Satisfactory Academic Progress Policy is available on SUNY Maritime's Financial Aid website. A copy of the policy may also be requested from the Financial Aid Office.

ACADEMIC SCHOOLS, DEPARTMENTS AND CONTACT INFORMATION

School of Business, Science and Humanities (BSH)

Dr. N. Rao Kowtha, Dean
rkowtha@sunymaritime.edu
Phone: 718-319-2048
Office: MAC 221

Global Business and Transportation (GBAT) Department

Dr. Alison Romain, Chair
aromain@sunymaritime.edu
Phone: 718-409-5799

The GBAT Department oversees the MS degree program in International Transportation Management (ITM) and the BS degree program in International Transportation and Trade (ITT). The ITT program offers a minor in Intermodal and Maritime Security. The ITM program offers a Certificate in Supply Chain Management and a Certificate in Chartering (jointly offered by Maritime College and the Association of Ship Brokers and Agents). The department teaches courses in the following six themes; economics, law, transportation and operations management, logistics and supply chain, risk and security, and organization and control systems.

Science Department

Dr. Caterina Panzeca, Chair
cpanzeca@sunymaritime.edu
Phone: 718-409-7365

The Science department oversees the BS in Marine Environmental Science (MES) degree program and the two minors offered within the MES program: Marine Biology and Meteorology & Oceanography. A minor in Environmental Science is available to students with other majors. The department teaches courses in the mathematical and physical sciences such as biology, chemistry, computer science, environmental science, geology, mathematics, meteorology, oceanography, and physics.

Humanities Department

Dr. Amanda Springs, Chair
asprings@sunymaritime.edu
Phone: 718-409-7459

The Humanities Department oversees the BS degree programs in Marine Business and Commerce and Maritime Studies, the former a deck license program, the latter, an intern program. Incoming students can major in Maritime Studies with a deck license, or Maritime Studies internship option. The department teaches courses in composition and literature, technical writing, history, foreign languages and the humanities, including film, art and music.

School of Engineering

Dr. Leigh Winfrey, Dean
lwinfrey@sunymaritime.edu
Phone: 718-319-2046

The School of Engineering oversees all of the engineering degree programs, as well as the USCG engine license program. Degree areas include the Bachelor of Engineering in Electrical Engineering, Facilities Engineering, Marine Engineering, Mechanical Engineering, and Naval Architecture.

Electrical Engineering Department

Dr. Dan Fridline, Acting Chair
dfridline@sunymaritime.edu
Phone: 718-409-7414

Mechanical and Facilities Engineering Department

Dr. Dan Fridline, Chair
dfridline@sunymaritime.edu
Phone: 718-409-7414

Naval Architecture and Marine Engineering Department

Dr. Cathy Strez, Chair
cstrez@sunymaritime.edu
Phone: 718-409-7415

School of Maritime Education and Training

Capt. Jeffrey Spillane, Dean
jspillane@sunymaritime.edu
Phone: 718- 409-4577

Marine Transportation (MT) Department

Peter Vecchio, Chair
pvecchio@sunymaritime.edu
Phone: 718- 409-729

The MT Department oversees the BS degree programs in Marine Transportation and Marine Operations – Deck as well as the AAS degrees in Martime Technology and Operations. The department teaches courses in marine transportation, nautical science, and navigation.

Naval Science Department and NROTC Program

CAPT Dennis Farrell, USN,
NROTC Commanding Officer and Department Chair
CO.NROTC@sunymaritime.edu or dfarrell@sunymaritime.edu
Phone: 718-409-7212

The Naval Science Department oversees all of the Naval Science courses offered at the College, as well as commissioning programs for the US Navy and US Marine Corps.

Stephen B. Luce Library

Jillian Kehoe, Director
jkehoe@sunymaritime.edu
Phone: 718-409-7236
Office: Stephen B. Luce Library (Fort)

The Stephen B. Luce Library boasts a diverse collection, with particular strengths in marine engineering, naval architecture, marine transportation, marine environmental science, global business and transportation, as well as the humanities. Both print and digital materials are easily accessible through the online catalog.

ACADEMIC POLICIES AND PROCEDURES

Academic Advising

Each student is assigned a Freshman Advisor upon entering Maritime College through the LEAD 101 course / program. At the beginning of the second semester freshman year, students are assigned a faculty advisor from their major department. (Note: transfer students typically work with the Registrar, School Dean, and/or Senior Academic Advisor for their major upon entering Maritime College; the Director of the Student Engagement and Advising [SEA] Center is also a valuable resource to all students). Advisors assist students in exploring academic and professional opportunities offered at Maritime and guide students in making appropriate decisions about their area of study.

Students should see their advisor to:

- Address any problems which affect academic performance
- Select courses for the upcoming semester
- Discuss academic performance
- Explore academic or professional concerns
- Discuss departmental requirements and course sequences
- Discuss elective coursework in the major and other departments.

Academic Board

The Academic Board is chaired by the Provost / Vice President for Academic Affairs, and is comprised of the Academic School Deans, the Academic Department Chairs, the Commandant of Cadets, two members elected by the Faculty and five non-voting members: the Associate Provost for Academic Programs, Planning and Assessment, the Dean of Student Affairs, the Dean of Admissions, the Director of the SEA Center, and the Registrar. The Board normally meets at the end of the fall and the spring semesters to determine academic status.

Academic Distress and Sanctions Policy

Undergraduate

At the end of each fall or spring semester, undergraduate students with a (semester and/or cumulative) GPA below the required graduation GPA (2.0) are reviewed for academic progress.

Students with a cumulative GPA below 2.0 shall be considered “not in good academic standing.” Students under this designation are ineligible to participate in intercollegiate athletics or club sports.

Students with a term GPA (fall or spring semester) below 2.0 shall be placed on “Academic Probation.” This sanction is noted on the transcript. Students on academic

probation are required to meet with their academic advisor to choose appropriate courses in which to enroll. Academic Probation status cannot be appealed.

Students who are placed on academic probation while “not in good standing” will be limited to 15 credits in the next semester and shall be encouraged to retake courses in which they earned a grade of D, F, or W.

Any of the following conditions shall make students subject to academic disenrollment:

- A cumulative GPA below 1.500 after two semesters at Maritime College.
- Placement on academic probation for a third consecutive term at Maritime College.
- Placement on academic probation for a fourth time during the student’s career at Maritime College.

Students meeting any of these conditions are reviewed by the Academic Board, which will either uphold the disenrollment or permit the student to remain on academic probation.

Students may appeal academic disenrollment to the Chair of their academic department and associated Academic School Dean. A student who wants to change major should appeal to the Chair of the program they wish to enter. If the appeal is unsuccessful at the Chair level, the student may appeal to the appropriate Academic School Dean and then, if needed, to the Provost. The Provost’s decision is final and there are no more appeal opportunities beyond the Provost level.

Graduate

At the end of each fall or spring semester, graduate students with a semester and/or cumulative GPA below the required graduation GPA (3.0) are presented to the Academic Board for consideration and may be disenrolled for at least one year.

Students meeting any of these conditions are reviewed by the Academic Board, which will either uphold the disenrollment or permit the student to remain on academic probation.

Students may appeal academic disenrollment to the chair of their academic department. A student who wants to change major should appeal to the Chair of the program they wish to enter. If the appeal is unsuccessful at the Chair level, the student may appeal to the appropriate Academic School Dean and then, if needed, to the Provost. The Provost’s decision is final and there are no more appeal opportunities beyond the Provost level.

Academic Integrity

Absolute integrity is expected of every Maritime student in all academic undertakings. Integrity entails a firm adherence to a set of values, and the values most essential to an academic community are grounded on the concept of honesty with respect to the intellectual efforts of oneself and others. Academic integrity is expected not only in formal coursework situations, but in all college relationships and interactions connected to the educational process, including the use of college resources. While both students

and faculty of Maritime College assume the responsibility of maintaining and furthering these values, this present section is specifically focused on the conduct of students.

A Maritime student's submission of work for academic credit indicates that the work is the student's own. All outside assistance should be acknowledged, and the student's academic position truthfully reported at all times. In addition, Maritime students have a right to expect academic integrity from each of their peers.

Students are expected to do their own work in class, on assignments, laboratory experiments, and examinations or tests in accordance with the directions given by the instructor. It is the responsibility of all students to read and understand this statement of college policy on academic integrity. Maritime College considers the violation of academic integrity a serious matter, and one that will be treated as such.

A student who violates academic integrity may, depending on the nature of the offense, be subject to one or more of the following measures: failure of the assignment or examination, failure of the course, dismissal from the Regiment of Cadets, or dismissal from the College. Violations of academic integrity, also known as academic dishonesty, are subject to review by the Judicial Board. In addition to facing the Judicial Board, regimental students may be brought before a Captain's Mast and/or a Suitability Hearing Board if the violation has occurred on the training ship. For further information, see the Organization, Operation, and Regulations Manual for the Regiment of Cadets.

The first academic integrity violation may be handled and processed by the faculty member. However, the Dean of Students or Commandants of Cadets shall have concurrent jurisdiction to adjudicate any instances of academic integrity. Thus, all integrity offenses can be grounds for dismissal or other action initiated by the Dean of Students or Commandants of Cadets.

A second academic integrity violation may result in physical and academic removal from the College.

Faculty Responsibilities

1. Faculty members should state clearly in all syllabi that violations of academic integrity will not be tolerated at Maritime College and that acts of academic dishonesty will be penalized in accordance the terms of this article.
2. Faculty members shall define as much as possible the meaning of terms such as plagiarism, and what is considered cheating in their course, especially in cases where such terms or instances are not obvious.
3. Faculty members should take steps to ensure that conditions during an exam or quiz are not conducive to cheating.
4. Faculty members who encounter acts of academic dishonesty are required to report them in writing to the Judicial Board, together with a list of any penalties already imposed (e.g., failure of assignment, failure of course, etc.) and a possible recommendation to the Board of any additional action to be taken. The chairperson of the Board will record the information in a database maintained by the Board. If this is a first offense, the Board will take no further action unless

requested by the faculty member. If this is not a first offense, the chair will convene the Board and review the case.

5. Whenever possible, the faculty member should impound the evidence of suspected dishonesty. If necessary, photocopies should be made. Such evidence will not be returned to the student, but will be kept in the confidential files of the Judicial Board.
6. Failure by the faculty member to execute any of these responsibilities will not constitute grounds for dismissal of charges against a student.

Student Responsibilities

1. Students are responsible for learning and understanding academic and non-academic integrity expectations at Maritime. Students who have questions or concerns should consult with their faculty members, academic advisors, and/or other leaders for clarification and support at any time.
2. Students are encouraged to notify the instructor if they observe an act of academic dishonesty. If a student reports such an incident, the instructor shall be obligated to pursue the matter as indicated above. If, in the opinion of the student who has reported the incident, the instructor has not fulfilled their responsibilities in this matter, that student may take one or more of the following steps in an attempt to resolve the situation:
    - Confer with the Department Chair
    - Confer with the Academic School Dean
    - Confer with the Provost / Vice-President for Academic Affairs.

Examples

Examples of Academic Integrity/Non-Academic Integrity violations include but are not limited to:

- The attempted or unauthorized use of materials, information, notes, study aids, devices or communication during an academic exercise.
- Plagiarism, the act of presenting another person's ideas, research or writing as one's own.
- Obtaining an unfair advantage.
- Falsification of official documents.
- Collusion is lending assistance or failing to report witnessed acts of academic misconduct.
- Providing false information to any College official, faculty member or office.
- Forgery, alteration, or misuse of any College document, record, or instrument of identification.
- Tampering with the election of an officer of any College-recognized student organization.
- Aiding, abetting, or procuring another person to violate a College policy.
- Academic dishonesty (i.e. cheating, plagiarism, obtaining unfair advantage, falsification of official signature, falsification of college documents).
- Sabotage of academic activity (interfering with, or sabotaging an academic activity. Sabotage includes, but is not limited to: removing, concealing,

damaging, destroying, or stealing materials or resources that are necessary to complete or to perform the academic activity; tampering with another student's work).

Accommodations Services

Maritime College values access, inclusion and works to ensure full participation. To discuss barriers a student may reach out to the Associate Dean of Students.

Students with a documented disability and who are seeking to utilize services must self-disclose to the Dean of Student Affairs. All accommodations are assessed and provided on an individual basis and must be grounded in documentation submitted by or on behalf of the student. While students can request a particular type of accommodation, SUNY Maritime College determines and develop plans for reasonable accommodations such as academic adjustments, auxiliary aids, and/or services as mandated under Title II of the Americans with Disabilities Act, Amendments Act (ADAAA) of 2008 and Section 504 of the Rehabilitation Act of 1973. All student disability information is confidential.

Alternative accommodations may be offered above those requested by the student. Accommodations may be denied if the request is not reasonably grounded in documentation or the resulting accommodation has the effect of lowering academic standards of a course or program, or presents an undue financial or administrative burden to the College.

Students must meet and register with Accommodation Services in each semester they wish to receive services. Again, all student disability information is confidential. Once approved for accommodations, the student is responsible for notifying professors for the courses in which they desire to receive accommodations. Students who do not register with Accommodations Services in a given semester will not be entitled to accommodations for that term, even if they had registered previously. Accommodations related to a disability cannot be implemented or considered retroactively.

Accommodations will be made during the academic year for KUP's (knowledge, understanding, and proficiency) tested as part of a written exam. There are some courses which have Standards of Training, Certifications and Watch-standing for Seafarers, 1978, as amended (STCW) components which measure safety and involve the demonstration of various competencies through practical assessments. No accommodations will be made for practical assessments outlined in the STCW guidelines. Special accommodations are not allowed during these safety-related practical assessments, as safety at sea is an important tenet of the merchant marine professional and to the maritime transportation industry.

Any student who is seeking special accommodations and plans to enroll in a degree program which requires the passing of the United States Coast Guard license examination should know that at this time, there are NO special accommodations provided when taking the U.S. Coast Guard exam. All students pursuing a U.S. Coast Guard license are also required to take course(s) commonly referred to as "seminar." The seminar course(s) are designed to reflect the testing conditions of the U.S. Coast Guard license examination.

All students participating in Summer Sea Term, (SST) should know that SST is considered a training laboratory, and special accommodations are not provided when safety and required practical assessments are being evaluated at sea.

Accommodations may be granted for academic work only.

Administrative Disenrollment

Administrative Disenrollment refers to a student who ceases to attend school for a semester without having officially withdrawn or filed for a Leave of Absence. Notation of Administrative Disenrollment will appear on the student's transcript. Students who wish to return after being Administratively Disenrolled will need to apply for readmission. For information on the procedure for Readmission, please refer to the section entitled "Readmission after a Withdrawal/Academic Disenrollment/Administrative Disenrollment" in the student Handbook for further information.

Auditing a Course

An individual may audit a course only with the consent of the instructor. Course auditors will not be enrolled nor listed on an official class roster. Course auditors will not receive credit or formal recognition for completing the course and cannot subsequently change their status from audit to credit.

Course Load Credit Limits

Undergraduate students

The maximum number of credits an undergraduate may take in a fall or spring semester is 22 credits. The maximum number of credits an undergraduate may take in any Summer Session is 8 credits. The maximum number of credits an undergraduate may take in any Winter Session is 4 credits. Students who wish to take more credits must obtain special permission via a Credit Overload form. Additional approvals and signatures are required.

For Fall – Spring Semesters:

- More than 22 credits requires approval from the Department Chair
- 25 credits and beyond require the additional approval of the School Dean.

For any Summer Session:

- More than 8 credits requires approval from the Department Chair or School Dean.

For any Winter Session:

- More than 8 credits requires approval from the Department Chair or School Dean.

Graduate Students

The maximum number of credits a graduate student may take in one term is 13 credits. Additional approval and signature of the Department Chair or School Dean is required for students taking 13 or more credits.

Declaring a Major

Undergraduates at SUNY Maritime College are required to declare their major prior to the completion of their 64th credit toward the degree (including all transfer credits from previous institutions). Students with more than 64 credits may request a one semester waiting period within the Undeclared category. The student must declare a program of study after the one semester period in Undeclared. If the student is not accepted into the program of choice, the student is subject to disenrollment by the Academic Board. Students changing or declaring a major are required to follow the curriculum at the time of acceptance and must meet the academic criteria for graduation within that program.

Double Majors

A student may have a second major transcripted and appear on the diploma under the following conditions:

1. Academic departments shall publish “Double Major Guidelines” specific to the second major defining requirements. All courses in the second curriculum must be completed within the guidance of the Double Major Guidelines of the second major.
2. Any plan for a second major must be approved in advance by both Department Chairs and the Provost.
3. If the additional required courses necessary to complete the second major are less than a total of 18 credits, additional courses must be taken so that at least 18 credits are taken in the second major. These additional required courses must not be in common with the first major. These credits are to be in upper division courses approved in advance by the Chair of the second major department. For the purpose of this paragraph 3, upper division courses are defined to be courses with a number of 300 or higher not including license courses.
4. Students must adhere to the Double Major Guidelines of both departments.
5. An overall GPA of 2.7 must be achieved.
6. There will be no mixed degrees, e.g., B.S. and B.E.

Drop/Add a Course

Course Drop/Add can be processed online up to the published deadline. Certain registration activity (lack of prerequisite, closed course, etc.) will require special overrides. In these cases, the Drop/Add procedure will require approval of Instructor, Chair and/or Provost. In most cases, a Drop/Add requiring a special override must be processed in person at the Registrar’s Office with accompanying forms.

Dropping below full time status during a semester may jeopardize financial aid eligibility, housing privileges, and NCAA eligibility. The approval of the Provost (or his/her

designee) may be required for drop/withdraw requests that result in a full-time student's status changing to less than full-time status.

Withdrawing from courses after the Drop/Add period will result in a W grade on record and require the student to obtain the instructor's signature on the Drop/Add form. This form then must be processed at the Registrar's Office. Request to withdraw from a course after the withdrawal period will require special approval and will result in a WF grade on record. Registration dates and deadlines specific to adding, dropping and/or withdrawing from courses are posted on the Academic Calendar.

Education Law (224-A)

1. No person shall be expelled from or be refused as a student to an institution of higher education for the reason that the student is unable, because of his or her religious beliefs, to attend classes or to participate in any examination, study or work requirements on a particular day or days.
2. Any student in an institution of higher education who is unable, because of his or her religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.
3. It shall be the responsibility of the faculty and the administrative officials of each institution of higher education to make available to each student who is absent from school, because of the student's religious beliefs, an equivalent opportunity to make up any examinations, study or work requirements which the student may have missed because of such absence on any particular day or days. No fees of any kind shall be charged by the institution for making available to the said student such equivalent opportunity.
4. If classes, examinations, study or work requirements are held on Friday after four o'clock post meridian or on Saturday, similar or makeup classes, examinations, study or work requirements shall be made available on other days, where it is possible and practicable to do so. No special fees shall be charged to the student for these classes, examinations, study or work requirements held on other days.
5. In effectuating the provisions of this section, it shall be the duty of the faculty and of the administrative officials of each institution of higher education to exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to any student because of the student availing themself of the provisions of this section.
6. Any student, who is aggrieved by the alleged failure of any faculty or administrative officials to comply with the provisions of this section, shall be entitled to maintain an action of proceeding in the supreme court of the county in which such institution of higher education is located for the enforcement of his or her rights under this section.

FERPA

Under The Family Educational Rights and Privacy Act (FERPA), also known as the Buckley Amendment, only the student may have access to the student's own record.

The College may not issue any information about a student to any other institution, agency, or organization without the written consent of the student, except under circumstances as required by law, or under the issue of the Solomon Amendment.

Therefore, only the student may request in writing with the student's own signature, that the Office of the Registrar process or release any information concerning the student. A formal written request or the required form must be completed to request a letter of enrollment, a verification of enrollment or degree. In addition, only the student may request that a transcript (official or an unofficial copy) be issued to the appropriate institution, agency or organization.

FERPA also gives the student the right to inspect his/her academic record, in the Registrar's Office by filing a written request to see his/her file. The student must submit the written request, and make an appointment to meet with the College Registrar in order to review the student's record. The student will be required to show the College ID Card as documentation of the student's identity. All requests shall be granted within 45 days from the date requested. There are specific limitations as to which documents the student may review. The school is not required to show the student "any financial information submitted by parents; confidential letters and recommendations placed in the file before 1975, and confidential letters and statements of recommendations placed in the records after 01/01/1975." [FERPA Regulations].

After viewing the record, the student believes there is any discrepancy within the record, the student may file a letter to challenge a discrepancy in the file. The student is required to submit a written letter, signed by the student, identifying the specific discrepancy to the College Registrar. The College Registrar is then required to submit the letter from the student and a copy of the student's record to the Provost for review and consideration.

Additional FERPA information can be found in the Student Handbook.

Final Examinations

The final examination is considered an integral part of courses. The final exam schedule allows for one hour of examination for each credit assigned.

1. Every course regardless of level (graduate or undergraduate) or delivery method (online or face-to-face) must have a culminating activity. This culminating activity – be it a cumulative final exam, paper, project, presentation, etc. – must assess most, if not every, Student Learning Outcome (SLO) for the course. Lab courses/sections are not required to have a culminating activity.
2. With the exception of online courses and lab courses, all courses must have 15 weeks of classroom instruction (lectures, presentations, exams, etc.). Final Exam Week is counted as one of those 15 weeks. Every one of these courses must meet during this 15th week, and must meet for the appropriate weekly meeting times totals – 50, 100, 150 or 200 minutes for 1, 2, 3 or 4 credit courses, respectively.

Instructors seeking exceptions to (1) or (2) above must submit a written special request prior to midterm, explaining sufficient justification for the request. The Department Chair, the Academic School Dean and the Provost must approve the exception.

Forgiveness Policy

There are certain circumstances in which a student's grade for a course may be "forgiven", i.e., removed from the student's cumulative GPA. (The course and grade remains on the student's record.) Such courses appear on a transcript with an "E" (exclude) next to the grade.

Repeated Courses

The most common reason for the Forgiveness Policy is for repeated courses. If the student does not successfully complete a course, she/he may only attempt the same course an additional two times. A student may repeat a successfully completed course to improve her/his GPA. The total number of attempts must be no more than three.

An attempt is defined as registering for and remaining in the course after the date where dropping is noted on the transcript as a W or WF (including those at other institutions).

Under exceptional circumstances, the student may request a fourth attempt of a course. A fourth attempt requires approval of the student's major Department Chair and the School Dean via a Fourth Attempt of Repeated Course Form.

The first course is flagged with the "E" notation and the repeated course is denoted with an "I" (include) repeat flag. (If the course is repeated several times, only the grade for the last time taking the course will remain in the cumulative GPA) The "E" will appear for each attempt except the last one, which will have the "I" flag notation. Note that this rule applies even if the repeated course grade is lower than the original course grade.

For courses with identical numbers and names, this process is done automatically by the registration system. If the course number or course name changes over the years, then a manual change is required. The College Registrar will make such changes. The student has a right to point out in writing any repeated course that has not been forgiven. There is also a review for additional repeated courses by the College Registrar when the student applies for graduation.

Repeated courses that qualify to be "forgiven" include:

- Courses for which student received a poor or failing grade and then retakes the course to satisfy the course requirement.
- Courses for which student took the course at Maritime College and then retakes an equivalent course at another College (an official transcript is received with the grade of C or better for undergraduate and grade of B or better for graduate) which is posted as transfer credits on the Maritime College record.
- Courses that fulfill the same degree requirement.

A student may receive credit for a successfully completed course only once. If a student takes a course and then repeats it, only the grade for the repeated course will be included in the Cumulative GPA.

Note that there may be impacts and limitations to financial aid eligibility with respect to repeated courses. Students should consult with their academic advisors for more information.

Change of Curriculum / Fresh Start

A student may request a Change of Curriculum. This includes a change to Major, Professional Experience Option, Minor or Catalog Year. The student must complete a Change of Curriculum Form which requires approvals from both the current Department Chair and the Department Chair of the new curriculum (or the School Dean(s)). Students requesting a change of license option or change into license program must also obtain approval of the Commandant of Cadets. For any curriculum change into a license program, a student must also be a cadet in the Regiment. A change from AAS to BS/BE must go through Admissions, and therefore cannot be requested via this form. A student may request a change in catalog year (i.e. switch to curriculum of that year) without any other changes; in that case, catalog year must be after year of admission/readmission. When student makes any other changes, the date of change determines catalog year.

If a student changes Major or changes Professional Experience (Deck, Engine, Intern), the student may request a "Fresh Start" that would exclude grades from GPA calculation for all courses that are not applicable to the new curriculum. If so requested, then:

1. Grades for all courses required in the old curriculum that are not applicable to the new curriculum will be removed from GPA. For a course required in the old curriculum that is applicable but not required in the new curriculum, the student will have a choice to apply the course or remove it from GPA. Courses and grades will remain on the academic transcript, with an E to the right of grade denoting the Exclusion of grade.
2. A course with an excluded grade can never again be used to satisfy the requirements of any curriculum.
3. The notation "Fresh Start" will appear on the transcript for the semester when request was granted.

Good Academic Standing

Graduate Programs

When a graduate student’s Cumulative GPA and Current Term GPA (for the most recent term) are 3.0 or better, that student is in good academic standing. A graduate student with a Cumulative or Current GPA below 3.0 shall be considered “not in good academic standing.”

Undergraduate Programs

Any undergraduate student with a cumulative GPA below 2.0 shall be considered “not in good academic standing.” Students under this designation are ineligible to participate in intercollegiate athletics, club sports or the student worker program.

Grade Appeal

The purpose of grading is to communicate the instructor’s evaluation of student performance in terms of learning outcomes and standards of achievement. The assignment of grades based on the evaluation of student work is at the heart of the institution’s academic standards and integrity. A student may appeal a grade assigned by a faculty member if the student believes that the grade is inappropriate.

Examples of acceptable reasons for a grade appeal include (this list in not comprehensive):

- Demonstrable calculation, editing, or factual error in determination of the grade;
- Omission of assignments or parts of assignments in calculation of the grade;
- Grade demonstrably based on impermissible factors such as discrimination, bias, retaliation or retribution.

To appeal a grade, the student should first speak with the instructor of the course in question. If the instructor denies the appeal or is not available, the student may appeal to the Chair of the Department offering the course. If there is still no resolution, the student may appeal to the Dean of the School. If there is still no resolution, the student may appeal then to the Provost.

The Provost may uphold the previous decision; the appeal process is then finished. Alternatively, the Provost may appoint a panel to review the documentation / materials. The Panel is comprised of two to three professors from the course’s content area. The Panel forwards their recommendation to the Provost.The Provost then may or may not uphold the Panel’s findings. The appeal process ends here.

Graduation Honors

Students may be awarded cumulative GPA based honors at graduation. The indices are as follows:

Undergraduate Students

- **Valedictorian** is the undergraduate student having earned a bachelor’s degree with the highest GPA closest to 4.000 and at least 60 credits earned at Maritime College.
- **Salutatorian** is the undergraduate student having earned a bachelor’s degree with the next highest GPA and at least 60 credits earned at Maritime College.
- **Summa Cum Laude** is for a cumulative GPA rounding to at least 3.75 (i.e., ≥ 3.745).
- **Magna Cum Laude** is for a cumulative GPA rounding to at least 3.50 (i.e., ≥ 3.495).

- **Cum Laude** is for a cumulative GPA rounding to at least 3.00 (i.e., ≥ 2.995)

Graduate Students

With Honors is for a cumulative GPA rounding to at least 3.75 (i.e., GPA ≥ 3.745).

Graduation Requirements

SUNY Maritime College has four degree-conferral dates (graduation dates) per academic year. Below are the months in which they generally occur.

- July
- September
- January
- May

The official conferral dates are posted on the Master Calendar each year. All degree requirements must be satisfied prior to the official graduation date in order to be eligible to receive the degree for that date.

The College holds one Graduation and Commencement Ceremony per year in May. Students who have had their degrees conferred in May or prior to May are invited to participate in the May Graduation Ceremony. An “early walk” policy may also be available to students who meet specific eligibility requirements, allowing those students expecting to receive their degrees in July and September to participate in the May ceremony within the same calendar year.

Application to Graduate Procedures

All students must submit an application for graduation to the Registrar in order to have their records reviewed for degree conferral. Applications deadlines are posted on the Academic Calendar each year. Below are the necessary application steps.

- A student wishing to graduate must first complete and submit an Application for Graduation (available on the Registrar webpage).
- The student must include a copy of the current DegreeWorks audit worksheet. The DegreeWorks audit worksheet should display all requirements as complete or in-progress at the time the application is submitted. Requirements that are not marked as met or in-progress must include an explanatory note as to how the requirement will be satisfied by the graduation date (outstanding transfer course, etc.). Students are encouraged to work with their advisor for assistance with their DegreeWorks worksheet and in determining their appropriate graduation date.
- The student must submit a graduation fee payment of $50. Note: Applications submitted after the posted deadline will incur a $25 late fee and may delay the arrival of the diploma and/or may prevent the student’s name from being printed in the commencement program.
- Students will be notified of their status towards graduation via their Maritime email account after the Registrar has conducted an initial review of the graduation applications submitted for an upcoming graduation date.

GPA and Other Considerations

In order to participate in commencement exercises (held in May), students must typically satisfy all Academic, Financial and Regimental (where applicable) requirements for their degree prior to commencement. Students who do not successfully complete all degree requirements, clear all financial or Regimental obligations (where applicable) are ineligible to participate in commencement exercises. To earn an undergraduate degree in all majors, a cumulative GPA rounding to at least 2.00 (i.e., GPA ≥ 1.995 on transcript) is required at the time of graduation. To earn a graduate degree in all majors, a cumulative GPA rounding to at least 3.00 (i.e., GPA ≥ 2.995 on transcript) is required at the time of graduation.

For students in license degree programs, degree requirements include the passing of all seven modules for 3rd Mate, or eight modules for the 3rd Assistant Engineer of the USCG license exam. Additionally, all sea time requirements must be met. A student will generally not be eligible to participate in the May Commencement Ceremony without having passed all modules of the USCG license exam.

Additionally, License/STCW course certificates will not be issued to any student unless they successfully complete the USCG/MARAD approved (46 CFR 310) program. For students in the 2-year license degree programs, course certificates will be issued only when students successfully complete the USCG-approved Deck or Engine license program.

Graduation Checkout Procedures

Students are asked to complete a Graduation Survey. The survey will be emailed to the student's Maritime email account sometime after the Registrar has reviewed their graduation application.

All graduation candidates must be in good standing with the departments at the college listed below in order to receive their diploma and/or proof of graduation upon degree conferral.

- **Student Accounts**: All outstanding balances owed to the college must be resolved.
- **Financial Aid**: All students that borrowed federal loans and/or Perkins loans are required to complete exit counseling. For Stafford loans, the exit counseling can be completed online at www.studentloans.gov. Students that received Perkins loans will receive additional instructions via email from the Financial Aid Department.
- **Library**: All books and/or other materials borrowed from the library must be returned and any overdue fines/fees must be resolved.
- **Regiment**: All outstanding issues with the Regiment must be resolved (i.e. ED's, class 1 alcohol sanctions, SAP, Alcohol EDU's etc.) for those students in the Regiment.
- **Housing**: Students living on campus must properly check out of housing and return keys.

- **International Students**: F1 students must have an exit meeting with the International Student Coordinator.

Commencement Ceremonies

There is one commencement ceremony held each academic year, immediately following the Spring semester, typically in May.

Students may attend only one commencement ceremony per degree earned. Typically, all degree requirements must be satisfied prior to the graduation date in order to be eligible to participate in commencement / recognition ceremonies. This includes passing all modules of the USCG license exams for those students in a license degree program.

Diplomas

Diplomas are distributed at commencement for those who graduate. For students who do not attend commencement, diplomas will be mailed to their home shortly thereafter. Alternatively, a student may choose to pick up their diplomas from the Registrar's Office.

Leave of Absence

A leave of absence (LOA) is permission to be away from the college temporarily, for medical, financial, military or personal reasons, including to study at another educational institution. Students must file a Leave of Absence form with the Office of the Registrar. Students may be on leave for up to two consecutive semesters. Students planning to take courses at another institution during their LOA should obtain pre-approval by submitting a *Request to Take Course Off Campus* form (available on the Registrar's webpage).

Students who are placed on "involuntary psychological leave" must submit appropriate documentation before being allowed to return or register (see Section III, College Policies, Article XVII "Mental Health Leave of Absence" in the *Student Code of Conduct* for further information).

Students who return from a LOA in the semester they indicated must notify the Registrar of their return prior to the start of the semester. They will need to meet with their academic advisor to obtain their alternate PIN number for registration.

Students who do not return from a Leave of Absence in the semester they indicated will be Administratively Disenrolled from the college and will need to apply for readmission if they wish to return. For information on the procedure for Readmission, please refer to the section entitled "Readmission after a Withdrawal / Academic Disenrollment / Administrative Disenrollment" in the student Handbook for further information.

Lines of Communication

Students having questions or complaints about their academic status at the College should proceed in the following manner:

1. Discuss questions and issues with the instructor whenever possible

2. If resolution with the instructor is not possible or unsatisfactory, take up questions and issues with the Department Chair
3. If either the student or instructor finds the resolution with the Department Chair unsatisfactory, take up questions and issues with the Academic School Dean
4. Finally, if a resolution has not been found, the Provost & Vice President for Academic Affairs will make the final determination

This guidance does not apply to Academic Integrity Violations, Academic Accommodation Complaints or Grade Appeals since they have their own policies.

Medical Leave of Absence

On occasion, students encounter medical concerns or conditions outside of their control that lead to challenges attending and completing coursework at Maritime College. Students may request a medical leave of absence for the full semester (all courses) in which they encounter the medical issue.

To request a medical leave, students should consult with the Dean of Student Affairs, file the Leave of Absence form with the Registrar's office, accompanied by the medical leave support form (completed by a licensed health care provider). This request will be reviewed by the Registrar, Academic School Dean, Dean of Student Affairs, and Health Services. If a medical leave is granted, students will be withdrawn from ALL courses in the semester (receiving 'W' grades). Medical leave cannot be requested of individual courses.

Students taking a medical leave of absence will have a hold placed on their account requiring them to meet with Health Services prior to beginning a subsequent semester.

Official Grades and Calculation of GPA

The grade point average (GPA) is calculated by multiplying the numerical value of a letter grade by the number of credits for the course, yielding the "quality points" for the course, and then taking the sum of the quality points and dividing by the sum of the credits attempted. This process is used both for semester and cumulative GPAs.

Numerical Values for Letter Grades

The numerical values for letter grades are as follows:

	A 4.000;	A- 3.667;
B+ 3.333;	B 3.000;	B- 2.667;
C+ 2.333;	C 2.000;	C- 1.667;
D+ 1.333;	D 1.000;	

F, WF 0.

Additional Grade Entries and Descriptions

P, TC, are not included in GPA calculation but are included in credits earned.

X, W, I, are not included in GPA calculation and are not included in credits earned.

I represents incomplete

P represents passed in pass-fail courses only

TC represents transfer credit

X is exempted

W reflects an official withdrawal from the course and is not included in GPA calculations.

WF is a withdrawal from the course after the 10th week of the semester and is equivalent to an F in GPA calculations.

Additional Notations

“E” (Exclude) indicates a course that is no longer being counted in the cumulative GPA.

“I” (Include) indicates a course that has been repeated, with the grade for the course, included in the cumulative GPA.

Grades Not Used Under Certain Circumstances:

D or D+ grades may not be issued in STCW Coast Guard license courses, effective Spring 2005.

D and D+ are not utilized for Graduate courses.

Readmission after a Withdrawal, Academic Disenrollment, or Administrative Disenrollment

A student who would like to return to Maritime College after a withdrawal, an administrative disenrollment, or an academic disenrollment must apply for readmission through the Admissions Office. A student who has been academically disenrolled will be considered for readmission only after a “get well program” is completed at another college (at least 12 credits relevant to the requested degree, with a grade of C or better and with an overall GPA > 2.5).

All requests for readmission must include a required application form, official transcripts for college work since leaving Maritime, and any additional information requested by the Dean of Admissions or the Associate Provost for Academic Programs, Planning and Assessment (or their designees). A student seeking to rejoin the Regiment will need the approval of the commandant of cadets and an in-person meeting may be necessary.

A readmitted student will generally be required to follow the degree curriculum in effect at the time of readmission and should meet with the Department Chair or Academic School Dean to formulate a schedule for the semester of return.

Readmission to a License Program

Due to the dynamic nature of changes that occur in SUNY Maritime College’s license program with the US Coast Guard:

1. Any student readmitted to the College after 3 or more years of separation who seeks entry or reentry into a license degree program at time of readmission or thereafter will be subject to a “License Refresh” whereby all license/STCW courses previously taken by the student will be excluded from the student’s GPA **and must be repeated**. Note that METE 201 and ENGR 503 courses which are also explicitly required in certain intern degrees, will not be excluded.
2. A student seeking readmission to a license degree program after any period of time outside of the license degree program is subject to the following conditions:
    a. Student must meet the U.S. Coast Guard’s medical and physical requirements before being readmitted;
    b. Student who lacks recent sea time (recency) must be a member of the Regiment of Cadets for at least one (1) semester before being placed on the training ship; this should be the spring semester preceding the SST.
    c. Student pursuing a deck license must register for and pass seminar in the semester prior to sailing for recency. Students pursuing an engine license must register for and pass seminar on the SST.
    d. Students who fail to complete all Coast Guard approved program requirements (e.g., completion of approved curriculum of study that includes all required training, appropriate sea service, STCW assessments and comprehensive Coast Guard administered examination for the appropriate national endorsement(s)), in a five-year period beginning in the first academic period of enrollment in the approved program with no more than one academic term of disenrollment, including summer, must complete the following within the year prior to program completion:
        i. Basic Training (BT). If the student has previously qualified for BT, Coast Guard approved revalidation training may be substituted;
        ii. Personal Survival Craft (PSC). If the student has previously qualified PSC, Coast Guard approved revalidation training may be substituted; and
        iii. Advanced Fire Fighting (AFF). If the student has previously qualified for Advanced Fire Fighting, Coast Guard approved revalidation training may be substituted.
    e. Student must complete all current STCW tasks (assessments) prior to completing the license degree program; and
    f. Student may need to repeat certain academic courses as determined by the major Department Chair and/or School Dean.
    g. Students who pass the comprehensive National Endorsement examination but are not program complete (i.e., graduation) within one year of passing the examination will be required to reexamine in order to be program complete.

Readmission after Suspension from the College for Disciplinary Reasons

A student who wants to return to Maritime College after separation from the College for disciplinary reasons should start the process by first reaching out to the Dean of Student Affairs or the Commandant of Cadets, as appropriate. If the student is approved to pursue readmission, the student should follow all relevant steps detailed above.

Registration

Each semester, students register for new classes after meeting with their advisor to plan which courses are needed according to the degree and major requirements.*

**Exception: the first semester the student is enrolled, the Registrar's Office will process a registration on behalf of the student after receiving the results of the Math placement exams.*

At the designated time period for advisement - prior to the registration period - students will meet with their advisor to plan a curriculum schedule of courses needed and to receive an Alternate PIN to register for courses. Note: Alternate PINs change every semester before registration. The student can register for classes or change sections of a course. The student can view their own schedule of classes including the days, the times, the instructors and the rooms for each course.

A student's account must be cleared of all fees in order to register, obtain grades, get copies of transcripts or receive a diploma.

Repeat a Course

If the student does not successfully complete a course, she/he may attempt to take the same course again. A student may also repeat a successfully completed course to improve her/his GPA. A student attempting to take a course more than three times must meet with the major Department Chair prior to registering for the course via the *Special Course Repeat Form*.

An attempt is defined as registering for and remaining in the course after the date where dropping is noted on the transcript as a W or WF (including those at other institutions).

Note that there may be impacts and limitations to financial aid eligibility with respect to repeated courses. Students should consult with their academic advisors for more information.

Semester Honors

SUNY Maritime maintains several programs to honor students who have earned distinction in the area of academic excellence. The following are the recognitions for academic achievement during a semester:

- **Admiral's List** – Students with a semester average above 3.495 are eligible for Admiral's List.
- **Dean's List** – Students with a semester average of 2.995 - 3.494 are eligible for Dean's List.

A minimum of 14 credits must be carried during the semester for such recognition.

STCW (Standards of Training, Certification and Watchkeeping)

Issuance of STCW Training Certificates

STCW training certificates shall be issued to license–option cadets at graduation (program completion) from SUNY Maritime College's MARAD approved Academy 310 license program. The production and issuance of STCW certificates are the responsibility of the Director of Licensing. The exception to this policy is the Vessel, Company & Facility Security Officer certificate, earned through MT-435 (Maritime Security) or TMGT-8390 (Maritime Port Security), which can be requested in writing to the Director of Licensing by non-license students after the course concludes.

License-option students may not substitute training and the academy will not accept training certificates from cadets who complete training outside of SUNY Maritime College's approved program. The only exception is a transfer student from another maritime academy which requires a case-by-case review of the training received at the previous academy.

Sitting for the USCG Exam

All cadets enrolled in SUNY Maritime College's Academy 310 program must sit for their initial U.S. Coast Guard examination on campus in either August or January based on their application rotation and graduation date. Subsequent re-examinations (complete or partial) may be taken at any U.S. Coast Guard Regional Examination Center (REC); however, the re-examination must be scheduled by the Director of Licensing in coordination with the cadet.

Additional Information found at: http://www.sunymaritime.edu/academics/coast-guard-licensing

SUNY Cross-Registration

SUNY Cross Registration provides SUNY students with access to courses at other SUNY campuses in order to promote timely degree completion. In addition, it provides the opportunity for students to combine courses from multiple SUNY campuses for purposes of financial aid awards.

Maritime College Policy

- SUNY Cross Registration is available for fall and spring semesters only.
- Maritime does not participate in SUNY Cross Registration (neither as home or host institution) during summer or winter terms. However, students can still pursue taking courses through standard visiting/non-matriculated student procedures.
- Only courses unavailable to a student at Maritime College in a particular term will be approved for SUNY Cross Registration (e.g., the course is not being

offered, there are no seats available, or it conflicts with another required course).

- Student must be within one year of graduation or demonstrate that delaying the course would result in increased time to degree completion (beyond the normal time for their degree).

Guidance for Maritime Students

Maritime students who wish to enter a Cross Registration agreement with another SUNY campus are advised to:

- Obtain approval to take the course Off Campus via the Off Campus Course Request Form and submit to the Office of the Registrar. This requires approval/signature of the Department Chair of the course or the appropriate Academic School Dean.
- Submit your request via the SUNY online application (https://www.suny.edu/crossregister).
- Register for the course(s) at the other SUNY campus. Students are responsible for following through with their registration at the other institution by their applicable dates/deadlines and adhere to their related policies. Note: this may require that you provide a Certificate of Residence if taking a course at a Community College.
- Report any enrollment changes in the course to both Maritime College and the Host institution.
- Upon completion of the course, ensure the “host” institution sends SUNY Maritime a transcript reflecting your final grade. The course will be treated in accordance with SUNY Maritime’s Transfer Credit Policy.

Guidance for Visiting Students

Degree-seeking students at other SUNY campuses who wish to enter a Cross Registration agreement by taking a course at Maritime should:.

- Consult the home institution’s policies to obtain approval to take the course.
- Submit a request via the SUNY online application (https://www.suny.edu/crossregister).
- Upload transcripts from the home institution to Maritime for review of applicable prerequisites, etc.
- Ensure the registration is processed correctly. The student must adhere to Maritime’s registration and withdrawal dates/deadlines and policies.
- Report any enrollment changes in the course to Maritime and the home campus.

Syllabus

A written syllabus (paper or electronic) must be provided to students in each course. If there are changes to the information provided in the syllabus during the semester, an updated syllabus must be provided to students in written form (paper or electronic).

The syllabus must include *as a minimum*:

- Information regarding the course content and expectations (e.g., class attendance); the student learning outcomes (SLOs) for the course shall also be explicitly communicated
- Details on the basis for grades, including: the course's examination policy; the number and types of exams; a list of graded assignments with their approximate due dates and their weight in the final grade.
- Instructor's course policy for academic integrity
- A statement on accommodations for students with learning disabilities
- Information supporting the College's emphasis to strengthen a culture of inclusion, including promoting an environment of dignity and respect for everyone in the class

Withdrawal from School

An official withdrawal is the voluntary decision to discontinue studies/enrollment at the college. Students must file a *Withdrawal from School* form with the Office of the Registrar if they wish to withdraw from school. Students that do not properly withdraw from the college will be Administratively Disenrolled. Students who wish to return after an Official Withdrawal will need to apply for readmission. For information on the procedure for Readmission, please refer to the section entitled "Readmission after a Withdrawal/Academic Disenrollment/Administrative Disenrollment" in the student Handbook for further information.

CREDIT HOUR POLICY

All credit hours awarded by SUNY Maritime College will conform to the definitions promulgated by and are in compliance with policies set forth by SUNY, NYSED and MSCHE.

State University of New York – Credit/Contact Hour Policy

SUNY Maritime College's calculations of credit hour follow the State University of New York (SUNY) Policy which is applicable to its Community Colleges and State-Operated Campuses. The Policy is below:

Summary

The State University of New York (University), like most American higher education, has adopted a variant of the traditional "Carnegie Unit" as a measure of academic credit. This unit is known in the University by the familiar term, "semester credit hour," and is the primary academic measure by which progress toward a degree is gauged. It is recognized that such a unit measures only a part, albeit a major part, of a composite learning experience, based upon formally structured and informal interactions among faculty and students.

Policy

Over the past several years, for academic purposes, some faculties have allowed modifications of the classical Carnegie definition of a semester credit hour, which has stipulated that one semester credit hour be awarded for fifteen sessions of 50-minutes duration in classroom lecture-recitation each requiring two hours of outside preparation by the student. Today there are many types of educational experiences with which credit hour assignment may properly be associated.

In the interest of accurate academic measurement and cross-campus comparability, the following definitions and practices apply in controlling the relationship between contact and credit hours. These definitions constitute a formalization of current and historic policy in order to ensure consistency throughout the University. Courses may be composed of any combination of elements described, such as a lecture course which also has required laboratory periods or a lecture course having an additional requirement for supervised independent study or tutorial activity.

A semester credit hour is normally granted for satisfactory completion of one 50-minute session of classroom instruction per week for a semester of not less than fifteen weeks. This basic measure may be adjusted proportionately to reflect modified academic calendars and formats of study.

New York State Education Department – Guidelines

All credit-bearing degree and certificate programs at SUNY Maritime College are approved by the New York State Education Department (NYSED). Calculations of credit hours for these programs follow NYSED guidelines, which are consistent with the SUNY's adoption of the Carnegie definition of a credit hour.

Codes, Rules and Regulations of the State of New York, Title 8 – Education Department, Chapter II – Regulations of the Commissioner, Subchapter A – Higher and Professional Regulations, Part 50 – General, Section 50.1 (o) stipulates the following: Semester hour means a credit, point, or other unit granted for the satisfactory completion of a course which requires at least 15 hours (of 50 minutes each) of instruction and at least 30 hours of supplementary assignments, except as otherwise provided pursuant to section 52.2(c)(4) of this Subchapter. This basic measure shall be adjusted proportionately to translate the value of other academic calendars and formats of study in relation to the credit granted for study during the two semesters that comprise an academic year.

Section 52.2(c)(4) stipulates: A semester hour of credit may be granted by an institution for fewer hours of instruction and study than those specified in subdivision (o) of section 50.1 of this Subchapter only: (i) when approved by the commissioner as part of a registered curriculum; (ii) when the commissioner has granted prior approval for the institution to maintain a statement of academic standards that defines the considerations which establish equivalency of instruction and study and such statement has been adopted by the institution; or (iii) in the event of a temporary closure of an institution by the State or local government as a result of a disaster, as defined in section 50.1(w) of this Title, when the commissioner has granted approval for the institution to maintain a statement of academic standards that defines the considerations which establish equivalency of instruction and study and such statement has been adopted by the institution.

NYSED – Determining Time on Task in Online Education

The College adheres to the New York State Education Department's Office of College and University Evaluation policies on "Determining Time on Task in Online Education," which is excerpted below.

Time on task is the total learning time spent by a student in a college course, including instructional time as well as time spent studying and completing course assignments (e.g., reading, research, writing, individual and group projects.) Regardless of the delivery method or the particular learning activities employed, the amount of learning time in any college course should meet the requirements of Commissioner's Regulation Section 50.1 (o), a total of 45 hours for one semester credit (in conventional classroom education this breaks down into 15 hours of instruction plus 30 hours of student work/study out of class).

"Instruction" is provided differently in online courses than in classroom-based courses. Despite the difference in methodology and activities, however, the total "learning time"

online can usually be counted. Rather than try to distinguish between "in-class" and "outside-class" time for students, the faculty member developing and/or teaching the online course should calculate how much time a student doing satisfactory work would take to complete the work of the course, including:

- reading course presentations/ "lectures"
- reading other materials
- participation in online discussions
- doing research
- writing papers or other assignments
- completing all other assignments (e.g., projects)

The total time spent on these tasks should be roughly equal to that spent on comparable tasks in a classroom-based course. Time spent downloading or uploading documents, troubleshooting technical problems, or in chat rooms (unless on course assignments such as group projects) should not be counted.

In determining the time on task for an online course, useful information includes

- the course objectives and expected learning outcomes
- the list of topics in the course outline or syllabus; the textbooks, additional readings, and related education materials (such as software) required
- statements in course materials informing students of the time and/or effort they are expected to devote to the course or individual parts of it
- a listing of the pedagogical tools to be used in the online course, how each will be used, and the expectations for participation (e.g., in an online discussion, how many substantive postings will be required of a student for each week or unit?)

Theoretically, one should be able to measure any course, regardless of delivery method, by the description of content covered. However, this is difficult for anyone other than the course developer or instructor to determine accurately, since the same statement of content (in a course outline or syllabus) can represent many different levels of breadth and depth in the treatment of that content, and require widely varying amounts of time.

Middle States Commission on Higher Education – Credit Hour Policy

SUNY Maritime College's calculations of credit hour comply with Credit Hour Policy of the Middle States Commission on Higher Education (MSCHE). The policy is excerpted here:

Context

The Middle States Commission on Higher Education expects all candidate and accredited institutions to demonstrate that they use acceptable and consistent methods for assigning credit hours to all courses and programs of study. The credit hour is defined by the U.S. Department of Education as a basic institutional measure of the level of instruction and academic rigor that establishes eligibility for federal funding.

Both within and between institutions, consistency in credit hour determinations has implications for the transferability of credit and for demonstrating that all courses and programs—regardless of teaching and learning formats or delivery mode—are of sufficient academic rigor, content, and depth.

The purpose of this document is to guide institutions in assigning credit hours in ways that are consistent with U.S. Department of Education credit hour regulations and that allow for flexibility.

Definition

The U.S. Department of Education defines "credit hour" as:

"…An amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

> (1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or,
>
> (2) at least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours."

The U.S. Department of Education establishes the credit hour as the basis for measuring an institution's eligibility for federal funding. The Carnegie unit, represented in point (1) above, has served as the traditional unit of measure, but the Department also recognizes that institutions are developing other measures of educational content and credit equivalency. The purpose of the credit hour policy is to ensure that credit hour measures are reasonably equivalent regardless of how institutions award credit hours to courses and programs in various modes of instruction and teaching and learning formats.

Policy

The Commission recognizes that institutions may use one or both of the options identified in the definition of credit hours when assigning credit hours.

SUNY Maritime College – Credit Hour Policy

All semester/credit hours awarded by SUNY Maritime College will conform to the definitions listed above. Therefore, all credits awarded are in compliance with policies set forth by SUNY, NYSED and MSCHE.

The academic calendar for SUNY Maritime College follows a semester system with fall and spring semesters consisting of 15 academic weeks, which includes one week for exams. Summer and winter terms are typically less than 15 weeks but adhere to the policy in terms of meeting time and the amount of work required. Terms for certain

academic programs (for example, compressed summer schedules) have been adjusted but nonetheless adhere to the policy in terms of the amount of work required. Courses offered in compressed schedules may be limited, and will be offered only if it is possible to adhere to the credit hour policy in terms of meeting time and the overall amount of work required.

Department faculty are responsible for developing, maintaining, and assessing the curriculum within an academic program. Assignment of credit hours for courses is determined within the program based on faculty expertise and student learning outcomes. New courses are introduced only after review and approval at the department level, school level, by the Curriculum Committee, and finally by the Faculty as a whole.

In their review and approval of new courses and major revisions of existing courses, the academic department, the school, the Curriculum Committee and the Faculty are charged with following the policy on credit hours and certifying that the expected student learning for the course meets the credit-hour standard.

The following tables summarize how the credit hour translates to the particular instruction method. Please note that for these calculations, time is in hours where 1 contact hour = 50 minutes and a semester is 15 weeks in duration.

For One (1) Credit Hour Awarded:	Minimum Inside-Class Contact Hours/ Week	Minimum Inside-Class Contact Hours/ Semester	Minimum Outside-of-Class Student Work/ Week	Minimum Outside-of-Class Student Work/ Semester	Total Instructional + Student Work Time/ Semester
Lecture	1	15	2	30	45
Lab	2	30	1	15	45
Recitation	2	30	1	15	45

The Registrar adds newly approved courses to the College Catalog upon direction of the Provost. The Registrar reviews the class schedules prior to the start of each semester to ensure that all classes are scheduled for the number of hours specified in the approved course description. Any discrepancies are brought to the attention of the appropriate academic department and/or school for correction.

Independent Study

Independent study courses are those courses of study in which a faculty member regularly interacts and directs student outcomes with periodic, usually one-on-one or individualized contact. Minimum credit hours are determined based on faculty instructional contact minutes and student outside work time. In all such instances, such courses must match the total amount of instructional and student work time as indicated in the table above, and the faculty member is required to keep records of the meeting times and student work assigned so that contact hours can be calculated.

Internships

Internships are courses of study in which a faculty member regularly interacts and directs student outcomes with periodic contact, but where the actual learning environment takes place on or off campus at an approved site. The learning experience will typically involve a site supervisor or preceptor, and directed activity/learning will occur outside of a lecture setting. Contact time and outside student work requirements must be established and documented and must match the total amount of instructional and student work time as indicated in the table above. The faculty member or Department Chair responsible for the experience is required to keep records of the amount of supervised work and the amount of outside work assigned so that contact hours can be calculated. However, total hours well exceed the minimum hours per credit requirement.

Accelerated Courses

Courses offered outside of a standard 15-week semester in which the credit hours offered are the same as standard semester courses and the content and substantive learning outcomes are the same as those in the standard semester. These courses must meet the total amount of instructional and student work time as indicated in the table above even if delivered within an accelerated time frame.

Online/Hybrid Courses

Online courses are offered entirely online without any onsite face-to-face meetings. These courses have the same learning outcomes and substantive components as a standard lecture/seminar course with an alternate delivery method. Contact time is satisfied by several means. In all instances, online courses must meet the total amount of instructional and student work time as indicated in the table above even if delivered online and asynchronously.

Hybrid courses combine online and face-to-face instruction, delivering a substantial proportion of the content online and typically using online discussions and a reduced number of face-to-face meetings. Contact time is assessed using both onsite definitions (for the onsite portion) and online definitions as above (for the online portion). In all such instances, these courses must meet the total amount of instructional and student work time as indicated in the table above even if delivered online or asynchronously.

Maritime Education and Training Courses

Many credit-bearing courses offered as part of the U.S. Coast Guard (USCG) Licensing program have requirements such as sea service, practical demonstrations of skill (assessments), classroom instruction, vessel maintenance & repair, and watchkeeping that do not easily follow the usual calculation of credits for the total amount of instructional and student work time. However, total hours well exceed the minimum hours per credit requirement. Such courses include:

- ENGR 510/520/530 – Summer Sea Term I/II/III

- ENGR 521 – Cadet Commercial Vessel Shipping (in lieu of Summer Sea Term II)
- MT 510/520/530 – Ship Operation and Management I/II/III (Summer Sea Term I/II/III)
- MT 521 – Cadet Commercial Vessel Shipping (in lieu of Summer Sea Term II)
- MTOD 524/525 – Cadet Commercial Vessel Shipping Limited Tonnage I/II
- MTOE 521/522/523 – Cadet Commercial Vessel Shipping Assistant Engineer I/II/III

These courses are audited by the USCG and the Maritime Administration (MARAD) every five years, where all course materials are reviewed during an on-Campus visit by a joint USCG-MARAD evaluation team. A mid-cycle internal audit must be conducted by the College and the results presented to the visiting team at the time of the audit.

Class Schedule

The Office of Registrar uses the grid below to schedule each course that is offered by the College.

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 AM 8:30 AM 8:50 AM					
9:00 AM 9:45 AM 9:50 AM					
10:00 AM 11:15 AM					
11:30 AM 12:45 PM					
1:00 PM 1:30 PM 1:50 PM					
2:00 PM 2:45 PM 2:50 PM					
3:00 PM 4:15 PM		College Activities Period		College Activities Period	
4:30 PM 4:30 PM 5:45 PM					
6:30 PM 6:30 PM 7:20 PM (60-minutes) 7:30 PM (50-minutes) 7:45 PM (75-minutes) 8:10 PM (100-minutes) 9:00 PM (150-minutes)			Student Activities Period (7:30 PM - 9:00 PM)		

Procedures

1. All courses offered at the College will be reviewed periodically by the department faculty, Department Chair, School Dean, and the Curriculum Committee for evidence of compliance with the semester/credit hour definitions as set forth by New York State, the U.S. Department of Education and the Middle States Commission on Higher Education. Information

indicating such compliance will be shared with the Registrar to ensure ongoing compliance of assignment of credit hours to courses.

2. Courses which appear to be out of compliance will be evaluated and immediate measures taken to rectify the discrepancies. New courses or changes to existing courses and curriculum will normally be evaluated as part of the work of the Curriculum Committee.
3. The College catalog shall serve as the official College publication providing information on credits assigned to each college course.
4. Records of credits assigned for each course will be maintained by the Registrar.

GENERAL EDUCATION AT SUNY MARITIME COLLEGE

SUNY Maritime College has a long history of offering baccalaureate curricula that include required courses across many disciplines, guaranteeing that our graduates have broad knowledge beyond their major fields. The College follows the the new SUNY General Education (GE) framework guidelines that were passed by the SUNY Board of Trustees in 2021 and applies to new, first-time students effective in fall 2023. The SUNY General Education (GE) system-wide framework applicable to all SUNY undergraduate degree programs that addresses the fundamental goals of higher education, including proficiency with essential skills, familiarization with disciplinary and interdisciplinary ways of knowing, and enhancement of the values and disposition of an engaged 21st century global citizenry.

SUNY's General Education rests on the following guiding principles:

1. SUNY GE promotes equity by equipping all SUNY undergraduates—regardless of background, program of study, or campus—with foundational capacities fostered through a broad liberal education to prepare them for further study, work, life, and global citizenship.
2. SUNY GE encourages students to explore subjects and learning experiences beyond their intended major and fosters a commitment to personal growth and life-long learning.
3. SUNY GE aligns with SUNY's commitment to deep and engaged learning and encourages persistence, completion, and success.
4. SUNY GE supports seamless transfer of students between and among SUNY institutions; it ensures consistency in expected learning outcomes while enabling individual campuses to develop unique signature features, including their respective array of educational offerings and pedagogical approaches.
5. SUNY GE specifies minimum requirements; campuses may set additional expectations, as long as those expectations remain consistent with SUNY policy, NYS regulation and education law, and institutional accreditation standards and expectations.
6. SUNY GE is internally consistent and coherent, and readily understood by students, faculty, staff, and other internal and external stakeholders.
7. SUNY GE includes clear and measurable student learning outcomes, assessed by campuses on an ongoing basis to ensure high-quality educational experiences for all undergraduate students; similarly, SUNY GE policy is reviewed regularly to ensure that it is effective, relevant, and up-to-date.

Additional information about SUNY GE is available online at https://system.suny.edu/academic-affairs/acaproplan/general-education/suny-ge/ and implementation of the SUNY GE guidelines is contained in each program curriculum.

UNDERGRADUATE DEGREE CURRICULA

This section provides information regarding undergraduate degree curricula for students entering Maritime College during the 2023-2024 academic year. Details about each program are contained in Appendix A.

Degrees, Majors, and Professional Experience Options

A summary of the degrees awarded by SUNY Maritime with the associated Lifestyle (Regiment or non-Regiment) and Professional Experience (License or Intern) options indicated is shown graphically in the table below.

MARITIME COLLEGE
STATE UNIVERSITY OF NEW YORK

← Degree	Lifestyle →	Must be a Cadet		Cadet or Civilian
	Professional Experience →	USCG License		Intern
	Major	Deck	Engine	
Master of Science (MS)	Shipping and Logistics	✔		✔
	Maritime and Naval Studies	✔		✔
Bachelor of Engineering (BE)	Electrical Engineering	✔	✔	✔
	Facilities Engineering		✔	✔
	Marine Engineering		✔	
	Mechanical Engineering		✔	✔
	Naval Architecture	✔	✔	✔
Bachelor of Science (BS)	Data Science & Machine Learning (new)			✔
	International Transportation & Trade	✔		✔
	Marine Environmental Science	✔		✔
	Marine Operations	✔	✔	
	Marine Transportation	✔		
	Maritime Studies	✔		✔
Associate of Applied Science (AAS)	Maritime Technology	✔ 1,600 Ton	✔ 1,600 Ton	

Following are the degrees and options offered, organized by the school in which they are offered.

The School of Business, Science & Humanities offers Master of Science degrees in…

- **Shipping and Logistics**
  - with Deck License
  - with Internship

The School of Business, Science & Humanities offers Bachelor of Science degrees in:

- **Data Science and Machine Learning**
  - with Internship
- **International Transportation and Trade**
  - with Deck License
  - with Internship
- **Marine Environmental Science**, Marine Biology Minor
  - with Deck License
  - with Internship
- **Marine Environmental Science**, Meteorology and Oceanography Minor
  - with Deck License
  - with Internship
- **Maritime Studies**
  - with Deck License
  - with Internship

The School of Engineering offers the following Bachelor of Engineering degrees:

- **Electrical Engineering**
  - with Deck License
  - with Engine License
  - with Internship
- **Facilities Engineering**
  - with Engine License
  - with Internship
- **Marine Engineering**
  - with Engine License
- **Marine Operations**
  - with Engine License
- **Mechanical Engineering**
  - with Engine License
  - with Internship
- **Naval Architecture**
  - with Deck License
  - with Engine License
  - with Internship

The School of Maritime Education and Training offers the following degrees:

- Bachelor of Science degrees in…
  - **Marine Transportation**
    - with Deck License
  - **Marine Operations**
    - with Deck License
- Associate of Applied Science degree in…
  - **Maritime Technology**
    - with Deck 1,600 Ton License
    - with Engine 1,600 Ton License

Degree Curricula Notes

Each student is responsible for knowing when their required courses are offered, as shown in the published curricula, course descriptions, and curricula flow. Students are encouraged to consult their academic advisor, Department Chair, School Dean, and/or other academic leaders.

General Remarks

Each degree curriculum in this document is provided as a reference showing all course requirements arranged in a model sequence. All bachelor's degrees leading to USCG licensure also require passing the relevant license exams.

A student's individual degree plan may divert from the published curriculum, but must take into account the following:

- A course may be offered only in certain semesters.
- Course prerequisites and corequisites must be honored.

The semester scheduling of course offerings is available in both this document and the accompanying course descriptions document. Course prerequisites/corequisites are available in the accompanying Course Descriptions file. The resulting "flow of courses" for each curriculum can be found in the accompanying Curricula Flow document.

Rules about Curriculum Changes

Students are normally required to follow the policies below. Students may appeal in a timely fashion for waivers through the Department Chair, Academic School Dean, and Provost.

1. **Grandfather clause**: A student is expected to complete their major curriculum as specified at the time of matriculation. A student may choose to follow a later curriculum, but the student must complete all of the requirements of that later curriculum.
2. **Readmission rule**: A readmitted student follows the curriculum in effect at the time the student returns to studies. The only departure from the school that does not require readmission is an official leave of absence.
3. **Change of major rule**: When a student changes major, they must change to the curriculum in effect at the time of the change.
4. **Regulatory change rule**: If a regulatory body (such as the U.S. Coast Guard or ABET) institutes new requirements that change the student's curriculum, the student must complete the new requirements.

Elective Categories for Undergraduate Degree Curricula

Free Electives

A **Free Elective** is defined as any course numbered 100 or higher, not required by the student's degree program. The sum of credits earned through Free Electives must equal the total required for the given degree program. Pass/Fail courses cannot be used as Free Electives.

Engineering (ENGR) Electives

An **Engineering (ENGR) Elective** is defined as any one of the following courses, not required by the student's degree program: any course numbered ENGR 3xx, 4xx, 50x, 54x, or 6xx; CHEM 213, CHEM 301, CHEM 321, ES 420, ES 430, MATH 311, MATH 446, OCEA 308, OCEA 425, NVSC 304; and other courses with the Engineering Chair's approval.

Global Business and Transportation (GBAT) Electives

A **Global Business and Transportation (GBAT) Elective** is defined as any one of the following courses, not required by the student's degree program: MT 350, MT 408, MT 430, MT 435, NVSC 201, all courses with the prefix GBAC, GBEC, GBLW, GBMG, GBTT, or GBUS.

Humanities (HUMN) Electives

A **Humanities (HUMN) Elective** is defined as any one of the following courses, not required by the student's degree program: CHIN 101 or higher; ENGL 200 or higher (except ENGL 452); HIST 200 or higher; HUMN 300 or higher; NVSC 102, 311 and 402; SPAN 101 or higher.

Law Electives

A **Law Elective** is any course from the following list, not required by the student's degree program: GBLW 431, GBLW 433, GBLW 435, GBLW 437, GBMG 348, HUMN 430, MT 404.

Liberal Arts & Sciences (LAS) Electives

A **Liberal Arts & Sciences (LAS) Elective** is defined as any one of the following courses, not required by the student's degree program: CHIN 101 or higher; ENGL 200 or higher (except ENGL 452); GBEC 121, 122, 424, 428; GBLW 435; HIST 200 or higher; HUMN 300 or higher; MATH 101 or higher; NVSC 102, 311 and 402; SPAN 101 or higher; SS 101 or higher; all courses with the prefix BIO, CHEM, ES, GEOL, METE, OCEA, or PHYS.

Marine Environmental Science (MES) Electives

A **Marine Environmental Science (MES) Elective** is any BIO, ES, METE, or OCEA course numbered 300 or higher not required by the student's degree program.

Marine Transportation (MT) Electives

A **Marine Transportation (MT) Elective** is any course from the following list, not required by the student's degree program: MT 212, MT 350, MT 404, MT 408, MT 430, MT 435, MT 450, NAUT 420, NAUT 476.

MTO Electives

A **Professional Studies (PS) Elective** is any course from the following list, not required by the student's degree program: MTO 120, MTO 300, MTO 310, MTO 410, and MTO 411.

Physical Education (PE) Electives

A **Physical Education (PE) Elective** is any course with the prefix PE not required by the student's degree program.

Minors Policy

Students may declare one of the approved minors provided they receive permission from their major Department Chair.

1. A minor consists of at least twelve credits, of which at least six credits must be upper division. A student completing a minor is also responsible for completing all prerequisite courses for the minor courses. Completing a minor may require a student to complete additional credits beyond those required by his/her major degree program.
2. At least nine credits must be earned through Maritime College.
3. A student may not use a course required for his/her major to satisfy a requirement of a minor.
4. Unless otherwise stated, a course taken to satisfy an elective for a major may also be used to satisfy a requirement of a minor (i.e., an elective for a major may be "double counted" as a minor requirement).
5. Students may declare two or more minors, but the same course may not be applied to more than one of the minors (i.e., "double counting" among minors is never allowed).

** Marine Environmental Science students must do a minor in either Marine Biology or Meteorology & Oceanography, neither of which are available to other students. The requirements set forth here do not apply to the MES minors.*

Approved Minors – Requirements and Courses

Environmental Science Minor

Available to all degrees except Marine Environmental Science. Courses to fulfill the minor are:

- ES 101 Introduction to Environmental Science. If major requires ES 101, the student may substitute one of the following courses (not required by major): BIO 201 General Biology I or CHEM 121/122 General Chemistry with Lab, or METE 201 Meteorology for Mariners
- OCEA 101 and 102 General Oceanography and Lab. If major requires OCEA 101/102, the student may substitute one of the following courses (not required by major): BIO 201 General Biology I or CHEM 121/122 General Chemistry with Lab, or METE 201 Meteorology for Mariners

- OCEA 402 Coastal Processes and Management (formerly Estuaries and Coastal Processes)
- ES 303 Geographic Information Systems (GIS)
- Any 300 or 400 level ES, GEOL, METE, or OCEA class

Humanities Minor

The Humanities Minor is available to all degrees except Maritime Studies. Courses to fulfill the minor are:

- Five elective courses offered by the Humanities Department

Intermodal and Maritime Security Minor

The Intermodal and Maritime Security Minor is available to all degrees. Fulfilling the minor requires four courses chosen from:

- GBTT 460 Principles of Global Supply Chain Security
- GBTT 462 Science and Technology Issues of Security
- GBTT 465 Lectures in Contemporary Security Issues
- GBUS 400 Maritime Cyber Security
- MT 430 Principles of Emergency Management Systems
- MT 435 Maritime Security

If major requires MT 435, the student may substitute one of the following courses (not required by major):

- GBLW 437 International Law
- GBTT 457 Port and Terminal Operations
- MT 350 Hazardous Materials and Oil Spill Response MT 408 International Safety Management

Law Minor

The Law Minor is available to all degrees except International Transportation and Trade. Four courses (not required by major) must be chosen from:

- GBLW 431 Business Law
- GBLW 433 Admiralty Law
- GBLW 435 Environmental Law and Policy
- GBLW 437 International Law
- GBMG 348 Business Ethics
- GBTT 451 Marine Insurance
- HUMN 430 Case Studies in Constitutional Law

Note that GBLW 431 is a prerequisite for GBLW 433 and GBTT 451.Management Minor

Management Minor

The Management Minor is available to all degrees except Marine Transportation and International Transportation and Trade. Two courses (not required by major) must be chosen from:

- GBUS 100 Introduction to Business & Economics
- GBAC 311 Financial Accounting
- GBLW 431 Business Law
- GBMG 345 Fundamentals of Marketing

and both

- GBMG 341 Organizational Management
- GBMG 440 Seminar in Strategy and Policy

Note that GBUS 100 is a prerequisite for all of the other courses listed above.

Naval Science Minor

The Naval Science Minor is available to all degrees. Courses to fulfill the minor are:

- **NVSC 101 Introduction to Naval Science**
- **NVSC 402 Leadership And Ethics**
- Nine additional credits of NVSC courses must be completed that are not required by the student's degree program, including two 3-credit courses at 200-level or above.

GRADUATE DEGREE CURRICULA

SUNY Maritime college offers two graduate degrees, as shown graphically in the table on page 71, as well as an Advanced Certificate, all as indicated below.

Graduate Degree Curricular Programs

This section provides information regarding graduate curricula for students entering Maritime College during the current academic year. Details about each program are contained in Appendix B, on the page indicated.

The following Master of Science (M.S.) degrees are offered by SUNY Maritime College, within the School of Business, Science and Humanities.

- **Maritime and Naval Studies**
- **Maritime and Naval Studies** & Graduate License Program
- **Shipping and Logistics**
    - Without Track Options
    - With Track Options
- **Shipping and Logistics** & Advanced Certificate in Supply Chain Management
- **Shipping and Logistics** & Graduate License Program

SUNY Maritime College also offers the following Advanced Certificate:

- **Supply Chain Management**

Graduate Degree Curricula

Each student is responsible for knowing when their required courses are offered, as shown in the published curricula, course descriptions, and curricula flow. Students are encouraged to consult their academic advisor, Department Chair, and/or other academic leaders.

General Remarks

Each degree curriculum in this document is provided as a reference showing all course requirements. All degrees leading to USCG licensure also require passing the relevant license exams.

A student's individual degree plan may divert from the published curriculum, but must take into account the following:

- A course may be offered only in certain semesters.
- Course prerequisites and corequisites must be honored
  Course prerequisites/corequisites are available in the accompanying Course Descriptions file.

Policies Regarding Curriculum Changes

Students are normally required to follow the policies below. Students may appeal in a timely fashion for waivers through the Department Chair, Academic School Dean, and Provost.

1. **Grandfather clause**: A student is expected to complete his/her major curriculum as specified at the time of matriculation. A student may choose to follow a later curriculum, but the student must complete all of the requirements of that later curriculum. Choosing a later curriculum requires submission of a Change of Curriculum form.
2. **Readmission rule**: A readmitted student follows the curriculum in effect at the time the student returns to studies. The only departure from the school that does not require readmission is an official leave of absence.
3. **Change of major rule**: When a student changes major, the student must change to the curriculum in effect at the time of the change. Submission of a Change of Curriculum form is required.
4. **Regulatory change rule**: If a regulatory body (such as the U.S. Coast Guard) institutes new requirements that change the student's curriculum, the student must complete the new requirements.

UNDERGRADUATE COURSES

Course Prefixes and Courses

The course numbering prefixes for all disciplines are listed below. Course descriptions appear in Appendix C, in alphanumeric order according to subject area, prefixes and course number. The course prefixes are as follows:

- BIO Biology
- CHEM Chemistry
- CS Computer Science
- ENGL English
- ENGR Engineering
- ES Environmental Science
- GBAC Accounting
- GBEC Economics and Finance
- GBLW Law
- GBMG Management
- GBTT Transportation Systems
- GBUS General Business
- GEOL Geology
- HIST History
- HUMN Humanities
- LEAD Leadership
- MATH Mathematics
- METE Meteorology
- MTOD Maritime Technology Deck Officer
- MTOE Maritime Technology Engine Officer
- MT Marine Transportation
- NAUT Nautical Science
- NAVG Navigation
- NVSC Naval Science
- OCEA Oceanography
- PE Physical Education
- PHYS Physics
- PS Professional Studies
- SPAN Spanish
- SS Social Science

General Notes on the Scheduling of Courses

A course description will include semester(s) when a course is regularly offered (assuming sufficient demand and resources). if no semester indicated, course is an elective offered at discretion of the department

Definition of Prerequisite and Corequisite Courses

The description for a given course will sometimes contain reference to courses that are prerequisites or corequisites for that given course.

A **prerequisite** is defined as a course that **must** be completed with required minimum grade (passing grade, unless otherwise specified) **prior** to taking another course.

A **corequisite** is defined as a course that can either be completed **prior** to (as detailed above) **or** be taken in the **same semester** as another course. The published degree curricula and flow charts illustrate the preference for any given corequisite situation.

GRADUATE COURSES

Course Prefixes and Courses

Descriptions for graduate course offerings appear in Appendix D, organized by course prefix, with the prefix representing the following:

- MNST Maritime and Naval Studies
- TMGT Shipping and Logistics (Transportation Management)

General Notes on the Scheduling of Courses

A course description will include semester(s) when a course is regularly offered (assuming sufficient demand and resources). If no semester indicated, course is an elective offered at discretion of the department

Definitions of Prerequisite and Corequisite Courses

The description for a given course will sometimes contain reference to courses that are prerequisites or corequisites for that given course.

A **prerequisite** is defined as a course that **must** be completed with required minimum grade (passing grade, unless otherwise specified) **prior** to taking another course.

A **corequisite** is defined as a course that can either be completed **prior** to (as detailed above) **or** be taken in the **same semester** as another course. The published degree curricula and flow charts illustrate the preference for any given corequisite situation.

MARITIME COLLEGE
STATE UNIVERSITY OF NEW YORK

APPENDIX A: UNDERGRADUATE DEGREE CURRICULA

OFFICE OF THE PROVOST

Updated September 2024

UNDERGRADUATE DEGREE CURRICULA

For Students Entering
Maritime College
During
2024-25 Academic Year

As of September 24, 2024

UNDERGRADUATE DEGREE CURRICULA

Programs	Page
Bachelor of Engineering	**5**
Electrical Engineering	
with Deck License	5
with Engine License	6
with Internship	7
Facilities Engineering	
with Engine License	8
with Internship	9
Marine Engineering	
with Engine License	10
Mechanical Engineering	
with Engine License	11
with Internship	12
Naval Architecture	
with Deck License	13
with Engine License	14
with Internship	15
Bachelor of Science	**16**
Data Science and Machine Learning, Logistics & Transportation Concentration	
With Internship	16
International Transportation and Trade	
with Deck License	17
with Internship	18
Marine Environmental Science	
with Deck License	19
with Internship	20
Marine Operations	
with Deck License	21
with Engine License	22
Marine Transportation	
with Deck License	23
Maritime Studies	
with Deck License	24
with Internship	25
Associate of Applied Science	**26**
Maritime Technology	
with Engine License	26
with Deck License	27

DEGREE CURRICULA NOTES

A student is responsible for knowing when their required courses are offered, as shown in the published curricula and course descriptions. For some curricula, flow charts showing the sequencing of courses is also available (check with department offering your curriculum).

General Remarks

Each degree curriculum in this document is provided as a reference showing all course requirements arranged in a model sequence. All bachelor's degrees leading to USCG licensure also require passing the relevant license exams.

A student's individual degree plan may divert from the published curriculum, but must take into account the following:

- A course may be offered only in certain semesters.
- Course prerequisites and corequisites must be honored.

The semester scheduling of course offerings is available in both this document and the accompanying course descriptions document. Course prerequisites/corequisites are available in the accompanying course descriptions document.

Rules about Curriculum Changes (Students are normally required to follow the policies below. Students may appeal in a timely fashion for waivers through the department chair and Provost.)

1. **Grandfather clause:** A student is expected to complete their major curriculum as specified at the time of matriculation. A student may choose to follow a later curriculum, but the student must complete all of the requirements of that later curriculum.

2. **Readmission rule:** A readmitted student follows the curriculum in effect at the time the student returns to studies. The only departure from the school that does not require readmission is an official leave of absence.

3. **Change of major rule:** When a student changes major, they must change to the curriculum in effect at the time of the change.

4. **Regulatory change rule:** If a regulatory body (such as the U.S. Coast Guard or ABET) institutes new requirements that change the student's curriculum, the student must complete the new requirements.

DEFINITIONS FOR ELECTIVE CATEGORIES

A **Free Elective** is defined as any course (except ENGL 090-095 and MATH 080) *not required by the student's degree program*. The sum of credits earned through Free Electives must equal the total required for the given degree program. Pass/Fail courses cannot be used as Free Electives.

An **Engineering (ENGR) Elective** is defined as any one of the following courses, *not required by the student's degree program:* any course numbered ENGR 3xx, 4xx, 50x, 54x, or 6xx; CHEM 213, CHEM 301, CHEM 321, ES 420, ES 430, MATH 311, MATH 446, OCEA 308, OCEA 425, NVSC 304; and other courses with the Engineering Chair's approval.

A **Global Business and Transportation (GBAT) Elective** is defined as any one of the following courses, *not required by the student's degree program:* MT 350, MT 408, MT 430, MT 435, NVSC 201, all courses with the prefix GBAC, GBEC, GBLW, GBMG, GBTT, or GBUS.

A **Humanities (HUMN) Elective** is defined as any one of the following courses, *not required by the student's degree program*: CHIN 101 or higher; ENGL 300 or higher (except ENGL 452); HIST 300 or higher; HUMN 300 or higher; NVSC 102, 311 and 402; SPAN 101 or higher.

A **Law Elective** is any course from the following list, *not required by the student's degree program*: GBLW 431, GBLW 433, GBLW 435, GBLW 437, GBMG 348, HUMN 430, MT 404.

A **Liberal Arts & Sciences (LAS) Elective** is defined as any one of the following courses, *not required by the student's degree program*: CHIN 101 or higher; CS 301; ENGL 300 or higher (except ENGL 452); GBEC 121, 122, 424, 428; GBLW 435; HIST 300 or higher; HUMN 300 or higher; MATH 090 or higher; NVSC 102, 311 and 402; SPAN 101 or higher; SS 101 or higher; all courses with the prefix BIO, CHEM, ES, GEOL, METE, OCEA, or PHYS.

A **Marine Environmental Science (MES) Elective** is any BIO, ES, METE, or OCEA course numbered 300 or higher *not required by the student's degree program*.

A **Marine Transportation (MT) Elective** is any course from the following list, *not required by the student's degree program:* MT 212, MT 350, MT 404, MT 408, MT 430, MT 435, MT 450, NAUT 420, NAUT 476.

A **Physical Education (PE) Elective** is any course with the prefix PE *not required by the student's degree program.*

B.E. in Electrical Engineering with Deck License

Lower Division - Freshman Year

Fall Semester					Spring Semester				
	CHEM 121	General Chemistry I	3				Gen Ed DEISJ Elective	3	
	CHEM 122	General Chemistry I Laboratory	1			ENGR 100	Engineering Graphics	1	
	ENGL 101	Freshman English I	3			ENGR 120	Programming for Engineers	2	
	ENGR 110+	Intro to Engineering Practice	2			MATH 102	Calculus II	4	
	LEAD 101	Leadership/Maritime Experience	1		L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
	MATH 101	Calculus I	4		L	NAVG 112	Navigation I: Intro to Navigation	4	
L	MTO 103	Water Safety & Survival	1			PHYS 102	Engineering Physics I	4	
L	MTO 112+	STCW Basic Training	2			PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	17				Semester Credits:	19.5	

L	**MT 510**	**Summer Sea Term I**	6	

Lower Division - Sophomore Year

	ENGR 242	Statics	3			CHEM 212	Materials Science I	3	
	MATH 211	Calculus III	4			ENGR 290	Circuit Analysis	3	
L	METE 201+	Meteorology for Mariners	3			**ENGR 292+**	**Digital Electronics**	4	
	PHYS 201	Engineering Physics II	4			MATH 212	Differential Equations	4	
	PHYS 203	Engineering Physics II Laboratory	0.5			NAVG 212	Navigation II: Oceans	4	
		General Education Elective**	3		L		General Education Elective**	3	
		Semester Credits:	17.5				Semester Credits:	21	

L	**MT 520**	**Summer Sea Term II**	6		*OR*	L	**MT 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGR 345	Engineering Statistical Analysis	3			ENGR 314	Engineering Economics	3	
	ENGR 383	**Signals & Systems**	3			**ENGR 395+**	**Electric Machines**	3	
	ENGR 385	**Instrumentation & Measurement**	1			**ENGR 396**	**Machine Learning**	3	
	ENGR 387+	**Analog Electronics**	4			**ENGR 398+**	**Control System Theory**	3	
	ENGR 394	**Electromagnetic Fields**	3		L	MT 250	Ship Const & Stability (Unltd Lic)	2	
L	NAUT 314	Rules of the Road	2		L	NAUT 308	Nautical Operations: Safety	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3		L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		Semester Credits:	19				Semester Credits:	20	

L	**MT 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

	ENGR 481	**Communications Theory**	3			**ENGR 489+**	**Electrical Design II**	4	
	ENGR 488+	**Electrical Design I**	3			**ENGR 494**	**Intro Renewable Energy Resource**	3	
	ENGR 490+	**Power Electronics & Electric Drives**	4			**ENGR 497**	**AC & DC Power Distribution Sys**	3	
	ENGR 3xx	Engineering Technical Writing	3		L	MT 322+	Marine Cargo Operations	3	
L	MT 321	Intro to Cargo Ops & Stability	3						
		Free Elective	3				Semester Credits:	13	
		Semester Credits:	19						

9th Semester

		General Education Elective**	3	
L	MT 412	Deck License Seminar	4	
L	MT 426+	Maritime Communications	3	
L	NAUT 416+	Bridge Resource Mgmt (Unltd Lic)	3	
		Free Elective	3	
		Semester Credits:	16	

USCG License Exam:

Lower Division Credits:	87
Upper Division Credits:	93
License Credits (L in left column):	62
Total Credits:	180

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Electrical Engineering with Engine License

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	17	

L	**ENGR 510**	**Summer Sea Term I**	6	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	**ENGR 540+**	**Introduction to Ship Systems**	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	17.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	**ENGR 542**	**Ship Systems II**	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	17.5	

L	**ENGR 520**	**Summer Sea Term II**	6		*OR*	L	**ENGR 521**	**Cadet Comm Vessel Shipping**	6	

	CHEM 212	Materials Science I	3	
	ENGR 290	Circuit Analysis	3	
	ENGR 292+	**Digital Electronics**	4	
L	ENGR 504+	Manufacturing Processes II	1	
L	**ENGR 541**	**Ship Systems I**	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	20	

Upper Division - Junior Year

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 383	**Signals & Systems**	3	
	ENGR 385	**Instrumentation & Measurement**	1	
	ENGR 387+	**Analog Electronics**	4	
	ENGR 394	**Electromagnetic Fields**	3	
L	**ENGR 543+**	**Ship Systems III**	3	
	ENGR 3xx	Engineering Technical Writing	3	
		Semester Credits:	20	

L	ENGR 516	Engine License Seminar	0	
L	**ENGR 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

	ENGR 314	Engineering Economics	3	
	ENGR 395+	**Electric Machines**	3	
	ENGR 396	**Machine Learning**	3	
	ENGR 398+	**Control System Theory**	3	
L	**ENGR 544**	**Ship Systems IV**	4	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	18	

Upper Division - Senior Year

L	ENGR 371	Applied Naval Architecture	3	
	ENGR 481	**Communications Theory**	3	
	ENGR 488+	**Electrical Design I**	3	
	ENGR 490+	**Power Electronics & Electric Drives**	4	
		Free Elective	3	
		Semester Credits:	16	

	ENGR 489+	**Electrical Design II**	4	
	ENGR 494	**Intro Renewable Energy Resource**	3	
	ENGR 497	**AC & DC Power Distribution Sys**	3	
		General Education Elective**	3	
		Free Elective	3	
		Semester Credits:	16	

USCG License Exam:	

Lower Division Credits:	84
Upper Division Credits:	76
License Credits (L in left column):	42
Total Credits:	160

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Electrical Engineering with Internship

Lower Division - Freshman Year

Fall Semester					Spring Semester				
	CHEM 121	General Chemistry I	3				Gen Ed DEISJ Elective	3	
	CHEM 122	General Chemistry I Laboratory	1			ENGR 100	Engineering Graphics	1	
	ENGL 101	Freshman English I	3			ENGR 120	Programming for Engineers	2	
	ENGR 110+	Intro to Engineering Practice	2			MATH 102	Calculus II	4	
	LEAD 101	Leadership/Maritime Experience	1			PHYS 102	Engineering Physics I	4	
	MATH 101	Calculus I	4			PHYS 104	Engineering Physics I Laboratory	0.5	
	PE 100	Swimming and Lifetime Fitness	1						
		Semester Credits:	15				Semester Credits:	14.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3			CHEM 212	Materials Science I	3	
	MATH 211	Calculus III	4			ENGR 290	Circuit Analysis	3	
	PHYS 201	Engineering Physics II	4			**ENGR 292+**	**Digital Electronics**	4	
	PHYS 203	Engineering Physics II Laboratory	0.5			MATH 212	Differential Equations	4	
		General Education Elective**	3				General Education Elective**	3	
		Semester Credits:	14.5				Semester Credits:	17	

	ENGR 526	**Industrial Internship I**	3	

Upper Division - Junior Year

	ENGR 345	Engineering Statistical Analysis	3			ENGR 314	Engineering Economics	3	
	ENGR 383	**Signals & Systems**	3			**ENGR 395+**	**Electric Machines**	3	
	ENGR 385	**Instrumentation & Measurement**	1			**ENGR 396**	**Machine Learning**	3	
	ENGR 387+	**Analog Electronics**	4			**ENGR 398+**	**Control System Theory**	3	
	ENGR 394	**Electromagnetic Fields**	3				General Education Elective**	3	
	ENGR 3xx	Engineering Technical Writing	3						
		Semester Credits:	17				Semester Credits:	15	

	ENGR 536	**Industrial Internship II**	3	

Alternate Internship Choice:

	ENGR 538	**Extended Industrial Internship**	6	

Upper Division - Senior Year

	ENGR 481	**Communications Theory**	3			**ENGR 489+**	**Electrical Design II**	4	
	ENGR 488+	**Electrical Design I**	3			**ENGR 494**	**Intro Renewable Energy Resource**	3	
	ENGR 490+	**Power Electronics & Electric Drives**	4			**ENGR 497**	**AC & DC Power Distribution Sys**	3	
		Engineering Elective	3				Engineering Elective	3	
		Free Elective	3						
		Semester Credits:	16				Semester Credits:	13	

Lower Division Credits:	64
Upper Division Credits:	64
Total Credits:	128

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Facilities Engineering with Engine License

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	17	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	**ENGR 540+**	**Introduction to Ship Systems**	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	17.5	

L	**ENGR 510**	**Summer Sea Term I**	6	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	**ENGR 542**	**Ship Systems II**	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504+	Manufacturing Processes II	1	
L	**ENGR 541**	**Ship Systems I**	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	19	

L	**ENGR 520**	**Summer Sea Term II**	6		*OR*	L	**ENGR 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 380+	Intro to Electric Machinery	3	
L	**ENGR 543+**	**Ship Systems III**	3	
	ENGR 3xx	Engineering Comm. & Ethics	3	
		Semester Credits:	18	

	ENGR 347	Strength of Materials	3	
	or * CHEM 212	Materials Science I		
	ENGR 351	Heat Transfer	3	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 390	Applied Electronics	3	
	ENGR 424	**HVAC System Op & Mgmt**	3	
L	**ENGR 544**	**Ship Systems IV**	4	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	21	

L	ENGR 516	Engine License Seminar	0	
L	**ENGR 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

	ENGR 314	Engineering Economics	3	
	ENGR 350+	Automation & Control Systems	3	
L	ENGR 371	Applied Naval Architecture	3	
	ENGR 423	**HVAC System Design**	3	
	ENGR 425	**Facilities Engineering Design I**	4	
		Semester Credits:	16	

	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 349	**Transport Processes Laboratory**	1	
	ENGR 426	**Facilities Engineering Design II**	4	
	ENGR 444	**Engr Project Management**	3	
		General Education Elective**	3	
		Free Elective	3	
		Semester Credits:	15	

USCG License Exam:	
Lower Division Credits:	83
Upper Division Credits:	76
License Credits (L in left column):	42
Total Credits:	159

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Facilities Engineering with Internship

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
	PE 100 *or*	Swimming and Lifetime Fitness Phys Ed Elective	1	
		Semester Credits:	15	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	14.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	14.5	

	CHEM 212 *or*	Materials Science I	3	
	*ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	16	

	ENGR 526	**Industrial Internship I**	3	

Upper Division - Junior Year

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 380+	Intro to Electric Machinery	3	
	ENGR3xx	Engineering Comm. & Ethics	3	
		Semester Credits:	15	

	ENGR 347 *or*	Strength of Materials	3	
	* CHEM 212	Materials Science I		
	ENGR 351	Heat Transfer	3	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 390	Applied Electronics	3	
	ENGR 424	**HVAC System Op & Mgmt**	3	
		Semester Credits:	15	

	ENGR 536	**Industrial Internship II**	3	

Alternate Internship Choice:

	ENGR 538	**Extended Industrial Internship**	6	

Upper Division - Senior Year

	ENGR 314	Engineering Economics	3	
	ENGR 350+	Automation & Control Systems	3	
	ENGR 423	**HVAC System Design**	3	
	ENGR 425	**Facilities Engineering Design I**	4	
		Engineering Elective	3	
		Semester Credits:	16	

	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 349	**Transport Processes Laboratory**	1	
	ENGR 426	**Facilities Engineering Design II**	4	
	ENGR 444	**Engr Project Management**	3	
		General Education Elective**	3	
		Free Elective	3	
		Semester Credits:	15	

Lower Division Credits:	63
Upper Division Credits:	64
Total Credits:	127

* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Marine Engineering with Engine License

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	17	

L	**ENGR 510**	**Summer Sea Term I**	6	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	**ENGR 540+**	**Introduction to Ship Systems**	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	17.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	**ENGR 542**	**Ship Systems II**	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504+	Manufacturing Processes II	1	
L	**ENGR 541**	**Ship Systems I**	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	19	

L	**ENGR 520**	**Summer Sea Term II**	6		*OR*	L	**ENGR 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 347	Strength of Materials	3	
	or * CHEM 212	Materials Science I		
	ENGR 380+	Intro to Electric Machinery	3	
L	**ENGR 543+**	**Ship Systems III**	3	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	17	

L	ENGR 516	Engine License Seminar	0	
L	**ENGR 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 351	Heat Transfer	3	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 390	Applied Electronics	3	
L	**ENGR 544**	**Ship Systems IV**	4	
		Semester Credits:	17	

Upper Division - Senior Year

	ENGR 314	Engineering Economics	3	
L	ENGR 371	Applied Naval Architecture	3	
	ENGR 423	**HVAC System Design**	3	
	or **ENGR 454**	**Vibrations**		
	ENGR 440+	**Marine Engineering Design II**	3	
	ENGR 453	**Modern Concepts**	3	
	ENGR3xx	Engineering Technical Writing	3	
		Semester Credits:	18	

	ENGR 349	**Transport Processes Laboratory**	1	
	ENGR 350+	Automation & Control Systems	3	
	ENGR 444	**Engr Project Management**	3	
	ENGR 450	**Marine Engineering Design III**	4	
	ENGR 495	**Marine Electrical Systems**	3	
		General Education Elective**	3	
		Semester Credits:	17	

USCG License Exam:	
Lower Division Credits:	83
Upper Division Credits:	75
License Credits (L in left column):	42
Total Credits:	158

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Mechanical Engineering with Engine License

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO112+	STCW Basic Training	2	
		Semester Credits:	17	

L	**ENGR 510**	**Summer Sea Term I**	6	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	**ENGR 540+**	**Introduction to Ship Systems**	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	17.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	**ENGR 542**	**Ship Systems II**	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504+	Manufacturing Processes II	1	
L	**ENGR 541**	**Ship Systems I**	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	19	

L	**ENGR 520**	**Summer Sea Term II**	6		*OR*	L	**ENGR 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGR 344	Thermodynamics	3	
	ENGR 347	Strength of Materials	3	
	or *CHEM 212	Materials Science I		
	ENGR 380+	Intro to Electric Machinery	3	
L	**ENGR 543+**	**Ship Systems III**	3	
	ENGR 341	Fluid Mechanics	3	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	17	

	ENGR 312	**Machine Design**	3	
	ENGR 454	**Vibrations**	3	
	ENGR 351	Heat Transfer	3	
	ENGR 390	Applied Electronics	3	
L	**ENGR 544**	**Ship Systems IV**	4	
	ENGR 3xx	Engineering Comm. & Ethics	3	
		Semester Credits:	19	

L	ENGR 516	Engine License Seminar	0	
L	**ENGR 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

	ENGR 348	Strength of Materials Laboratory	1	
L	ENGR 371	Applied Naval Architecture	3	
	ENGR 418+	**Mechanical Engr Design I**	4	
	ENGR 345	Engineering Statistical Anaylysis	3	
	ENGR 456	**Computer Aided Engineering**	3	
		General Education Elective**	3	
		Semester Credits:	17	

	ENGR 314	Engineering Economics	3	
	ENGR 349	**Transport Processes Laboratory**	1	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 419+	**Mechanical Engr Design II**	**4**	
		Engineering Elective	3	
		Free Elective	3	
		Semester Credits:	17	

USCG License Exam:	
Lower Division Credits:	83
Upper Division Credits:	76
License Credits (L in left column):	42
Total Credits:	159

* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Mechanical Engineering with Internship

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
	PE 100 *or*	Swimming and Lifetime Fitness Phys Ed Elective	1	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	14.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
	ENGR 503+	Manufacturing Processes I	1	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	15.5	

	CHEM 212 *or* *ENGR 347	Materials Science I Strength of Materials	3	
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	16	

	ENGR 526	**Industrial Internship I**	3	

Upper Division - Junior Year

	ENGR 344	Thermodynamics	3	
	ENGR 347 *or* * CHEM 212	Strength of Materials Materials Science I	3	
	ENGR 380+	Intro to Electric Machinery	3	
	ENGR 341	Fluid Mechanics	3	
		Free Elective	3	
		Semester Credits:	15	

	ENGR 312	**Machine Design**	3	
	ENGR 454	**Vibrations**	3	
	ENGR 351	Heat Transfer	3	
	ENGR 3xx	Engineering Comm. & Ethics	3	
		Electrical Engineering Elective	3	
		Semester Credits:	15	

	ENGR 536	**Industrial Internship II**	3	

Alternate Internship Choice:

	ENGR 538	**Extended Industrial Internship**	6	

Upper Division - Senior Year

	ENGR 418+	**Mechanical Engr Design I**	4	
	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 456	**Computer-Aided Engineering**	3	
		General Education Elective**	3	
		Engineering Elective	3	
		Semester Credits:	16	

	ENGR 314	Engineering Economics	3	
	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 349	**Transport Processes Laboratory**	1	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 419+	**Mechanical Engr Design II**	4	
		Engineering Elective	3	
		Semester Credits:	15	

Lower Division Credits:	64
Upper Division Credits:	64
Total Credits:	128

Electrical Engineering Electives:

ENGR 383 Signals & Systems
ENGR 390 Applied Electronics
ENGR 396 Machine Learning
ENGR 398 Control System Theory
ENGR 494 Introduction to Renewable Energy Resources

* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

**In compliance with SUNY General Education Framework requirements
Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Naval Architecture with Deck License

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	17	

L	**MT 510**	**Summer Sea Term I**	6	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
		Semester Credits:	19.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
L	METE 201+	Meteorology for Mariners	3	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
	NAVG 212	Navigation II: Oceans	4	
L		General Education Elective**	3	
		Semester Credits:	20	

L	**MT 520**	**Summer Sea Term II**	6		*OR*	L	**MT 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGR 347	Strength of Materials	3	
	or * CHEM 212	Materials Science I		
L	**ENGR 363**	**Ship Statics**	3	
	ENGR 365+	**Ship Form and Graphics**	3	
	ENGR 380+	Intro to Electric Machinery	3	
L	NAUT 314	Rules of the Road	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
		Semester Credits:	17	

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 366+	**Ship Structure**	4	
	ENGR 368+	**Ship Design I**	4	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		Semester Credits:	20	

L	**MT 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

Upper Division - Senior Year

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 461+	**Ship Design II**	4	
	ENGR 462+	**Ship Resistance and Propulsion**	3	
	ENGR 472+	**Sailboat Principles & Design**	3	
	or	Engineering Elective		
L	MT 321	Intro to Cargo Ops & Stability	3	
	ENGR 3xx	Engineering Comm. & Ethics	3	
		Semester Credits:	19	

	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 471+	**Ship Design III**	4	
	ENGR 473	**Ship Dynamics**	3	
	ENGR 476+	**Power Boat Principles & Design**	3	
	or	Engineering Elective		
L	MT 322	Marine Cargo Operations	3	
		Semester Credits:	17	

All Naval Architecture students must take at least one of the Boat Principles & Design courses ENGR 472/476.

9th Semester

L	MT 412	Deck License Seminar	4	
L	MT 426+	Maritime Communications	3	
L	NAUT 416+	Bridge Resource Mgmt (Unltd Lic)	3	
		General Education Elective**	3	
		Free Elective	3	
		Semester Credits:	16	

USCG License Exam:	
Lower Division Credits:	86
Upper Division Credits:	95
License Credits (L in left column):	63
Total Credits:	181

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Naval Architecture with Engine License

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	17	

L	**ENGR 510**	**Summer Sea Term I**	6	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	**ENGR 540+**	**Introduction to Ship Systems**	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	17.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	**ENGR 542**	**Ship Systems II**	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504+	Manufacturing Processes II	1	
L	**ENGR 541**	**Ship Systems I**	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	19	

L	**ENGR 520**	**Summer Sea Term II**	6		*OR*	L	**ENGR 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGR 347	Strength of Materials	3	
	or * CHEM 212	Materials Science I		
L	**ENGR 363**	**Ship Statics**	3	
	ENGR 365+	**Ship Form and Graphics**	3	
	ENGR 380+	Intro to Electric Machinery	3	
L	**ENGR 543+**	**Ship Systems III**	3	
	ENGR 3xx	Engineering Technical Writing	3	
		Semester Credits:	18	

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 366+	**Ship Structure**	4	
	ENGR 368+	**Ship Design I**	4	
L	**ENGR 544**	**Ship Systems IV**	4	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	20	

L	ENGR 516	Engine License Seminar	0	
L	**ENGR 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 390	Applied Electronics	3	
	ENGR 461+	**Ship Design II**	4	
	ENGR 462+	**Ship Resistance and Propulsion**	3	
	ENGR 472+	**Sailboat Principles & Design**	3	
	or	Engineering Elective		
		Semester Credits:	16	

	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 471+	**Ship Design III**	4	
	ENGR 473	**Ship Dynamics**	3	
	ENGR 476+	**Power Boat Principles & Design**	3	
	or	Engineering Elective		
		General Education Elective**	3	
		Semester Credits:	17	

All Naval Architecture students must take at least one of the Boat Principles & Design courses ENGR 472/476

* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

.

USCG License Exam:	
Lower Division Credits:	83
Upper Division Credits:	77
License Credits (L in left column):	42
Total Credits:	160

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.E. in Naval Architecture with Internship

Lower Division - Freshman Year

Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
	PE 100	Swimming and Lifetime Fitness	1	
		Semester Credits:	15	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	14.5	

Lower Division - Sophomore Year

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	14.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	16	

	ENGR 526	**Industrial Internship I**	3	

Upper Division - Junior Year

	ENGR 347	Strength of Materials	3	
	or * CHEM 212	Materials Science I		
	ENGR 363	**Ship Statics**	3	
	ENGR 365+	**Ship Form and Graphics**	3	
	ENGR 380+	Intro to Electric Machinery	3	
	ENGR 3xx	Engineering Technical Writing	3	
		Semester Credits:	15	

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 366+	**Ship Structure**	4	
	ENGR 368+	**Ship Design I**	4	
		Semester Credits:	15	

	ENGR 536	**Industrial Internship II**	3	

Alternate Internship Choice:

	ENGR 538	**Extended Industrial Internship**	6	

Upper Division - Senior Year

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 461+	**Ship Design II**	4	
	ENGR 462+	**Ship Resistance and Propulsion**	3	
	ENGR 472+	**Sailboat Principles & Design**	3	
	or	Engineering Elective		
		Engineering Elective	3	
		Semester Credits:	16	

	ENGR 354+	Marine Engineering Design I	3	
	ENGR 471+	**Ship Design III**	4	
	ENGR 473	**Ship Dynamics**	3	
	ENGR 476+	**Power Boat Principles & Design**	3	
	or	Engineering Elective		
		General Education Elective**	3	
		Semester Credits:	16	

All Naval Architecture students must take at least one of the Boat Principles & Design courses ENGR 472/476.

Lower Division Credits:	63
Upper Division Credits:	65
Total Credits:	128

* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Data Science and Machine Learning with Internship, Logistics & Transportation Concentration

Lower Division - Freshman Year

Fall Semester

	CS 131	**Programming I**	3	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business and Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
		Semester Credits:	14	

Spring Semester

		Gen Ed DEISJ Elective	3	
	CS 202	**Introduction to Data Science**	3	
	MATH 102	Calculus II	4	
	PE 100	Swimming and Lifetime Fitness	1	
(1)		Gen Ed Natural Science	4	
		Semester Credits:	15	

Lower Division - Sophomore Year

	MATH 211	Calculus III	4	
	MATH 213	**Discrete Mathematics**	3	
	MATH 251	Statistics	3	
		General Education Elective**	3	
		LAS Elective	3	
		Semester Credits:	16	

	MATH 311	**Linear Algebra**	3	
	STAT 301	**Statistics II**	3	
		General Education Elective**	3	
(1)		General Education Elective**	3	
		LAS Elective	3	
		Semester Credits:	15	

Upper Division - Junior Year

	CS 301	**Data Structures & Algorithims**	3	
	CS 311	**Machine Learning I**	3	
	GBTT 251	Transportation Systems	3	
	HUMN 467	Science Fiction	3	
		LAS Elective	3	
		Semester Credits:	15	

	CS 312	**Machine Learning II**	3	
	GBTT 252	Business of Shipping	3	
	STAT 401	**Time Series Analysis**	3	
		LAS Elective	3	
		Semester Credits:	12	

	DS 525	**Data Science Internship**	6	

Upper Division - Senior Year

	CS 401	**Database Systems**	3	
	CS 411	**Deep Learning**	3	
	GBTT 453	Import/Export and Traffic Mgt	3	
(2)		MATH/STAT/CS Elective	3	
		Free Elective	3	
		Semester Credits:	15	

	CS 425	**Data Science Practicum**	3	
	GBTT 351	International Logistics	3	
(2)		MATH/STAT/CS Elective	3	
		Free Elective	3	
		Semester Credits:	12	

(1) Students in Oceans and Environment Concentration must take OCEA 101 and OCEA 102.
(2) Must be 3 credits or above and at least one must be 300 level or above.

Lower Division Credits:	60
Upper Division Credits:	60
Total Credits:	120

**In compliance with SUNY General Education Framework requirements
Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in International Transportation and Trade with Deck License

Lower Division - Freshman Year

Fall Semester

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		General Education Elective**	3	
		Semester Credits:	18	

Spring Semester

		Gen Ed DEISJ Elective	3	
	GBEC 121	Macroeconomics	3	
	HIST 102	US History Since 1865	3	
	MATH 251	Statistics	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
		Semester Credits:	19	

L	**MT 510**	**Summer Sea Term I**	**6**	

Lower Division - Sophomore Year

	GBAC 311	Financial Accounting	3	
	GBEC 122	Microeconomics	3	
	GBLW 431	Business Law	3	
	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 314	Rules of the Road	2	
		General Education Elective**	3	
		Semester Credits:	17	

	GBAC 315	Managerial Accounting	3	
	GBLW 433	Admiralty Law	3	
	GBMG 345	Fundamentals of Marketing	3	
	HUMN 202	Later Wrld Civilization & Culture	3	
L	METE 201+	Meteorology for Mariners	3	
L	NAVG 212	Navigation II: Oceans	4	
		Semester Credits:	19	

L	**MT 520**	**Summer Sea Term II**	6		*OR*	L	**MT 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGL 452	Technical Writing	3	
	GBEC 424	Intl. Economics and Finance	3	
	GBTT 251	Transportation Systems	3	
L	MT 322+	Marine Cargo Operations	3	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		Semester Credits:	18.5	

	GBEC 427	Financial Management	3	
	GBEC 428	Economic Geography	3	
	GBTT 252	Business of Shipping	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		LAS Elective	3	
		Semester Credits:	18	

L	**MT 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

	GBLW 435	Environmental Law & Policy	3	
	GBMG 341	Organizational Management	3	
	GBTT 451	Marine Insurance	3	
L	MT 412	Deck License Seminar	4	
L	MT 426	Maritime Communications	3	
		International Studies Humanities Elective	3	
		Semester Credits:	19	

	GBEC 429	Seminar: Transport. Economics	3	
	or GBMG 440	Seminar: Strategy and Policy		
	GBTT 351	International Logistics	3	
	GBTT 453	Import/Export & Traffic Mgt.	3	
	GBUS 300	International Business	3	
	MATH 446	Operations Research	3	
L	NAUT 416+	Bridge Resource Mgmt (Unltd Lic)	3	
		Semester Credits:	18	

USCG License Exam:	
Lower Division Credits:	85
Upper Division Credits:	79.5
License Credits (L in left column):	62
Total Credits:	164.5

International Studies Humanities Electives

ENGL 416 Literature of the Sea
ENGL 418 Contemporary Literature
ENGL 470 Major British Authors
HIST 401-02 Topics in European Civilization I-II
HIST 418 Hist of American Foreign Policy
HIST 421 Vietnam and America
HIST 425 History of Technology
HIST 426 Twentieth Century Technology
HIST 473 Europe and the World
HIST 474 Latin America and the World
NVSC 102 Sea Power and Maritime Affairs
NVSC 311 Evolution of Warfare
Foreign Language Courses

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in International Transportation and Trade with Internship

Lower Division - Freshman Year

Fall Semester

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
	or MATH 111	Applied Calculus I		
		GenEd Natural Science	3	
		Semester Credits:	15	

Spring Semester

		Gen Ed DEISJ Elective	3	
	GBEC 121	Macroeconomics	3	
	GBMG 345	Fundamentals of Marketing	3	
	MATH 251	Statistics	3	
		General Education Elective**	3	
		Semester Credits:	15	

Lower Division - Sophomore Year

	ENGL 452	Technical Writing	3	
	GBAC 311	Financial Accounting	3	
	GBEC 122	Microeconomics	3	
	HIST 102	US History Since 1865	3	
		General Education Elective**	3	
		Semester Credits:	15	

	GBAC 315	Managerial Accounting	3	
	GBLW 431	Business Law	3	
	HUMN 202	Later Wrld Civilization & Culture	3	
		Free Elective	3	
		LAS Elective	3	
		Semester Credits:	15	

Upper Division - Junior Year

	GBEC 424	Intl. Economics and Finance	3	
	GBLW 433	Admiralty Law	3	
	GBMG 341	Organizational Management	3	
	GBTT 251	Transportation Systems	3	
		LAS Elective	3	
		Semester Credits:	15	

	GBEC 427	Financial Management	3	
	GBEC 428	Economic Geography	3	
	GBTT 252	Business of Shipping	3	
		International Studies Elective	3	
		LAS Elective	3	
		Semester Credits:	15	

	GBUS 525	ITT Internship / Work Experience	6		*OR*		GBUS 526	ITT Study Abroad	6	

Upper Division - Senior Year

	GBLW 435	Environmental Law & Policy	3	
	GBTT 451	Marine Insurance	3	
	GBTT 453	Import/Export & Traffic Mgt.	3	
	GBTT 457	Port and Terminal Operations	3	
		International Studies Elective	3	
		Semester Credits:	15	

	GBEC 429	Seminar: Transport. Economics	3	
	or GBMG 440	Seminar: Strategy and Policy		
	GBTT 351	International Logistics	3	
	GBUS 300	International Business	3	
	MATH 446	Operations Research	3	
		Phys Ed Elective	1	
		Semester Credits:	13	

Lower Division Credits:	60
Upper Division Credits:	64
Total Credits:	124

International Studies Electives

At least one of these two electives must be chosen from the left column (International Studies Humanities Electives)

ENGL 416	Literature of the Sea
ENGL 418	Contemporary Literature
ENGL 470	Major British Authors
HIST 401/2	Topics in European Civilization I-II
HIST 418	Hist of American Foreign Policy
HIST 421	Vietnam and America
HIST 425	History of Technology
HIST 426	Twentieth Century Technology
HIST 473	Europe and the World
HIST 474	Latine America and the World
NVSC 102	Sea Power and Maritime Affairs
NVSC 311	Evolution of Warfare
	Foreign Language Courses

GBLW 437	International Law
GBMG 442	Intl Marketing Management
GBMG 443	Cross-Cultural Management
GBTT 460	Principles of Global Supply Chain Security
GBUS 400	Maritime Cyber Security
GBUS 410	Studies in the African Transportation & Maritime Industry
GBUS 526	ITT Study Abroad*
MT 408	International Safety Management
MT 435	Maritime Security

*Other Study Abroad courses to be evaluated by Dept. Chair

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Marine Environmental Science with Deck License

Lower Division - Freshman Year

Fall Semester

	BIO 201+	**General Biology I**	4	
	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	ES 101+	Intro to Environmental Science	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calc I (or MATH 101)	4	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	18	

Spring Semester

	BIO 202+	**General Biology II**	4	
		Gen Ed DEISJ Elective	3	
	MATH 112	**Applied Calc II** (or MATH 102)	3	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
	OCEA 101	**General Oceanography**	3	
	OCEA 102	**General Oceanography Lab**	1	
L	MTO 103	Water Safety & Survival	1	
		Semester Credits:	20	

L	**MT 510**	**Summer Sea Term I**	**6**	

Lower Division - Sophomore Year

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	GEOL 101	**General Geology**	3	
L	METE 201+	Meteorology for Mariners	3	
L	MT 250	Ship Construction & Stability	2	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
		Semester Credits:	18.5	

	BIO 210	**Ecology**	3	
	CHEM 123	**General Chemistry II**	3	
	CHEM 124	**General Chemistry II Laboratory**	1	
L	MT 322+	Marine Cargo Operations	3	
L	NAVG 212	Navigation II: Oceans	4	
		General Education Elective**	3	
		General Education Elective**	3	
		Semester Credits:	20	

L	**MT 520**	**Summer Sea Term II**	6		*OR*	L	**MT 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

*	BIO/METE/OCEA	Core MES Course	3-4	
	CHEM 311	**Environmental Chemistry**	3	
	CHEM 312	**Environmental Chemistry Lab**	1	
	BIO 417	**Biostatistics**	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 314	Rules of the Road	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
		Semester Credits:	18-19	

*	BIO/METE/OCEA	Core MES Course	3-4	
	CHEM 321	**Organic Chemistry**	3	
	CHEM 322	**Organic Chemistry Laboratory**	1	
	ES 303	**GIS**	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		MES Elective	3	
		Semester Credits:	19-20	

L	**MT 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

*	BIO/METE/OCEA	Core MES Course	3-4	
	ES 440	**Global Climate Change**	3	
	ES 451+	**Field Methods in Environ. Science**	4	
L	MT 412	Deck License Seminar	4	
L	MT 426+	Maritime Communications	3	
		Semester Credits:	18-19	

*	BIO/METE/OCEA	Core MES Course	3-4	
	ES 418	**Environmental Sustainability**	3	
	ES 430	**Environmental Impact Assessment**	3	
	GBLW 435	Environmental Law & Policy	3	
L	NAUT 416+	Bridge Resource Mgmt (Unltd Lic.)	3	
	OCEA 402	**Coastal Processes and Mngt**	3	
		Semester Credits:	18-19	

* See next page.

USCG License Exam:	
Lower Division Credits:	88.5
Upper Division Credits:	79
License Credits (L in left column):	62
	167.5-168.5

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

(1) This course is offered in odd years only. **(2)** This course is offered in even years only.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Marine Environmental Science with Internship

Lower Division - Freshman Year

Fall Semester

	BIO 201+	**General Biology I**	4	
	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	ES 101+	Intro to Environmental Science	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calc I (or MATH 101)	4	
		Semester Credits:	16	

Spring Semester

	BIO 202+	**General Biology II**	4	
		Gen Ed DEISJ Elective	3	
	MATH 112	**Applied Calc II** (or MATH 102)	3	
	OCEA 101	**General Oceanography**	3	
	OCEA 102	**General Oceanography Lab**	1	
	PE 100	Swimming and Lifetime Fitness	1	
		Semester Credits:	15	

Lower Division - Sophomore Year

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	GEOL 101	General Geology	3	
	METE 201+	Meteorology for Mariners	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
		Semester Credits:	16.5	

	BIO 210	**Ecology**	3	
	CHEM 123	**General Chemistry II**	3	
	CHEM 124	**General Chemistry II Laboratory**	1	
		General Education Elective**	3	
		General Education Elective**	3	
		Semester Credits:	13	

Upper Division - Junior Year

*	BIO/METE/OCEA	Core MES Course	3-4	
	BIO 417	**Biostatistics**	3	
	CHEM 311	**Environmental Chemistry**	3	
	CHEM 312	**Environmental Chemistry Lab**	1	
		Free Elective	3	
		Semester Credits:	13-14	

*	BIO/METE/OCEA	Core MES Course	3-4	
	CHEM 321	**Organic Chemistry**	3	
	CHEM 322	**Organic Chemistry Laboratory**	1	
	ES 303	**GIS**	3	
		MES Elective	3	
		Semester Credits:	13-14	

	ES 505	Environmental Science Internship I	3	
	ES 515	Environmental Science Internship II	3	

Upper Division - Senior Year

*	BIO/METE/OCEA	Core MES Course	3-4	
	ES 440	**Global Climate Change**	3	
	ES 451+	**Field Methods in Environ. Science**	4	
		Free Elective	3	
		Semester Credits:	13-14	

*	BIO/METE/OCEA	Core MES Course	3-4	
	ES 418	**Environmental Sustainability**	3	
	ES 430	**Environmental Impact Assessment**	3	
	GBLW 435	Environmental Law & Policy	3	
	OCEA 402	**Coastal Processes and Mngt**	3	
		Semester Credits:	15-16	

Lower Division Credits:	60.5
Upper Division Credits:	61
Total Credits:	121.5

***To fulfill the CORE MES Courses, students will choose from the following list of upper-level courses with prefixes- BIO, METE, OCEA. One course must be from each discipline for a total of three courses and the fourth from a discipline of their choice.**

BIO: Marine Biology (BIO 315), Ichthyology (BIO 415), Invertebrate Zoology (BIO 320), Marine Botany (BIO 340), Fisheries Science (BIO 416), Ecotoxicology (BIO 420)

OCEA: Marine Geology (OCEA 414), Marine Biogeochemistry (OCEA 415), Marine Environmental Issues (OCEA 425)

METE: Synoptic Meteorology (METE 350), Tropical Cyclones (METE 402), Dynamic Meteorology (METE 408), Marine Climatology (METE 411), Weather Forecasting (METE 422)

(1) This course is offered in odd years only.

(2) This course is offered in even years only.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Marine Operations with Deck License

Lower Division - Freshman Year

Fall Semester

	ENGL 101	Freshman Eng	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
	MTO 120+	**Primer of Towing**	3	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	17	

Spring Semester

	CS 101	Computer Laboratory	1	
		Gen Ed DEISJ Elective	3	
		Gen Ed US His & Civic Eng Elective	3	
	MATH 251	Statistics	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
		Semester Credits:	17	

L	**MT 510**	**Summer Sea Term I**	6	

Lower Division - Sophomore Year

	GBEC 121	Macroeconomics	3	
L	METE 201+	Meteorology for Mariners	3	
L	MT 322+	Marine Cargo Operations	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
		Semester Credits:	15.5	

	ENGR 540+	**Intro to Ship Systems**	3	
	GBEC 122	Microeconomics	3	
L	NAUT 314	Rules of the Road	2	
L	NAVG 212	Navigation II: Oceans	4	
		Gen Ed Wrld His & Glb Aw Elective	3	
		General Education Elective**	3	
		Semester Credits:	18	

L	**MT 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

L	ENGL 452	Technical Writing	3	
	ENGR 542	**Ship Systems II**	2	
	GBTT 251	Transportation Systems	3	
	MT 212	Ship Management	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
		Semester Credits:	19	

	CHEM 100	**Introductory Chemistry**	3	
	GBEC 428	Economic Geography	3	
	GBTT 252	Business of Shipping	3	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		Humanities Elective	3	
		Semester Credits:	16	

L	**MT 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

	GBTT 457	Port and Terminal Operations	3	
L	MT 412	Deck License Seminar	4	
L	MT 426+	Maritime Communications	3	
	MTO 211	**Advanced Towing Operations**	3	
		Humanities Elective	3	
		Semester Credits:	16	

	GBLW 435	Environmental Law & Policy	3	
	MT 408	International Safety Mgt	3	
	MTO 212	**Business of Towing**	3	
L	**MTOD 414+**	**Bridge Resource and Team Mgmt**	3	
		Humanities Elective	3	
		LAS Elective	3	
		Semester Credits:	18	

USCG License Exam:

Lower Division Credits:	79.5
Upper Division Credits:	75
License Credits (L in left column):	62
Total Credits:	154.5

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Marine Operations with Engine License

Lower Division - Freshman Year

Fall Semester

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	16	

L	**ENGR 510**	**Summer Sea Term I**	6	

Spring Semester

	CHEM 100	**Introductory Chemistry**	**3**	
		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
L	**ENGR 540**	**Intro to Ship Systems**	**3**	
	MATH 112	**Applied Calculus II**	**3**	
L	MT 250	Ship Construction & Stability	2	
L	MTO 103	Water Safety & Survival	1	
		Semester Credits:	16	

Lower Division - Sophomore Year

	CHEM 212	Materials Science I	3	
L	ENGR 503+	Manufacturing Process I	1	
L	**ENGR 542**	**Ship Systems II**	**2**	
	GBEC 121	Macroeconomics	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
	ENGR 3xx	Engineering Comm & Ethics Req	3	
		Gen Ed US His & Civic Eng Elective	3	
		Semester Credits:	18.5	

L	**ENGR 520**	**Summer Sea Term II**	6		*OR*	L	**ENGR 521**	**Cadet Comm Vessel Shipping**	6	

L	ENGR 504+	Manufacturing Process II	1	
L	**ENGR 541**	**Ship Systems I**	**2**	
L	MT 322+	Marine Cargo Operations	3	
	MTO 310	Shipyard Management	3	
	PHYS 214	**General Physics II**	**4**	
	PHYS 216	**General Physics Lab**	**0.5**	
		Gen Ed Wrld His & Glb Aw Elective	**3**	
		Semester Credits:	16.5	

Upper Division - Junior Year

	ENGR 243	**Transport Processes**	**3**	
	ENGR 290	Circuit Analysis	3	
L	**ENGR 543+**	**Ship Systems III**	**3**	
	MTOE 201+	**Engine Room Resource Mgmt**	3	
		General Education Elective**	3	
		Semester Credits:	15	

L	ENGR 516	Engine License Seminar	0	
L	**ENGR 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

	ENGR 380+	Intro to Electric Machinery	3	
L	**ENGR 544**	**Ship Systems IV**	**4**	
	GBTT 251	Transportation Systems	3	
	MATH 251	Statistics	3	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	15	

Upper Division - Senior Year

	GBTT 252	Business of Shipping	3	
	GBTT 457	Port and Terminal Operations	3	
	GBUS 300	International Business	3	
		Humanities Elective	3	
		LAS Elective	3	
		Semester Credits:	15	

	ENGR 446	**Marine Engine Theory & Appl.**	**3**	
	GBLW 435	Environmental Law & Policy	3	
		Humanities Elective	3	
		LAS Elective	3	
		Professional Option	3	
		Semester Credits:	15	

Professional Option Courses:

MT 212	Ship Management
MT 435	Maritime Security
MTO 200	Intro Regulatory Framework

USCG License Exam: ☐

Lower Division Credits:	79
Upper Division Credits:	66
License Credits (L in left column):	44
Total Credits:	145

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Marine Transportation with Deck License

Lower Division - Freshman Year

Fall Semester

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	15	

Spring Semester

		Gen Ed DEISJ Elective	3	
		Gen Ed US His & Civic Eng Elective	3	
	MATH 251	Statistics	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
		Semester Credits:	16	

L	**MT 510**	**Summer Sea Term I**	6	

Lower Division - Sophomore Year

	GBEC 121	Macroeconomics	3	
L	METE 201+	Meteorology for Mariners	3	
L	MT 322+	Marine Cargo Operations	3	
	MT 408	International Safety Mgt	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
		Semester Credits:	18.5	

	GBEC 122	Microeconomics	3	
	GBTT 251	Transportation Systems	3	
L	NAUT 314	Rules of the Road	2	
L	NAVG 212	Navigation II: Oceans	4	
		Gen Ed Wrld His & Glb Aw Elective	3	
		General Education Elective**	3	
		Semester Credits:	18	

L	**MT 520**	**Summer Sea Term II**	6		*OR*	L	**MT 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGL 452	Technical Writing	3	
	GBEC 428	Economic Geography	3	
	GBLW 431	Business Law	3	
	GBMG 341	Organizational Management	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
		Semester Credits:	18	

	GBEC 424	International Economics & Finance	3	
	GBLW 435	Environmental Law & Policy	3	
	GBTT 252	Business of Shipping	3	
	MT 435	Maritime Security	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		Semester Credits:	18	

L	**MT 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

	GBUS 300	International Business	3	
L	MT 412	Deck License Seminar	4	
L	MT 426+	Maritime Communications	3	
		Humanities Elective	3	
		LAS Elective	3	
		Semester Credits:	16	

	GBEC 429 *or* GBMG 440	Seminar: Transport. Economics / Seminar: Strategy and Policy	3	
	MATH 446	Operations Research	3	
L	NAUT 416+	Bridge Resource Mgmt (Unltd Lic.)	3	
		Humanities Elective	3	
*		Professional Option	3	
		Semester Credits:	15	

***Professional Option Courses:**

GBAC 311 Financial Accounting
GBLW 433 Admiralty Law
GBTT 451 Marine Insurance
GBTT 460 Principles of Global Supply Chain Security
GBUS 400 Maritime Cybersecurity
MT 404 Environmental Management
MTO 212 The Business of Towing
MTO 211 Advanced Towing Operations
NAUT 420 Piloting and Shiphandling
NAUT 460 Coastal Operations
NAUT 476 Fast Rescue Boat Operations

USCG License Exam:

Lower Division Credits:	79.5
Upper Division Credits:	73
License Credits (L in left column):	62
Total Credits:	152.5

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Maritime Studies with Deck License

Lower Division - Freshman Year

Fall Semester

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Semester Credits:	15	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ES 101+	**Intro to Environmental Science**	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
	NVSC 102	**Sea Power & Maritime Affairs**	3	
		Semester Credits:	16	

L	**MT 510**	**Summer Sea Term I**	6	

Lower Division - Sophomore Year

	GBEC 121	Macroeconomics	3	
	MATH 251	Statistics	3	
L	METE 201+	Meteorology for Mariners	3	
L	MT 322+	Marine Cargo Operations	3	
		Gen Ed US His & Civic Eng Elective	3	
		Gen Ed Wrld His & Glb Aw Elective	3	
		Semester Credits:	18	

	GBEC 122	Microeconomics	3	
L	NAUT 314	Rules of the Road	2	
L	NAVG 212	Navigation II: Oceans	4	
	OCEA 101	**General Oceanography**	3	
	OCEA 102	**General Oceanography Lab**	1	
		General Education Elective**	3	
		General Education Elective**	3	
		Semester Credits:	19	

L	**MT 520**	**Summer Sea Term II**	6		*OR*	L	**MT 521**	**Cadet Comm Vessel Shipping**	6	

Upper Division - Junior Year

	ENGL 452	Technical Writing	3	
	GBLW 435	Environmental Law & Policy	3	
	GBTT 251	Transportation Systems	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
		Humanities Elective	3	
		Semester Credits:	18	

	GBTT 252	Business of Shipping	3	
	HIST 416	US Maritime History to Civil War	3	
	or HIST 417	US Maritime History Since 1865		
	MT 435	Maritime Security	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		Humanities Elective	3	
		Semester Credits:	18	

L	**MT 530**	**Summer Sea Term III**	5	
L	MTO 412	Medical Care Provider	1	

Upper Division - Senior Year

(1)	**HUMN 465**	**Humanities Research Methods**	3	
	or ENGL 416	Literature of the Sea		
L	MT 412	Deck License Seminar	4	
L	MT 426+	Maritime Communications	3	
		Humanities Elective	3	
		Humanities Elective	3	
		Semester Credits:	16	

	GBEC 428	Economic Geography	3	
	HUMN 490	**Studies in Maritime Policy**	3	
L	NAUT 416+	Bridge Resource Mgmt (Unltd Lic.)	3	
		Humanities Elective	3	
		Law Elective	3	
		Semester Credits:	15	

USCG License Exam:	
Lower Division Credits:	80
Upper Division Credits:	73
License Credits (L in left column):	62
Total Credits:	153

(1) This course is offered in odd years only.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

B.S. in Maritime Studies with Internship

Lower Division - Freshman Year

Fall Semester

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
	or MATH 111	Applied Calculus I		
	PE 100	Swimming and Lifetime Fitness	1	
		Semester Credits:	13	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ES 101+	**Intro to Environmental Science**	3	
	MATH 251	Statistics	3	
	METE 201+	Meteorology for Mariners	3	
	NVSC 102	**Sea Power & Maritime Affairs**	3	
		Semester Credits:	15	

Lower Division - Sophomore Year

	ENGL 452	Technical Writing	3	
	GBEC 121	Macroeconomics	3	
		Gen Ed US His & Civic Eng Elective	3	
		Gen Ed Wrld His & Glb Aw Elective	3	
		Free Elective	3	
		Semester Credits:	15	

	GBEC 122	Microeconomics	3	
	OCEA 101	**General Oceanography**	3	
	OCEA 102	**General Oceanography Lab**	1	
		General Education Elective**	3	
		General Education Elective**	3	
		Free Elective	3	
		Semester Credits:	16	

Upper Division - Junior Year

	GBLW 435	Environmental Law & Policy	3	
	GBTT 251	Transportations Systems	3	
		Humanities Elective	3	
		Humanities Elective	3	
		LAS Elective	3	
		Semester Credits:	15	

	GBTT 252	Business of Shipping	3	
	HIST 416	US Maritime History to Civil War	3	
	or HIST 417	US Maritime History Since 1865		
		Humanities Elective	3	
		LAS Elective	3	
		Free Elective	3	
		Semester Credits:	15	

Upper Division - Senior Year

	GBEC 428	Economic Geography	3	
(1)	**HUMN 465**	**Humanities Research Methods**	3	
	or ENGL 416	Literature of the Sea		
	HUMN 505	Internship in Maritime Studies I	3	
		Humanities Elective	3	
		LAS Elective	3	
		Law Elective	3	
		Semester Credits:	18	

	HUMN 490	**Studies in Maritime Policy**	3	
	HUMN 515	Internship in Maritime Studies II	3	
	or	Free Elective		
		Humanities Elective	3	
		LAS Elective	3	
		Law Elective	3	
		Semester Credits:	15	

Lower Division Credits:	59
Upper Division Credits:	63
Total Credits:	122

(1) This course is offered in odd years only.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

A.A.S. in Maritime Technology with Engine License

Freshman Year

Fall Semester

	ENGL 101	Freshman English I	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
		Gen Ed US His & Civic Eng Elective	3	
		General Education Elective**	3	
		Semester Credits:	17	

L	**ENGR 510**	**Summer Sea Term I**	6	

Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
L	**ENGR 540+**	**Introduction to Ship Systems**	3	
L	MT 250	Ship Construction & Stability	2	
		Gen Ed Natural Science Elective	3	
		General Education Elective**	3	
		Semester Credits:	15	

L	**MTOE 521**	**Cadet Com Vessel Asst Engr I**	2	

Sophomore Year

L	ENGR 503+	Manufacturing Processes I	1	
L	**ENGR 542**	**Ship Systems II**	**2**	
	MTO 310	**Shipyard Management**	3	
L	**MTOE 561+**	**Marine Eng & Aux Machinery I**	3	
L	**MTOE 564+**	**Engine Room Resource Mgmt**	3	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	14	

L	**MTOE 522**	**Cadet Com Vessel Asst Engr II**	4	

L	ENGR 504+	Manufacturing Processes II	1	
L	**ENGR 541**	**Ship Systems I**	2	
L	MT 322+	Marine Cargo Operations	3	
L	**MTOE 563+**	**Marine Electrical Machinery**	3	
L	**MTOE 562+**	**Marine Eng & Aux Machinery II**	3	
L	MTO 412	Medical First Aid	1	
		Semester Credits:	13	

L	**MTOE 523**	**Cadet Com Vessel Asst Engr III**	2	

License Credits (L in left column):	46
Total Credits:	73

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

A.A.S. in Maritime Technology with Deck License

Freshman Year

Fall Semester

	ENGL 101	Freshman English I	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
	MTO 120+	**Primer of Towing**	3	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	MTO 112+	STCW Basic Training	2	
		General Education Elective**	3	
		Semester Credits:	17	

Spring Semester

		Gen Ed DEISJ Elective	3	
L	MTO 103	Water Safety & Survival	1	
L	MT 250	Ship Construction & Stability	2	
L	NAVG 112	Navigation I: Intro to Navigation	4	
		Gen Ed US His & Civic Eng Elective	3	
		General Education Elective**	3	
		Semester Credits:	16	

L	**MT 510**	**Summer Sea Term I**	6	
L	***MTOD 524**	**Cadet Com Vssl Ship Lim Ton I**	2	

* MT 520: Summer Sea Term II may be substituted for MTOD 524. Note that MT 520 has prerequisites MT 510, METE 201, and NAVG 212.

Sophomore Year

L	METE 201+	Meteorology for Mariners	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
	MTO 211	**Advanced Towing Operations**	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAUT 314	Rules of the Road	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
		Semester Credits:	16	

L	MT 322+	Marine Cargo Operations	3	
L	MT 426+	Maritime Communications	3	
	MTO 212	**Business of Towing**	3	
L	**MTOD 414+**	**Bridge Resource and Team Mgmt**	3	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
L	MTO 412	Medical First Aid	1	
L	NAVG 212	Navigation II: Oceans (optional)***	4	
		Semester Credits:	17 *or* 21	

:

*** Required for Oceans Endorsement Only

L	**MTOD 525**	**Cadet Com Vssl Ship Lim Ton II**	4	
L	**MTOD 526**	**Cadet Com Vssl Ship Lim Ton III**	2	

	License Credits (L in left column):	51
License	Credits with Oceans Endorsement:	55
	Total Credits:	80
Total	Credits with Oceans Endorsement:	81

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

**In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).

MARITIME COLLEGE
STATE UNIVERSITY OF NEW YORK

APPENDIX B: UNDERGRADUATE COURSE DESCRIPTIONS

OFFICE OF THE PROVOST

Updated September 2024

UNDERGRADUATE
COURSE DESCRIPTIONS

For Students Entering
Maritime College
During
2024-25 Academic Year

As of September 24, 2024

Note: The course numbering prefixes for all disciplines are listed below. All courses appear in alphanumeric order according to prefixes and course number.

Accounting: GBAC	Marine Transportation: MT
Biology: BIO	Maritime Technology and Operations: MTO
Chemistry: CHEM	Maritime Tech & Ops Deck Officer: MTOD
Chinese: CHIN	Maritime Tech & Ops Engine Officer: MTOE
Computer Science: CS	Mathematics: MATH
Data Science: DS	Meteorology: METE
Economics: GBEC	Nautical Science: NAUT
Engineering: ENGR	Naval Science: NVSC
English: ENGL	Navigation: NAVG
Environmental Science: ES	Oceanography: OCEA
Finance: GBEC	Physical Education: PE
General Business: GBUS	Physics: PHYS
Geology: GEOL	Professional Studies: PS
History: HIST	Social Science: SS
Humanities: HUMN	Spanish: SPAN
Law: GBLW	Statistics: STAT
Management: GBMG	Transportation Systems: GBTT

General Note on the Scheduling of Courses:

Course descriptions include semester(s) when course is regularly offered (assuming sufficient demand and resources). If no semester indicated, course is an elective offered at discretion of the department.

Definitions of Prerequisite and Corequisite Courses:

The description for a given course will sometimes contain reference to courses that are prerequisites or corequisites for that given course.

A ***prerequisite*** is defined as a course that ***must be completed*** with required minimum grade (passing grade, unless otherwise specified) ***prior to*** taking another course.

A ***corequisite*** is defined as a course that can either be ***completed prior to*** (as detailed above) ***or*** be ***taken in the same semester as*** another course. The published degree curricula and flow charts illustrate the preference for any given corequisite situation.

BIOLOGY

BIO 201 General Biology I
3 class hours, 2 laboratory hours, 4 credits.
Cell types and structure. Hierarchical organizations of organisms. Systematics. Cell division. Genetics. Survey of animal and plant kingdoms.
SUNY-GER: Natural Sciences.
[Fall]

BIO 202 General Biology II
3 class hours, 2 laboratory hours, 4 credits.
Morphology and physiology of viruses, bacteria, fungi, ferns, flowering plants and animals. Ecology. Animal behavior. Evolution.
Prerequisite: BIO 201.
[Spring]

BIO 210 Ecology
3 class hours, 3 credits.
Population and community structure. Intra- and inter-specific competition. Predator-prey. Biodiversity. Mimicry. Co-evolution. Exotic species, Habitats.
Prerequisites: MATH 101 or MATH 111, BIO 202.
[Spring]

BIO 315 Marine Biology
3 class hours, 3 credits.
The marine environment. Classification of marine animals and plants. Challenges of life in the sea. Migration, reproduction & behavior of marine life. Marine ecosystems.
Prerequisite: BIO 202.
[Fall – Even years]

BIO 320 Invertebrate Zoology
3 class hours, 2 laboratory hours, 4 credits.
The invertebrate fauna will be explored in terms of their morphology, physiology, and ecology. The evolutionary relationships among these groups will be investigated. Laboratory exercises will provide for the examination of preserved and/or live specimens of representative members of various phyla.
Prerequisite: BIO 202.
[Fall - Odd years]

BIO 340 Marine Botany
3 class hours, 3 credits.
The study of the taxonomy, evolution, physiology, distribution, ecology, and economic importance of marine vegetation including coastal salt marshes and mangals.
Prerequisite: BIO 202.

BIO 415 Ichthyology
3 class hours, 3 credits.
An extensive study of fishes. Emphasis will be placed on their morphological and physiological characteristics and how adaptations of these help fish meet the challenges presented to them by the aquatic environment.
Prerequisite: BIO 202.
[Spring-Odd Years]

BIO 416 Fisheries Science
3 class hours, 3 credits.
A study of the models used for the evaluation of data relevant to the assessment and management of fish stocks. Concepts of population size, growth and mortality will be explored along with the fisheries management concepts of maximum sustainable yield, catch per unit of effort, and conservation measures and policies.
Prerequisites: BIO 202, BIO 417.
[Spring - Even years]

BIO 417 Biostatistics
3 class hours, 3 credits.
This course covers techniques of inferential statistics and its practice using a statistical software. Topics include review of basic statistics, statistical software, t-test, linear regression, chi-square test, analysis of variance and nonparametric methods such as Mann-Whitney U test and Wilcoxon rank-sum. The analytic methods and applications will be linked to topics in biology or environmental science.
Prerequisite: BIO 201, MATH 101 or 111
[Fall]

BIO 420 Ecotoxicology
2 class hours, 4 laboratory hours, 4 credits.
An experimental approach to ecotoxicology. Techniques to be learned include: heavy metal determination by atomic absorption spectrophotometry, tissue and cell culturing, various field-sampling techniques. Students will design and carry to completion independent research projects and will present their results orally and in the form of a scientific paper.
Prerequisite: Permission of the instructor.

BIO 425 Evolutionary Biology
3 class hours, 3 credits.
Students will study the development of evolutionary theory from antiquity to today. Multiple hypotheses for how life changes over time will be evaluated through analyses of multidisciplinary data including: natural history, experiment evolution, genomics, paleontology, anthropology, and comparative biology drawn from published sources. Students will study evolutionary theory from the Great Chain of Being, to Darwinian natural selection, the Modem Synthesis, ending with contemporary attempts of evolutionary synthesis. Topics covered will include: origin of life, teleology, natural selection, sexual selection, evolutionary constraints, sociobiology, macroevolution, population genetics, and evolution of humans.
Prerequisites: BIO 202.

BIO 610 Special Topics in Biology
3 class hours, 3 credits.
Theoretical and/or experimental investigation of contemporary topics or problems in biology.
Prerequisite: As specified by the department chair.

CHEMISTRY

CHEM 100 Introductory Chemistry
3 class hours, 3 credits.
An introductory course focusing on measurement, structure of matter, stoichiometry, solutions, gases, electronic structure of atoms and chemical bonding. Credit will not be given for both this course and CHEM 121.
Prerequisite: MATH 080.
[Spring]

CHEM 121 General Chemistry I
3 class hours, 3 credits.
A study of the structure, composition and transformations of matter in the aqueous, gaseous and solid states. Stoichiometry, precipitation and oxidation-reduction reactions, thermochemistry, chemical bonding, gas laws, and molecular geometry. Credit will not be given for both this course and CHEM 100. Prerequisite: MATH 080.
SUNY-GER: Natural Sciences (with CHEM 122).
[Fall and Spring]

CHEM 122 General Chemistry I Laboratory
2 laboratory hours, 1 credit.
Corequisite: CHEM 121.
SUNY-GER: Natural Sciences (with CHEM 121).
[Fall and Spring]

CHEM 123 General Chemistry II
3 class hours, 3 credits.
This class is the continuation of CHEM 121. Kinetics, acid-base and solubility equilibria, buffers, pH, chemical thermodynamics, solution properties, electrochemistry, nuclear chemistry and coordination chemistry.
Prerequisite: CHEM 100 or CHEM 121.
[Spring]

CHEM 124 General Chemistry II Laboratory
2 laboratory hours, 1 credit.
Prerequisite: CHEM 122.
Corequisite: CHEM 123.
[Spring]

CHEM 212 Materials Science I
3 class hours, 3 credits.
A course detailing the structures and properties of solid materials. Bonding mechanisms, crystalline structures and imperfections, solidification. Mechanical properties and their dependence on atomic-scale structure. Electrochemical corrosion. Thermal aspects: phase diagrams, isothermal transformation diagrams, heat treatments. Engineering alloys, polymers and ceramics.
Prerequisite: CHEM 100 or CHEM 121.
Corequisite: MATH 101 or MATH 111.
[Fall and Spring]

CHEM 213 Materials Science II
3 class hours, 3 credits.
Comparison of mechanical properties of metals, ceramics, polymers, glasses and composites with emphasis on failure of materials. Modern theory of electrons and atoms. Electrical conduction. Band theory and the classification of materials as conductors, semiconductors and insulators. Dielectrics and capacitors. Optical properties and the laser. Magnetism and magnetic materials.
Prerequisite: CHEM 212.

CHEM 301 Chemistry of Fuels and Lubricants
3 class hours, 3 credits.
An introduction to the chemistry of fuels, combustion and lubricants. Includes topics on chemical thermodynamics, kinetics and emissions.
Prerequisite: CHEM 100 or CHEM 121, MATH 101 or MATH 111.

CHEM 311 Environmental Chemistry
3 class hours, 3 credits.
Natural and pollution-related atmospheric, aquatic and soil chemistry. Mechanisms of smog formation, ozone depletion and global warming; fresh and salt water chemistry and biochemistry, water pollution and ground water contamination. Chemical monitoring techniques and pollution-control technology.
Prerequisite: CHEM 123.
[Fall]
Previously CHEM 220.

CHEM 312 Environmental Chemistry Laboratory
3 laboratory hours, 1 credit.
This course is designed to introduce students to common procedures for analyzing environmental samples such as water, air, and sediments. The techniques include wet methods, such as titrations and extractions, and instrumental methods such as mass spectroscopy, and flow injection analysis. The course also includes coverage of the theory of instrumentation involved in these techniques.
Prerequisite: CHEM 124.
Corequisite: CHEM 311.
[Fall]

CHEM 321 Organic Chemistry
3 class hours, 3 credits.
A first semester course in Organic Chemistry. Nomenclature, structure, synthesis, and reactions of aliphatic organic compounds emphasizing reaction mechanisms and stereochemistry.
Prerequisite: CHEM 123.
[Spring]
Previously CHEM 221.

CHEM 322 Organic Chemistry Laboratory
3 laboratory hours, 1 credit.
Organic Chemistry Lab is intended to be taken simultaneously with the lecture class. The majority of laboratory experiments cover the same content as the Organic Chemistry lecture class however spectroscopic techniques are also included.
Prerequisite: CHEM 124.
Corequisite: CHEM 321.
[Spring]
Previously CHEM 222.

COMPUTER SCIENCE

CS 100 Introduction to Business Computing
2 class hours, 2 credits.
General computer literacy, with emphasis on computers in the business environment. Major concepts and recent developments in hardware, operating systems, applications software, database management, and the internet are presented. Societal and ethical concerns, including issues such as cyber security and software piracy, are also considered.
[Fall and Spring]

CS 101 Computer Laboratory
2 laboratory hours, 1 credit.
A laboratory course covering word processing, spreadsheets, presentations and graphics using Microsoft Office applications.
[Fall and Spring]

CS 131 Introduction to Computer Programming
3 class hours, 3 credits.
An introduction to computer programming in an object-oriented language (such as Python). Topics include: primitive data types and operations; branching and looping; functions; object-oriented programming; functional programming. Other possible topics include data exploration with R.

CS 202 Introduction to Data Science
3 class hours, 3 credits.
An introductory course in obtaining, manipulating, analyzing, and visualizing data. Topics include: Python language basics; importing and exporting various data formats such as JSON, Excel and CSV; Numpy computing library; data processing with Pandas library; webscraping; transforming data; linear regression with sci-kit learn; data visualization.
Prerequisite: CS 131 or ENGR 120.

CS 301 Data Structure & Algorithms
3 class hours, 3 credits.
Techniques and algorithms for organizing and processing data. Data structures considered may include: text and binary files; contiguous and linked lists; stacks and queues; linked lists; trees; graphs. For each data structure, relevant processing algorithms (e.g., for traversing, searching, and sorting) will be considered, including recursive methods.
Prerequisite: CS 131 or ENGR 120.
[Spring]

CS 311 Machine Learning I
3 class hours, 3 credits.
Introduction to Logistic Regression, KNN, Naive Bayes and Decision Trees/Random Forest with Statistics. Project-based. This course cannot be taken with ENGR 396 for credit
Prerequisite: CS 202.
[Fall]

CS 312 Machine Learning II
3 class hours, 3 credits.
Second course on Machine Learning. Includes statistical learning methods such as Hidden Markov Model and MCMC. Unsupervised learning methods and clustering algorithms. Natural language processing using word to vector. With Word2Vec, Sci-Kit Learn. Project-based.
Prerequisite: CS 311 or ENGR 396.
[Spring]

CS 401 Database Systems
3 class hours, 3 credits.
Introductory database concepts; the relational model and normalization; use of a relational database management system; SQL; big data and cloud; use of NoSQL system such as MongoDB.
Prerequisite: CS 202.
[Fall]

CS 411 Deep Learning
3 class hours, 3 credits.
Introduction to Neural Network structures and learning algorithms. Construction of various Neural Network models, including CNN, RNN, and LSTM. Methods in dimensionality reduction and feature extraction via unsupervised learning algorithms.
Prerequisite: CS 311 or ENGR 396, MATH 311
[Fall]

CS 425 Data Science Practicum
3 class hours, 3 credits.
Capstone course for applying data science skills to various types of data in respective concentrations. Includes library information literacy session, guest lectures from various departments, review of various data science methods. Project/presentation based. Students must demonstrate skills in data cleaning, data presentation and data analysis, with analytical methods of statistics or machine learning.
Prerequisite: Senior standing, CS 311 or ENGR 396.
[Spring]

CS 610 Special Topics in Computer Science
1, 2, 3 or 4 credits.
Significant topics in programming languages, software engineering, cybersecurity and machine learning that reflect the interest of both the student and the instructor.
Prerequisite: Determined by the department chair.

DATA SCIENCE

DS 525 Data Science Internship
6 credits.
An internship with a sponsoring industrial firm, requiring the intern to be assigned to duties requiring the practical application of data science, which could include data acquisition, data cleaning, data presentation and data analysis. The intern will keep a daily work log and will retain work samples subject to the approval of their supervisor, as agreed with the intern's faculty advisor. The intern will receive a formal performance review upon completion of the internship and must complete a substantial internship report to receive credit. Prerequisite: Permission of the department chair, and completion of sophomore year in the Data Science program.

ENGLISH

ENGL 090-095 Practice in Writing and Reading I-II
3 class hours, 3 credits each.
Intensive preparation for college level writing and reading. This course may not be used to satisfy any degree requirement.
[Summer (ENGL 090)]

ENGL 101 Freshman English I
3 class hours, 3 credits.
Expository writing and analytic reading of selected texts: ENGL 101 emphasizes writing.
A weekly 75-minute recitation aimed at students who need supplementary work in writing is available. Incoming students identified by the English placement exam as needing such additional preparation will be required to attend the recitation.
SUNY-GER: Communication.
[Fall and Spring]

ENGL 102 Freshman English II
3 class hours, 3 credits.
Expository writing and analytic reading of selected texts: ENGL 102 emphasizes reading.
Prerequisite: ENGL 101.
[Fall and Spring]

ENGL 103 Freshman English II for Engineers
3 class hours, 3 credits.
Expository writing and analytic reading of selected texts: ENGL 103 emphasizes styles and formats needed for students and practitioners of engineering.
Prerequisite: ENGL 101.
[Fall and Spring]

ENGL 213 Latinx Literature
3 class hours, 3 credits.
Introduction to prominent writers from a range of Latinx literary traditions.
Representative literary works from Mexican-American, Dominican-American,
Puerto Rican and other Latinx writers are read and analyzed.
Corequisite: ENGL 101.
SUNY-GER: Diversity, Equity, Inclusion and Social Justice.

ENGL 230 American Authors
3 class hours, 3 credits.
Intensive reading of selected works representative of American authors.
Corequisite: ENGL 101.
SUNY-GER: Humanities.

ENGL 231 British Authors
3 class hours, 3 credits.
Intensive reading of selected works representative of British authors.
Corequisite: ENGL 101.
SUNY-GER: Humanities.

ENGL 250 Drama
3 class hours, 3 credits.
Reading, discussion, and performance of several major plays. Consideration of the drama as a genre.
Corequisite: ENGL 101.
SUNY-GER: The Arts.
Previously ENGL 409

ENGL 407 Poetry
3 class hours, 3 credits.
Reading and discussion of several major poets. Consideration of poetry as a genre.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST or HUMN 100-299.

ENGL 414 Irish Literature
3 class hours, 3 credits.
After a detailed survey of Irish history from ancient myths to contemporary political, economic, and literary developments/realities, students delve into classics of Irish Literature by writers such as Yeats, Synge, O'Casey, Joyce, Friel, and Heaney. Readings for the course are supplemented with a variety of films dealing with Irish history and trips for Irish cultural enrichment.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST or HUMN 100-299.

ENGL 415 Literature of Colonialism
3 class hours, 3 credits.
How does colonialism affect those who have been colonized, and those who are doing the colonizing? This course studies colonialism, as it is expressed in two sets of literary works: those written from the viewpoint of colonizers, and those written from the viewpoint of corresponding colonized peoples. Areas focused on include Africa, India, and Southeast Asia.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 416 Literature of the Sea
3 class hours, 3 credits.
Reading and discussion of works by important European and American authors dealing with maritime themes.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 423 Shakespeare
3 class hours, 3 credits.
Reading and discussion of a representative selection of Shakespeare's plays.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 426 Science and Literature
3 class hours, 3 credits.
A discussion of works of several major scientists and the effects of their work and thought on our culture. Special emphasis on developments which have most influenced modern life. Scientists studied are Galileo, Newton, Darwin, Freud, and Einstein.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 450 Speech
3 class hours, 3 credits.
A course combining theoretical study of speech communication with practical study of public speaking, conferences, and meetings. The class meets in the Television Studio.

ENGL 452 Technical Writing and Studies in Technology and Civilization
3 class hours, 3 credits.
Practice in report writing, research and conference techniques. Reading and discussion of material on the influence of technology on modern civilization.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.
[Fall and Spring]

ENGL 453 Creative Writing
3 class hours, 3 credits.
Writing and marketing prose fiction, with an emphasis on the short story. Students' works are read and discussed, as are works by professional authors.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 454 Journalism
3 class hours, 3 credits.
An introduction to the principles and practices of journalism, this course will explore the role of media, focusing and print and on-line outlets. It will examine what constitutes various types of news stories, how they're conceived, developed, published and received. Students will draft and evaluate various news formats. The course also will examine the legal, ethical and business aspects of media, using print as the basis of comparison.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 456 Web Literacy and Design
3 class hours, 3 credits.
A course combining technical writing with rigorous study of Web design and administration. Applications to both marketing and engineering are explored.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 468 Biography/Autobiography
3 class hours, 3 credits.
An examination of biographies and autobiographies, the most popular genre in America. Students will study the difference between a life told from the outside, and one told by the person who lived it; they will also study two major developments of the Twentieth Century: changing expectations of readers, and a dramatic change in the balance between sincerity and authenticity.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 470 Major British Authors
3 class hours, 3 credits.
Intensive reading of selected works by representative British authors.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 471 Major American Authors
3 class hours, 3 credits.
Intensive reading of selected works by representative American authors.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 472 Major American Writers: 19th Century
3 class hours, 3 credits.
This course will study the writers of the "American Renaissance," and trace the different paths pursued by those who followed them. Readings include selections from the Transcendentalists, the Romantics, the Realists, and the first Modernists.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 474-475 Film I-II
3 class hours, 3 credits each.
Studies in the history of film, in film as an art form, and in the relationship between film and literature.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 477 Film and Fiction Studies
3 class hours, 3 credits.
Studies in the transformation of print texts into visual narrative form. Also, study of the phenomenon known as "novelization." The tensions between traditional linear narrative form and post-modern complexity will also be analyzed.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 478 Asian Cinema
3 class hours, 3 credits.
The study of major Asian filmmakers, with an emphasis on their inter-relations with Western culture. Examination of the historical and cultural backgrounds of films from Japan, China, Hong Kong, and Korea. Directors studied include Kurosawa, Ozu, Kobayashi, Yimou Zhang, John Woo, Tsui Hark, Wong Kar Wai, and Chan-wook Park.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGL 480 Crime Fiction/Crime Film
3 class hours, 3 credits.
"Crime Fiction/Crime Film" is a course about the relationship between crime literature and the American cinema. We will concentrate our studies on the following topics: film genre; the gangster film; "pulp" fiction and hardboiled writing; film noir and neo-noir; Classical and New Hollywood; and the postmodern crime film. We will be reading the work of the classic crime writers Hammett, Chandler, Cain, and Jim Thompson. And we will also be studying the films of many important film directors including D.W. Griffith, Howard Hawks, John Huston, Alfred Hitchcock, Billy Wilder, Martin Scorsese, and Quentin Tarantino.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

ENGINEERING

ENGR 100 Engineering Graphics
2 lab hours, 1 credit.
Interpret and create basic engineering drawings following the standard conventions of engineering graphical communication. Course includes use of computer-aided drafting and basic drafting techniques such as orthographic and 3D modeling with a focus on the concepts of descriptive geometry and improvement of spatial ability.
Prerequisite: MATH 090.
[Fall and Spring]

ENGR 110 Introduction to Engineering Practice
1 class hour, 1 recitation hour, 2 credits.
Students will learn the practical techniques needed to practice engineering effectively, including (1) the presentation of calculations, data, and graphs; (2) communication by email, memoranda, drawings, and specifications; (3) effective documentation of work product; (4) use of and conversions between systems of units; and (5) proper exercise of professional responsibilities in reviewing calculations and written documentation. A simple group design exercise will be conducted as part of the class.
Corequisite: MATH 101 or MATH 111.
[Fall and Spring]

ENGR 120 Programming for Engineers
1 class hour, 2 laboratory hours, 2 credits.
The students will learn to use modern computational tools to analyze engineering problems. This course is an introduction to computer programming for engineering tasks.
Corequisite: MATH 101.
[Fall and Spring]

ENGR 242 Statics
3 class hours, 3 credits.
Statics and introduction to strength of materials. Principles of statics and static equilibrium with vector and classical applications. Includes coverage of frames, trusses, three dimensional structures, friction, and moments of inertia.
Prerequisite: A grade of C- or better in PHYS 102.
Corequisites: ENGR 110, MATH 102.
[Fall and Spring]

ENGR 243 Transport Processes
3 class hours, 3 credits.
An introduction to the properties, terminology, concepts and basic laws of fluid statics and dynamics, thermodynamics and heat transfer.
Prerequisite: PHYS 102 or PHYS 211.
[Fall]

ENGR 244 Dynamics
3 class hours, 3 credits.
Principles governing motion resulting from applied forces. Provides a background in solid dynamics for use in areas such as robotics, vibration, and design from a vector formulation perspective. Topics include particle and rigid body kinematics, force and energy methods applied to particles and rigid bodies in plane motion, and the effects of friction.
Prerequisites: ENGR 242, MATH 102.
[Fall and Spring]

ENGR 290 Circuit Analysis
3 class hours, 3 credits.
Introduction to circuit elements, basic electrical rules, theorems, and laws applicable to DC and AC circuits, first-order transient analysis concept and application, single- and three-phase power connections and analysis, phasor concept and frequency domain analysis, use of electronic simulation techniques in measuring circuit parameters.
Prerequisite: PHYS 201 or PHYS 214.
Corequisite: MATH 102 or MATH 112.
[Fall and Spring]
Previously Electrical Engineering I.

ENGR 292 Digital Electronics
3 class hours, 2 lab hours, 4 credits.
Boolean algebra; logic gates, arithmetic operations, combinational logic circuits, decoders and multiplexers, sequential logic, counters and shifters, ASCII code, data acquisition circuits; three bus CPU architecture. Laboratory experiments exemplify lecture material and include both hard-wired and simulated digital electronic circuits, using hardware descriptive languages (HDLs), e.g.,VHDL or Verilog, when appropriate.
Prerequisite: MATH 101.
[Spring]
Previously ENGR 388.

ENGR 311 Kinematics
3 class hours, 3 credits.
Introduction to kinematic analysis of mechanisms with a goal toward understanding of the properties of motion, relative motion, velocities, accelerations and the relationships to mechanisms in industry. Knowledge of these concepts lead to design of robot manipulators, gears, linkages and transmissions used in mechanical systems. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 244.

ENGR 312 Machine Design
3 class hours, 3 credits.
Application of solid mechanics, dynamic system analysis and strength of materials leading to the selection and design of machine elements as components of a mechanical system. Screws, fasteners, joints, springs, bearings, gears, shafts and power transmission systems components are some of the elements considered. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 347.
[Spring]

ENGR 314 Engineering Economics
3 class hours, 3 credits.
Economic principles are studied which include compound interest, time value of money, equipment replacement and equipment retirement decisions. The course concludes with a discussion of various methods of calculating depreciation. Calculations are performed by formula and by tabulated values. Open only to B.E. students or by permission of department chair.
Prerequisite: MATH 101.
[Fall and Spring]
Previously ENGR 443.

ENGR 341 Fluid Mechanics
3 class hours, 3 credits.
Covers the fundamentals of fluid mechanics, including fluid statics and fluid dynamics, and prepares students for the solution of engineering or naval architecture problems. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 242, MATH 211.
[Fall and Spring]

ENGR 344 Thermodynamics
3 class hours, 3 credits.
The study of problems for the following topics: First and Second Law of Thermodynamics; entropy, reversible and irreversible processes; irreversibility and availability; ideal gas processes, steady state, steady flow processes; power and refrigeration cycles; real gases and equations of state, gas mixtures, psychometrics; combustion processes and heat of reaction. Open only to B.E. students or by permission of department chair.
Prerequisites: MATH 211, PHYS 102.
[Fall and Spring]

ENGR 345 Engineering Statistical Analysis
3 class hours, 3 credits.
The students will learn the use of basic discrete and continuous probability models, simple functions of random variables, statistical inference, construction of statistical models, and basic experimental design techniques including the use of modern statistical computational tools. This course is an introduction to the probabilistic and statistical methods that are part of the modern engineer's repertoire. Credit will not be given for both this course and MATH 251. Open only to B.E. students or by permission of department chair.
Prerequisite: MATH 102.
[Fall and Spring]

ENGR 347 Strength of Materials
3 class hours, 3 credits.
Material stress-strain relationships under axial, biaxial, torsional and flexural loadings, Principal stress analysis. Statically indeterminate flexural stresses and deflection by integration, superposition and energy methods. Combines static modes of loading, dynamic loading and column stresses. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 242, MATH 102.
[Fall and Spring]

ENGR 348 Strength of Materials Lab
2 laboratory hours, 1 credit.
Materials testing techniques: tension, compression shear, torsion, flexure, fatigue and impact test on structural materials. Engineering report of tests required. Analysis of data is emphasized. All students must complete a term project. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 347.
[Fall and Spring]

ENGR 349 Transport Processes Laboratory
2 laboratory hours, 1 credit.
Principles of transport processes and fundamental laboratory techniques demonstrated through formal laboratory experiments and lectures. Experiments may include diesel engine, gas turbine, conduction and convection heat transfer; pumps, dual-pipe heat exchanger, and flow devices. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 344.
Corequisites: ENGR 341, ENGR 351.
[Spring]

ENGR 350 Automation and Control Systems
2 class hours, 2 laboratory hours, 3 credits.
Students will be introduced to analog control systems. Students will learn the modeling and dynamic response of physical systems, and the application of feedback control techniques to these systems. Students will learn analysis techniques including transfer function models, stability analysis, root locus design techniques, and frequency-response design methods. Analysis will include the use of simulation tools. Students will be introduced to both state space models and state space design. Student work will include class projects. Open only to B.E. students or by permission of department chair.
Prerequisite: MATH 212.
[Fall and Spring]
Previously Analog Controls

ENGR 351 Heat Transfer
3 class hours, 3 credits.
Analysis of steady state and transient conduction through plane walls and cylinders. Conduction with and without heat generation (applicable nuclear materials). Analysis and design of fins. Analysis of free and forced convection processes. Analysis of radiation processes for black and gray bodies. Introduction to heat exchanger design. Introduction to numerical methods. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 344, MATH 212.
[Fall and Spring]

ENGR 354 Marine Engineering Design I
3 class hours, 3 credits.
Diesel, steam, and/or gas turbine propulsion system design, including thermal, mechanical and electrical considerations of system components. Heat balances are performed using both hand calculations and computational tools. System losses are considered, and auxiliary components are selected and sized. Term design project required. Credit will not be given for both this course and ENGR 446. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 344.
[Spring]

ENGR 363 Ship Statics
3 class hours, 3 credits.
Theory and calculation of transverse and longitudinal stability, trim, flooding, subdivision and damaged stability. Applications to surface ships, submersibles, and other special vehicle types. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 120, ENGR 242, MATH 102.
Corequisite: ENGR 365.
[Fall]

ENGR 365 Ship Form and Graphics
2 class hours, 2 laboratory hours, 3 credits.
Principles of orthographic projection and descriptive geometry are applied to the special problems of naval architectural graphics, particularly the ship lines drawing. Computer-aided drafting and ship form (hydrostatic) calculations. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 100, ENGR 120, ENGR 242, MATH 102.
[Fall]

ENGR 366 Ship Structure
3 class hours, 2 laboratory hours, 4 credits.
Longitudinal and local strength of ship structures. Analysis of framing, bulkheads, and decks. Role of Regulatory Agencies in establishing structural requirements. Projects include calculation of ship's bending moment, midship section modulus, deck and bulkhead design. Introduction to the finite element method. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 347.
[Spring]

ENGR 368 Ship Design I
2 class hours, 4 laboratory hours, 4 credits.
Techniques of conceptual and preliminary ship design based on economic profitability discussed and applied to a specific type of ship. Trade route analysis, principal dimensions, form, power requirement and stability are determined. Capital (building) costs, operating costs and economic measures of merit are estimated. Each student lays out preliminary lines of a ship to satisfy owner's requirement. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 363.
[Spring]

ENGR 371 Applied Naval Architecture
3 class hours, 3 credits.
Covers the principles of intact and damaged stability and trim, longitudinal strength of ship structures. Also, introduces ship resistance and ship powering calculations. Covers basic ship stability requirements under STCW-95. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to B.E. students not majoring in Naval Architecture or by permission of department chair.
Prerequisite: ENGR 242.
[Fall and Spring]

ENGR 380 Introduction to Electric Machinery
2 class hours, 2 lab hours, 3 credits.
Introduction to electrical power systems for non-electrical engineering majors. Generation, transmission, distribution and utilization of electric power, introduction to single- and three- phase power calculations, magnetic circuits, transformers, three-phase induction machines, synchronous machines, and DC machines. Laboratory emphasizes operating characteristics of transformers and rotating machines. Credit will not be given for both this course and ENGR 395. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 290.
[Fall and Spring]
Previously Electrical Engineering II.

ENGR 383 Signals and Systems
3 class hours, 3 credits.
Introduction to continuous and discrete time signals and systems with emphasis on Fourier analysis. Wide-ranging examples include acoustical, mechanical, and electrical signals and systems; notion of causality, linearity, time invariance and periodicity; Fourier series, discrete and continuous time transforms, frequency response and impulse response; convolution; stability. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 290, MATH 212.
[Fall]
Previously Network Analysis.

ENGR 385 Instrumentation and Measurement
2 laboratory hours, 1 credit.
Introduction to instrumentation and measurement using physical components and breadboards to test circuit theorems covered in ENGR 290, theoretical calculations, simulation and real measurement, data analysis, presentation, professional engineering report writing, use of spreadsheets for data analysis and graphing. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 290.
[Fall]

ENGR 387 Analog Electronics
3 class hours, 2 laboratory hours, 4 credits.
Principles of analog signal amplification, signal conditioning, filtering; operational amplifier circuit analysis and design; principles of operation of diodes, bipolar transistors, field-effect transistors; transistor amplifier analysis and design; laboratory experiments supplement and complement lecture material and include hard-wired and simulated analog electronic circuits. Credit will not be given for both this course and ENGR 390. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 290.
[Fall]

ENGR 390 Applied Electronics
3 class hours, 3 credits.
Introduction to electronic devices and systems for non-electrical engineering majors. Covers basic theory, operating characteristics, and applications of diodes, thyristors, single- and three-phase rectification schemes, bipolar junction transistors, field-effect transistor, switches, operational amplifiers, digital logic gates, MUX and DEMUX, ASCII code and data frames. Credit will not be given for both this course and ENGR 387. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 290.
[Fall and Spring]
Previously Electrical Engineering III.

ENGR 394 Electromagnetic Fields
3 class hours, 3 credits.
Review of vectors, coordinate systems, vector differential operators. Static electric field calculation techniques, work and potential in electrostatic fields, field of electric dipoles, divergence theorem, Laplace's and Poisson's equations, magneto-static field, magnetic characteristics of materials, magnetic circuits, field of solenoid, magnetic moment, Maxwell equations and plane waves, dispersion relation and modeling of transmission lines. Open only to B.E. students or by permission of department chair.
Prerequisites: PHYS 201, MATH 212.
[Fall]

ENGR 395 Electric Machines
2 class hours, 2 laboratory hours, 3 credits.
Electromechanical energy conversion systems, magnetic circuits, transformers, construction, principles of operation, circuit models, analysis, electrical and mechanical characteristics of DC machines, induction machines, synchronous machines, fractional horse power machines. Credit will not be given for both this course and ENGR 380. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 290, ENGR 385, ENGR 394.
[Spring]

ENGR 396 Machine Learning
3 class hours, 3 credits.
Introduction to machine learning and its core models and algorithms. Review of probability concepts, classification, linear and non-linear regression, data-driven model selection, dimension-reduction techniques; programming of statistical models for analyzing large datasets. Emphasis on practical applications such as speech recognition, image compression, medical diagnoses and stock market prediction through project-based assignments. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 120, ENGR 345.
[Spring]
Previously Advanced Programming and Machine Learning

ENGR 398 Control System Theory
2 class hours, 2 lab hours, 3 credits.
Introduction to analysis and design of feedback control systems with emphasis on modeling, characteristics, and applications. Topics cover transfer functions, time domain response, frequency domain response, stability criteria, root locus, Bode diagrams, PID controllers/compensators, digital implementation, etc. Simulation tools will be used extensively in the analysis and design of various control systems. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 120, ENGR 383.
[Spring]

ENGR 412 Ocean Engineering
3 class hours, 3 credits.
Survey of subjects important to engineers dealing with the ocean environment including soil mechanics, marine structures, corrosion, underwater acoustics, under water life support systems, power plants, and pollution. Selected design problems will be reviewed. Open only to B.E. students or by permission of department chair.
Prerequisites: CHEM 212, ENGR 347.

ENGR 418 Mechanical Engineering Design I
3 class hours, 2 laboratory hours, 4 credits.
Introduction of the phases of the design process. Projects will include structural, mechanical, thermo-fluid and electrical considerations of systems and their components. Use of CAD/software as well as economic, environmental, social, ethical, legal aspects, safety and other factors. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 312, ENGR 503.
Corequisites: ENGR 341, ENGR 351, ENGR 380.
[Fall]

ENGR 419 Mechanical Engineering Design II
3 class hours, 2 laboratory hours, 4 credits.
Continuation of ENGR 418 (Mechanical Engineering Design I).
Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 418.
[Spring]

ENGR 423 HVAC System Design
3 class hours, 3 credits.
Principles of heating, ventilating and air conditioning are applied and utilized in the design of HVAC (environmental control) systems. Concepts include thermodynamics, psychrometrics, system calculations, heating and cooling load estimating, duct, pipe and fan sizing, air conditioning system concepts and configuration, hydronic heating, cooling, heating and air process equipment. Open only to B.E. students or by permission of department chair.
Prerequisite: A grade C or better in ENGR 351.
Corequisite: ENGR 341.
[Fall]

ENGR 424 HVAC Systems Operation and Management
3 class hours, 3 credits.
Introduction to commercial HVAC facility systems utilizing vapor compression, absorption and related machinery. Course material includes preparation for urban refrigeration licensing exams, design of building HVAC system machinery, cooling tower and energy management utilizing standard commercial refrigerants. Urban Code used in design of air balancing systems. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 243 or ENGR 344.
[Spring]

ENGR 425 Facilities Engineering Design I
4 class hours, 4 credits.
An introduction to the design, construction, operation, maintenance and management of major facilities. The principles of transport processes, electrical theory and strength of materials are used to understand the function and determine the design requirements of the various engineering subsystems present in modern facilities, such as large medical centers, building complexes and other infrastructure. Open only to Facilities Engineering majors.
Prerequisites: ENGR 347, ENGR 354, ENGR 424.
Corequisites: ENGR 380, ENGR 423.
[Fall]

ENGR 426 Facilities Engineering Design II
4 class hours, 4 credits.
Continuation of ENGR 425 (Facilities Engineering Design I). The techniques of engineering project management are applied to the planning, design, construction and commissioning of new facilities as well as the systematic operation, management, maintenance and modification of existing facilities. Open only to Facilities Engineering majors.
Prerequisite: ENGR 425.
Corequisite: ENGR 444.
[Spring]

ENGR 440 Marine Engineering Design II
2 class hours, 2 laboratory hours, 3 credits.
Continuation of ENGR 354 (Marine Engineering Design I); includes a semester project involving the engineering design of a vessel propulsion plant and support systems. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 120, ENGR 345, ENGR 347, ENGR 354.
[Fall]

ENGR 444 Engineering Project Management
3 class hours, 3 credits.
The objectives of this course are to (1) develop knowledge of the uncertain environment of project management, which is especially challenging because of the uniqueness and magnitude of technological projects, and the use of tools such as multiple regression and basic decision theory to deal with these uncertainties, (2) gain knowledge of network analysis tools (i.e., PERT/CPM) for project resource allocation and time management, while remaining aware of the pitfalls and limitations of these tools, and (3) develop a sense of the interpersonal and organizational components of project management, especially the group dynamics of teams engaged in a complex technological effort. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 314.
[Spring]

ENGR 446 Marine Engine Theory and Application
3 class hours, 3 credits.
The application of thermodynamics, fluid dynamics, and heat transfer to the design of marine engineering systems, including steam power plants, diesel power plants, waste heat recovery, refrigeration and other auxiliary systems. Credit will not be given for both this course and ENGR 354. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 243 or ENGR 344.
[Spring]

ENGR 450 Marine Engineering Design III
3 class hours, 2 laboratory hours, 4 credits.
Continuation of ENGR 440 (Marine Engineering Design II), includes a semester project involving the engineering design of multiple shipboard system components. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 341, ENGR 351, ENGR 380. ENGR 440.
[Spring]

ENGR 452 Digital Controls
2 class hours, 2 laboratory hours, 3 credits.
Students will learn digital control techniques for dynamic systems of discrete elements using systems for data sampling. Data sampling systems will include the mathematical representations of analog/digital and digital/analog conversions. Control techniques will be applied to open-loop and closed-loop systems and include the relationships between inputs and outputs. Dynamic analyses will include state-space and stability analyses, and time-domain and frequency-domain analyses. Design of digital controllers will be covered using simulation tools. Class projects will be included. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 350.

ENGR 453 Modern Concepts
3 class hours, 3 credits.
Current approaches to developing power generation projects, including traditional large-scale steam plants (nuclear and fossil fueled), combined cycle technologies, and cogeneration facilities; various types of design documents, including engineering drawings and specifications, that form the basis of a final design. Students learn the comprehensive engineering design process, from preliminary engineering study through final design and construction. Design project, report, and presentation. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 344.
[Fall]

ENGR 454 Vibrations
3 class hours, 3 credits.
Students will gain a fundamental understanding of vibration in mechanical systems. Topics include free vibration of mechanical systems, damping, forced harmonic vibration, support motion, vibration isolation, systems with multiple degrees of freedom, normal modes, free and forced vibrations, vibration absorbers, application of matrix methods, numerical techniques and computer applications. Demonstrations and practical exercises will be used throughout the course. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 244, MATH 212.
[Fall]

ENGR 455 Engineering Approximation
3 class hours, 3 credits.
This course teaches simple reasoning techniques for analyzing complex phenomena. Basic tools include: unit systems and unit conversions, back-of-the-envelope calculations and order-of-magnitude estimation techniques. Analysis methods include: divide-and-conquer hierarchies, dimensional analysis, extreme cases, continuity and scaling laws, successive approximations, balance equations, cheap calculus, and symmetry methods. Applications are drawn from the physical and biological sciences, mathematics, and engineering. Open only to B.E. students or by permission of department chair.
Prerequisite: PHYS 102.

ENGR 456 Computer Aided Engineering
3 class hours, 3 credits.
Fundamentals and applications of computer-aided design, modeling, and analysis. Introduction to the finite element method and use of standard packages for design problems in structural mechanics and heat transfer. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 120, ENGR 312.
Corequisite: ENGR 351.
[Fall]

ENGR 461 Ship Design II
2 class hours, 4 laboratory hours, 4 credits.
Continuation of ENGR 368 (Ship Design I). Preliminary characteristics of a ship of the type examined in Ship Design I are determined to meet owner's requirements. General arrangements, hydrostatics, structural design, speed-power estimate, weights and centers, stability and trim. Extensive use of CAD and computer facilities is required. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 366, ENGR 368.
Corequisite: ENGR 345.
[Fall]

ENGR 462 Ship Resistance and Propulsion
2 class hours, 2 laboratory hours, 3 credits.
Study of resistance and powering of ships. Principle of model testing and similitude for ship hulls and propellers. Standard series calculations. Use of the college's model towing tank for performance of ship resistance and powering tests. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 341.
[Fall]

ENGR 471 Ship Design III
2 class hours, 4 laboratory hours, 4 credits.
Continuation of ENGR 461 (Ship Design II). Course requires students to enter SNAME sponsored ship design competition and meet requirements of the competition. Other design competitions may be substituted with instructor's approval. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 461, ENGR 462.
[Spring]

ENGR 472 Sail Boat Principles and Design
2 class hours, 2 laboratory hours, 3 credits.
Preliminary design techniques for small sail powered craft. Principal dimensions, form, stability, structural design, and speed calculations. Preliminary characteristics to meet owner's requirements. Practical use of CAD and computer facilities. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 363, ENGR 366;
Corequisite: ENGR 462
or
Prerequisites: ENGR 347, ENGR 371.
[Fall]

ENGR 473 Ship Dynamics
3 class hours, 3 credits.
Theory of ship motions in response to ocean waves, and methods of reducing motions. Statistical nature of ship response to waves. Uses ship designed in ENGR 461 and 471. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 244, ENGR 345, ENGR 363, MATH 212.
[Spring]

ENGR 476 Power Boat Principles and Design
2 class hours, 2 laboratory hours, 3 credits.
Preliminary design techniques, motor powered small craft. Principal dimensions, hull form and stability, structural design, speed and/or power requirements. Preliminary characteristics to meet owner's requirements. Practical use of CAD and computer facilities. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 363, ENGR 366
or ENGR 347, ENGR 371.
[Spring]

ENGR 481 Communications Theory
3 class hours, 3 credits.
This course introduces the fundamentals of communication theory with an emphasis on signal modulation. Topics include simple review of Fourier transform, energy and power spectral density, amplitude modulation, frequency modulation, phase modulation, multiplexing technique, pulse modulation, random processes and noises, etc. Coursework includes literature study of IEEE publications that will enable students to learn the latest technologies in communications. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 383, ENGR 387.
[Fall]

ENGR 485 Electrical Power Systems
3 class hours, 3 credits.
Analysis and design aspects of large power systems: system representation; symmetrical components load flow analysis; system protection computer solution methods emphasized. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 380.

ENGR 488 Electrical Design I
2 class hours, 2 laboratory hours, 3 credits.
A project-oriented course in which students integrate engineering codes and standards and their undergraduate knowledge and experience into a design solution and communicate it in oral and written format. Projects may incorporate: control systems, sensor interfaces, electric drives, power electronics, micro-processors, data acquisition, analysis and control through micro programming and electronic communication. Lectures cover knowledge needed to understand and accomplish the design process. Students are evaluated for teamwork, professionalism, engineering ethics, research and life-long learning. At completion, teams have produced a design to enable construction of a model in ENGR 489 Electrical Design II. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 292, ENGR 395, ENGR 396, ENGR 398.
[Fall]

ENGR 489 Electrical Design II
2 class hours, 4 laboratory hours, 4 credits.
Student teams construct a model of the design project assigned in ENGR 488 Electrical Design I. Models are tested for levels of constraint imposed in the theoretical design and data is compared with theoretical calculations. Teams make a number of presentations to demonstrate their progress and are evaluated for project management, incorporation of engineering codes and standards, data collection, data analysis techniques and use of audio and visual software for final presentation. Lectures will address new developments in the field of electrical engineering. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 488.
[Spring]

ENGR 490 Power Electronics & Electric Drives
3 class hours, 2 laboratory hours, 4 credits.
Fundamentals of electromechanical energy conversion, power electronics, and applied control theory in the context of electric drive systems. Electrical drives for: DC machines and four-quadrant operation; induction motors including DTC and V/F. Electric drive systems for switched reluctance and permanent magnet machines (surface-mounted and interior). Systematic design approach to motor drives using simulation tools combined with real experiments. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 387, ENGR 395.
[Fall]

ENGR 494 Introduction to Renewable Energy Resources
3 class hours, 3 credits.
Introduction to distributed energy resources (DER) and renewable energy systems with emphasis on technology and application. Comparison of fossil fuel to renewable energy sources such as solar, biomass, wind, geothermal, and hydroelectric. Net Present Value (NPV) and Life Cycle Cost (LCC) analysis. Topics include operating principles, theoretical and actual energy systems, energy storage, efficiency, microgrids, and smart grids. Open only to B.E. students or by permission of department chair.
Prerequisites: ENGR 290, PHYS 201.
[Spring]

ENGR 495 Marine Electrical Systems
3 class hours, 3 credits.
Governing rules, regulations and design requirements for shipboard electrical systems; sizing ship power equipment; load analysis and system layout; cable sizing; short circuit analysis, system protection and coordination; recent technical developments in marine electrical machinery. Credit will not be given for both this course and ENGR 497. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 380.
[Spring]

ENGR 497 AC and DC Power Distribution Systems
3 class hours, 3 credits.
Introduction to power generation, transmission, and distribution. Review of three-phase concepts, line parameters and ABCD equivalent circuits, power flow studies, and short-circuit calculations. Unbalanced conditions feeder transposition, radial and weakly-meshed distribution systems, distribution load flows, network reduction, and load forecasting. Applications to integrated AC and DC marine power systems will be emphasized. Team projects will be assigned to model, analyze, and/or design an active distribution system using commercial platforms and applicable IEEE codes. Credit will not be given for both this course and ENGR 495. Open only to B.E. students or by permission of department chair.
Prerequisite: ENGR 395.
[Spring]

PROFESSIONAL STUDIES (ENGR 500 – 599)

ENGR 503 Manufacturing Processes I
1 class hour, 3 laboratory hours, 1 credit.
Fundamentals of metal cutting, measuring systems, hand tools and machine tools with major emphasis on basic engine lathe operation. Also includes the use of milling machines, grinders, and drill presses. Safe operation and use of safety equipment is emphasized. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
[Fall and Spring]

ENGR 504 Manufacturing Processes II
1 class hour, 3 laboratory hours, 1 credit.
Manufacturing Processes II offers oxy-acetylene cutting and welding, brazing, arc welding, pipe fitting, and sheet metal fabrication. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
[Fall and Spring]

ENGR 510 Summer Sea Term I
6 credits.
Understanding of the ship's organization. Interrelationship of the components of an operating engine room. Safety of person and ship. Watchstanding, maintenance and repair, and lectures. Responsibility is delegated on the basis of experience and demonstrated ability. In compliance with international STCW requirements, there will be no D or D+ grades in this course. This course also includes required STCW training for Vessel Personnel with Designated Security Duties (VPDSD). Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: ENGR 540, MTO 103, MTO 112. Students must satisfactorily complete Vessel Personnel with Designated Security Duties (VPDSD) training at SUNY Maritime College and Mug Ship Weekend in order to be eligible to take ENGR 510.
[Summer]

ENGR 516 Engineering License Seminar
0 credits.
Lectures, discussion, and study of subjects required by U.S. Coast Guard for federal licensure as an officer in U.S. Merchant Marine. Course is graded Pass/Fail. Examinations are administered to replicate conditions under which Federal exams are given.
Prerequisites: ENGR 503, ENGR 504, ENGR 520 or ENGR 521, ENGR 543, ENGR 544, NAUT 308.
[Summer]

ENGR 520 Summer Sea Term II
6 credits.
Areas of responsibility and depth of knowledge are increased in the overall operations of the vessel under the supervision of the Chief Engineer and the Senior Engineering Training Officer. Safety of person and ship is emphasized. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: ENGR 510, ENGR 541, ENGR 542.
[Summer]

ENGR 521 Cadet Commercial Vessel Shipping (in lieu of Summer Sea Term II)
6 credits.
Exceptionally qualified candidates may, upon application to the Engineering Department, be selected to sail on a commercial ship in lieu of ENGR520. Cadets will be assigned to vessels for approximately 60 days, as required to satisfy the USCG license requirements for sea service, if berths are available. Cadets will be selected based upon academic performance and conduct. An extensive sea project is required. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: ENGR 510, ENGR 541, ENGR 542.
[Summer]

ENGR 526 Industrial Internship I
3 credits.
An internship with a sponsoring industrial firm, requiring the intern to be assigned to duties requiring the practical application of engineering knowledge. These could include such tasks as inspection of existing equipment or systems, inspection of newly completed work, preparation of specifications for renovation or repair work, or development of maintenance plans and programs. The intern will keep a daily work log, and will retain work samples subject to the approval of his/her supervisor, as agreed with the intern's faculty advisor. The intern will receive a formal performance review upon completion of the internship, and must complete a substantial internship report to receive credit.
Prerequisites: Permission of the department chair, and completion of sophomore year in a relevant engineering discipline.
[Summer]

ENGR 530 Summer Sea Term III
5 credits.
Operational responsibilities by the student engineer of all phases of ship work under the supervision of the Chief Engineer and the Senior ENGR Training Officer. Safety of person and ship is emphasized. Each student must take and pass intensive oral and written examinations. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: ENGR 503, ENGR 504, ENGR 520 or ENGR 521, ENGR 543, ENGR 544, NAUT 308, satisfy Ship Work and Training requirements.
Corequisites: ENGR 516, MTO 412.
[Summer]

ENGR 536 Industrial Internship II
3 credits.
An internship with a sponsoring industrial firm, requiring the intern to be assigned to duties requiring the practical application of engineering analysis and design techniques, which could include such tasks as review and application of relevant codes to proposed renovation and repair work, completion of calculations pertaining to performance or sizing of equipment, completion of design specifications, estimates, and drawings, or preparation of reports and presentation materials. The intern will keep a daily work log, and will retain work samples subject to the approval of his/her supervisor, as agreed with the intern's faculty advisor. The intern will receive a formal performance review upon completion of the internship, and must complete a substantial internship report to receive credit.
Prerequisites: ENGR 526, permission of the department chair, and completion of the junior year in a relevant engineering discipline.
[Summer]

ENGR 538 Extended Industrial Internship in Engineering
6 credits.
An internship with a sponsoring industrial firm, requiring the intern to be assigned to duties requiring the practical application of engineering analysis and design techniques, which could include such tasks as review and application of relevant codes to proposed renovation and repair work, completion of calculations pertaining to performance or sizing of equipment, completion of design specifications, estimates, and drawings, or preparation of reports and presentation materials. The intern will keep a daily work log, and will retain work samples subject to the approval of his/her supervisor, as agreed with the intern's faculty advisor. The intern will receive a formal performance review by the faculty advisor upon completion of the internship. This course is intended to be taken in place of the ENGR 526/ENGR 536 sequence.
Prerequisites: Permission of the department chairperson and completion of the junior year in a relevant engineering discipline.
[Summer]

ENGR 540 Introduction to Ship Systems
3 class hours, 1 laboratory hour, 3 credits.
An introduction to ship auxiliary and main propulsion machinery and systems, as well as engine room operation and management. Students are also required to undergo shipboard familiarization and engine room familiarization in preparation for Summer Sea Term I. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Corequisite: MTO 112.
[Spring]

ENGR 541 Ship Systems I
2 class hours, 2 credits.
Design principles, characteristics and classification of marine refrigeration and air conditioning systems. Design principles, characteristics and classification of marine electric systems, including DC and AC circuits, motors and generators. Course covers construction and specification of systems and components, as well as correct operation and maintenance procedures. U.S. Coast Guard design requirements pertaining to each system and its component equipment are covered. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: ENGR 540.
[Spring]

ENGR 542 Ship Systems II
2 class hours, 2 credits.
A continuation of the study of design principles and operating characteristics of marine auxiliary systems. Maintenance procedures, laws and regulations applicable to marine engineering systems are covered. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: ENGR 540.
[Fall]

ENGR 543 Ship Systems III
3 class hours, 2 laboratory hour, 3 credits.
Study of design principles, characteristics and classification suffocation of marine diesel engines. Construction specifications as indicated in the U.S. Coast Guard and ABS ENGR Regulations. Correct procedures for operation and maintenance of auxiliary and main engine diesels, fuels, and combustion. Diesel operation using diesel simulator, miscellaneous systems. A diesel lab is integrated into the course structure to facilitate hands on learning and demonstration of proper engineering practices. The lab will expose students to the practical aspects of diesel engines. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: ENGR 542.
[Fall]

ENGR 544 Ship Systems IV
4 class hours, 4 credits.
Principles, types, construction and description of ship main propulsion engines and their support components. Brief description of steam reciprocating engines; a comprehensive treatment of steam turbines, gas turbines, and electric drive systems together with the auxiliary components which comprise a complete propulsion plant. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: ENGR 542.
[Spring]

ENGR 601 Independent Study in Engineering I
1, 2, 3, or 4 credits.
Theoretical or experimental independent investigation of special topics in engineering. Student work will be under the direct supervision of a mentor approved by the Engineering Department.
Prerequisite: Permission of the department chair.

ENGR 602 Independent Study in Engineering II
1, 2, 3, or 4 credits.
Theoretical or experimental independent investigation of special topics in engineering. Student work will be under the direct supervision of a mentor approved by the Engineering Department.
Prerequisites: ENGR 601, permission of the department chair.

ENGR 610 Special Topics in Engineering
1, 2, 3, or 4 credits.
Theoretical and/or experimental investigation of special problems in engineering.
Prerequisite: As specified by the instructor.

ENGR 631 Undergraduate Research I
3 credits.
This course offers undergraduate engineering students the opportunity to help expand the body of human knowledge by researching a topic on the edge of current engineering understanding. This research experience is a valuable gateway to the personal development of knowledge creation skills which distinguish the best in their fields. Students may take an additional semester of undergraduate research (ENGR 632), but may not apply more than a total of 6 credit hours of undergraduate research to their program of study. This course is intended for students who are capable of advanced studies. Registration requires the express consent of the faculty member who is serving as the research advisor.
Prerequisite: Permission of the department chair.

ENGR 632 Undergraduate Research II
3 credits.
This course offers undergraduate engineering students the opportunity to help expand the body of human knowledge by researching a topic on the edge of current engineering understanding. This research experience is a valuable gateway to the personal development of knowledge creation skills which distinguish the best in their fields. Students may not apply more than a total of 6 credit hours of undergraduate research to their program of study. This course is intended for students who are capable of advanced studies. Registration requires the express consent of the faculty member who is serving as the research advisor for the student's research.
Prerequisites: ENGR 631, permission of the department chair.

ENVIRONMENTAL SCIENCE

ES 101 Introduction to Environmental Science
2 class hours, 2 laboratory hours, 3 credits.
An introduction to the science of the environment. Includes lecture and labs designed to introduce students to concepts and analysis of environmental issues.
[Fall (MES Majors and MES Minors Only) and Spring]
SUNY-GER: Natural Sciences.

ES 303 Geographic Information Systems (GIS)
2 lecture hours, 2 lab hours. 3 credits.
An introduction to the field of Geographic Information Systems (GIS) and ArcGIS PRO. It includes both theoretical and practical elements, providing a general understanding of the subject of spatial theory and hands-on experience. The course begins with the basic elements of a GIS and progresses quickly into the use of ArcGIS PRO software for spatial analysis. Students will complete a final project in which they apply GIS to an environmental problem.
Prerequisite: Junior standing, open only to Marine Environmental Science majors, Data Science majors, and Environmental Science minors.
[Spring]

ES 305 Remote Sensing
2 class hours, 2 laboratory hours, 3 credits.
Principles of remote sensing: electromagnetic and sound energy, and remote sensing systems. Photogrammetry. Radiometry. Orbital dynamics. Electro-optical sensors. Satellite systems. Blackbody radiation. Radar and sonar. Meteorological, oceanographic and biological applications.
Prerequisites: OCEA 101, METE 201, PHYS 214.
[Spring]

ES 410 Marine Microbiology
3 class hours, 3 credits.
A survey of microbes and their role in nutrient cycles, disease, and oil spill remediation. Methodologies for collecting and identifying marine microorganisms.
Prerequisites: BIO 201, CHEM 121.

ES 418 Environmental Sustainability
3 class hours, 3 credits.
This course will cover: (i) global sustainable development goals and sustainability concepts; (ii) critical issues in conservation and sustainability; (iii) sustainability tools and metrics; and (iv) social, ethical and policy issues surrounding conservation and sustainable development. Special focus will include case studies of conservation and development in practice. Topics include biodiversity conservation, forest management, sustainable cities, and food systems.
Prerequisite: BIO 210.
Corequisite: ES 303.
[Spring]

ES 420 Environmental Pollution
3 class hours, 3 credits.
Sources and fates of common selected environmental pollutants; remediation, clean-up and disposal of pollutants; acute and chronic effects of pollutants; case studies of aquatic, terrestrial and atmospheric pollution.
Prerequisite: CHEM 100 or CHEM 121.
[Spring]

ES 430 Environmental Impact Assessment
3 class hours, 3 credits.
The value and role of environmental impact statements. Materials, structural designs, site locations and habitat impact.
Prerequisites: ES 303, CHEM 311.
[Spring]

ES 440 Global Climate Change
3 class hours, 3 credits
This course covers the scientific background needed to understand planetary climate change as a consequence of interconnected solar, geologic, oceanographic, atmospheric, biochemical, and anthropogenic processes. Topics include: ice ages and their causes, the greenhouse effect, modeling and prediction of climate, energy and fossil fuels, the human impact on climate, climate policy, and the consequences of global warming. The course also explores a range of proposed solutions and their potential capacities and limitations.
Prerequisites: ES 101, OCEA 101.

ES 451 Field Methods in Environmental Science
3 class hours, 3 laboratory hours, 4 credits.
A capstone course emphasizing the hands-on lab and field investigative techniques that are used to study the physical, biological, geological, and chemical parameters of the marine environment.
Prerequisites: OCEA 101, BIO 210, CHEM 312, ES 303.
Corequisite: GEOL 101.
[Fall]

ES 505/515 Environmental Science Internship I/II
3 credits each.
Supervised field experience which allows the students to apply and extend their scientific academic abilities in a professional working environment. The hands-on experience may be in environmental science, marine biology, meteorology, or oceanography. Projects can be conducted under the supervision of a researcher not associated with Maritime College; however, a Science faculty member must serve as an internal sponsor and overseer of the project. Two internships may span two academic semesters or may be taken concurrently as a single internship in the summer. The intern will be required to submit a proposal prior to commencement of each internship and a written report along with an evaluation letter from the internship supervisor upon completion.
Prerequisites: Permission of department chair and completion of sophomore year.
[Summer]

ES 610 Special Topics in MES
3 class hours, 3 credits.
Theoretical and/or experimental investigation of contemporary topics or problems in environmental science with a focus on biology, chemistry, meteorology or oceanography.
Prerequisite: As specified by the department chair.

ES 631 Undergraduate Research I
1, 2 or 3 credits.
Undergraduate Marine Environmental Science students engage in an authentic experiential scholarly scientific research project or creative activity under the guidance of a faculty advisor. Students may take an additional semester of undergraduate research (ES 632) but may not apply more than a total of 6 credits of undergraduate research to their program of study
Prerequisite: Permission of chair.

ES 632 Undergraduate Research II
1, 2 or 3 credits.
Undergraduate Marine Environmental Science students engage in an authentic experiential scholarly scientific research project or creative activity under the guidance of a faculty advisor. Students may not apply more than a total of 6 credits of undergraduate research to their program of study
Prerequisite: Permission of chair.

ACCOUNTING

GBAC 311 Financial Accounting
3 class hours, 3 credits.
An introduction to accounting from the point of view of the investor and manager, GBAC 311 covers procedures for recording, summarizing and reporting business transactions, as well as asset valuation, costing and revenue analysis. Emphasis is on an analytical and interpretive approach to generally accept accounting principles that apply to the treatment of assets, liabilities, and capital transactions. The course includes an in-depth examination of corporate financial statements.
Prerequisite: GBUS 100.
[Fall and Spring]

GBAC 315 Managerial Accounting
3 class hours, 3 credits.
Topics of study include forms of business organization, corporation accounting, marketable securities, inventories, cash flows, income tax, and cost accounting for retail, service and manufacturing enterprises.
Prerequisite: GBAC 311.
[Fall and Spring]

ECONOMICS and FINANCE

GBEC 121 Essentials of Macroeconomics
3 class hours, 3 credits.
An analysis of the forces that affect national economies including aggregate levels of production, employment and prices. Particular emphasis on the impact of government spending, taxation and monetary policy. Topics include GDP accounting, business cycles, inflation and unemployment, fiscal policy, national debt, monetary theory, and the framework of international economics.
SUNY-GER: Social Sciences.
[Fall and Spring]

GBEC 122 Essentials of Microeconomics
3 class hours, 3 credits.
An analysis of the economic forces that influence the behavior of firms. Topics include basic demand and supply, price and demand elasticities, costs of production, and the behavior of enterprises under competitive and monopolistic conditions. Resource and labor markets as well as environmental constraints also are studied.
SUNY-GER: Social Sciences.
[Fall and Spring]

GBEC 424 International Economics and Finance
3 class hours, 3 credits.
A study of the patterns of international trade from historical, theoretical and empirical perspectives. Analysis of the economics and policy issues involved in tariffs, bilateral and multilateral trade agreements, and economic unions. International finance from the enterprise and national perspectives. Analysis of trade with developing, middle income and industrial countries and the role played by multinational firms.
Prerequisite: GBEC 122.
[Fall and Spring]

GBEC 427 Financial Management
3 class hours, 3 credits.
An introduction to the financial management of corporations, including statements, ratio analysis, current assets and liability management, capital budgeting, stock and debt financing.
Prerequisite: GBAC 311.
[Fall and Spring]

GBEC 428 Economic Geography
3 class hours, 3 credits.
This course continues the overview begun in GBTT 251 of the global transportation systems that ~~integrate our world as mechanisms that facilitate international trade, from the sourcing of raw materials to the final delivery of products and services to the end custome~~r. Topics include the economic clusters and patterns linked to the geography of our world that affect both supply and demand, and the relationship of these clusters and patterns to cultural, political, and ethical contexts of transportation in globally extended supply chains.
Prerequisite: GBTT 251.
[Fall and Spring]

GBEC 429 Seminar in Transportation Economics
3 class hours, 3 credits.
Economic and managerial analysis of characteristic problems in the transportation industry. Examination of issues such as regulation and deregulation, freight rate setting, service quality, pollution, security and safety, congestion, port management structures, location and land value, social considerations, technology and innovation.
Prerequisite: Senior standing.
[Fall and Spring]

LAW

GBLW 431 Business Law
3 class hours, 3 credits.
Topics include contracts, business torts, agency, white collar crime, the Uniform Commercial Code, product liability, consumer rights, negotiable instruments, real and personal property, bankruptcy and business ethics.
Prerequisite: GBUS 100.
[Fall and Spring]

GBLW 433 Admiralty Law
3 class hours, 3 credits.
Topics include jurisdiction of admiralty courts, rights of seamen, bills of lading, charter parties, cargo claims, maritime liens, insurance, general average, salvage, collisions, limitation of liability, sovereign immunity, pollution and United States Coast Guard proceedings against merchant mariners' licenses.
Prerequisite: GBLW 431.
[Fall and Spring]

GBLW 435 Environmental Law and Policy
3 class hours, 3 credits.
An introduction to the role of administrative agencies and legal institutions in controlling all forms of pollution. Topics include government's environmental responsibilities, energy policy, regulation of air and water pollution, toxic substances, and restrictions on the development of public and private lands. The course considers economic, scientific and technological aspects of administrative and legislative approaches to environmental problems. The evolving role of international law affecting the environment also is discussed.
Prerequisite: Junior standing.
[Fall and Spring]

GBLW 437 International Law
3 class hours, 3 credits.
Topics covered include the sources of international law, sovereignty, the jurisdiction of the nation state and the community of nations, and the status of diplomatic representatives. The law of the sea is examined extensively, including territorial seas, contiguous zones, exclusive economic zones, innocent passage, hot pursuit, freedom of navigation, fishing rights, scientific research and mineral exploitation.
Prerequisite: GBUS 100.
[Fall - Even years]

MANAGEMENT

GBMG 341 Organizational Management
3 class hours, 3 credits.
An examination of the fundamentals of organization and administration including planning, organizing, directing, coordinating, evaluating and controlling. Topics include the structure and processes for managing the organization as a system in a dynamic environment, corporate social responsibility and international dimensions.
Prerequisite: GBUS 100.
[Fall and Spring]

GBMG 345 Fundamentals of Marketing
3 class hours 3 credits.
This course considers the functions performed by marketing intermediaries and the distribution of goods and services from producers to customers.. Topics include the nature and scope of marketing problems, the behavior of consumers and industrial buyers, product design and development, channels of distribution, promotional and pricing strategies, social responsibility and ethics, governmental regulation and international dimensions of marketing.
Prerequisite: GBUS 100.
[Fall and Spring]

GBMG 348 Business Ethics
3 class hours, 3 credits.
The course examines ethical issues, moral principles, values, duties, obligations, and etiquette in the context of business theory and practice. A philosophical framework (e.g. Aristotle) for ethical and moral thinking is set. Ethics as a set of values going beyond the law is studied. Ethical relationships which businesses, and business people, encounter with stakeholders and others are examined and defined. The course text and other readings draw on a wide body of literature, including the humanities, management theory and the social sciences. Actual cases (e.g. Bhopal, *Exxon Valdez*, Enron, Arthur Andersen, WorldCom) are studied for ethical implications. Special issues of ethical conduct within the workplace (e.g. sexual harassment; equal opportunity; whistleblowers; nepotism) are studied and discussed.
Prerequisite: GBUS 100.
[Fall - Odd years]

GBMG 440 Seminar in Strategy and Policy
3 class hours, 3 credits.
An integrative learning experience that relates business knowledge to managerial decision-making. Readings and case analyses test skills in applying management, marketing, financial and other business techniques in competitive situations. Emphasis is on successful performance in a complex and dynamic global business environment.
Prerequisite: Senior standing.
[Fall and Spring]

GBMG 442 International Marketing Management
3 class hours, 3 credits.
An in-depth analysis of the issues involved in developing international marketing programs from the determination of objectives and evaluation of opportunities to the implementation of global strategies. Cases and exercises emphasize how marketing principles are applied and different marketing mixes are developed by multinational providers of goods and services.
Prerequisite: GBMG 345.

GBMG 443 Cross-Cultural Management
3 class hours, 3 credits.
This course considers the challenges of doing business across different national cultures. Topics include identifying cultural differences and their impacts on relationships with customers, suppliers, subordinates, superiors and co-workers. The effect of language, religion, value systems and social structure are considered, as are the implications of differences in attitudes toward performance, uncertainty, assertiveness, individualism, gender, leadership and expectations about the future.
Prerequisite: GBMG 341.
[Spring]

TRANSPORTATION SYSTEMS

GBTT 251 Transportation Systems
3 class hours, 3 credits.
This course presents an overview of the global transportation systems that help integrate our world, including their operation, design, and the economic factors that help drive and influence the supply chains of which they are a part. This course is the first in a sequence of two courses, the other being GBEC 428 Economic Geography, that integrates the presentation and learning of three elements primary to contemporary transportation: 1) system design, organization, and control; 2) global environments and factors, including culture and ethics, that influence transportation processes and activities; and 3) the economics of transportation, including the effects of demand and supply, private sector costing and pricing strategies, and government regulation at all levels.
Prerequisite: GBUS 100.
[Fall and Spring]

GBTT 252 The Business of Shipping
3 class hours, 3 credits.
This course surveys the various aspects of the business of water-borne transport of goods and passengers. Topics include private versus common carriage; organization and management of liner and tramp shipping companies; freight rates; the roles of ship managers, ship brokers; bunker brokers, stevedores, port agencies, terminals and warehouses. These subjects are examined from operational, financial, regulatory and risk- management perspectives.
Prerequisite: GBUS 100.
[Fall and Spring]

GBTT 351 International Logistics
3 class hours, 3 credits.
This course applies a total systems approach to the management of activities involved in the physical movement of raw materials, in-process inventory and finished goods from point of origin to point of use or consumption. Topics include supply chain management, inbound and outbound logistics systems, customer service, inventory and warehousing, transportation management, information systems, global logistics and logistics strategy.
Prerequisite: GBUS 100.
[Fall and Spring]

GBTT 451 Marine Insurance
3 class hours, 3 credits.
An introduction to the fundamentals of cargo, hull, and protection and indemnity insurance. Topics include insurance markets, brokers, agents, underwriters, forms of policies, valuation, total losses, particular average, general average, insured perils, war risks, subrogation, reinsurance and insurance of pollution liabilities.
Prerequisite: GBLW 431.
[Fall and Spring]

GBTT 453 Import/Export and Traffic Management
3 class hours, 3 credits.
A survey of the fundamentals of foreign trade from a transactional perspective. Topics include negotiating the international sales contract, U.S. customs practice, entry of goods, tariffs, foreign trade zones, bonded warehousing, duty drawbacks, export controls, reducing the risk of nonpayment, the letter of credit, letters of undertaking and guarantees, arranging for the transportation of the goods, freight forwarding, non- vessel operating common carriers, negotiating and entering into contracts of affreightment, service contracts, charter parties, bills of lading, insuring the goods, and engaging stevedoring and terminal services.
Prerequisite: GBUS 100.
[Fall and Spring]

GBTT 457 Port and Terminal Operations
3 class hours, 3 credits.
An introduction to the diversified operations within ports, both U.S and international. Topics include the role of port authorities and other governmental agencies, interorganizational relationships, port development, security and law enforcement, traffic control, harbor maintenance, and the operation of container, bulk and petroleum terminals.
Prerequisite: GBUS 100.
[Fall and Spring]

GBTT 460 Principles of Global Supply Chain Security
3 class hours, 3 credits.
The course depicts security as a control mechanism in several major channels in the supply chain; e.g. in human resources confidentiality of employee records; in logistics cargo and passenger security; in communications encrypted email and hacker-free databases; in finance sanctity of credit cards and identity; and in marketing protection of intellectual property. Students will engage in a team research project as a practicum for learning how to develop and conduct vulnerability assessments and security planning. A major underlying course theme is that security can only be successfully developed and implemented in context of the cultural, economic, and political contexts of the supply chain processes for which it serves as a control mechanism. An ASIS endorsed certificate in Global Transportation and Supply Chain Security is issued upon successful completion of this course with a grade of B or better and GBTT 462 and GBTT 465.
Prerequisites: GBUS 100 and Junior standing.
[Fall and Spring]

GBTT 462 Science and Technology Issues of Security
3 class hours, 3 credits.
This course explores the social and political contexts, the implications and consequences of the scientific and technological issues in the security arena. For example, containers now coming out of a port terminal are scanned for radiation; what can the scanners detect and if radiation is detected, what does that mean? How would a city be evacuated in the event a nuclear device was detected? Another example of technology with far-reaching implications is that of biometrics; suppose everybody had their retina patterns in a national database? When is personal information too intrusive for government access? An ASIS endorsed certificate in Global Transportation and Supply Chain Security is issued upon successful completion of this course with a grade of B or better and GBTT 460 and GBTT 465.
Prerequisites: GBUS 100 and Junior standing.
[Fall and Spring]

GBTT 465 Lectures in Contemporary Security Issues
3 class hours, 3 credits.
The capstone course of a minor in intermodal and maritime security jointly offered by the Department of Global Business and Transportation (GBAT), and the Department of Marine Transportation (MT). In addition to lectures by the professor supervising the course, from time to time prominent experts in maritime and intermodal security, from both public and private sectors, will address the students on topical issues of the day in their field of security. Students will be required to do a term paper that integrates the information from the different speakers as well as both primary and secondary research performed by the student. An ASIS endorsed certificate in Global Transportation and Supply Chain Security is issued upon successful completion of this course with a grade of B or better and GBTT 460 and GBTT 462.
Prerequisites: GBUS 100 and Junior standing.
[Fall and Spring]

GENERAL BUSINESS

GBUS 100 Introduction to Business and Economics
3 class hours, 3 credits.
This foundation course introduces students to basic concepts of economics and to the structure, functions, and objectives of the business enterprise.
[Fall and Spring]

GBUS 300 International Business
3 class hours, 3 credits.
An introduction to international business examining the environment in which multinational firms operate and the distinctive ways in which global enterprises perform business functions. Topics include the impact of cultural and political-legal differences, trade theory, regional and global economic integration, foreign exchange, country selection, exporting and importing, supply chain management, marketing globally and international human resource management.
Prerequisite: GBUS 100.
[Fall and Spring]

GBUS 400 Maritime Cyber Security
3 class hours, 3 credits
This course will present the student with the opportunity to gain an understanding of the Maritime Cyber Security environment. It is jointly offered by all of the Departments within SUNY Maritime. In addition to lectures by the professors supervising the course, from time to time prominent experts in maritime and intermodal security, from both public and private sectors, will address the students on topical issues of the day in this critical field of maritime cyber security. Students will be required to do a research paper that integrates the information from the different speakers as well as both primary and secondary research performed by the student.
[Fall and Spring]

GBUS 410 Studies in the African Transportation and Maritime Industry
3 class hours, 3 credits
This course introduces students to the transportation and Maritime industry of the African continent. Students will take a trip to Africa, attend lectures, and participate in research. Topics include studies in the social, historical, cultural, economic, and political environment of the countries visited.
Prerequisite: GBUS 100
[Summer and Winter]

GBUS 525 ITT Internship/Work Experience
6 credits.
Candidates for the Bachelor of Science in International Transportation and Trade are required to perform, with prior approval, an internship in an organization in international transportation, trade or another aspect of global business or to complete a summer study abroad program. The activities are intended to familiarize the ITT candidates with professional work environments and expose them to career opportunities.
Prerequisite: GBUS 100.
[Summer]

GBUS 526 ITT Study Abroad
6 class hours, 6 credits.
This intensive study abroad course is designed to provide undergraduate students with the opportunity to put their academic coursework, theory and concepts learned in the classroom into real time practices as found in the international and global commercial venues. Students in this study abroad program will have the opportunity to discuss critical 21st century topics and issues pertinent to global trade, commerce and transportation with academics, and practitioners in both the public and private sectors in each country visited. Among the issues and topics to be covered include: supply chain management, ports & terminals operations, importing & exporting, intermodal transportation, manufacturing, security, managing risk, fraud and ethics.
Note: This course is to be an alternative to GBUS 525 ITT Internship.
Prerequisites: GBUS 100 and permission of the instructor.
[Summer]

GBUS 610 Special Topics in Business and Transportation
3 credits.
Significant topics in business and transportation are examined that reflect the interest of both the students and the instructor. Activities typically involve review of the current and historical literature on the topic and the design, implementation and presentation of a substantial analytic or developmental project.
Prerequisites: GBMG 341 and permission of the instructor.

GEOLOGY

GEOL 101 General Geology
2 class hours, 2 laboratory hours, 3 credits.
Physical geology, rocks and minerals, plate tectonics, geologic time, evolution of the Earth, processes at Earth's surface, hydrologic cycle, Earth resources.
SUNY-GER: Natural Sciences.
[Fall]

HISTORY

HIST 101 US History to 1865
3 class hours, 3 credits.
A survey of American history from its earliest beginnings to the US Civil War. Course themes focus on developing civic understanding for engaging in the dynamics of the diverse and pluralistic society which comprise the public life of the United States (both past and present).
Corequisite: ENGL 101.
SUNY-GER: US History and Civic Engagement
[Fall and Spring]

HIST 102 US History Since 1865
3 class hours, 3 credits.
A survey of American history from the US Civil War to Present. Course themes focus on developing civic understanding for engaging in the dynamics of the diverse and pluralistic society which comprise the public life of the United States (both past and present).
Corequisite: ENGL 101.
SUNY-GER: US History and Civic Engagement
[Fall and Spring]

HIST 401-402 Topics in European Civilization I-II
3 class hours, 3 credits each.
Survey of European civilization from the Middle Ages to the end of World War II.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 416 U. S. Maritime History to the Civil War
3 class hours, 3 credits.
An investigation into the ways that maritime commerce provided the foundation for the growth of the United States from pre-Columbian times through the Civil War. The focus of the course will be on the growth of America as a sea power, and the influence of the
U. S. Navy and its role in promoting American merchant shipping.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.
[Fall]

HIST 417 U. S. Maritime History since 1865
3 class hours, 3 credits.
An investigation into the major developments in American maritime history from the Civil War to the present. The course will focus on pivotal naval battles, as well as the growth of maritime commerce, as the twin catalysts of national expansion and cultural exchange.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.
[Spring]

HIST 418 History of American Foreign Policy
3 class hours, 3 credits.
A survey of the major developments in American foreign policy.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 421 Vietnam and America
3 class hours, 3 credits.
Vietnam in the Twentieth Century. Focus on America's direct involvement and a consideration of its legacy for the U.S. and for Southeast Asia.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 425 History of Technology
3 class hours, 3 credits.
A survey of selected major developments in Western technology, and their effects on society. Analysis of the process of technological innovation, and the application of modern technology in resource-limited societies. Special emphasis on those developments which bear on modern life and work.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 426 Twentieth Century Technology
3 class hours, 3 credits.
A detailed survey of the major technological developments of the twentieth century. Students will analyze in-depth advances in fields including communication, medicine, transportation, and warfare.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 432 America in the 1950s and 1960s
3 class hours, 3 credits.
A course that explores social, cultural, economic, and political developments from the end of World War II to the resignation of President Nixon in 1974. Significant military aspects of the Cold War and the two Asian conflicts of the period will also be studied, along with their consequences for American society and America's relations with the world.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 436 Sports and American Society
3 class hours, 3 credits.
An examination of the evolution of American society, through the prism of sports. Sports will be utilized as a means to analyze social and economic change, race relations, labor-management conflict and the emergence of player unions, the impact of war on sport, gender issues, and the impact of print and electronic media.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 440 History of American Enterprise I
3 class hours, 3 credits.
This course will explore the lives and critical business decisions of the pioneering entrepreneurs who used the accumulation of capital, acquired through astute investments, to create this nation's largest companies and corporations. Students will examine the role of these business pioneers in the growth of commerce as the engine of cultural exchange and, therefore, American expansion. This course covers the period from the first colonists to 1865.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 441 History of American Enterprise II
3 class hours, 3 credits
This course will explore the lives and critical business decisions of the pioneering entrepreneurs who used the accumulation of capital, acquired through astute investments, to create this nation's largest companies and corporations. Students will examine the role of these business pioneers in the growth of commerce as the engine of cultural exchange and, therefore, American expansion. This course covers the period from the end of the Civil War to the present.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 465 History of Science
3 class hours, 3 credits.
This is a course in the role science played in the development of our modern technologically-based society, and the corresponding role that industrial society has played in the development of contemporary scientific inquiry. The first half of this course will examine major personalities and breakthroughs in the subject matter and processes of science, from the ancient world through the nineteenth century. The second half of the course will focus on selected controversial topics in contemporary science.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.
[Spring]

HIST 471 China and the World I
3 class hours, 3 credits
This survey course covers ancient Chinese history and culture, from pre-history to the mid-19th century, and aims to provide a deeper framework for understanding contemporary China and China's relationship to the world.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 472 China and the World II
3 class hours, 3 credits
This survey course covers Chinese history and culture from the mid-19th century to the present. The course will examine the critical events that shaped modern China and aim to provide a framework for understanding contemporary Chinese politics and China's relationship to the world.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 473 Europe and the World
3 class hours, 3 credits
A survey of Europe's historical transformation through global encounters. Course themes and assignments provide a framework for understanding the foundations of contemporary European society and its political, economic, and cultural relationship with the wider world (from 1492 to present).
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 474 Latin America and the World
3 class hours, 3 credits
A survey of Latin America's historical transformation through global encounters. Course themes and assignments provide a framework for understanding the foundations of contemporary Latin America society and its political, economic, and cultural relationship with the wider world (from Antiquity to present).
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HIST 481 The Holocaust
3 class hours, 3 credits
The course will focus on the complex history of the Holocaust, including lessons for today that we can learn from these events. We will study the history of Nazi Anti-Semitism; the rise of the Nazi party; and the Holocaust, from its beginnings through liberation and the aftermath of the tragedy. We will seek to understand how these "unthinkable" events took place, namely the "Final Solution", Nazi Germany's systematic attempt to exterminate the entire Jewish population. We will learn not only about the suffering of the victims, but also about the actions of the perpetrators, the bystanders, and others who aided and abetted the Nazi Genocide of the Jewish people. We will also study the heroic actions of those who helped save Jews from the horrors of the Holocaust. We will utilize the writings of historians, historical documents, testimonies and writings of survivors, films and other relevant materials.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-29

HUMANITIES

HUMN 201 Early World Civilization & Culture
3 class hours, 3 credits.
An introduction to a broad outline of world culture and the development of civilizations from antiquity through the global early modern era.
Corequisite: ENGL 101
SUNY-GER: World History and Global Awareness
[Fall and Spring]

HUMN 202 Later World Civilization & Culture
3 class hours, 3 credits.
An introduction to a broad outline of world culture and the development of civilizations from the global early modern to the present.
Corequisite: ENGL 101
SUNY-GER: World History and Global Awareness
[Fall and Spring]

HUMN 216 Introduction to Jazz History
This course introduces students to the character, methods, objectives, and cultural significance of jazz music. The course consists of directed listening and viewing of jazz audio and video, textbook and supplemental critical reading, and seminar style discussions of the aesthetic, musicological, socioeconomic, and political implications of jazz as well as the history and development of America's urbane modern musical art form.
Corequisite: ENGL 101
SUNY GER- Diversity, Equity, Inclusion and Social Justice
Previously HUMN 406

HUMN 217 Oceanic Migrations
3 class hours, 3 credits
This course considers literature produced by indigenous peoples around the glob that centers the ocean thematically, theoretically, culturally, and/or historically. Attention is dedicated to topics such as indigeneity, diaspora, globalizations, migration, environmental justice, and (post) colonialism.
Corequisite: ENGL 101
SUNY GER- Diversity, Equity, Inclusion and Social Justice

HUMN 230 Introduction to Philosophy
3 class hours, 3 credits.
An introduction to major schools of philosophical thought. Courses include readings of philosophic works in disciplines including, but not limited to, metaphysics, axiology, ontology, epistemology, and logic.
Corequisite: ENGL 101
SUNY GER- Humanities
Previously HUMN 462

HUMN 232 The Empire Writes Back: De/Post/Colonial Literatures
3 class hours, 3 credits.
How does colonialism affect those who have been colonized, and those who are doing the colonizing? This course studies colonialism, as it is expressed in a variety of literary works: those written from the viewpoint of colonizers, those written from the viewpoint of corresponding colonized peoples, those working to query if literature can be decolonized, etc.
Corequisite: ENGL 101
SUNY GER- Humanities

HUMN 251 Introduction to World Music
3 class hours, 3 credits.
This course introduces students to the character, methods, objectives, and cultural significance of several of the world's music cultures. Class activities include directed listening and viewing of audio and video, textbook and supplemental critical reading, and seminar style discussions of the aesthetic, musicological, socioeconomic, and political implications of world music cultures through various paradigms: sacred/secular, traditional/modern, and work/play.
Corequisite: ENGL 101.
SUNY GER-The Arts.
Previously HUMN 405

HUMN 300 World Literature and Culture III
3 class hours, 3 credits.
A study of the ideas treated in Humanities I & II as they are developed in modern works of fiction and non-fiction.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 391 Digital Humanities Methods
3 class hours, 3 credits.
This course offers students a landscape view of Digital Humanities (DH), focusing on how its various approaches raise new questions, offer fresh approaches to old questions, and embody new epistemologies. Students will gain an understanding of the emerging role of DH across several academic disciplines and begin to learn some of the fundamental skills often used in DH projects and work. Though no previous technical skills are required, students will be asked to experiment in introductory ways with DH tools and methods.
Prerequisite: ENGL 101

HUMN 392 GIS/Mapping in the Humanities
3 class hours, 3 credits
This course offers an introduction to the wide range of applications of Geographic Information Systems (GIS) mapping in the humanities and social sciences, as well as to the use of various mapping tools, with a sustained focus on training in ArcGIS.
Prerequisite: ENGL 101
[Fall]

HUMN 400 History of Art
3 class hours, 3 credits.
A study of painting, sculpture, and architecture from prehistoric times to the present. Fundamental concepts of art analysis will also be introduced.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 401 Studio Drawing and Painting
3 class hours, 1 studio hour, 3 credits.
Two class hours a week introduce basic techniques of drawing and painting, two classes weekly of lecture and discussion on the visual elements and major styles in art history. No previous art experience is necessary.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 402 Images of Men, Women, and Machines
3 class hours, 3 credits.
Looking at art, film, fiction, drama, advertising, and photography over the past hundred years, this course focuses on the social and cultural impact of modern machines, and the ways these machines including automobiles, airplanes, home appliances, and consumer electronics have transformed the lives of both men and women.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 403 A History of Western Music
3 class hours, 3 credits or 2 class hours, 2 rehearsal/performance hours, 3 credits.
A historical survey of Western music from the medieval to the present, emphasis on stylistic characteristics and representative composers and works. Students who will complete two years of satisfactory service in the College band before graduation need attend only two class hours each week. Others will attend a third class hour or work on an appropriate project.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 404 Art and Technology
3 class hours, 3 credits.
An introduction to the interrelationships between art, technology, science and engineering.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 430 Case Studies in Constitutional Law
3 class hours, 3 credits.
This course will examine the role of the Supreme Court in the American system of government, focusing on particular cases and legal principles in depth. Students will read Constitutional Law cases and other materials and will prepare oral presentations and written materials analyzing cases and legal principles.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.
[Spring]

HUMN 454 The Words and Images of War
3 class hours, 3 credits.
An in-depth investigation of the experience of war from ancient times until today through the stories, novels and poems of combatants, complemented by fiction and non-fiction films and photographic essays. These readings are underscored by theoretical studies of human aggression, violence and killing.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 460 The Bible as/in Literature
3 class hours, 3 credits.
Discussion of literary dimensions of passages from the Bible and the relationships of a variety of other stories, poems, and plays to the Bible.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 461 Religion
3 class hours, 3 credits.
An introduction to the philosophy of religion. Principal topics of discussion include immortality; the problem of evil; and the principle of inerrant scripture.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 465 Humanities Research Methods
3 class hours, 3 credits.
An elective for students seeking to enhance their skills in research, analysis, and writing. This course is aimed at introducing the student to the skills involved in historical, literary, or aesthetic research. Emphasis is on the ability to locate, evaluate, and synthesize data, as well as the technical aspects of academic investigation, research methods and tools, and expository writing.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.
[Fall - Odd Years]

HUMN 467 Science Fiction
3 class hours, 3 credits.
In this class we will critically examine a broad range of genre literature on themes such as race, religion, ecological peril, artificial intelligence, exploration, and colonization. Students will consider these concepts in light of historical context and theoretical concepts (such as symbolist/allegorical texts, simulacra, ergodicity, and the hermeneutic/proairetic code) and complete a significant work of independent research in which they link fiction with real-world application.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 490 Studies in Maritime Policy
3 class hours, 3 credits.
Analysis of the technological, legal, environmental, and ethical aspects of policy decisions in the maritime sphere. Readings range from polemical arguments by interest groups to international treaties. Students prepare case studies and argue positions as both advocates and arbiters.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.
[Spring]

HUMN 505/515 Internship in Maritime Studies I/II
3 credits each term.
Student placement in maritime-related publishing, marketing, legal, and museum sites. Students will devote six hours per week (typically one full day) to their internship, keep a journal of activities, and file an end-of-term report with their faculty mentor.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

HUMN 601-602 Independent Studies in the Humanities I-II
1, 2, or 3 credits each.
Independent investigation of special topics in Humanities. Student work will be under the direct supervision of a mentor approved by the Humanities Department.
Prerequisite: Permission of the department chair.

HUMN 610-611 Special Topics in Humanities I-II
3 class hours, 3 credits each.
Special topics and issues for qualified students interested in acquiring a broader knowledge of our linguistic, literary, or artistic heritage.
Prerequisite: ENGL 101 and 9 credits in ENGL, HIST, or HUMN 100-299.

LEADERSHIP

LEAD 101 Leadership and the Maritime Experience
1 class hour, 1 credit.
A required course for all freshmen (first-time college or < 32 transfer credits). This course is aimed at introducing the student to college life with emphasis on the unique history and goals of Maritime College, helping the student manage the difficult transitional first year of college via the formulation of a plan for academic success, and fostering the student's potential for leadership via the development of self-awareness and interaction with other students from diverse backgrounds.
[Fall and Spring]

LEAD 102 Springboard to Regimental Success
1 class hour, 2 training hours, 0 credits.
This course is designed to introduce the student to the rigors and responsibilities of the Regiment of Cadets at SUNY Maritime. The course utilizes a unique and engaging format of classroom meetings, physical training, and regimental activities to promote personal and academic skills that will assist the student in navigating the collegiate experience and the U.S.C.G. license program. Upon successful completion of the course, students will be ensured a training billet in the following summer's INDOC program. Course is graded Pass/Fail.
Prerequisite: Acceptance to J-Start program.
[Spring]

LEAD 201 Exploring Leadership
1 class hour, 1 credit.
This integrative course offers students an opportunity to connect the study of leadership theory with opportunities to practice leadership. Students will explore the concept and practice of "citizen leadership" as a framework for civic and professional leadership roles throughout life. LEAD 201 introduces "leadership" and "citizenship" as social constructs, i.e., ideas and values that vary across cultural and historical contexts.
Prerequisite: LEAD 101.

LEAD 401 Leadership Seminar
1 class hour, 1 credit.
The course is designed to be a blended nontraditional seminar class focused as a culminating leadership experience. Considerable introspection and exploration of your time both at Maritime College and within the SAIL Program is expected. The underlying theme is that every person can become a leader and that the ability to lead begins with the process of self-discovery (LEAD 101) and ends with self-actualization (LEAD 401). LEAD 401 has an experiential component where students are expected to assess past and present leadership experiences to identify their leadership style.
Prerequisite: LEAD 201.

MATHEMATICS

The Science Department administers a placement test in mathematics to all undergraduate students admitted to the college. An evaluation of each student's mathematics preparation will be based on the performance on this test and admissions credentials. First-semester students, including transfer students, will be registered in the appropriate mathematics course in accordance with the results of this evaluation and their choice of curriculum. All incoming Bachelor of Engineering students will be scheduled for MATH 101 (or higher if awarded transfer credit). A weekly 75-minute recitation aimed at students who need supplementary work in college algebra and trigonometry is available. Incoming students identified by the math placement exam as needing such additional preparation will be required to attend the recitation.

MATH 080 Elementary Algebra
3 class hours, 3 credits.
Arithmetic review; scientific notation; algebraic operations; factoring; solving linear and quadratic relations; absolute value; Pythagorean theorem; coordinate geometry; graphing lines and parabolas; relevant word problems. Course offered on a pass/fail basis. This course may not be used to satisfy any degree requirement.
[Fall and Spring]

MATH 090 Introduction to College Mathematics
4 class hours, 4 credits.
Algebra review; basic function concepts; lines, systems of linear equations, and linear functions; quadratic functions; polynomial and rational functions; exponential functions and logarithms; trigonometry and trigonometric functions; applications to problems in business and the sciences. A weekly 75-minute recitation aimed at students who need supplementary work in college algebra and trigonometry is available. Incoming students identified by the math placement exam as needing such additional preparation will be required to attend the recitation.
Prerequisite: MATH 080.
SUNY-GER: Mathematics.
[Fall and Spring]

MATH 101 Calculus I
4 class hours, 4 credits.
A first course in the calculus of one-variable functions with emphasis on preparing students for Bachelor of Engineering majors. Topics include: the limit of a function; continuity and differentiability; average and instantaneous rates of change; differentiation of algebraic, trigonometric, exponential, and inverse functions; algebraic and geometric interpretation of a function and its derivatives; optimization; related rate applications; and an introduction to antidifferentiation including the definite integral. All incoming Bachelor of Engineering students will be scheduled for MATH 101 (or higher if awarded transfer credit). A weekly 75-minute recitation aimed at students who need supplementary work in college algebra and trigonometry is available. Incoming students identified by the math placement exam as needing such additional preparation, and students who received below B- in MATH 90 will be required to attend the recitation. Credit will not be given for both this course and MATH 111.
Prerequisite: A grade of C- or better in MATH 090.
SUNY-GER: Mathematics.
[Fall and Spring]

MATH 102 Calculus II
4 class hours, 4 credits.
A second course in the calculus of one-variable functions with emphasis on preparing students for bachelor of engineering majors. Topics include: Antiderivatives; the definite integral; Fundamental Theorem of Calculus; techniques of integration; l'Hôpital's rule; improper integrals; geometric applications of integration; numerical sequences and series; power series; Taylor polynomials and Taylor series.
Prerequisite: A grade of C- or better in MATH 101.
SUNY-GER: Mathematics.
[Fall and Spring]

MATH 111 Applied Calculus I
4 class hours, 4 credits.
A first course in the calculus of one-variable functions with applications to business and science. Topics include: The limit of a function; continuity and differentiability; average and instantaneous rates of change; differentiation of algebraic, exponential, and logarithmic functions; algebraic and geometric interpretation of a function and its derivatives; optimization; related rate applications; and an introduction to antidifferentiation including the definite integral. Credit will not be given for both this course and MATH 101.
Prerequisite: MATH 090.
SUNY-GER: Mathematics.
[Fall and Spring]

MATH 112 Applied Calculus II
3 class hours, 3 credits.
A survey of calculus topics beyond the differentiation of one-variable functions, with emphasis on applications of interest to Marine Environmental Science and Marine Operations majors. Topics include: Integration and the Fundamental Theorem of Calculus; multidimensional structures, including vectors, complex numbers, and matrices; differentiation, and integration of functions of several variables; introduction to ordinary differential equations.
Prerequisite: MATH 101 or MATH 111.
SUNY-GER: Mathematics.
[Spring]

MATH 211 Calculus III
4 class hours, 4 credits.
A first course in multivariable calculus. Topics include: Multidimensional structures, including vectors, complex numbers, and matrices; geometry of lines and planes; the calculus of vector-valued functions and its applications; differentiation and optimization of functions of several variables; double and triple integrals; polar, cylindrical, and spherical coordinate systems; vector fields; line and surface integrals, including use of Green's Theorem.
Prerequisite: MATH 102.
[Fall and Spring]

MATH 212 Differential Equations
4 hours, 4 credits.
First order equations and applications; linear differential equations of higher order; applications of 2nd order linear differential equations; power series solutions; Laplace transforms; systems of linear equations; elements of linear algebra, matrices and determinants; Fourier series; solutions of partial differential equations by the method of separation of variables.
Prerequisite: MATH 211.
[Fall and Spring]

MATH 213 Discrete Mathematics

3 class hours, 3 credits.

This course lays the groundwork for further courses in discrete mathematics and theoretical computer science. Topics include sets, functions, relations, formal logic (propositional and predicate calculus); elementary number theory.

Prerequisite: MATH 101

[Fall]

MATH 251 Statistics

3 class hours, 3 credits.

An introductory course in statistical methods. Topics include: frequency distributions; measures of central tendency, variability, and relative standing; normal and binomial probability distributions; confidence intervals and hypothesis testing for mean and proportion; one-way analysis of variance and contingency tables; bivariate and multiple regression analysis; with use of calculators and Excel to describe and analyze data. Credit will not be given for both this course and ENGR 345.

Prerequisite: MATH 090. SUNY-GER: Mathematics. *[Fall and Spring]*

MATH 311 Linear Algebra

3 class hours, 3 credits.

A first course in linear algebra. Topics include: linear systems; echelon forms; matrix algebra; spaces of vectors, linear independence and bases; linear transformations; orthogonality; determinants; eigenvalues and eigenvectors; diagonalization; and an introduction to abstract vector spaces. Applications to engineering will appear throughout the course.

Prerequisite: MATH 211.

MATH 446 Operations Research

3 class hours, 3 credits.

Quantitative methods for business-oriented decision and optimization problems. Topics chosen from among: linear programming and related sensitivity analysis; transportation problem; network and project-scheduling algorithms; queues; simulation; Markov processes; decision analysis. Use of software packages.

Prerequisite: ENGR 345 or MATH 251.

[Fall and Spring]

MATH 610 Special Topics in Mathematics

1, 2, or 3 credits.

METEOROLOGY

METE 201 Meteorology for Mariners
2 class hours, 2 laboratory hours, 3 credits.
Structure and composition of the atmosphere; atmospheric radiation; forces and winds; general circulation; moisture; atmospheric stability; polar front and wave cyclone theory; marine weather observations; elements of weather forecasting and ship routing. In compliance with international STCW requirements, there will be no D or D+ grades in this course.
SUNY-GER: Natural Sciences.
[Fall and Spring]

METE 350 Synoptic Meteorology
3 class hours, 2 laboratory hours, 4 credits.
Surface and upper-air circulation systems, vorticity and divergence, thickness and hydrostatics, air masses and fronts, moisture and stability, theory of weather forecasting. Plotting and analysis of surface and upper-air charts, use of thermodynamic diagrams, dynamic and non-dynamic forecast techniques, scales of motion, weather analysis and forecasting using NMC charts operationally available.
Prerequisite: METE 201.
[Fall - Odd Years]

METE 402 Tropical Cyclones
2 class hours, 2 laboratory hours, 3 credits
Tropical circulation; stream function and analysis; trade wind features; the ITCZ; tropical disturbances; easterly waves; tropical vortices; the monsoon; the hurricane problem; man and the hurricane; damage; recent research.
Prerequisite: METE 201.

METE 408 Dynamic Meteorology
3 class hours, 3 credits.
Thermodynamics of gases and applications to meteorology; atmospheric hydrostatics and thickness; thermodynamics of water vapor and moist air; elements of cloud physics. Hydrodynamics of fluids and applications to meteorology; The Equation of Motion; continuity; divergence and vertical motion; The Vorticity Equation; elements of quasi- geostrophic theory
Prerequisites:MATH 111 or 101, METE 201, PHYS 211.
[Spring - Even Years]

METE 411 Marine Climatology
2 class hours, 2 laboratory hours, 3 credits.
History of modern climatology; temperature & moisture controls; planetary winds & ocean currents; local winds; monsoonal weather, El Nino & La Nina; tropical climates; mid-latitude climates; polar climates; climatic change & global warming, fog & sea ice; acid rain & ozone depletion; climatic impact of extreme atmospheric events.
Prerequisite: METE 201.

METE 422 Weather Forecasting
2 class hours, 2 laboratory hours, 3 credits.
Quasi-geostrophic forecast theory, elements of numerical weather prediction; short range forecasting and nowcasting; operational forecasting using NMC charts, radar, and satellite pictures.
Prerequisite: METE 201.

METE 610 Special Topics in Meteorology
3 class hours, 3 credits.
Theoretical and/or experimental investigation of contemporary topics or problems in meteorology.
Prerequisite: As specified by the department chair.

MARINE TRANSPORTATION

MT 212 Ship Management
2 class hours, 3 credits.
The student will learn fundamental concepts and principles required to manage an international shipping company from the shoreside perspective. Subjects will include the various types of charter agreements, voyage trading data, cargo booking and trading, Bills of Lading, Insurance and the customer/owner relationship.
[Fall and Spring]

MT 250 Ship Construction and Stability for Unlimited License
2 class hours, 2 credits.
Description of structural components, types of construction, materials and methods of shipbuilding. Principles of ship form, flotation, transverse and longitudinal stability. Application of stability, trim, and stress tables, and stress calculating equipment and software. Merchant marine methodology in stability and trim calculations for intact and damaged vessels. This course satisfies STCW requirements in the areas of ships construction and stability. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Corequisites: MATH 090.
[Fall and Spring]

MT 321 Introduction to Cargo Operations and Ship Stability
3 class hours, 3 credits.
The course is in two sections. The first section is a review of basic ship's construction; structural components, types of construction, materials and methods of shipbuilding. This section will also study the principles of transverse and longitudinal stability, general stability and trim calculations for both intact and damaged vessels as appropriate to the licensed deck officer. The second section of the course focuses on a study of vessel cargo and the role of the ship in integrated transportation systems. Specific topics include a survey of cargo gear, principles and problems of stowage and carriage of general, bulk, refrigerated, dangerous cargo, grain, special cargoes and containers, and the role of the ship's officer related to various types of vessels and cargo operations. A complete project is required dealing with the actual loading and stowage of a vessel, utilizing industry soft- ware and actual ship specifications. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MATH 090, ENGR 363 or ENGR 371 or MT 250.
[Fall and Spring]

MT 322 Marine Cargo Operations
2 class hours, 2 laboratory hours, 3 credits.
A study of the tanker industry, and the operational aspects of the tanker; including basic safety and pollution prevention precautions and procedures, layouts of different types of oil tankers, types of cargo, their hazards and their handling equipment, general operations sequence and oil tanker construction and terminology. Pertinent U.S. Coast Guard and OPA '90 regulations will be covered, as well as how they relate to specific duties and responsibilities. Operational exposure to loading/discharging and auxiliary tanker systems will be gained through exercises structured around the school's tanker in a weekly two- hour laboratory. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MT 250 or MT 321, ENGR 510 or MT 510.
[Fall and Spring]

MT 350 Hazardous Materials and Oil Spill Response
3 class hours, 3 credits.
This course will introduce the student to current methods and strategies used to combat oil and hazardous materials spills. The course will review legislation pertaining to facility and vessel response plans, carriage of hazardous materials, and worker safety. The course will familiarize the student with various types of spill response equipment and strategies through both classroom lectures and practical demonstrations.
[Spring]

MT 404 Environmental Management
3 class hours, 3 credits.
This class will provide an overview of current international environmental regulations as they pertain to the shipping industry. The discussion will include the place of environmental compliance in the company and the compliance process. Sections of the following Laws pertaining specifically to Vessel Operations will be used: MARPOL, Resource Conservation and Recovery Act, Clean Water Act, Clean Air Act, Montreal Protocol, State Statutes. Public health statutes applicable to shipping and vessel sanitation will also be covered. (USPHS – CDC Reporting Criteria). Case studies will be used throughout the course.
[Fall and Spring]

MT 408 International Safety Management
3 class hours, 3 credits.
This course will introduce students to the ship management requirements found in the IMO's International Safety Management Code and how those requirements and principles are applied in the international shipping industry. Students will become familiar with the various aspects of the code and how the Code is implemented through such programs as safety management programs. Extensive use of case studies will be made.
[Fall and Spring]

MT 412 Deck License Seminar
8 class hours, 4 credits.
Lecture, discussions and problems dealing with subjects required by the U.S. Coast Guard for federal license as an officer in the merchant marine. In order to complete this course satisfactorily each candidate for license is required to demonstrate, by qualifying examinations in all areas, his ability to become a fully qualified merchant marine officer. Topic areas include: Chart Plot, Oceans, Navigation Problems, Rules of the Road, Deck General, Deck Safety, Navigation General. Examinations are administered to replicate conditions under which Federal exams are given. Students must pass this course before they will be allowed to sit for the Coast Guard license. Course is graded Pass/Fail.
Prerequisites: MT 322, MT 520 or MT 521, NAVG 312, NAUT 308, NAUT 314, NAUT 315.
[Fall and Spring]

MT 426 Maritime Communications
2 class hours, 2 laboratory hours, 3 credits.
A Simulator-based training course designed to satisfy the International Maritime Organization (IMO) requirements for training in Global Maritime Distress and Safety Systems. The course provides the student with a good working knowledge of modern marine communications. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MT 510.
[Fall and Spring]

MT 430 Principles of Emergency Management Systems
3 class hours, 3 credits.
This course uses established guidelines set by FEMA and widely used in business to introduce students to the emergency management system in theory and practice. Discussion will include general topics in emergency management systems with an emphasis on how corporations are including these principles into business continuity planning. The course will include such topics as risk analysis, communications, planning and mitigation.
[Fall and Spring]

MT 435 Maritime Security
3 class hours, 3 credits.
Perform Federal Level 1 Anti-Terrorism Training. Instruct in Chemical, Biological and Radiological Defense (CBR-D). Obtain certification as a Vessel, Company and Facility Security Officer. Instruction and discussion on current security issues and technology. The purpose of this course is to provide the student with a fundamental knowledge in Maritime Security and prepare them to be a Vessel, Company or Facility Security Officer. In compliance with international STCW requirements, there will be no D or D+ grades in this course.
[Fall and Spring]

MT 450 Liquefied Gas Tanker Operations
2 class hours, 2 laboratory hours, 3 credits.
The purpose of this course is to meet the training requirements for Liquefied Gas Vessel Person in Charge. The 42 hour course provides individuals with a thorough working knowledge of liquid gas tank ship operations and enables them to conduct safe, pollution free cargo operations. The emphasis of the course is placed on safety and operational aspects of cargo operations in accordance with accepted industry practice and legal requirements. This course covers the mandatory minimum training requirements of a Liquefied Gas Tanker Training Program as listed in Section A-V/1 paragraph 22-34 in the STCW 95 Code and 46 CFR Part 13 Table 13.121(F). In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MTO 112, MT 250, MT 322.

SUMMER SEA TERM (DECK)

MT 510 Ship Operation and Management I (Summer Sea Term I)
6 credits.
Communications: Visual communications used in the merchant marine; Morse Code, blinker light and International Code Flags; merchant ship communications systems; use of lifeboat radio apparatus.
Navigation: Use of shipboard aids available to the navigator; elementary chart work plotting position, courses and distances; practical supervised piloting; introduction to instruments used in celestial navigation.
Operations: Ship activation; boat handling; davit operation; man-overboard drills; hull construction; numbering of compartments, deck doors, firehouse stations and extinguishers; ventilation; drainage; fire and flushing mains; loading marking; deck fittings; preservation, sanitation and maintenance; safety practices; ship deactivation, Basic Rules of Nautical Road. In compliance with international STCW requirements, there will be no D or D+ grades in this course. This course also includes required STCW training for Vessel Personnel with Designated Security Duties (VPDSD). Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: NAUT 102, NAVG 112, MTO 103, MTO 112. Students must satisfactorily complete Vessel Personnel with Designated Security Duties (VPDSD) training at SUNY Maritime College and Mug Ship Weekend in order to be eligible to take MT 510.
[Summer]

MT 520 Ship Operation and Management II, Intermediate (Summer Sea Term II)
6 credits.
Communications: Ship's visual communication apparatus; signal practice to obtain a speed of eight words per minute with the blinker light: International code, H.O. 102. Introduction to radio telephone.
Navigation: Sextant-review of adjustments and altitude measurements; celestial observations; computing and plotting of lines of position; azimuths and compass error; practical adjustments of the magnetic compass; chart work in conjunction with all phases of piloting and sailing; correction of charts and publications from Notices to mariners. Introduction to electronic aids to navigation. Day's work.
Operations: Care of lifeboats and equipment; fire detection and extinguishing systems; use of portable fire extinguishers, emergency lifesaving appliances, cargo booms and winches, grand tackle, line throwing apparatus; tours of foreign port facilities, ships and shipyards. Intermediate Rules of Nautical Road.
Meteorology: Plotting and making the weather map; synoptic observations and weather forecasting at sea.
In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MT 510, METE 201, NAVG 212.
[Summer]

MT 521 Cadet Commercial Vessel Shipping (in lieu of Summer Sea Term II)
6 Credits.
Cadets with exceptional academic status may, upon application to the Department of Marine Transportation, be selected to sail on a commercial ship in lieu of Summer Sea Term II. Cadets will be assigned to vessels exceeding tonnage specified by the U.S. Coast Guard for Unlimited Tonnage, Any Ocean Qualification for a minimum of sea days approved by the Marine Transportation Department. Candidates are selected by the Department of Marine Transportation, based upon academic and regimental performance. An extensive sea project is required. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MT 510, METE 201, NAVG 212.
[Fall, Spring and Summer]

MT 530 Ship Operation and Management III, Advanced (Summer Sea Term III)
5 credits.
Communications: Review of visual signaling and practical work to obtain a speed of six words per minute in blinker; radio auto-alarm; VHF/UHF radiotelephone operations; GMDSS Operators Certificate.
Navigation: Practical work in celestial navigation, electronic navigation, relative motion and piloting; analysis of dead-reckoning, running fixes and estimated positions supervising the correction of charts and publications; practical use of the tide and tidal current tables; duties and responsibilities of the navigator.
Operations: Steering gear drill, individual ship handling, use of distress signals, preparation of ship for U.S. Coast Guard annual inspection; foreign ports and port facilities; assumption of deck officer's duties and responsibilities. Advanced Rules of the Road. Each cadet on his/her first class Sea Term must take and pass the written qualifying examination. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: NAUT 308, NAVG 312, satisfy Ship Work and Training requirements.
Corequisite: MTO 412.
[Summer]

MT 533 Ship Operation and Management III for International Students
5 credits.
This is a 45 day training term at sea. This course is only for international students to enable completion of their sea time requirements.
Prerequisite: MT 520 or MT 521.
[Summer]

MT 601-602 Independent Study in Marine Transportation I-II
1, 2, 3, or 4 credits each.
Independent investigation of special topics in Marine Transportation. Student work will be under the direct supervision of a mentor assigned by the Marine Transportation Department. In the event that the course earns 1 credit, the department has the option of assigning a Pass/Fail grade.
Prerequisite: Permission of the department.

MT 610-611 Special Topics in Marine Transportation I-II
3 credits each.
Significant/varied topics in marine transportation of specialized interest are covered. Topics will be chosen to reflect the interest of both students and instructor.
Prerequisite: All required MT courses.

MARITIME TECHNOLOGY AND OPERATIONS

MTO 103 Water Safety and Survival for Mariners
2 class hours, 1 credit
A water safety and survival course that includes swimming, stroke development, conditioning, fitness and wellness. This course includes all required USCG STCW practical assessments and is a required course for students in any of the USCG licensing programs. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
[Fall and Spring]
Previously PS 103.

MTO 112 STCW Basic Training
1 class hour, 2 laboratory hours, 2 credits
Successful completion of this course and MTO 103 satisfies the four elements of STCW Basic Training requirements for all shipboard personnel. Elements include Personal Survival Techniques, Fire Prevention and Fire Fighting, Elementary First Aid, and Personal Safety and Social Responsibility training requirements. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
[Fall and Spring]
Previously PS 112.

MTO 120 Primer of Towing
1.5 class hours, 2.5 laboratory hours, 3 credits.
This hands-on course is designed to examine vessel and external characteristics impacting towing vessels. Lectures analyze the science of forces to include controllable (engine, rudders, etc.), Semi-Controllable (bank cushion, bank suction, interaction, and shallow water effect) Uncontrollable (wind and current), and external towing forces. Practicums initiate classroom lecture concepts for students to appraise and predict basic piloting and maneuvering concepts on a single-screw displacement hull advancing to the colleges Tug and Barge Simulator to compare/contrast advanced twin-screw and azimuth-drive maneuvering systems. Various towing applications and forces are defined and appraised by means of simulation. Topics covered use a variety of techniques with an emphasis on hands-on, practical application of all skills.
[Fall]
Previously PS 120.

MTO 200 Introduction of Regulatory Framework
3 class hours, 3 credits.
The course examines the basic regulatory frameworks and interrelationships and vocabulary of International and Domestic Rules, Regulations, and Conventions. It also focuses on developing an understanding and appreciation of Domestic regulatory framework process and external influences including Government, Organizations, Associations, and citizen groups. The course is designed to help the student understand the topics and regulations he/she will utilize in greater detail in future careers.
Previously MTO 300.

MTO 211 Advanced Towing Operations
1 ½ class hours, 2 ½ practicum hours, 3 credits.
A course to expand upon towing force principles to identify, formulate, and appraise complex advanced towing operations through simulation of towing and docking operations, push-gear, alongside towing, astern towing, ship docking, and barge docking. The course strengthens and enhances MTO 120 learning outcomes of tug and towboat evolutions The course is designed to help the student understand towing applications he/she will utilize in greater detail in maritime transportation systems.
Prerequisite: MTO 120.
[Fall]
Previously MTO 411.

MTO 212 The Business of Towing
1.5 class hours, 2 weekend internships, 3 credits.
The course examines the basic concepts of tug and towboat definitions, construction and design; deck seamanship; vessel and managerial operations; and communications. The course is designed to help the student understand the topics and regulations he/she will utilize in greater detail in Towing Operations. A report on the internship related to the towing industry is required.
Prerequisite: MT 510 or ENGR 510.
[Spring]
Previously MTO 410.

MTO 310 Shipyard Management
3 class hours, 3 credits.
This course introduces the concepts of shipyard management, and highlights the shipbuilding and ship repair process. This course applies principles of project management focusing on the importance of owner/customer activity, and surveys the forces, factors and risks associated with shipbuilding in shaping successful outcomes.

MTO 412 Medical First Aid
2 class hours, 1 credit.
The course is based on the IMO model course for Medical First Aid. It includes: study and practice in: the contents of a standard first aid kit, the anatomy and physiology of human body systems, toxicological shipboard hazards, identification of hazardous substances and hazards of exposure, patient assessment, standard isolation techniques, CPR and use of AED, treatment of burns and scalds, heat and cold emergencies, symptoms and treatment of hyperthermia/ hypothermia/ dehydration, radio medical services, medications, sterilization techniques, prevention of disease transmission, treatment for shock, broken bones, dislocations, splinting, and patient movement and transportation. This course meets STCW requirements as set forth in Table A-VI/4-1 and is approved by the U.S. Coast Guard to meet the First Aid and CPR requirements in 46 CFR 11.201(i), if taken within one year of graduation. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
[Spring and Summer]
Previously PS 412

MARITIME TECHNOLOGY AND OPERATIONS DECK OFFICER

MTOD 414 Bridge Resource and Team Management
1 class hour, 3 simulator hours, 3 credits.
This simulator-based course is designed to enhance the potential Officer in Charge of a Navigation Watch (OICNW) decision- making skills as it applies to traffic and voyage planning situations. Practical application of Rules of the Road and development of correct bridge procedures will be emphasized. Open sea and harbor conditions will be simulated for day as well as night using the simulator. Each watch team has 3 simulator hours and 1 class hour per week. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MATH 090, NAUT 314, NAUT 315, MT 520 or MT 521 or MTOD 524.
[Spring]
Previously MTDO 414 Bridge Resource Management (Limited License)

MTOD 524 Cadet Commercial Vessel Shipping I
2 credits.
Introduction to the workboat industry internship. Successful completion of the course includes a minimum number of sea days approved by the MTO Department Chair on a vessel assignment arranged by Maritime College's Cadet Shipping Coordinator and submission of a satisfactory sea project, assigned by the MTO Department Chair or designee. Cadet Sea Service from Indoctrination to program completion must be properly documented and meet the Maritime College U.S. Coast Guard program approval. Cadets must submit sea service documentation to the Director of Licensing and Cadet Shipping in a timely manner. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MT 510.
[Summer]
Previously MTDO 524

MTOD 525 Cadet Commercial Vessel Shipping II
4 credits.
Workboat industry internship that includes an emphasis on Cargo and Stability. Successful completion of the course includes a minimum number of sea days approved by the MTO Department Chair on a vessel assignment arranged by Maritime College's Cadet Shipping Coordinator and submission of a satisfactory sea project assigned by the MTO Department Chair or designee. Cadet Sea Service from Indoctrination to program completion must be properly documented and meet Maritime College's U.S. Coast Guard program approval. Cadets must submit sea service documentation to the Director of Licensing and Cadet Shipping in a timely manner as follows: sea service letters and Tankerman Person-in-Charge (PIC) documentation in compliance with 46 CFR §13.303 In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: METE 201, MT 321, MT 322, MTO 410 or MTO 411, MTOD 524, NAUT 308.
[Summer]
Previously MTDO 525

MTOD 526 Cadet Commercial Vessel Shipping Limited Tonnage III
2 credits.
Workboat industry internship that includes an emphasis on Navigation, Leadership and Team-working Skills, and Management Systems. Successful completion of the course includes a minimum number of sea days approved by the MTO Department Chair on a vessel assignment arranged by Maritime College's Cadet Shipping Coordinator and submission of a satisfactory sea project assigned by the MTO Department Chair or designee. Cadet Sea Service from Indoctrination to program completion must be properly documented and meet Maritime College's U.S. Coast Guard program approval. Cadets must submit sea service documentation to the Director of Licensing and Cadet Shipping in a timely manner. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MTO 410 or 411, MTOD 414, MTOD 524, NAUT 308, NAVG 212 for Ocean option, NAVG 312.
[Summer]
Previously MTDO 526

MTOD 601 Independent Study in Marine Technology Small Vessel Operations I
1, 2, 3, or 4 credits.
Independent investigation of special topics in the field of Marine Technology Small Vessel Operations. Cadets will be assigned a mentor by the Professional, Education, and Training Department. In the event that the course earns 1 credit, the department has the option of assigning a Pass/Fail grade.
Prerequisite: Permission of the department.
Previously MTDO 601

MTOD 602 Independent Study in Marine Technology Small Vessel Operations II
1, 2, 3, or 4 credits.
Independent investigation of special topics in the field of Marine Technology Small Vessel Operations. Cadets will be assigned a mentor by the Professional, Education, and Training Department. In the event that the course earns 1 credit, the department has the option of assigning a Pass/Fail grade.
Prerequisites: MTOD 601 and Permission of the department.
Previously MTDO 602

MARITIME TECHNOLOGY AND OPERATIONS ENGINE OFFICER

MTOE 521 Cadet Commercial Vessel Shipping Assistant Engineer I
2 credits.
Successful completion of the course includes a minimum number of sea days approved by the MTO Department Chair on a vessel assignment arranged by Maritime College's Cadet Shipping Coordinator and submission of a satisfactory sea-project assigned by the MTO Department Chair or designee. Cadet Sea Service from Indoctrination to program completion must be properly documented and meet Maritime College's U.S. Coast Guard program approval. Cadets must submit sea service documentation to the Director of Licensing and Cadet Shipping in a timely manner. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: ENGR 510.
[Summer]
Previously MTEO 521

MTOE 522 Cadet Commercial Vessel Shipping Assistant Engineer II
4 credits.
Successful completion of the course includes a minimum number of sea days approved by the MTO Department Chair on a vessel assignment arranged by Maritime College's Cadet Shipping Coordinator and submission of a satisfactory sea project assigned by the MTO Department Chair or designee. Cadet Sea Service from Indoctrination to program completion must be properly documented and meet the academy's U.S. Coast Guard program approval. Cadets must submit sea service documentation to the Director of Licensing and Cadet Shipping in a timely manner. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MTOE 521, MTOE 561.
[Summer]
Previously MTEO 522

MTOE 523 Cadet Commercial Vessel Shipping Assistant Engineer III
2 credits.
Successful completion of the course includes a minimum number of sea days approved by the MTO Department Chair on a vessel assignment arranged by Maritime College's Cadet Shipping Coordinator and submission of a satisfactory sea project assigned by the MTO Department Chair or designee. Cadet Sea Service from Indoctrination to program completion must be properly documented and meet the academy's U.S. Coast Guard program approval. Cadets must submit sea service documentation to the Director of Licensing and Cadet Shipping in a timely manner as follows: sea service letters and Tankerman Person-in-Charge (PIC) documentation in compliance with 46 CFR §13.303. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: MT 250, MT 322, MTOE 201.
[Summer]
Previously MTEO 523

MTOE 561 Marine Engines and Auxiliary Machinery I
2 class hours, 2 laboratory hours, 3 credits.
Small Vessel Engineer I will be an STCW course that is the first in a two semester sequence in the comprehensive study of numerous designs and features of high- and medium-speed diesel engines including aspects of operation, maintenance and repair. Topics include: Main and auxiliary engines, propulsion and drive systems, lubrication systems, bearings, starting systems, fuel and combustion systems, intake and exhaust systems, cooling and charge-air systems, and casualty control methods. Laboratory hours consist of operation, maintenance, repair and management of the campus diesel fleet (minimum 6 hrs/week} and a journal kept. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: ENGR 510.
[Fall]
Previously MTEO 561 Small Vessel Engineer I

MTOE 562 Marine Engines and Auxiliary Machinery II
2 class hours, 2 laboratory hours, 3 credits.
Small Vessel Engineer II will be an STCW course that is the second in a two semester sequence in the comprehensive study of numerous designs and features of high- and medium-speed diesel engines including aspects of operation, maintenance and repair. Topics include: Governors and speed control systems, engine automation and control systems, electronic systems, communications, ventilation systems, turbines, and diesel safety. Laboratory hours consist of operation, maintenance, repair and management of the campus diesel fleet (minimum 6 hrs/week} and a journal kept. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MTOE 561.
[Spring]
Previously MTEO 562 Small Vessel Engineer II

MTOE 563 Marine Electrical Machinery and Systems
3 class hours, 2 laboratory hours, 3 credits.
This course is designed to provide Assistant Engineer Limited License (AELL) students with the basic knowledge and skills necessary to safely and effectively work with the electrical systems and equipment found aboard commercial towing vessels. The course of study will include a lecture portion to discuss the theory, design and operation of electrical circuits and machinery. A lab will supplement the lecture discussions and provide a setting for hands-on training and a venue to conduct assessments in the safe use of electrical instruments, methods for troubleshooting, and performing maintenance of electrical machinery/ equipment. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: ENGR 542, MTOE 561.
[Spring]
Previously MTEO 563 Small Vessel Electrical Machinery and Systems

MTOE 564 Engine Room Resource Management
2 class hours, 2 simulator hours, 3 credits.
A comprehensive review of equipment, materials, tools, personnel, onboard and remote information sources, communications, contacts and other resources available and at the disposal of the engineer of the watch to recognize what they each can/cannot do; how they inter-relate and might substitute for something else as an emergency back-up during various routine, non-routine, crisis and/or catastrophic events or situations. Engine room simulation exercises prepares engine room officers to handle dynamically escalating scenarios, emphasizing real life situation and mitigating tools to improve teamwork, leadership, communication, decision-making and resource management to maintain or restore power, electricity, safety, and other critical services. Engine room simulation training problem solving is critical to prevention of casualties, injuries, pollution events, and premature equipment failures. Self-discipline, responsibility and, accountability will be emphasized together with the other characteristics and skills of leadership and sensitivity to personnel, cultures, society, and the environment. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: ENGR 510.
[Fall]
Previously MTOE 201 Small Vessel Resource Management

NAUTICAL SCIENCE

NAUT 102 Introduction to Vessel Operations and Seamanship
3 laboratory hours, 1 credit.
This course will introduce the student to the current practice of seamanship and safe work practices afloat and in the maritime environment. Students will be introduced to industry safety protocol and concurrent OSHA requirements for a safe workplace. This course contains required subjects for Ratings Forming Part of a Navigation Watch as incorporated in the current STCW regulations. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
[Fall and Spring]

NAUT 308 Nautical Operations: Safety
2 class hours, 2 credits.
This course is designed to meet two specific licensing requirements: Advanced Firefighting and Survival Craft Crewman. Each of these subjects is an endorsement on the Third Mate and Third Assistant engineer's license. The first seven weeks of this class (14 hours) will be devoted to Advanced Fire Fighting. An additional eight hours of practical training is held at the fire field. The second portion of this class, an additional 14 hours, will concentrate on survival craft operations and shipboard evacuation procedures. Students will learn to plan and implement evacuation plans, conduct drills and gain familiarity with survival craft operations and deployment. The practical assessment for this class will be held during the Pre-cruise period for all cadets. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MT 510 or ENGR 510.
[Fall and Spring]

NAUT 314 Rules of the Road
2 class hours, 2 credits.
Laws and rules for prevention of collision at sea, pertinent U. S. court decisions, practical application of rules to actual situations. Exposure to visual aspects of rules of the road, through use of the College's bridge simulator. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MT 510.
[Fall and Spring]

NAUT 315 Introduction to Integrated Bridge Systems
3 class hours, 3 credits.
This class will introduce students to integrated bridge systems, electronic navigation and collision avoidance through the use of radar and ARPA. Students will split time between classroom lectures and time in the ARPA/Radar/ECDIS labs. Topics discussed include radar theory, manual and electronic plotting, interpretation of radar and use of radar as a navigation tool. Students will also be introduced to other electronic tools found in an integrated bridge environment such as AIS. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MT 510.
Corequisite: NAUT 314.
[Fall and Spring]

NAUT 416 Bridge Resource Management (Unlimited License)
1 class hour, 2 simulator hours, 3 credits.
This simulator-based course is designed to enhance the potential Third Mate's decision-making skills as it applies to traffic and voyage planning situations. Practical application of Rules of the Road and development of correct bridge procedures will be emphasized. Open sea and harbor conditions will be simulated for day as well as night using the simulator. Each watch team has 2 simulator hours and 1 class hour per week. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: NAUT 314, NAUT 315, MT 520 or MT 521 or MTOD 524.
[Fall and Spring]

NAUT 420 Piloting & Ship Handling for the Mariner
1 class hour, 3 laboratory hours, 3 credits.
Piloting and ship handling for the mariner will serve two vital areas for the mariner. In piloting, the cadet will garner the skills required to pilot, safely and professionally, for a particular waterway. In ship handling, previously learned ship handling characteristics will be reinforced and improved using old and new methods.
Prerequisite: MTO 112.

NAUT 460 Coastal Operations
1 class hour, 4 laboratory hours, 3 credits.
This course is designed to help the student better understand ship handling, maneuvering, watch-standing in Near Coastal and Inland waters, and operations on deck (anchoring, line handling, and drills) aboard an operating vessel. This will include communications and hands-on experience onboard the vessel to accomplish tasks as a crew. Projects will be intended for the student to have a better understanding of the vessel they will be working with, as well as a specialized field they may want to pursue in their careers.
Prerequisite: MT 530, Senior standing.

NAUT 476 Fast Rescue Boat Operations and Small Boat Handling
1 class hour, 3 laboratory hours, 3 credits.
Course provides a Coast Guard approved certification in Fast Rescue Boat operations meeting STCW requirements, Table A-VI/2-2 and as described in NAVIC 3-00. The course of instruction will: allow students to experience small vessel handling techniques and safe operational practices used in both rescue craft and commercial operations; introduce students to mechanical systems found on small vessels; introduce students to small vessel design and commercial types; introduce students to small vessel management considerations such as passenger vessel security and emergency preparedness. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MT 530, Senior standing.

NAVIGATION

NAVG 112 Navigation I: Introduction to Navigation
4 class hours, 4 credits.
This class will introduce the student to current navigational techniques used in commercial vessel operations. Introduction to piloting techniques and chartwork. Introduction to voyage planning and use of publications. Tide and current theory and calculations, set and drift problems, visibility of lights, and the Pilot Chart. Compasses and compass error. Analysis and determination of the terrestrial fix. Introduction to electronic charts. Estimated time of arrival and speed required. Introduction to time and nautical astronomy. Extensive plotting and chartwork. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Corequisites: MATH 090, MTO 112.
[Fall and Spring]
Previously Terrestrial Navigation.

NAVG 212 Navigation II: Oceans
4 class hours, 4 credits.
This class will introduce the student to celestial navigation and ocean navigation (the sailings). Topics include: The theory of celestial navigation; the celestial sphere; the navigational spherical triangle; time and its application; Development of the celestial line of position. Celestial sight reduction: spherical trigonometry formulas and sight reduction tables: the use of the Nautical Almanac; determination of latitude; determination of time of celestial phenomena; compass error from azimuths and amplitudes of celestial bodies. The Sailings: Great Circle, Mid-Latitude, Mercator and their use in voyage planning. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisite: MATH 090, NAVG 112.
[Spring]
Previously Celestial Navigation.

NAVG 312 Integrated Bridge Systems and Voyage Planning
4 class hours, 4 credits.
Integrated bridge systems. Discussion of electronic tools used in collision avoidance and position finding in Integrated Bridge Systems. Theory, operation and integration of electronic navigation systems including ECDIS, GPS, AIS, Fathometer, and Radar/ARPA as found in an integrated bridge environment. Dangers and limitations of equipment and inputs. Piloting and navigation using radar, ECDIS simulators. Elements of voyage planning and implementation of both a chart based and ECDIS based voyage plan showing waypoints and other appropriate information. A course project will include a complete trans-oceanic voyage plan. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Open only to students for whom this course is a requirement for their degree program or minor, or by permission of the department chair.
Prerequisites: NAUT 314, NAUT 315, MT 520 or MT 521 or MTOD 524.
[Fall and Spring]
Previously Electronic Navigation.

NAVAL SCIENCE

Naval Science courses required for NROTC College Program, Scholarship, Strategic Sealift Midshipmen Program (SSMP), Seaman-to-Admiral 21 (STA-21) Officer Candidates, and Marine Enlisted Commissioning and Education Program (MECEP) students.

NVSC 150-151 Naval Science Laboratory
NVSC 250-251
NVSC 350-351
NVSC 450-451
NVSC 550-551
2 class hours, 1 credit, each.
Required of all NROTC students. Midshipmen are provided the opportunity in laboratory to develop personally while participating in activities as a team leader or team member. Naval Science Laboratories are a blend of academic lectures on naval theory and naval administration and practical training in physical readiness, military discipline and an appreciation of the customs and traditions of the Naval Service. Required of and open only to all NROTC students.
Pass/Fail.
[Fall (NVSC x50) – Spring (NVSC x51)]

NVSC 101 Introduction to Naval Science
3 class hours, 3 credits.
This course offers an introduction to the U.S. Navy and Marine Corps, emphasizing each branch's mission, capabilities and organization. It will cover naval courtesy, customs, leadership, officer and enlisted rank structure, and professional nomenclature. Required for all SSMP, NROTC scholarship and College Program midshipmen.
[Fall]

NVSC 102 Sea Power and Maritime Affairs
3 class hours, 3 credits.
A historical survey of the U.S. Navy and Marine Corps that focuses on the influence of sea power upon world history. This course explores the major events, significant figures, and circumstances that have imbued the U.S. Navy with its proud history and rich tradition. It focuses on the varying maritime philosophies which were interpreted into naval strategies/doctrines, the budgetary concerns that shaped force realities, and the pursuit of American diplomatic objectives. Required for all NROTC scholarship and College Program midshipmen.
[Spring]

NVSC 201 Leadership and Management
3 class hours, 3 credits.
Advanced organizational behavior and management in the context of the naval organization. Major behavioral theories are explored in detail. Practical applications are explored by the use of experimental exercises, case studies, and laboratory discussions. Required for all NROTC scholarship, College Program, and STA-21 midshipmen.
[Spring]

NVSC 204 Naval Science for the Strategic Sealift Officer
3 class hours, 3 credits.
Introduction to the functional coordination of the Merchant fleet with the Navy in peacetime, during international tension, or during formally declared war. Naval control of shipping, operations, communications, offensive and defensive procedures and weaponry for merchant ships are covered in detail. Required for all SSMP students.
Prerequisite: NVSC 101.
[Spring]

NVSC 211 Navigation
4 class hours, 3 credits.
Piloting and celestial navigation including theory, principles, procedures, the use of charts, visual and electronic aids, and the theory and operation of magnetic and gyro compasses. Celestial navigation is covered in depth. Practical skills are developed. Topics include tides, currents, effects of wind and weather, plotting, use of navigation systems, and a day's work in navigation. Required of all Navy option NROTC midshipmen who are not in a deck license program.
[Fall]

NVSC 303 Naval Ship Systems II (Weapons)
3 class hours, 3 credits.
Modern naval weapons from a systems approach, with examples from today's fleet. Attention is given to airborne, surface and sub-surface platforms. This course outlines the theory and employment of weapons systems. The facets of command, control, and communications are explored as a means of weapons system integration. Required of all Navy option NROTC midshipmen.
[Spring]

NVSC 304 Naval Ship Systems I (Engineering)
3 class hours, 3 credits.
A study of ship characteristics and types including ship design, hydrodynamic forces, stability, compartmentation, propulsion, electrical and auxiliary systems, interior communications, ship control, and damage control; theory and design of steam, gas turbine, and nuclear propulsion; shipboard safety and firefighting. Required of all Navy option NROTC midshipmen who are not in an engine license program.
[Fall]

NVSC 311 Evolution of Warfare
3 class hours, 3 credits.
History of warfare, focusing on the impact of major military theorists, strategies, tacticians, and technological development. Required of all Marine Option NROTC Midshipmen and MECEP students. Limited to juniors only.
[Fall]

NVSC 312 Fundamentals of Maneuver Warfare
3 class hours, 3 credits.
The purpose of this course is to introduce the student to the foundational concepts and history of the USMC as the premier Maneuver Warfighting Organization. It is a theoretical class that utilizes both historical examples from previous military operations as well as current doctrine, developing an individual who is both a critical thinker and scholar in the profession of arms. The goal is to educate the student to read military history analytically not to memorize facts. Required of and open only to Marine Officer candidates from SUNY Maritime, Fordham, and Columbia.
[Spring]

NVSC 402 Leadership and Ethics
3 class hours, 3 credits.
The study of naval junior officer responsibilities in naval administration. This capstone course in the NROTC curriculum builds on and integrates the professional competencies developed in prior course work and professional training. Required of all NROTC, SSMP, STA-21, and MECEP students.
[Spring]

NVSC 403 Naval Operations and Seamanship
3 class hours, 3 credits.
A study of nautical rules of the road, relative-motion vector analysis theory, relative motion problems, formation tactics, and ship employment. Also included are an introduction to naval operations analysis, ship behavior and characteristics in maneuvering, applied aspects of ship handling, and afloat communications. Required of all Navy option NROTC midshipmen.
[Fall]

OCEANOGRAPHY

OCEA 101 General Oceanography
3 class hours, 3 credits.
Topics include: Earth structure, plate tectonics, marine provinces, marine sediment, seawater chemistry and density structure, atmospheric circulation, oceanic circulation, waves, tides, coasts, marine productivity and energy.
SUNY-GER: Natural Sciences (with OCEA 102).
[Spring]

OCEA 102 General Oceanography Laboratory
2 laboratory hours, 1 credit.
This is the laboratory course that accompanies OCEA 101 General Oceanography. This hands-on laboratory course is designed to familiarize students with the concepts and techniques associated/introduced in the lecture.
Corequisite: OCEA 101.
SUNY-GER: Natural Sciences (with OCEA 101).
[Spring]

OCEA 308 Dynamic Oceanography
3 class hours, 3 credits.
Topics include: Heat budget of earth and ocean, wind-driven surface ocean circulation, hydrostatics, equation of state of seawater, equations of motion, geostrophic flow, Ekman transport, vorticity, major current systems, regional oceanography, thermohaline circulation and water masses, waves, tides.
Prerequisites: MATH 102 or MATH 112, PHYS 214, OCEA 101.

OCEA 402 Coastal Processes and Management
3 class hours, 3 credits.
This course will discuss coastal oceanographic processes, the formation of coastal landscapes, and coastal change. Topics include: wave dynamics, sediment transport, coastal geomorphology, coastal resources, climate change, coastal hazards, and coastal restoration and management. Emphasis will be placed on characterizing coastal settings and applying appropriate coastal zone management practices that minimize the impacts of coastal change.
Prerequisite: OCEA 101 and 102
Corequisite: ES 303
[Spring]

OCEA 414 Marine Geology
3 class hours, 3 credits.
Matter & Minerals. Rock types. Igneous, Sedimentary, Metamorphic. Geologic Time. Shorelines. Earthquakes, Seismology and Earth's Interior. Sea Floor Spreading,
Continental Drift, and Plate Tectonics.
Prerequisites: OCEA 101.

OCEA 415 Marine Biogeochemistry
3 class hours, 3 credits.
Chemical oceanography, chemical and biological processes affecting gases, nutrients and trace metals in seawater, seawater composition, oceanic distribution of chemical species, carbon an nutrient cycling, redox reactions on seawater, diagenesis, hydrothermal vents, marine organic chemistry
Prerequisites: CHEM 121, OCEA 101.
[Spring - Odd Years]

OCEA 425 Marine Environmental Issues
3 class hours, 3 credits.
Focus will be on selected anthropogenic non-pollution-related impacts on the ocean environment including exploitation of marine energy resources.
Prerequisites: CHEM 100 or CHEM 121, OCEA 101.
[Fall – Even Year

OCEA 610 Special Topics in Oceanography
3 class hours, 3 credits.
Theoretical and/or experimental investigation of contemporary topics or problems in oceanography.
Prerequisite: As specified by the department chair.

PHYSICAL EDUCATION

PE 100 Swimming and Lifetime Fitness
2 class hours, 1 credit
This is a swimming and wellness course that combines academic work with lab exercises in the swimming pool. This course includes stroke development, conditioning, water safety training and lifetime fitness.
[Fall and Spring]

PE 101 Lifetime Fitness and Conditioning
2 class hours, 1 credit.
The study of Exercise Physiology in an academic, as well as an activity mode. Exams from classroom work and activity labs and fitness testing would be required.
[Fall and Spring]

PE 2xx Lifetime Sports
2 class hours, 1 credit.
The 200-level courses involve specific sports training, and skills development unique to that particular individual or team sport. This could include such activities as Basketball, Soccer Volleyball Tennis, Rowing, Sailing. The course numbering will be sport-specific (PE 201 Basketball, etc.). *For PE 219 (Learn to Sail), PE 220 (Safe Powerboat Handling), and PE 260 (Kayaking): students must successfully complete a swimming assessment on the first day of class to confirm they are able to swim 50 yards and don a personal flotation device in the water.*

PE 301 Nutrition for Health, Exercise, and Sports
3 credits, 3 class hours.
This is a course about food, fitness, and physiology. The course will explore the relationship between nutrition, exercise and health and wellness.

PE 350 Intercollegiate Athletic Participation
One full season, 1 credit.
Requires being an active member on any of the College's Varsity Sport teams. Pass/Fail

PE 360 USMC Bulldog Preparation
2 class hours, 1 credit.
Required of all MECEP and Marine Option Midshipmen. Bulldog Prep is a course designed to prepare individuals for the rigors of Marine Corps Officer Candidates School. Marines and Midshipmen are provided the opportunity to develop leadership, team spirit, and physical fitness, while participating in physical training. The training includes, but is not limited to: conditioning runs, weight training, calisthenics, and cross-training. This class is only open to NROTC students. Pass/Fail.

PHYSICS

PHYS 102 Engineering Physics I
4 class hours, 4 credits.
A calculus -based mechanics course focused on basic standards and unit conversions, vector algebra, translational kinematics, particle dynamics, work and energy, impulse and momentum, rotational kinematics and dynamics, static equilibrium and static fluids. Credit will not be given for both this course and PHYS 211.
Prerequisite: MATH 101.
SUNY-GER: Natural Sciences (with PHYS 104).
[Fall and Spring]

PHYS 104 Engineering Physics I Lab
2 laboratory hours fortnightly, 0.5 credits.
Measurements with error analysis, experiments in mechanics. Credit will not be given for both this course and PHYS 213.
Corequisite: PHYS 102.
SUNY-GER: Natural Sciences (with PHYS 102).
[Fall and Spring]

PHYS 201 Engineering Physics II
4 class hours, 4 credits.
Electric field and potential, D.C. circuits, Magnetic fields, Faraday's Law, inductance and capacitance, AC circuits, wave motion, EM waves and spectrum. Credit will not be given for both this course and PHYS 214.
Prerequisite: A grade of C- or better in PHYS 102.
SUNY-GER: Natural Sciences (with PHYS 203).
[Fall and Spring]

PHYS 203 Engineering Physics II Lab
2 laboratory hours fortnightly, 0.5 credits.
Measurements with error analysis, experiments in electricity and magnetism, waves. Credit will not be given for both this course and PHYS 216.
Corequisite: PHYS 201.
SUNY-GER: Natural Sciences (with PHYS 201).
[Fall and Spring]

PHYS 211 General Physics I
3 class hours, 3 credits.
Topics include: unit conversions, vector algebra, translational kinematics, particle dynamics, work and energy, momentum, rotational kinematics and dynamics, fluid statics, heat, and calorimetry. Credit will not be given for both this course and PHYS 102.
Prerequisite: MATH 090.
SUNY-GER: Natural Sciences (with PHYS 213).
[Fall and Spring]

PHYS 213 General Physics I Lab
2 laboratory hours fortnightly, 0.5 credit.
Measurements and errors, experiments in mechanics and heat. Credit will not be given for both this course and PHYS 104.
Corequisite: PHYS 211.
SUNY-GER: Natural Sciences (with PHYS 211).
[Fall and Spring]

PHYS 214 General Physics II
4 class hours, 4 credits.
Thermodynamics, electric field and potential, DC circuits, magnetic fields, Faraday's Law, AC circuits, waves (sound and electromagnetic radiation), interference and diffraction of waves, optics (mirror and lenses). Credit will not be given for both this course and PHYS 201.
Prerequisite: PHYS 211 or PHYS 102.
Corequisite: MATH 101 or MATH 111.
SUNY-GER: Natural Sciences (with PHYS 216).
[Spring]

PHYS 216 General Physics II Lab
2 laboratory hours fortnightly, 0.5 credit.
Measurements and errors, experiments in electricity and magnetism, spectroscopy. Credit will not be given for both this course and PHYS 203.
Corequisite: PHYS 214.
SUNY-GER: Natural Sciences (with PHYS 214).
[Spring]

PROFESSIONAL STUDIES

PS 210 ECDIS – Limited Deck License
3 laboratory hours, 1 credit.
Continuing Education USCG approved short course, number SUNYDP-179, to meet 2010 STCW Amendments ECDIS (Electronic Chart Display and Information Systems) requirements.
Prerequisites: NAVG 112, MT 510.

SPANISH

SPAN 101 Spanish I
3 class hours, 3 credits.
Spanish I is an introductory course. It is designed to develop the basic skills of listening, speaking, reading, and writing in Spanish at an elementary level. Native speakers, bilingual speakers, and students with more than one year of high school Spanish are not eligible for this course.

SPAN 102 Spanish II
3 class hours, 3 credits.
Spanish II is a second semester, introductory course. It is designed to further develop the skills of listening, speaking, reading, and writing in Spanish at an elementary level.
Prerequisite: SPAN 101 or consent of instructor.

SOCIAL SCIENCE

SS 400 Fundamentals of International Relations
3 class hours, 3 credits.
An examination of major factors which determine the nature of international relations. Topics to be discussed include the origins of the nation-state system, the role of military power, the economic element of international relations, the nature of diplomacy, and the role of international law.

SS 610-611 Special Topics in History and the Social Sciences I-II
3 class hours, 3 credits each.
Special topics for qualified students interested in acquiring a broader knowledge of the social sciences.

STATISTICS

STAT 301 Statistics II
3 class hours, 3 credits.
Calculus based statistics course. Random variables and distributions. Bivariate and multivariate distributions. Markov chains. Bayesian statistics.
Prerequisite: MATH 211, MATH 251 or ENGR 345
[Spring]

STAT 401 Time Series Analysis
3 class hours, 3 credits.
Introduction to Random Walk, Martingale Process, Regression models and Time Series models. Use of Python library Sci-kit Learn to implement Times Series models such as ARIMA.
Prerequisite: CS 202, MATH 251 or ENGR 345, MATH 311
[Spring]

STAT 610 Special Topics in Statistics
1, 2, 3 or 4 credits.
Significant topics in probabilistic methods, statistics or statistical learning that reflect the interest of both the students and the instructor.
Prerequisite: Determined by the department chair

COURSES IN RESERVE

Courses not offered in the last five years may be offered in the future if a department determines a need for the course.

ASTR 202 Descriptive Astronomy
3 class hours, 3 credits.
Celestial sphere; solar system; theories of the evolution of the solar system: star identification; physics of the stars; star clusters and nebulae; galactic systems; evolution of the universe.
Placed in Courses in Reserve 3/27/13.

CHEM 420 Chemistry of Hazardous Materials
3 class hours, 3 credits.
Physical and chemical properties of hazardous materials; flammability principles; compressed gases; cryogens; chemistry of combustion; chemistry of fire extinguishment; common substances; corrosives; water reactive materials; toxic materials; radioactive materials; radiation hazards.
Placed in Courses in Reserve 3/27/13.

CHIN 101 Mandarin I
3 class hours, 3 credits.
An introduction to the language and culture of China. Intensive conversational Chinese spoken here!
Placed in Courses in Reserve 9/12/19.

CHIN 102 Mandarin II
3 class hours, 3 credits.
An introduction to the language and culture of China; a continuation of CHIN 101, Mandarin I.
Prerequisite: CHIN 101.
Placed in Courses in Reserve 9/12/19.

ENGL 408 Modern Poetry
3 class hours, 3 credits.
A study of modern poetry. This course traces the development of English and American poetry since World War I, from the formalism of the early 20th-century through the emergence of free-verse, and including recent developments in post-modern poetry. Prerequisite: HUMN 201 or HUMN 202.
Placed in Courses in Reserve 10/16/13.

ENGL 410 Greek Drama
3 class hours, 3 credits.
Reading and discussion of plays from the Athenian Golden Age. Works to be studied include the two classic tragic trilogies, plus several comedies. Includes re-enactments of scenes and plays.
Prerequisite: HUMN 201 or HUMN 202.
SUNY-GER: The Arts.
Placed in Courses in Reserve 10/16/13.

ENGL 411-412 The Novel I-II
3 class hours, 3 credits each.
Reading and discussion of major novelists. Consideration of the novel as a genre.
Prerequisite: HUMN 201 or HUMN 202.
SUNY-GER: The Arts (ENGL 411 only).
Placed in Courses in Reserve 10/16/13.

ENGL 418 Contemporary Literature
3 class hours, 3 credits.
A study of literature written during the past eighty years, leading to the many styles of today. The movement from modernism to post-modernism will be traced through novels and short stories from around the world. Emphasis is placed on introducing new voices, from a diversity of cultures.
Prerequisite: HUMN 201 or HUMN 202.
Placed in Courses in Reserve 10/16/13.

ENGL 420 Comedy
3 class hours, 3 credits.
Reading of comic works by several major authors. Consideration of the range and nature of comedy and of comedy as a genre.
Prerequisite: HUMN 201 or HUMN 202.
Placed in Courses in Reserve 10/16/13.

ENGR 102 Introduction to Engineering
1 class hour, 1 credit.
Introduces students to the engineering profession, ethics, problem-solving techniques and tools. Engineering communications techniques are stressed. Design methodology is introduced.
Placed in Courses in Reserve 4/6/11.

ENGR 523 Cadet Observer in Limited Horsepower Operations
6 credits.
This course subjects the student seeking engineering certification for limited horsepower vessels to an intense practical, professional learning experience aboard a working tug or supply vessel. The intent is that the student will encounter and address situations where his or her technical knowledge is relevant and applicable, but at the same time encountering situations where that knowledge that will be placed in a recognizable, applied context. Cadet Observer status should comprise a work experience of no less than sixty sea days. An extensive sea project is required to satisfy applicable USCG and STCW requirements and prepare candidate for DDE license exam.
Prerequisite: ENGR 551.
Placed in Courses in Reserve 4/6/11.

ENGR 551 DDE I (Designated Duty Engineer)
2 class hours, 6 laboratory hours, 4 credits.
The first of a two semester sequence in the comprehensive study of numerous designs and features of medium and high speed marine diesel engines including aspects of operation, maintenance and repair. Topics include: basic engine types and applications, engine construction and the details of engine parts, fuels, fuel analysis and handling, fuel and air systems. Laboratory hours consist of operation, maintenance, repair and management of the campus diesel fleet under the supervision of the Tug Engineer and Director of Small Vessel Operations, will be individually arranged (minimum 6 hrs/week} and a journal kept. Students cannot receive credit for this course and for ENGR 530 Summer Sea Term III.
Prerequisites: PS 112, ENGR 540.
Placed in Courses in Reserve 2/27/13.

ENGR 552 DDE II (Designated Duty Engineer)
2 class hours, 6 laboratory hours, 4 credits.
The second of a two semester sequence in the comprehensive study of numerous designs and features of medium and high speed marine diesel engines including aspects of operation, maintenance and repair. Topics include: exhaust and cooling systems, filters, starting and control systems, governors, reconditioning diesel engines, tune-up and trouble shooting. Laboratory hours consist of operation, maintenance, repair and management of the campus diesel fleet under the supervision of the Tug Engineer and Director of Small Vessel Operations, will be individually arranged (minimum 6 hrs/week) and a journal kept. Students cannot receive credit for this course and for
ENGR 530 Summer Sea Term III.
Prerequisite: ENGR 551.
Placed in Courses in Reserve 2/27/13.

ES 450 Field Work in Marine Environmental Science
2 laboratory hours, 1 credit.
Gathering and analysis of oceanographic and atmospheric data. Students, accompanied by several MES faculty, will spend 3 days and 2 nights (one weekend) aboard one of the college's vessels collecting samples and gathering data. Time will be arranged beforehand for preparatory work and afterward for the analysis of samples and data, and the presentation of write-ups.
Prerequisites: BIO 315, CHEM 311, METE 350, OCEA101.
Placed in Courses in Reserve 3/27/13.

GBEC 323 Banking and Financial Markets
3 class hours, 3 credits.
An examination of U.S. monetary and banking systems. Topics covered include the functioning of financial intermediaries, the role of the Federal Reserve System, the Securities and Exchange Commission and other regulators, and the structure and performance of domestic and global financial markets.
Prerequisite: GBEC 122.
Placed in Courses in Reserve 11/6/13.

GBEC 426 Labor Economics and Industrial Relations
3 class hours, 3 credits.
A study of the structure and economics of labor markets including determinants of wages and levels of employment, the practice of collective bargaining, labor legislation and maritime labor issues.
Prerequisite: GBEC 122.
Placed in Courses in Reserve 11/6/13.

GBMG 343 Organizational Behavior and Development
3 class hours, 3 credits.
This course examines individual and small group dynamics within the corporate structure. It applies behavioral science theory and research to issues such as management style, leadership, motivation, decision-making and problem solving. Goal-setting, power and conflict in organizations, and organizational change and development also are considered.
Prerequisite: GBMG 341.
Placed in Courses in Reserve 11/6/13.

GBMG 347 Entrepreneurship in International Transportation and Trade
3 class hours, 3 credits.
This course is designed to provide the student with an overview of entrepreneurship in international transportation and trade, including the critical features of starting and maintaining a new business venture or marketing a new product. The course takes the student entrepreneur from the product concept to making it a reality. Topics to be covered include: entrepreneurial ideas, innovation, and behavior, the role of entrepreneurs in business, financing and financial planning, legal aspects of new venture formation, organization of the venture, managerial functions pertaining to strategies, planning and human resource management, marketing the firm's products to potential customers and the ethical and social responsibilities of entrepreneurs. Class discussions and team activities will focus on the development of a suitable new entrepreneurial business and marketing plan.
Prerequisite: GBMG 345.
Placed in Courses in Reserve 11/6/13.

GBMG 444 Business, Government and Society
3 class hours, 3 credits.
A study of changes in the social, political and legal environment of business and their impact on management. The course reviews the regulatory obligations of corporations and analyzes current issues and proposals concerning technology, social change and business ideology. Emphasis is given to managing the corporation's actions in these and other areas through case analyses.
Prerequisite: GBUS 100.
Placed in Courses in Reserve 11/6/13.

GBMG 445 Public Administration in Transportation
3 class hours, 3 credits.
Topics include principles of administrative organization, methods of leadership and control, intergovernmental relations and public sector human resources management as well as budgeting, policy making and decision making in government organizations that manage or regulate transportation systems. Attention also is given to interactions with elected and appointed officials, legislative bodies, industry organizations and other interests groups.
Prerequisite: GBUS 100.
Placed in Courses in Reserve 11/6/13.

GBTT 359 Urban Transportation
3 class hours, 3 credits.
Public sector development, management and operations of people-moving systems. Transportation modes studied include subways, commuter rail, ferries and hydrofoils, cable traction and buses. Major cities' systems are examined, and employment opportunities in the field are discussed.
Prerequisite: GBUS 100.
Placed in Courses in Reserve 11/6/13.

GBTT 455 Advanced Transportation Management
3 class hours, 3 credits.
An advanced course in carrier organization and management. Topics include transportation operations, marketing, finance, purchasing, information systems and maintenance as well as human resources management and labor relations. The class examines national transportation policy, regulation and the changing environment of transportation. Activities include original research on problems in transportation management with emphasis on marine transportation.
Prerequisite: GBUS 100.
Placed in Courses in Reserve 11/6/13.

HIST 403-404 Topics in Recent History I-II
3 class hours, 3 credits each.
Consideration of selected topics in American or World History, 1945 to the present.
Prerequisite: HIST 102.
Placed in Courses in Reserve 10/16/13.

HUMN 407 Literature of Leadership
3 class hours, 3 credits.
This course analyzes the various positions taken throughout history regarding the responsibilities of the leader. Topics to be covered include: the rise to power, theory versus practice in the use of authority, "right authority" versus its abuse, and how societies deal with leaders who have gone astray.
Prerequisite: HUMN 201 or HUMN 202.
SUNY-GER: Humanities.
Placed in Courses in Reserve 10/16/13.

HUMN 458 Moral Choices in Literature
3 class hours, 3 credits.
We are taught to "do the right thing," but how do we recognize the right thing in order to choose properly? This course is organized in two parts: defining the right and the good; then, having the courage to act rightly in the face of social apathy or disapproval.
Prerequisite: HUMN 201 or HUMN 202.
Placed in Courses in Reserve 10/16/13.

MATH 301 Advanced Calculus
3 class hours, 3 credits.
Functions of several variables; vectors; differentials; Implicit Function Theorem; Inverse Function Theorem; extrema; line and surface integrals; Fourier series; partial differential equations.
Prerequisite: MATH 212.
Placed in Courses in Reserve 3/27/13.

MATH 302 Complex Variables
3 class hours, 3 credits.
Complex numbers, analytic functions; contour integration; Taylor and Laurent series; poles and residues; conformal mapping; applications.
Prerequisite: MATH 212.
Placed in Courses in Reserve 3/27/13.

PHYS 332 Modern Physics
3 class hours, 3 credits.
Electromagnetic radiation, quantum theory of radiation and matter, lasers, x rays, solid state devices, special relativity, nuclear radioactivity, nuclear reactions, nuclear fission and fusion.
Prerequisite: PHYS 201 or PHYS 214.
Placed in Courses in Reserve 3/27/13.

PHYS 363 Physics of Fluids
3 class hours, 3 credits.
Physics of fluids; structure of matter; hydrostatics: buoyancy, surface tension; hydrodynamics: Bernoulli's principle, laminar and turbulent flow; heat and thermodynamics: expansion of liquids and heat capacity; transfer processes: conduction, convection, radiation, ideal gas laws, phase equilibria, thermodynamic processes and cycles, first and second laws, entropy.
Prerequisite: PHYS 214.
Placed in Courses in Reserve 3/27/13.

COURSES DELETED FROM COURSE CATALOG

CHEM 610-611 Special Topics in Chemistry I-II
1, 2, or 3 credits each.
Theoretical or experimental investigation of special problems in either chemistry or metallurgy. Credits vary with problems.
Deleted 11/13/13.

CS 301 Data Structures
4 hours, 3 credits.
Techniques and algorithms for organizing and processing data. Data structures considered may include: text and binary files; contiguous and linked lists; stacks and queues; linked lists; trees; graphs. For each data structure, relevant processing algorithms (e.g., for traversing, searching, and sorting) will be considered, including recursive methods. Throughout the course, an object-oriented viewpoint via the concepts of encapsulation, inheritance, and polymorphism will be emphasized.
Prerequisite: CS 131.
Deleted 4/5/17.

CS 401 Database Systems
4 hours, 3 credits.
Survey of standard file organizations; introductory database concepts; the relational model and normalization; use of a relational database management system; object- oriented model; transaction management; distributed databases; database security.
Prerequisite: CS 131.
Deleted 4/5/17.

CS 480 Computer Engineering I
2 class hours, 2 laboratory hours, 3 credits.
An introduction to the design, construction, programming and operation of a micro- computer system; topics include: overall computer organization, CPU group, memory interfacing, assembly language programming, testing and debugging techniques; the initial phases of the design and construction of a microcomputer are included. Prerequisite: ENGR 388.
Deleted 4/5/17.

CS 490 Computer Engineering II
2 class hours, 2 laboratory hours, 3 credits.
Continuation of Computer Science 480. The input/output sections of a computer; types of I/0 devices; interfacing and programming; design projects including the design and construction of the I/0 portion of the computer, the interfacing of the display, keyboard and robot arm.
Prerequisite: CS 480.
Deleted 4/5/17.

ENGL 413 Novels of Latin America
3 class hours, 3 credits.
Latin America has produced several recent Nobel Prize winners in literature. The writing of the region reflects both the extreme political conflicts of today and the lingering effects of the region's historical and cultural past. Reading and discussion focus on both the historical and the magic realist schools of prose fiction.
Prerequisite: HUMN 201 or HUMN 202.
Deleted 2/12/14.

ENGR 299 Upper Division Qualification
0 credits.
A Passing grade in this course indicates successful completion of the Engineering Lower Division Subset Competencies for the Bachelor of Engineering degree programs, and is a prerequisite for upper division courses in engineering. Pass/Fail.
Deleted 11/13/13.

ENGR 302 Introduction to Renewable Energy Concepts
3 class hours, 3 credits.
A study of the effects of carbon based fuel on environment and an introduction to basics of renewable sources of energy such as solar-thermal, solar direct, wind, wave, hydrogen fuel cell, bio-fuel, bio-mass and nuclear.
Prerequisites: MATH 211, PHYS 201.
Renumbered/replaced by ENGR494 10/4/18.

ENGR 343 Engineering Analysis
3 class hours, 3 credits.
An introduction to mathematical and physical modeling of engineering differential systems. Analysis leading to solution of ordinary and partial differential equations by analytical and numerical techniques. Probability and statistics. The use of digital computers is stressed.
Prerequisite: MATH 212.
Deleted 10/4/18.

ENGR 384 Power Electronics
2 class hours, 2 laboratory hours, 3 credits.
Principles of power electronics, operating characteristics of bipolar junction transistors, IGBTs, MOSFETs and thyristors, power converters, basic switching circuits, AC/DC, DC/DC, DC/AC converters and their applications. A laboratory component requiring students to design, construct, diagnose and test power electronics converters is included.
Prerequisite: ENGR 387.
Deleted 10/4/18.

ENGR 421 Plant Facilities Design and Management I
4 class hours, 4 credits.
A basic introduction into the management, operation, design, construction and maintenance of large facilities and building complexes. Typical facilities studied are large medical centers and office complexes. Applications will demonstrate how the principles of transport processes, electrical theory and strength of materials apply to the under- standing of the basic construction concepts and operations of large facilities. Special emphasis is given to current co-generation techniques with utility rate structure analysis. This course, together with ENGR 422 are designed to give the engineering graduate a working knowledge required to enter the facilities field.
Prerequisites: ENGR 200, ENGR 242, ENGR 344, ENGR 345, ENGR 380.
Renumbered/replaced by ENGR 425 4/6/11.

ENGR 422 Plant Facilities Design and Management II
4 class hours, 4 credits.
Continuation of ENGR 421 (Plant Facilities Design and Management I).
Prerequisite: ENGR 421.
Renumbered/replaced by ENGR 426 4/6/11.

.

ENGR 428 Computerized Control Systems
2 class hours, 2 laboratory hours, 3 credits.
This course has the dual goal of introducing students to computerized control systems and C programming. Students will use C to program single-board computers to monitor physical phenomena. In turn, the operations of the computer will be used to verify the correctness of the C programs. Students will be exposed to all fundamental aspects of C programming including: language syntax; sequence, selection, and repetition structures; procedures and functions; program design techniques, debugging, and maintenance.
Prerequisites: ENGR 120, ENGR 345 or ENGR 383.
Deleted 10/4/18.

ENGR 430 Data Networks
2 class hours, 2 laboratory hours, 3 credits.
This course is a survey of hardware, software, and protocols commonly used in constructing computer networks, with an emphasis on data transfer over TCP/IP networks. The objectives of this course are to (1) enable to student to design and implement small scale computer networks, (2) enable the student to troubleshoot and add units to existing networks, and (3) enable the student to write requirements and specifications for large scale networks. Lab periods will require students to use computers running a variety of operating systems.
Prerequisites: ENGR 120, MATH 102
Deleted 10/4/18.

ENGR 432 Information Assurance
2 class hours, 2 laboratory hours, 3 credits.
This course further develops networking protocols from ENGR 430 Data Networks with an emphasis on information assurance and security. The objectives of this course are (1) gain a basic understanding of the various types of network exploits that must be prevented, (2) gain an understanding of the software and network tools available for evaluating information assurance, and (3) gain experience in hardening networks and systems against intrusion, denial of service, and other security lapses. Lab periods will require students to use computers running a variety of operating systems.
Prerequisite: ENGR 430.
Deleted 10/4/18.

ENGR 483 Control Systems Theory
2 class hours, 2 laboratory Hours, 3 credits.
Analysis and control of feedback systems: transducers and their transfer functions; time domain and frequency response; stability criteria; classification of control equipment; performance specification and compensating networks.
Prerequisites: ENGR 120, ENGR 383.
Renumbered/replaced by ENGR 398 10/4/18.

ENGR 484 Electric Drives
2 class hours, 2 laboratory hours, 3 credits.
Students will learn a systematic design approach to motor drives using MATLAB and SIMULINK analysis simulation tools. Students will learn the fundamental principles of the subject, and extensive modeling, simulation, and analysis will be emphasized. Typical motor drives will be demonstrated for detailed industrial applications.
Prerequisite: ENGR 384.
Deleted 10/4/18.

ENGR 525 Industrial Internship I
6 credits.
An internship with a sponsoring industrial firm, requiring the intern to be assigned to duties requiring the practical application of engineering knowledge. These could include such tasks as inspection of existing equipment or systems, inspection of newly completed work, preparation of specifications for renovation or repair work, or development of maintenance plans and programs. The intern will keep a daily work log, and will retain work samples subject to the approval of his/her supervisor, as agreed with the intern's faculty advisor. The intern will receive a formal performance review upon completion of the internship, and must complete a substantial internship report to receive credit.
Prerequisites: Permission of the department chair, and completion of sophomore year in a relevant engineering discipline.
Renumbered/replaced by ENGR 526 10/4/18.

ENGR 535 Industrial Internship II
6 credits.
An internship with a sponsoring industrial firm, requiring the intern to be assigned to duties requiring the practical application of engineering analysis and design techniques, which could include such tasks as review and application of relevant codes to proposed renovation and repair work, completion of calculations pertaining to performance or sizing of equipment, completion of design specifications, estimates, and drawings, or preparation of reports and presentation materials. The intern will keep a daily work log, and will retain work samples subject to the approval of his/her supervisor, as agreed with the intern's faculty advisor. The intern will receive a formal performance review upon completion of the internship, and must complete a substantial internship report to receive credit.
Prerequisites: ENGR 525, permission of the department chair, and completion of the junior year in a relevant engineering discipline.
Renumbered/replaced by ENGR 536 10/4/18.

GBMG/MATH 446 Operations Research
3 class hours, 3 credits.
Quantitative methods for business-oriented decision and optimization problems. Topics chosen from among: linear programming and related sensitivity analysis; transportation problem; network and project-scheduling algorithms; queues; simulation; Markov processes; decision analysis. Use of software packages.
Prerequisite: ENGR 345 or MATH 251.
GBMG 446 Cross-reference deleted 3/28/12. MATH 446 course unchanged.

HIST 415 Topics in American Social History
3 class hours, 3 credits.
A consideration of several major social institutions and social phenomena in their American settings. Topics may include: the family, schools, sports, cities, immigration, and/or slavery.
Prerequisite: HIST 101 or HIST 102.
Deleted 2/12/14.

HIST 420 / NVSC 102 Sea Power and Maritime Affairs
Same as NVSC 102.
Prerequisite: HIST 101 or HIST 102.
HIST 420 Cross-reference deleted 4/6/11. NVSC 102 course unchanged.

HIST 422 Turning Points in American History
3 class hours, 3 credits.
The causes and consequences of the American Revolution, Civil War, and World War II. Attention is given to critical battles and the political, social, and economic influence of each war upon the development of American society.
Prerequisites: HIST 101, HIST 102.
Deleted 2/12/14.

HUMN 412 Models for Decision Making
3 class hours, 3 credits.
The principles of effective decision making. Topics range from such basic notions as "rationality" to such technical areas as Delphi forecasting.
Prerequisite: HUMN 201 or HUMN 202.
Deleted 2/12/14.

NAUT 408 License Seminar
4 class hours, 2 credits.
Lecture, discussions and problems dealing with subjects required by the U.S. Coast Guard for federal license as an officer in the merchant marine. In order to complete this course satisfactorily, each candidate for license is required to demonstrate, by qualifying examinations in all areas, his ability to become a fully qualified merchant marine officer. Examinations are administered to replicate conditions under which Federal exams are given.
Prerequisite: MT 530.
Replaced by MT 412 11/28/12.

NAVG 402 Advanced Marine Navigation
1 class hour, 2 laboratory hours, 2 credits.
The transition from navigation as an art to the science of problem solving, in preparation for the Federal License Exam for Third Mate in the US Merchant Marine. Additionally, an intensive review of all general subject matter related to shipboard navigation is accomplished. Examinations are administered to replicate conditions under which Federal exams are given.
Prerequisite: MT 530.
Replaced by MT 412 11/28/12.

NVSC 103 Basic Naval Science
1 class hour, 1 credit.
Introduction to Navy policies and Maritime affairs as they relate to the Merchant Marine Officer. The course covers Naval and Maritime evolutions, functions, missions, and strategy. Course is required for all freshman students except for MMR/NROTC scholarship and college program midshipmen and foreign students; freshman students may take NVSC 101 in lieu of NVSC 103.
Deleted 11/17/10.

OCEA 416 Marine Biogeochemistry Lab
3 laboratory hours, 1 credit.
Introduction to analytical chemistry of seawater; analyses of salinity, dissolved oxygen, dissolved nutrients in seawater; applications of seawater analyses to gas solubility, primary productivity and air/sea exchange of gases in a variety of marine environments.
Prerequisites: CHEM 121, OCEA 101.
[Spring – Odd Years]
Deleted 10/4/18.

PHYS 202 Engineering Physics Lab
2 laboratory hours every week, 1 credit.
Measurements and error analysis, mechanics, heat, electricity and magnetism experiments.
Corequisite: PHYS 201.
[Fall and Spring]
Deleted 4/5/17.

PHYS 610-611 Special Topics in Physics I-II
1, 2, or 3 credits each.
Theoretical or experimental investigation of special problems in either classical or modern physics.
Deleted 11/13/13.

PS 111 Professional Studies
2 class hours, 2 credits.
An introduction to the shipping industry, ships, and ship systems. Basic Transportation module: the shipping industry, ship nomenclature, organization, and construction. Basic Engineering module: propulsion plant nomenclature, components arrangements, and characteristics.
[Fall and Spring]
Deleted 10/4/18.

MARITIME COLLEGE
STATE UNIVERSITY OF NEW YORK

APPENDIX C: GRADUATE DEGREE CURRICULA

OFFICE OF THE PROVOST

Updated September 2024

GRADUATE
DEGREE CURRICULA

For Students Entering
Maritime College
During
2024-25 Academic Year

As of September 24, 2024

GRADUATE DEGREE CURRICULA

Programs	Page
Master of Science	**4**
Maritime and Naval Studies	4
Maritime and Naval Studies & Graduate License Program	6
Shipping and Logistics	7
Shipping and Logistics & Advanced Certificate in Supply Chain Management	9
Shipping and Logistics & Graduate License Program	11
Advanced Certificate	**14**
Supply Chain Management	14

DEGREE CURRICULA NOTES

A student is responsible for knowing when his/her required courses are offered.

General Remarks

Each degree curriculum in this document is provided as a reference showing all course requirements. All degrees leading to USCG licensure also require passing the relevant license exams.

A student's individual degree plan may divert from the published curriculum, but must take into account the following:

- A course may be offered only in certain semesters.
- Course prerequisites and corequisites must be honored.

Course prerequisites/corequisites are available in the accompanying Course Descriptions file.

Rules about Curriculum Changes (Students are normally required to follow the policies below. Students may appeal in a timely fashion for waivers through the department chair and Provost.)

1. **Grandfather clause:** A student is expected to complete his/her major curriculum as specified at the time of matriculation. A student may choose to follow a later curriculum, but the student must complete all of the requirements of that later curriculum. Choosing a later curriculum requires submission of a *Change of Curriculum* form.

2. **Readmission rule:** A readmitted student follows the curriculum in effect at the time the student returns to studies. The only departure from the school that does not require readmission is an official leave of absence.

3. **Change of major rule:** When a student changes major, he/she must change to the curriculum in effect at the time of the change. Submission of a *Change of Curriculum* form is required.

4. **Regulatory change rule:** If a regulatory body (such as the U.S. Coast Guard or ABET) institutes new requirements that change the student's curriculum, the student must complete the new requirements.

Master of Science
Maritime and Naval Studies
Curriculum Check Sheet

- Orientation Course (1 course for 1 credit)

Course #	Course	Completed
MNST 6001	Introduction to Academic Writing and Research Methods	

- Core Courses (2 courses for 6 credits)

Course #	Course	Completed
MNST 7101	American Commercial Maritime History: 1500 to the Present	
MNST 7102	The History of American Sea Power	
MNST 7103	American Sea Fiction and Maritime Culture	
MNST 7104	Maritime Digital Archives/Maritime Digital Humanities	

Elective Courses (7 courses for 21 credits *)

Course #	Course	Completed
* Students may take up to 3 approved TMGT courses		

- Capstone Course (1 course for 3 credits)

Course #	Course	Completed
MNST 9100	Capstone	

TOTAL CREDITS: 31

Master of Science
Maritime and Naval Studies
Elective Courses

Corequisite: MNST 6001	
Course #	**Course**
MNST 8101	Music of the Sea
MNST 8102	Ocean Politics and Law
MNST 8103	The History of World Sea Power
MNST 8104	Maritime Shakespeare
MNST 8105	Literature of the Middle Passage
MNST 8106	Maritime Piracy and Predation
MNST 8107	Maritime and Naval Art
MNST 8109	The Last Great Hunt: Herman Melville, *Moby-Dick*, and American Culture
MNST 8110	Introduction to the Issues and Challenges Particular to Maritime Museums
MNST 8111	Environmental Humanities: Arks and Archives
MNST 8112	Maritime Monsters: What Lies Beneath?
MNST 8113	Fantastic Voyagers of the Spanish Indies
MNST 8250	Government Transportation/Environmental Policy (Cross-listed as TMGT 8250)*
MNST 8199	Special Topics in Maritime and Naval Studies I
MNST 8299	Special Topics in Maritime and Naval Studies II
* Corequisite: TMGT 6001 or MNST 6001; no prerequisites	

Master of Science
Maritime and Naval Studies
Graduate License Program
Curriculum Check Sheet –License Courses
Course Sequence

Course #	Course	CREDITS	SEMESTER	Completed
NAUT 102	Intro to Vessel Ops. And Seamanship	1	Fall 1	
MTO 112	STCW Basic Training	2	Fall 1	
MTO 103	Water Safety and Survival for Mariners	1	Fall 1	
NAVG 112	Navigation I – Introduction to Navigation	4	Fall1	
MT 250	Ships Construction & Stability	2	Fall 1	
METE 201	Meteorology for Mariners	3	Spring 1	
NAVG 212	Navigation II - Oceans	4	Spring 1	
MT 321	Intro to Cargo Ops & Ship Stability	3	Spring 1	
MT 510*	Ship Operation & Management I	6	Summer 1	
NAUT 314	Rules of the Road	2	Fall2	
NAUT 315	Introduction to Integrated Bridge Systems	3	Fall 2	
MT 322	Marine Cargo Operations	3	Fall 2	
NAUT 308	Nautical Operations - Safety	2	Spring 2	
NAVG 312	Integrated Bridge Systems and Voyage Planning	4	Spring 2	
MT 426	Maritime Communications	3	Spring 2	
MT 520 or MT 521**	Ship Operation & Management II or Cadet Commercial Vessel Shipping**	6	Summer 2 or Fall 2 or Spring2 or Summer 2	
MT 412	Deck License Seminar	4	Fall 3	
MT 435***	Maritime Security	(3)	Fall 3	TMGT 8390***
NAUT 416	Bridge Resource Management	3	Fall 3	
MT 530	Ship Operation & Management III	5	Summer 3	
MTO 412	Medical First Aid	1	Summer 3	

* VPDSD (SUNY DP-747) is a prerequisite for MT 510
** During Fall 1, students interested in MT 521 Cadet Commercial Vessel Shipping should discuss alternative course sequencing for the following semesters with their Primary Advisor.
***Graduate License students take the on-campus section of TMGT 8390 instead of the undergraduate license course MT 435. Graduate License students who take MT 435 instead of TMGT 8390 will be required to take an additional graduate course.

TOTAL LICENSE CREDITS: 65

Master of Science
Shipping and Logistics
Curriculum Check Sheet

- Orientation Course (1 course for 1 credit)

Course #	Course	Completed
TMGT 6001	Orientation for Graduate Studies *(corequisite for core courses)*	

- Core Courses (6 courses for 18 credits)

Course #	Course	Completed
TMGT 7060	Systems Analysis & Operations Research	
TMGT 7100	Economics of International Trade	
TMGT 7400	Logistics within the Supply Chain	
TMGT 7500	International Business and Transportation Law	
TMGT 7600	Shipping Economics	
TMGT 7700	Ship Finance	

- 8000-Level Elective Courses (4 courses for 12 credits)
  Prerequisite -at least four core courses

Course #	Course	Completed
*	*	

**Not required if Thesis Option (courses 9201 & 9202) is chosen to complete the program*

- Final Course(s) (1 course Capstone Option is 3 credits, 2 course Thesis Option is 6 credits)
  Prerequisite- all six core courses

Course #	Course	Completed
TMGT 9100	Capstone Course	
or		
TMGT 9201	Thesis I	
TMGT 9202	Thesis II	

TOTAL CREDITS: 34

Master of Science
Shipping Logistics Elective Courses

Course #	Course
Prerequisites for 8000-level courses: any four core courses	
TMGT 8110	Economics of Transportation
TMGT 8150	Transportation Benefit Cost Analysis
TMGT 8210	Transportation Managerial Accounting
TMGT 8250	Government Transportation/Environmental Policy (Cross-listed as MNST 8250) *
TMGT 8270	Ship Management
TMGT 8280	Fleet Management
TMGT 8300	Transportation Management
TMGT 8310	Port Development and Environmental Issues
TMGT 8320	Port and Terminal Management
TMGT 8330	Analysis of Integrated Ocean Transportation and Ports
TMGT 8340	Dry and Wet Bulk Vessel Operations
TMGT 8360	Intermodal Freight Transportation
TMGT 8370	Shipboard Operations for Shoreside Managers
TMGT 8390	Maritime Port Security
TMGT 8420	Ocean Marine Hull & Protection & Indemnity Insurance
TMGT 8430	Ocean Marine Cargo Insurance and Loss Adjusting
TMGT 8440	Maritime Law
TMGT 8450	Advanced Charter Parties I
TMGT 8460	Advanced Charter Parties II (Corequisite: TMGT 8450)
TMGT 8465	Advanced Topics in Shipping
TMGT 8470	Transportation Risk Management
TMGT 8480	Managing Across Cultures
TMGT 8491	The Terrorist Threat Today
TMGT 8499	Special Topics in International Transportation Management I
TMGT 8501	Principles of Supply Chain Management I
TMGT 8502	Principles of Supply Chain Management II (Prerequisite: TMGT 8501)
TMGT 8505	International Trade Management Internship
TMGT 8510	Systems Design & Control
TMGT 8520	Global Transportation and Supply Chain Security
TMGT 8530	Information Management
TMGT 8540	Maritime Physical and Cyber Security
TMGT 8550	Maritime Physical and Cyber Security, Risk Management and Mitigation (Prerequisite:
TMGT 8599	Special Topics in International Transportation Management II
* Corequisite: TMGT	

Master of Science Shipping and Logistics
&
Advanced Certificate in Supply Chain Management
Curriculum Check Sheet

- Orientation Course (1 course for 1 credit)

Course #	Course	Completed
TMGT 6001	Orientation for Graduate Studies *(corequisite for core courses)*	

- Core Courses (6 courses for 18 credits)

Course #	Course	Completed
TMGT 7060	Systems Analysis & Operations Research	
TMGT 7100	Economics of International Trade	
TMGT 7400	Logistics within the Supply Chain	
TMGT 7500	International Business and Transportation Law	
TMGT 7600	Shipping Economics	
TMGT 7700	Ship Finance	

- Supply Chain Management Courses (4 courses for 12 credits)
  Prerequisite -at least four core courses

Course #	Course	Completed
TMGT 8501	Principles of Supply Chain Management I	
TMGT 8502	Principles of Supply Chain Management II *(Prerequisite TMGT8501)*	
TMGT 8510	Systems Design & Control	
TMGT 8530	Information Management	

*****Not required if Thesis Option (courses 9201 & 9202) is chosen to complete the program*

- 8000-Level Elective Courses (2 courses for 6 credits)

Course #	Course	Completed
*	*	

*****Not required if Thesis Option (courses 9201 & 9202) is chosen to complete the program*

- Final Course(s) (one course Capstone Option for 3 credits, two course Thesis Option for 6 credits)
  Prerequisite- all six core courses

Course #	Course	Completed
TMGT 9100	Capstone Course	
or		
TMGT 9201	Thesis I	
TMGT 9202	Thesis II	

TOTAL CREDITS: 40

Master of Science in Shipping and Logistics &
Advanced Certificate in Supply Chain Management
Elective Courses

Course #	Course
Prerequisites for 8000-level courses: any four core courses	
TMGT 8110	Economics of Transportation
TMGT 8120	Topics in Managerial Economics
TMGT 8150	Transportation Benefit Cost Analysis
TMGT 8210	Transportation Managerial Accounting
TMGT 8250	Government Transportation/Environmental Policy (Cross-listed as MNST 8250) *
TMGT 8270	Ship Management
TMGT 8280	Fleet Management
TMGT 8300	Transportation Management
TMGT 8310	Port Development and Environmental Issues
TMGT 8320	Port and Terminal Management
TMGT 8330	Analysis of Integrated Ocean Transportation and Ports
TMGT 8340	Dry and Wet Bulk Vessel Operations
TMGT 8360	Intermodal Freight Transportation
TMGT 8370	Shipboard Operations for Shoreside Managers
TMGT 8390	Maritime Port Security
TMGT 8420	Ocean Marine Hull & Protection & Indemnity Insurance
TMGT 8430	Ocean Marine Cargo Insurance and Loss Adjusting
TMGT 8440	Maritime Law
TMGT 8450	Advanced Charter Parties I
TMGT 8460	Advanced Charter Parties II (Corequisite: TMGT 8450)
TMGT 8465	Advanced Topics in Shipping
TMGT 8470	Transportation Risk Management
TMGT 8480	Managing Across Cultures
TMGT 8491	The Terrorist Threat Today
TMGT 8499	Special Topics in International Transportation Management I
TMGT 8505	International Trade Management Internship
TMGT 8520	Global Transportation and Supply Chain Security
TMGT 8540	Maritime Physical and Cyber Security
TMGT 8550	Maritime Physical and Cyber Security, Risk Management and Mitigation (Prerequisite: TMGT 8540)
TMGT 8599	Special Topics in International Transportation Management II
* Corequisite: TMGT 6001 or MNST 6001; no prerequisites	

Master of Science
Shipping and Logistics
Graduate License Program
Curriculum Check Sheet – Graduate Courses

- Orientation Course (1 course for 1 credit)

Course #	Course	Completed
TMGT 6001	Orientation for Graduate Studies *(corequisite for core courses)*	

- Core Courses (6 courses for 18 credits)

Course #	Course	Completed
TMGT 7060	Systems Analysis & Operations Research	
TMGT 7100	Economics of International Trade	
TMGT 7400	Logistics within the Supply Chain	
TMGT 7500	International Business and Transportation Law	
TMGT 7600	Shipping Economics	
TMGT 7700	Ship Finance	

- Program Course (1 course for 3 credits)
  Prerequisite -at least four core courses

Course #	Course	Completed
TMGT 8390	Maritime Port Security (substitutes for MT 435)	

- 8000-Level Elective Courses (3 courses for 9 credits)
  Prerequisite -at least four core courses

Course #	Course	Completed
*	*	

*****Not required if Thesis Option (courses 9201 & 9202) is chosen to complete the program*

- Final Course(s) (one course with Capstone Option for 3 credits or two course Thesis Option for 6 credits)
  Prerequisite- all six core courses

Course #	Course	Completed
TMGT 9100	Capstone Course	
or		
TMGT 9201	Thesis I	
TMGT 9202	Thesis II	

GRADUATE CREDITS: 34
UNDERGRADUATE LICENSE CREDITS: 62
TOTAL CREDITS: 96

Master of Science
Shipping and Logistics
Graduate License Program
Curriculum Check Sheet –License Courses

Course Sequence

Course #	Course	CREDITS	SEMESTER	Completed
NAUT 102	Intro to Vessel Ops. And Seamanship	1	Fall 1	
MTO 112	STCW Basic Training	2	Fall 1	
MTO 103	Water Safety and Survival for Mariners	1	Fall 1	
NAVG 112	Navigation I – Introduction to Navigation	4	Fall1	
MT 250	Ships Construction & Stability	2	Fall 1	
METE 201	Meteorology for Mariners	3	Spring 1	
NAVG 212	Navigation II - Oceans	4	Spring 1	
MT 321	Intro to Cargo Ops & Ship Stability	3	Spring 1	
MT 510*	Ship Operation & Management I	6	Summer 1	
NAUT 314	Rules of the Road	2	Fall 2	
NAUT 315	Introduction to Integrated Bridge Systems	3	Fall 2	
MT 322	Marine Cargo Operations	3	Fall 2	
NAUT 308	Nautical Operations - Safety	2	Spring 2	
NAVG 312	Integrated Bridge Systems and Voyage Planning	4	Spring 2	
MT 426	Maritime Communications	3	Spring 2	
MT 520 or MT 521**	Ship Operation & Management II or Cadet Commercial Vessel Shipping**	6	Summer 2 or Fall 2 or Spring 2 or Summer2	MT 520 or MT 521**
MT 412	Deck License Seminar	4	Fall 3	
MT 435***	Maritime Security	(3)	Fall 3	TMGT 8390***
NAUT 416	Bridge Resource Management	3	Fall 3	
MT 530	Ship Operation & Management III	5	Summer 3	
MTO 412	Medical First Aid	1	Summer 3	

* VPDSD (SUNY DP-747) is a prerequisite for MT 510
** During Fall 1, students interested in MT 521 Cadet Commercial Vessel Shipping should discuss alternative course sequencing for the following semesters with their Primary Advisor.
***Graduate License students take the on-campus section of TMGT 8390 instead of the undergraduate license course MT 435. Graduate License students who take MT 435 instead of TMGT 8390 will be required to take an additional graduate course.

TOTAL LICENSE CREDITS: 65

Master of Science
Shipping Logistics/Graduate License Program Elective Courses

Course #	Course
Prerequisites for 8000-level courses: any four core courses	
TMGT 8110	Economics of Transportation
TMGT 8150	Transportation Benefit Cost Analysis
TMGT 8210	Transportation Managerial Accounting
TMGT 8250	Government Transportation/Environmental Policy (Cross-listed as MNST 8250) *
TMGT 8270	Ship Management
TMGT 8280	Fleet Management
TMGT 8300	Transportation Management
TMGT 8310	Port Development and Environmental Issues
TMGT 8320	Port and Terminal Management
TMGT 8330	Analysis of Integrated Ocean Transportation and Ports
TMGT 8340	Dry and Wet Bulk Vessel Operations
TMGT 8360	Intermodal Freight Transportation
TMGT 8370	Shipboard Operations for Shoreside Managers
TMGT 8420	Ocean Marine Hull & Protection & Indemnity Insurance
TMGT 8430	Ocean Marine Cargo Insurance and Loss Adjusting
TMGT 8440	Maritime Law
TMGT 8450	Advanced Charter Parties I
TMGT 8460	Advanced Charter Parties II (Corequisite: TMGT 8450)
TMGT 8465	Advanced Topics in Shipping
TMGT 8470	Transportation Risk Management
TMGT 8480	Managing Across Cultures
TMGT 8491	The Terrorist Threat Today
TMGT 8499	Special Topics in International Transportation Management I
TMGT 8501	Principles of Supply Chain Management I
TMGT 8502	Principles of Supply Chain Management II (Prerequisite: TMGT 8501)
TMGT 8505	International Trade Management Internship
TMGT 8510	Systems Design & Control
TMGT 8520	Global Transportation and Supply Chain Security
TMGT 8530	Information Management
TMGT 8540	Maritime Physical and Cyber Security
TMGT 8550	Maritime Physical and Cyber Security, Risk Management and Mitigation (Prerequisite: TMGT 8540)
TMGT 8599	Special Topics in International Transportation Management II
* Corequisite: TMGT 6001 or MNST 6001; no prerequisites	

Advanced Certificate
Supply Chain Management
Curriculum Check Sheet

- Core Courses (1 course for 3 credits)

Course #	Course	Completed
TMGT 7060	Systems Analysis & Operations Research	

- Supply Chain Management Courses (5 courses for 15 credits)

Course #	Course	Completed
TMGT 7400	Logistics within the Supply Chain	
TMGT 8501	Principles of Supply Chain Management I	
TMGT 8502	Principles of Supply Chain Management II (Prerequisite: TMGT 8501)	
TMGT 8510	Systems Design & Control	
TMGT 8530	Information Management	

- 8000-Level Elective Course (1 course for 3 credits)

Course #	Course	Completed

TOTAL CREDITS: 21

Advanced Certificate
Supply Chain Management
Elective Courses

Course #	Course
TMGT 8110	Economics of Transportation
TMGT 8120	Topics in Managerial Economics
TMGT 8150	Transportation Benefit Cost Analysis
TMGT 8210	Transportation Managerial Accounting
TMGT 8250	Government Transportation/Environmental Policy (Cross-listed as MNST 8250) *
TMGT 8270	Ship Management
TMGT 8280	Fleet Management
TMGT 8300	Transportation Management
TMGT 8310	Port Development and Environmental Issues
TMGT 8320	Port and Terminal Management
TMGT 8330	Analysis of Integrated Ocean Transportation and Ports
TMGT 8340	Dry and Wet Bulk Vessel Operations
TMGT 8360	Intermodal Freight Transportation
TMGT 8370	Shipboard Operations for Shoreside Managers
TMGT 8390	Maritime Port Security
TMGT 8420	Ocean Marine Hull & Protection & Indemnity Insurance
TMGT 8430	Ocean Marine Cargo Insurance and Loss Adjusting
TMGT 8440	Maritime Law
TMGT 8450	Advanced Charter Parties I
TMGT 8460	Advanced Charter Parties II (Prerequisite: TMGT 8450)
TMGT 8465	Advanced Topics in Shipping
TMGT 8470	Transportation Risk Management
TMGT 8480	Managing Across Cultures
TMGT 8491	The Terrorist Threat Today
TMGT 8499	Special Topics in International Transportation Management I
TMGT 8505	International Trade Management Internship
TMGT 8520	Global Transportation and Supply Chain Security
TMGT 8540	Maritime Physical and Cyber Security
TMGT 8550	Maritime Physical and Cyber Security, Risk Management and Mitigation (Prerequisite: TMGT 8540)
TMGT 8599	Special Topics in International Transportation Management II
* Corequisite: TMGT 6001 or MNST 6001; no prerequisites	

MARITIME COLLEGE
STATE UNIVERSITY OF NEW YORK

APPENDIX D: GRADUATE COURSE DESCRIPTIONS

OFFICE OF THE PROVOST

Updated September 2024

GRADUATE
COURSE DESCRIPTIONS

For Students Entering
Maritime College
During
2024-25 Academic Year

As of September 24, 2024

COURSE DESCRIPTIONS

Discipline: PREFIX	Page
Maritime and Naval Studies: MNST	**3**
6001 Orientation Course	3
7000-Level Core Courses	3
8000-Level Elective Courses	4
Capstone Course	7
Shipping and Logistics: TMGT	**8**
6001 Orientation Course	8
7000-Level Core Courses	8
8000-Level Elective Courses	10
Capstone Course	19
Thesis Courses	19
Courses in Reserve	**20**
Courses Deleted from Course Catalog	**22**

General Note on the Scheduling of Courses:

Course descriptions include semester(s) when course is regularly offered (assuming sufficient demand and resources). If no semester indicated, course is an elective offered at discretion of the department.

Definitions of Prerequisite and Corequisite Courses:

The description for a given course will sometimes contain reference to courses that are prerequisites or corequisites for that given course.

A ***prerequisite*** is defined as a course that ***must be completed*** with required minimum grade (passing grade, unless otherwise specified) ***prior to*** taking another course.

A ***corequisite*** is defined as a course that can either be ***completed prior to*** (as detailed above) ***or*** be ***taken in the same semester as*** another course. The published degree curricula and flow charts illustrate the preference for any given corequisite situation.

MARITIME AND NAVAL STUDIES

MNST 6001 Introduction to Academic Writing and Research Methods
1 class hour, 1 credit.
This course focuses on writing, research, critical, and other analytical skills necessary for graduate-level work in the Maritime and Naval Studies program. Students learn the appropriate form, style, and etiquette for academic writing, investigate library research tools, and become acquainted with software applications that support academic writing and research.
Prerequisite: Undergraduate writing or composition.
[Fall and Spring]

MNST 7101 American Commercial Maritime History: 1500 to Present
3 class hours, 3 credits.
This course examines the history and growth of American commercial shipping and its influence on foreign policy and economic development. The course also will examine how the American merchant marine industry helped shape the nation's emergence as a world power. Commercial shipping's role in the development of the American colonies, the effects of commercial shipping (including privateering) on the American Revolution and subsequent wars, relevant admiralty and salvage law, marine insurance, continued challenges faced by American shipbuilders and the critical role of organized labor in the American shipping industry will be examined.
Corequisite: MNST 6001.
[Spring]

MNST 7102 The History of American Sea Power
3 class hours, 3 credits.
A course exploring the major sea battles that have affected American history and culture, from 1500 to the present. The evolution and innovation of naval weapons, new types of warships and novel tactics of the opposing ships' commanders will be examined, as well as the military, commercial and diplomatic context that brought about each battle, and its effect on America's rise as a world power.
Corequisite: MNST 6001.
[Fall]

MNST 7103 American Sea Fiction and Maritime Culture
3 class hours, 3 credits.
This course examines American maritime culture and fiction from the invention of the American sea narrative to modernist experimentation. We will be reading some of the greatest writers in American literature including James Fenimore Cooper, Richard Henry Dana Jr., Herman Melville, Edgar Allan Poe, Frederick Douglass, Mark Twain, Kate Chopin, and Ernest Hemingway.
Corequisite: MNST 6001

MNST 7104 Maritime Digital Archives / Maritime Digital Humanities
3 class hours, 3 credits.
This course examines the intersection between Digital Scholarship and Maritime Studies. We will concentrate on the examination and evaluation of Digital Archives; consider other digital primary sources and platforms; and use Digital Scholarship tools in research and development for possible inclusion in the MNST Capstone Project. Our focus throughout the course will be on the lives and work of mariners from the 18th century to the modern merchant marine.
Corequisite: MNST 6001

MNST 8101 Music of the Sea
3 class hours, 3 credits.
Maritime music traditions exist in most of the world's cultures, and their meanings vary widely. In Music of the Sea we will investigate maritime music from North America, the Caribbean, Europe, and Asia. We will examine shantying traditions, maritime work songs, water legends, boatmen's, fishermen's, whalers' and sailors' songs, making connections across cultures in musical and lyric content.
Corequisite: MNST 6001.

MNST 8102 Ocean Politics and Law
3 class hours, 3 credits.
The course will investigate political, legal, economic, environmental and other issues related to the oceans. It will identify how the need for resources has motivated the formation of national and international organization policy. The course will also include the study of the law of the sea as well as case studies of particular flashpoints, such as disputes concerning straits, the continental shelf and fisheries management.
Corequisite: MNST 6001.

MNST 8103 The History of World Sea Power
3 class hours, 3 credits.
The rise of Greece and the dominance of Rome as major powers, the virtual control of world commerce by the British Navy in the 19th century, and the outcomes of the major wars of the 20th century have all pivoted on decisive military and naval battles. This course will explore military and political context as well as the ships, sailors, weapons, and tactics involved in the major sea battles that dramatically altered world history, from ancient times to the present.
Corequisite: MNST 6001.

MNST 8104 Maritime Shakespeare
3 class hours, 3 credits.
This course studies 6 plays of Shakespeare, emphasizing their reflection of and contributions to European and global cultural perceptions of the sea. Each play will be read alongside maritime cultural and literary theoretical models. Topics may include: Shakespeare's sources and influences; exploration literature; cartography; historicism and presentism; Atlantic Studies; Blue Cultural Studies; and, the New Thalassology.
Corequisite: MNST 6001.

MNST 8105 Literature of the Middle Passage
3 class hours, 3 credits.
Between the sixteenth and nineteenth centuries, eleven million Africans were enslaved and forced to cross the Atlantic Ocean. This course is an investigation of the cultural, commercial and literary history of that journey, which came to be known as the Middle Passage. Reading a wide range of works, we will think about the role of the archive in the study of history, and the limitations of evidence-based methods of historiography in the special case of the Middle Passage. In turning to literature as a legitimate source of historical knowledge, we will also ask how we know and what we cannot know.
Corequisite: MNST 6001.

MNST 8106 Maritime Piracy and Predation
3 Class Hours, 3 Credits
This course is an intensive study of the early modern pirates, privateers and wreckers of Western Europe; however, attention is also given to additional eras and similar struggles in the Middle East and Asia, allowing students to gain an understanding of a timeless, global phenomenon. An investigation into these archetypal outlaws and their practices (both in fact and in fiction) reveals central tensions in the economic, naval, political and ethical debates of the 16th, 17th and 18th centuries, and their influence on our own contemporary systems.
Corequisite: MNST 6001.

MNST 8107 Maritime and Naval Art
3 class hours, 3 credits
Engineers, admirals, traders, statesmen, and propagandists all make use of visual representations of ships, but for different reasons and in different ways. This course will consider how these motives intersect with the pictorial and graphic conventions of different major maritime cultures, surveying the history of marine and nautical art from ancient times up through the 20th century, concentrating chiefly on the modern period of global trade and conquest and the heyday of maritime art in the 17th-19th centuries.
Corequisite: MNST 6001

MNST 8109 The Last Great Hunt: Herman Melville, *Moby-Dick*, and American Culture
3 class hours, 3 credits.
This course concentrates on Herman Melville's place in the American literary canon and the impact of *Moby-Dick* on American culture from the Abstract Expressionists to pop music and science-fiction films. We will also be concerned with the genre of sea fiction, the American whaling industry, and Melville as a precursor to modernist and postmodernist experimentation. This is a multi-media examination of the greatest novel in American literature and how Melville's "last great hunt" changed the world.
Corequisite: MNST 6001.

MNST 8110 Introduction to the Issues and Challenges Particular to Maritime Museums
3 class hours, 3 credits
Maritime-focused museums in the 21st century are facing challenges that and very different from art-, science- or military history-focused museums in fundamental ways. This survey course introduces students to the history of maritime museums and especially to the unique challenges facing this specific type of museum, as well as some creative solutions to the predicaments that can develop when dealing with ships, water and preservation and exhibition of maritime artifacts. This course covers the debates and the philosophical dilemmas unique to maritime-focused museums in the 21st century. Students will be involved in actual case studies and work with museum staff on ongoing problems facing American maritime museums today.
Corequisite: MNST 6001.

MNST 8111 Environmental Humanities: Arks and Archives
3 class hours, 3 credits.
This course studies the intersection of Environmental Humanities, Archival Theory and Practice, and Digital Humanities. It foregrounds the challenges – pragmatic, aesthetic, and ethical – of deciding how and what can be saved in the face of climate change, ecological pressure, and sea level rise. Students will work with documents in both physical archives and digital collections.
Corequisite: MNST 6001.

MNST 8112 Maritime Monsters: What Lies Beneath?
3 class hours, 3 credits
While monsters in general have long held an important place in the human psyche, maritime monsters -- those creatures lurking in the deep -- pose a special threat and offer a distinct thrill. Submersed beneath the waters, these monsters are brought to the surface on maps, in literature, through artistic endeavor, and via scientific research. Sea monsters, figurative and literal can be read as, amongst other possibilities: etiological and enigmatic explanations; natural and anthropogenic dangers; internal and external fears. Thus, this course explores depictions of maritime monsters across a range of disciplines: cartography, history, art, literature, and science. It takes a broad approach to the study of maritime monsters, utilizing a wide array of theoretical frameworks to examine, analyze, and interpret their meaning(s).
Corequisite: MNST 6001.

MNST 8113 Fantastic Voyagers of the Spanish Indies
3 class hours, 3 credits
This course offers a close reading of Early Modern voyage narratives from colonial Latin America and the Philippines. Particular focus is paid on Baroque and Enlightenment preoccupations with the fantastical and the exotic as central themes in maritime writing of the First Global Age (c. 1450-1800). The course also engages with the multiethnic nature of Hispanic communities emerging in the Atlantic and Pacific Basins as a product of early globalization. Readings may include the following: captivity and disaster narratives, exploration and scientific logs, naval and pirate accounts, and missionary chronicles.
Corequisite: MNST 6001.

MNST 8199-8299 Special Topics in Maritime and Naval Studies I-II
3 class hours, 3 credits.
Special topics and issues for qualified students interested in acquiring a broader knowledge of Maritime and Naval Studies.
Corequisite: MNST 6001.

MNST 8250 Government Transportation/Environmental Policy
3 class hours, 3 credits.
An introduction to the overall structure and design of environmental law in the United States and in the international community. Closer examination of specific cases, statutes and treaties affecting marine transportation, marine natural resources, pollution and development. Consideration of environmental policy impact in a cross-cultural context is also examined.
Corequisite: MNST 6001or TMGT 6001.
Cross-Listed as TMGT 8250

MNST 9100 Capstone
3 class hours, 3 credits.
The capstone course is required of all MNST students. Successful completion will require both appropriate contributions to the course activities and assignments and satisfactory completion of the capstone project. The capstone course activities and assignments will consist of discussion areas addressing topical issues in Maritime and Naval Studies; readings selected to introduce issues of professional preparation (including preparation for doctoral studies); and assignments designed to initiate the capstone project.
Prerequisites: MNST 6001 and two Core Courses from MNST 7101, MNST 7102, MNST 7103 and MNST 7104.

SHIPPING AND LOGISTICS

TMGT 6001 Orientation to Graduate Studies
1 class hour, 1 credit.
This course introduces new graduate students to the full range of academic, administrative, and social expectations of graduate students, and the environment in which they must meet those expectations. The course provides students with multiple opportunities to develop and improve their research, writing, and source citation proficiencies as well as their critical thinking, communication, and presentation skills.
[Fall and Spring]

TMGT 7060 Systems Analysis & Operations Research
3 class hours, 3 credits.
Exploration of quantitative and systems methods in business and transportation. Topics include problem solving, optimization—both linear and non-linear, network models, deterministic and probabilistic models, the systems life spiral, principles and practices for developing, managing and enhancing systems. Computers are an integral part of the course. Mathematics topics will be reviewed as necessary.
Corequisite: TMGT 6001.
[Fall and Spring]

TMGT 7100 Economics of International Trade
3 class hours, 3 credits.
A systematic analysis of the underlying determinants of international trade, including classical, Ricardian, neoclassical and current theories of international trade, commercial policy, and customs unions. Monetary topics include balance of payments; accounting and adjustment process; foreign exchange markets; and the role of the dollar in international trade and international finance.
Corequisite: TMGT 6001.
[Fall and Spring]

TMGT 7400 Logistics within the Supply Chain
3 class hours, 3 credits.
This course focuses on and explicates the logistics channel of the supply chain. “Channels” are identifiable sets within a supply chain of interdependent business processes and activities that help to impart a distinct economic value or utility to the product as it moves through the supply chain or to the service as being provided. The purpose of the course is to prepare students to be logistic managers, to control efficiently the movement of goods, materials and other resources using processes that instill time and place utility in the moved product or the developing service, from beginning of supply chain (sourcing of raw materials) to its end (the ultimate destination of the delivered product or service).
Corequisite: TMGT 6001.
[Fall and Spring]

TMGT 7500 International Business & Transportation Law
3 class hours, 3 credits.
Introduction to the issues and problems that face the individual/company engaged in international transportation and business, while exploring the rights and duties of participants, and the legal and practical issues that arise in international business transactions.
Corequisite: TMGT 6001.
[Fall and Spring]

TMGT 7600 Shipping Economics
3 class hours, 3 credits.
Application of economic analysis to issues of major concern to shipping firms, and to the shipping industry as a whole. Topics covered include: analysis of the market structure of the shipping industry, the supply of shipping services, the costs to the firm, pricing shipping services, determination of freight rates, shipping and the balance of payments, government policies affecting shipping, subsidies, cabotage, and tariffs.
Corequisite: TMGT 6001.
[Fall and Spring]
Previously TMGT 8140

TMGT 7700 Ship Finance
3 class hours, 3 credits.
Application of financial tools to ship and fleet financing. Topics include: economic analysis of the sale and purchase, new building and second hand markets, sources of financing, bareboat and sale / leaseback arrangements, mortgage requirements, estimating profitability of charter party time and spot transactions, valuation of prospective purchases, evaluating shipping enterprises, among others.
Corequisite: TMGT 6001.
[Fall and Spring]
Previously TMGT 8230

TMGT 8110 Economics of Transportation
3 class hours, 3 credits.
Economic analysis of transportation decision-making. Topics include: demand, cost, analysis of rate determination, taxes and subsidies, government regulation and resource allocation, study of competitive and noncompetitive forces in a regulated and deregulated environment.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8120 Topics in Managerial Economics
3 class hours, 3 credits.
Application of quantitative methods to economic decision-making. Topics include: optimization techniques, demand theory; cost theory, econometric estimation, market structure, pricing practices, antitrust, capital budgeting, and forecasting.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8150 Transportation Benefit-Cost Analysis
3 class hours, 3 credits.
Techniques for the profitable evaluation of a project's merit and cost, whether in the public or private sector. These include business and asset acquisitions, transportation projects, proposed or existing government regulation, taxes, subsidies, grants, among others.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8210 Transportation Managerial Accounting
3 class hours, 3 credits.
Application of accounting principles to managerial decisions in various transportation modes, including vessels, air carriers and motor freight operations. Includes the treatment of revenue and expense; agency; branch and ship accounting; subsidy treatment; governmental uniform system of accounting and reporting; foreign exchange; and other financial aspects of international and domestic transportation. The role of computers in integrating the accounting systems with management, planning and operating information systems.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8250 Government Transportation/Environmental Policy
3 class hours, 3 credits.
An introduction to the overall structure and design of environmental law in the United States and in the international community. Closer examination of specific cases, statutes and treaties affecting marine transportation, marine natural resources, pollution and development. Consideration of environmental policy impact in a cross-cultural context is also examined.
Corequisite: MNST 6001 or TMGT 6001.
Cross-Listed as MNST 8250

TMGT 8270 Ship Management
3 class hours, 3 credits.
This elective course is a study of the many functions performed by shore side management while operating merchant vessels. Topics include: the evolving role of the ship's manager, ship management agreements, crewing agencies, crewing problems and agreements, bunker procurement, quality and control, sale and purchase of vessels, demolition, vessel agencies, managing operating and running costs, voyage estimating, vessel maintenance issues, risk management, ISM compliance, classification societies, working within the regulatory environment, among others.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8280 Fleet Management
3 class hours, 3 credits.
A comprehensive analysis of the principles of fleet operations and maintenance to obtain a higher degree of productivity and cost effectiveness. The course includes: forecast fleet requirements, vehicle maintenance, vehicle operations, fleet economics, budget organization, safety and fleet security, energy efficiency, data processing, and labor relations.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8300 Transportation Management
3 class hours, 3 credits.
The study of upper level management and the decision making process within the context of the transportation firm. Case studies and computer simulations concerning internal operations and profitable responses to changing industry trends are studied.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8310 Port Development and Environmental Issues
3 class hours, 3 credits.
The transportation industry and ports are facing new challenges as a result of increased environmental regulations and enforcement, all of which affect intermodal transportation initiatives. International agreements, treaties and conventions have modified the way international and even domestic commerce and trade is conducted. The course will deal with domestic and international laws and regulations, which impact port operations. The course will also focus on new approaches and solutions to many of the environmental problems encountered in port operations and development
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8320 Port & Terminal Management
3 class hours, 3 credits.
This course consists of an inquiry into the basic concepts and principles of seaport management. It stresses U.S. public ports, while providing an insight into the port problems of developing nations. Included topics are: operations; organizational structure; powers; public policy; economics; planning; marketing; technology and regulation.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8330 Analysis of Integrated Ocean Transport
3 class hours, 3 credits.
Topics studied include: ocean routes, terminals, free ports, cargo handling & stowage, charter parties, theory of rate-making, rate practice and control, pools; agreements, economic aspects of selected ports, the relation of facility to its hinterland, costs of shipping through the facility, competitive position, labor costs and productivity, construction and rental costs, governmental agencies, port authorities and commissions.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8340 Dry & Wet Bulk Vessel Operations
3 class hours, 3 credits.
Analysis of dry bulk and tanker vessel operations in the tramp market from both the shore side and shipboard perspective. Discusses development in dry bulk and tanker markets, the supply and demand of vessels and evolving shipboard technology.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8360 Intermodal Freight Transportation
3 class hours, 3 credits.
Learn the basics of intermodal freight transportation, including documents and equipment, freight operations, intermodal information technology, and rules and laws that apply in this type of transportation. Students can also find answers to the questions of how intermodal freight transportation developed, what is happening today, and where it might be going in the future.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8370 Shipboard Operations for Shoreside Managers
3 class hours, 3 credits.
This specialized course is held at sea aboard a cruise ship. The student is introduced to shipboard operations, navigation, vessel safety, bridge watch standing, marine engineering and related topics. The student can expect to spend approximately one week at sea during the course and the balance of time in a traditional classroom environment.
Prerequisites: Any four core courses in TMGT 7000-7999.
[Summer]

TMGT 8390 Maritime Port Security
3 class hours, 3 credits.
Objective is to prepare the student to become aware of the new threats to the Maritime Industry and protect their assets of Ports, Terminals and Ships. To enable the student to prepare for a position as Company Security Officer or Port Facility Security Officer. Three certificates can be obtained with completion of this course. In compliance with international STCW requirements, there will be no D or D+ grades in this course.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8420 Ocean Marine Hull & Protection & Indemnity Insurance
3 class hours, 3 credits.
Ocean marine hull and protection and indemnity policies, clauses and interpretation are studied. Topics include: hull markets, total losses, averages, perils insured against, running down liabilities, sue and labor, general average, hull valuations, war risks, P and I clubs, covered risks, charterers' and bailees' legal liability, reinsurance, functions and problems of brokers, agents and underwriters, hull and P and I underwriting, among other topics.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8430 Ocean Marine Cargo Insurance & Loss Adjusting
3 class hours, 3 credits.
This course is designed to brokers, underwriters, claims handlers and insured's a better understanding of how to manage risk and how a claim meets the final test of coverage and loss adjustment. Topics include: major classes of cargo, policy interpretation, premiums, cargo valuation, packing handling and susceptibility to damage, perils insured against, general average/salvage, role of the adjuster, and more.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8440 Maritime Law
3 class hours, 3 credits.
The course seeks to satisfy the need to understand the general maritime principles needed by ship officers and ones working in the maritime industry ashore. American admiralty and maritime laws and practices as they apply to ship owners, seamen and ship officers, ship insurers and charterers will be discussed.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8450 Advanced Charter Parties I
3 class hours, 3 credits.
Topics include: ship brokerage and commissions, negotiating charter parties. Application of contract and agency law to charter parties, time charter party forms and clauses, payment of hire, off-hire clauses, overlap and under lap, withdrawal, speed and fuel oil consumption warranties, seaworthiness, bills of lading under charter parties, the Inter-Club Agreement, maritime liens and prohibition of liens, demise charter party terms, conditions, consequences, among others. A professional chartering certificate is issued upon successful completion of both TMGT 8450 & 8460.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8460 Advanced Charter Parties II
3 class hours, 3 credits.
Objectives include a detailed understanding of the practices and law governing voyage chartering of ocean going and other vessels, as well as ship brokering and dry and wet chartered vessel operations. A professional chartering certificate is issued upon successful completion of both TMGT 8450 & 8460.
Corequisites: TMGT 8450.

TMGT 8465 Advanced Topics in Shipping
3 class hours, 3 credits.
Provides a detailed examination of major issues of concern to shipping, export, import, seaport, risk management, and logistics students and executives. It examines the business of international shipping and trade from operational, regulatory, economic, policy, risk management and legal perspectives.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8470 Transportation Risk Management
3 class hours, 3 credits.
The overall objective for this course is to demonstrate professional competence in handling transportation risks. After successful completion of the course students should be able to identify and analyze transportation loss exposure, analyze different types of transport coverage, recommend appropriate insurance provisions and loss control measures in order to properly manage risk associated with marine transportation. Areas covered include marine terminal, freight forwarding, shipbuilding, and cargo risk management.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8480 Managing Across Cultures
3 class hours, 3 credits.
This course deals with the identifying and understanding the cultural issues that impact senior and middle management of a global transportation business. Alternative actions and implementation details rising from this understanding are discussed. Cultural Acumen for the Global Manager - Lessons from Project GLOBE, forms the basis for this class.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8491 The Terrorist Threat Today
3 class hours, 3 credits.
Understand typical terrorist mindsets and psychologies, their threat to U.S. interests and supply chains, as well as understanding the counter terrorist apparatus set up in the U.S. to deal with the terrorist threat.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8499 Special Topics in International Transportation Management I
3 class hours, 3 credits.
This course examines issues of current or emerging significance in international transportation management through the lens of contextual analysis. Clear identification of the issues, an assessment of their importance within the global context, and recommendations of resolution are important capabilities for the global executive. This course provides the opportunity to learn the essential and relevant underlying skills. An understanding of the socio political economic realities of the world, and the development of ethical, critical thinking and communication skills are features of this course.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8501 Principles of Supply Chain Management I
3 class hours, 3 credits.
Introduction into the concept of supply chain management, and focuses on the issues of integrating the channel functions of extended supply chains. The course explicates the major channels of the supply chain, delineates functional areas wherein products and services are transformed incrementally to final form as they form as they move through the supply chain, surveys the major technologies in use today, and surveys both qualitative and quantitative managerial techniques.
Prerequisites: Any four core courses in TMGT 7000-7999.
[Fall]

TMGT 8502 Principles of Supply Chain Management II
3 class hours, 3 credits.
The management functions of planning, organizing, and controlling; explores the logic of collaboration in today's business environments, domestic and global; examines globalization issues deriving from cultural, economic, and political contexts, and examines and models the strategic planning hierarchy of vision, mission, strategic goals, and tactical objectives.
Prerequisites: TMGT 8501.
[Spring]

TMGT 8505 International Trade Management Internship
3 class hours, 3 credits.
The Internship in ITM will provide practical, hands on experience that will facilitate a student's segue into a professional position. There are many different career tacks possible in international transportation management; however, the main criterion for approving an internship is whether the work performed, mentoring given, and lessons learned can, in the judgment of the supervising faculty member and GBAT Department Chair, be applied directly to International Transportation Management. A successfully completed ITM internship will satisfy one of the program's 3-credit elective requirements. The internship may be either paid or unpaid, and credit is granted for both.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8510 Systems Design & Control
3 class hours, 3 credits.
This course examines the consequences of global markets, specifically, successful competition in an uneven cultural, economic, political and social playing fields that requires deriving cost efficiencies from constantly re-engineering extended supply chains. The best of the re-engineering takes a total cost analysis approach, viewing all parts of the supply chain as an integrated whole and leaving nothing in isolation. Students are introduced to the design and control techniques that derive from a systems approach.
Prerequisites: Any four core courses in TMGT 7000-7999.
[Spring]

TMGT 8520 Global Transportation and Supply Chain Security
3 class hours, 3 credits.
This course is an elective in the SCM emphasis in the Shipping and Logistics degree program. The course explores the applications of security within the global supply chain extending from the sourcing of raw materials to the ultimate destination of the product or service. Students will evaluate the multiple perspectives of security that impact the strategic, operational, tactical, personal, informational, and physical aspects of the supply chain and examine the interplay of security & efficiency in the business decision making construct. A project format allows for detailed analysis of the particulars of supply chain vulnerability and the formulation of plans to address the issues uncovered. Practical application of security concepts, clear and concise communication of possible mitigation strategies to decision makers will be highlighted.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8530 Information Management
3 class hours, 3 credits.
This course examines how information technology may help achieve current and future opportunities for business improvement in the maritime and related industries. Methods for analyzing a business leading to the discovery of opportunity are examined. Techniques for the application of technology to these opportunities and assessing the resulting benefits are used. Consideration is given to methods for managing the technology investment. Examples are worked using contemporary and emerging opportunities and technologies. A middle and upper level management perspective is taken. Guest speakers from the industry will be featured.
Prerequisites: Any four core courses in TMGT 7000-7999.
[Fall and Spring]

TMGT 8540 Maritime Physical and Cyber Security
3 class hours, 3 credits.
This course will present the graduate student with the opportunity to gain an in-depth and total understanding and overview of the various facets of the Maritime Cyber Security environment. This course approaches cyber issues from a variety of interdisciplinary perspectives. It also presents a convergence approach to cyber security that joins both physical and cyber security's holistic approaches to understanding the current threats of cyber security. It is jointly taught as an interdepartmental effort by the various departments within SUNY Maritime College. In addition to lectures by the various professors supervising the course, from time to time prominent experts in maritime and intermodal security, from both public and private sectors, will address the students on topical issues of the day, from this emerging threat space of maritime cyber security.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 8550 Maritime Physical and Cyber Security, Risk Management and Mitigation
3 class hours, 3 credits.
This course will present the graduate student with the opportunity to gain an in-depth understanding of the Maritime Cyber Security environment as it applies to Maritime Physical and Cyber Security, Risk Management and Mitigation Strategies. In addition to lectures, from time to time prominent experts in maritime and intermodal security, from both public and private sectors, will address the students on topical issues of the day, in this critical field of maritime cyber security. This course moves beyond understanding level to the more advanced stages of analyzation, evaluation and then active problem-solving exercises. This course unifies and continues the thread started in TMGT 8540.
Prerequisite: TMGT 8540.

TMGT 8599 Special Topics in International Transportation Management II
3 class hours, 3 credits.
Special topics for qualified students interested in acquiring a broader knowledge of topics and issues associated with international transportation management.
Prerequisites: Any four core courses in TMGT 7000-7999.

TMGT 9100 Capstone
3 class hours, 3 credits.
This course is the culmination of your program in Shipping and Logistics and is designed to draw upon the knowledge that you have acquired in all of the other courses that have preceded it. Students perform directed team research and make a presentation to faculty and outside evaluators.
Prerequisites: Completion of Core Courses, 25 TMGT Credits, 3.0 GPA.

TMGT 9201 Thesis I
3 class hours, 3 credits.
A graduate student works with a supervising faculty member as an alternative to a (3 credit) capstone course. The thesis is individual study and research, over two semesters, and is worth 6 credits.
Prerequisites: Completion of Core Courses.

TMGT 9202 Thesis II
3 class hours, 3 credits.
A graduate student works with a supervising faculty member as an alternative to a (3 credit) capstone course. The thesis is individual study and research, over two semesters, and is worth 6 credits.
Prerequisites: TMGT 9201

COURSES IN RESERVE

Courses not offered in the last five years may be offered in the future if a department determines a need for the course.

TMGT 8130 Economics of Ocean Transportation
3 class hours, 3 credits.
Topics include: transportation planning: vessel suitability: capital, operating and voyage costs. Development of financial models for comparing movements using cost per delivered unit of cargo. Examines movement planning and the valuation and acquisition of vessels.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8240 International Trade Transactions
3 class hours, 3 credits.
Contemporary trends in transportation industrial relations, the dilemmas, conflicts, and challenges associated with the employment relationship. Topics include: union organizations and structure; labor legislation, the theory of negotiation and strategic approaches to collective bargaining, and the limitations on the freedom to strike. An assessment of the unions' impact on wages, prices, profits, technological change, and management actions will be made.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8260 Industrial Relations in Transportation
3 class hours, 3 credits.
Contemporary trends in transportation industrial relations, the dilemmas, conflicts, and challenges associated with the employment relationship. Topics include: union organizations and structure; labor legislation, the theory of negotiation and strategic approaches to collective bargaining, and the limitations on the freedom to strike. An assessment of the unions' impact on wages, prices, profits, technological change, and management actions will be made.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8290 Transportation Planning
3 class hours, 3 credits.
Transportation systems are compared within the context of the shipper/carrier relationship. Distribution patterns are investigated in ocean, inland waterways, rail, trucking, air, and pipeline modes. Topics covered include: carrier organization and operation, competition and operation, competition and cooperation, intermodal transportation, ratemaking negotiations and practices, carrier liability and government regulations.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8350 Analysis of Air Transportation & Airports
3 class hours, 3 credits.
A comprehensive analysis and evaluation of air transportation and airport organization and practices. Consideration is given to the changes in management and marketing in international trade, as influenced by the progress of commercial air transportation. Special emphasis is placed on the relationship between the various components of the air transportation system, physical planning, the role of government in air transportation, environmental concerns, forecasting, economic aspects of selected airports, competitive position, construction and rental costs, and airport authorities and commissions.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8355 Selected Topics in International Aviation Transportation Management
3 class hours, 3 credits.
Covers changing, discrete aviation transportation issues in an "issue management" approach. Issues include privatization, aircraft technology, security, facilitation, technology applications. Students do a term paper and oral presentation on an issue they select.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8380 Bunker & Aviation Fuel Markets
3 class hours, 3 credits.
Topics include: marine fuel, lube and aviation fuel oil markets, contracting, pricing, hedging tools, quality issues, risk management; environmental concerns, role of brokers, among others.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8490 International Marketing
3 class hours, 3 credits.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

TMGT 8500 Business Ethics
3 class hours, 3 credits.
Prerequisites: TMGT 7100, TMGT 7300, TMGT 7500.
Placed in Courses in Reserve

COURSES DELETED FROM COURSE CATALOG

TMGT 7200 Management Information Systems in Transportation
3 class hours, 3 credits.
This course introduces the student of transportation and logistics to the theory and practice of how information systems align with and support freight transportation and logistics processes. Focus is placed on the strategic processes of operations control, decision support, and customer in multimodal environments. Process models for these environments are presented and discussed, as are the techniques for data collection and capture, processing, communication, and presentation. The ultimate objective of the course is to provide the student with a working development to deliver usable and effective information systems.
Corequisite: TMGT 6001.
Renumbered as TMGT 8530.

TMGT 8160 Systems Analysis & Operations Research
3 class hours, 3 credits.
Exploration of quantitative and systems methods in business and transportation. Topics include problem solving, optimization—both linear and non-linear, network models, deterministic and probabilistic models, the systems life spiral, principles and practices for developing, managing and enhancing systems. Computers are an integral part of the course. Mathematics topics will be reviewed as necessary.
Prerequisites: All TMGT 7000-level courses.
Renumbered as TMGT 7060.

TMGT 8220 Financial Decision Making in Transportation
3 class hours, 3 credits.
Topics include: required rate of return, capital assets, pricing models, capital budgeting techniques, and sources of long term capital.
Prerequisites: All TMGT 7000-level courses.
Deleted

TMGT 8310 Organizational Management
3 class hours, 3 credits.
This course concentrates on managerial strategy formulation, i.e., creation of goals, objectives and plans along with the organizational implementation factors of organizing, directing (motivating & leading),and controlling. The course also focuses on ethical decision making and organizational social responsibility. Students enrolled in this course will develop "strategizing and executing skills" that will enable them to provide competitive advantages, value and successful leadership to their respective organizations in the 21st century global economy.
Prerequisites: All TMGT 7000-level courses.
Replaced with TMGT 8310 Port Development and Environmental Issues

TMGT 9200 Thesis Seminar
3 class hours, 3 credits.
Each candidate will prepare a comprehensive thesis under the guidance of a faculty mentor. Required of all candidates for the Master of Science Degree who do not elect course 9100 (International Business Policy).
Prerequisites: Candidates must have at least 18 masters level credits completed with a minimum 3.0 GPA.
Deleted