United States Merchant Marine Academy

2011-2012 Catalog

The Mission of the United States Merchant Marine Academy

To educate and graduate merchant marine officers and leaders of honor and integrity who serve the maritime industry and armed forces and contribute to the economic, defense, and homeland security interests of the United States.

The United States Merchant Marine Academy is operated by the Maritime Administration of the U.S. Department of Transportation.

Course content and regulations at the Academy are under constant review and revision. Therefore, the Academy reserves the right, whenever it deems advisable, to withdraw, cancel, reschedule or modify any course, program of study or requirement in connection with any of the foregoing within the limits established by law and Maritime Administration, U.S. Department of Transportation Orders.

The United States Merchant Marine Academy welcomes students of any race, color, creed, sex and national or ethnic origin. Because of the specialized nature of the Academy's program, and the obligation of students after graduation, requirements regarding age, physical condition and U.S. citizenship do apply. These requirements are listed in this catalog.

The Academy is an equal opportunity employer.

On the cover:
Commencement marks the culmination of four years of hard work by the members of the graduating class, who leave the U.S. Merchant Marine Academy to serve in America's maritime industry and Armed Forces.

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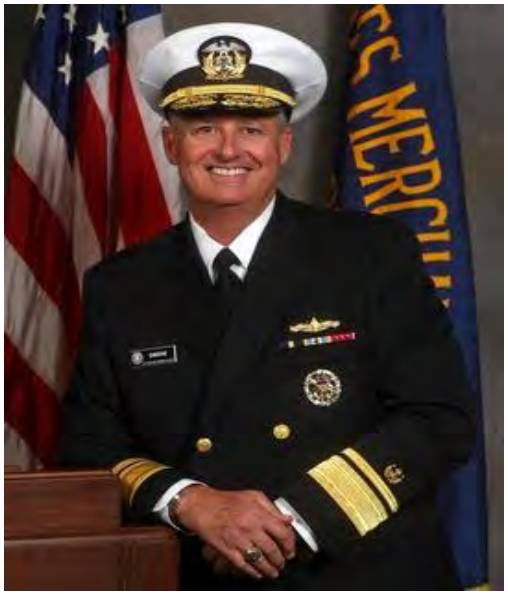


A Message from the Superintendent

Acta Non Verba – Deeds, Not Words; the United States Merchant Marine Academy's motto describes its policies, procedures and Regiment of Midshipmen in the truest and most simple way. The young men and women who choose to make the commitment to meet the demands and expectations of the Academy do so to receive an education from one of the most selective institutions of higher learning in the country. They choose the United States Merchant Marine Academy for its ability to educate them through instruction, design, practical application, and hands on experience in the field.

The Merchant Marine Academy experience differs from tradition colleges as it produces leaders of honor and integrity through regimental, co-curricular and shipboard programs, in addition to its rigorous academic structure. The men and women who attend the Academy will not only have the skills to succeed in the maritime industry, but the experience and maturity to serve as leaders of the nation as commissioned officers on reserve or active duty in the Armed Forces.

The four year education provided by the United States Merchant Marine Academy will allow you to earn academic and professional credentials needed to thrive in the maritime industry, a crucial element to the economic, defense and homeland security interests of the nation.

If the challenges and rewards of the United States Merchant Marine Academy education appeal to you, then I invite you to seek admission to our regiment of midshipmen. Your life's journey begins at Kings Point!

Philip H. Greene
Rear Admiral
U.S. Maritime Service

Table of Contents

Policy

Policy Regarding Sexual Harassment, Sexual Assault and Gender Discrimination

The policy of the U. S. Merchant Marine Academy is to provide a safe and supportive environment for work and learning. Sexual harassment, sexual assault and gender discrimination are not acceptable at our institution. It is the responsibility of all midshipmen, faculty and staff to refrain from such behavior, to discourage it wherever found, to confront those responsible, and to report any such behavior, as mandated in Superintendent's Instruction 2003-5.

The Academy, as an institution dedicated to training men and women as officers in the merchant marine and Armed Forces, must uphold and perpetuate the traditions of an honorable profession. Sexual harassment, sexual assault and gender discrimination, whether in private or public, undermine the principles of honorable and disciplined conduct that are the hallmarks of an officer's character. Inappropriate conduct is corrosive to the cohesiveness, morale and esprit de corps of a military organization or a ship's company.

To fail to take responsible corrective action when witness to such behavior is an act of moral cowardice which, along with physical cowardice, is among the worst failures of which an officer may be guilty.

The U.S. Merchant Marine Academy: Serving the Nation

Introduction

A glimpse at a map of the United States shows us that we are a maritime nation. To the east is the Atlantic Ocean; to the west, the Pacific; off our southern border, the Gulf of Mexico; in the north, the Great Lakes; and crisscrossing our states, great rivers like the Mississippi and other inland waterways.

Every hour of every day, ships of all types ply the waters in and around our nation. They leave our ports laden with U.S. goods bound for foreign markets, or arrive in our harbors with merchandise and materials for American consumers.

There are tankers traveling along the west coast with raw petroleum for our refineries; Great Lakes vessels loaded with iron ore, coal or other minerals for America's industry; huge containerships in Eastern ports, their box-like containers filled with manufactured goods; general cargo ships in the Gulf unloading pal- lets of coffee and crates of fruit; tugboats pushing and pulling barges carrying the Mid- west's grain.

These kinds of vessels, owned by U.S. companies, registered and operated under the American flag, comprise the U.S. merchant marine. This fleet of highly productive ships is a major part of our system of commerce, helping guarantee our access to foreign markets for sale of our manufactured goods.

Moreover, in time of war or national emergency, the U.S. merchant marine becomes vital to national security as a "fourth arm of defense." Our merchant ships bear the brunt of delivering military supplies overseas to our forces and allies. The stark lessons of national conflict prove that a strong merchant marine is an essential part of American seapower.

The nation's economic and security needs met by the U.S. merchant marine are compelling. Today, the United States imports approximately 85 percent of some 77 strategic commodities critical to America's industry and defense. Although we, as a nation, account for only six percent of the world population, we purchase nearly a third of the world's output of raw materials. Ninety-nine percent of these materials are transported by merchant vessels.

A ship at sea does not operate in a vacuum. It depends on a framework of shoreside activities for its operations. This industry includes companies which own and manage the vessels; ports and terminals where cargo is handled; yards for ship repair; services like marine insurance underwriters, ship chartering firms, admiralty lawyers, engineering and research companies; and increasingly today, intermodal systems of trucks and railroads to distribute goods around the country.

But the most important element in a productive merchant fleet and a strong transportation industry is people—men and women who are intelligent, dedicated, well-educated and competent.

The purpose of the U.S. Merchant Marine Academy is to ensure that such people are available to the nation as ship- board officers and as leaders in the transportation field who will meet the challenges of the present and the future.

The Program

The Academy is located in Kings Point, New York. Its 82-acre waterside campus lies on Long Island's north shore, about 20 miles east of New York City.

The Academy is a national institution, operated by the Federal Government's Maritime Administration, an agency of the U.S. Department of Transportation. The Academy's four-year program centers on a regimental system that instills its students - called midshipmen (a term used for both men and women) with the traits of leadership, discipline and dedication required for a career that typically may include service at sea, maritime employment ashore, and serving as a com- missioned officer in a reserve component of the U.S. Armed Forces.

The Academy's Regiment of Midshipmen numbers approximately 950 young men and women who represent every state of the Union as well as U.S. Trust Territories and Possessions. The size of the student body contributes to a true sense of camaraderie among the members of the Regiment and permits the Academy to maintain an excellent student-teacher ratio.

A sound college education is the foundation for every profession in our society and the mariner's profession is no exception. Elements of the academic program provide all mid-shipmen with the specialized training and education for success as U.S. Coast Guard-licensed merchant marine officers, in compliance with the requirements set forth in the International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978, as well as the STCW Code in subsequent related amendments. The curriculum at the Academy is accredited by the Middle States Association of Colleges and Schools and provides each midshipman with the broad college education required for a bachelor of science degree. The military knowledge necessary for commissioning in a reserve component of the Armed Forces rounds out the academic program. Few colleges can offer such a full range of credentials at graduation.

The Academy challenges its midshipmen intellectually and physically. The academic program is demanding, the regimental system rigorous. Freshman (fourth class or plebe) year is particularly strenuous as students make the transition from high school graduate to Academy midshipman. In their first few months, they learn many new terms, the quality of endurance, how to perform under pressure, and most importantly, how to successfully manage time.

During sophomore (third class) year, and again during junior (second class) year, mid-shipmen are sent to sea for practical ship-board training. Aboard ship, sailing the trade routes of the world, they learn the value of self-reliance and initiative as they gain first-hand experience in the mariner's environment.

In senior (first class) year, they fine tune the skills learned in the classroom and at sea as they prepare to enter the professional world.

Enrollment at the Academy requires many personal sacrifices, but the goal is worthwhile. Students must be prepared for numerous demands on their time, a degree of stress, and some limitations on their personal freedom. In return, the Academy develops leaders and prepares its graduates for careers that are bounded only by their talents and desire.

History

The Academy represents Federal involvement in maritime training that is more than a century old. Since the administration of President Ulysses S. Grant, the U.S. Government has initiated various programs to train its citizens for service in the merchant marine. The Academy, dedicated in 1943, represents the realization of these efforts.

Between 1874 and 1936, diverse Federal legislation supported maritime training through schoolships, internships at sea and other methods. A disastrous fire in 1934 aboard the passenger ship MORRO CASTLE, in which 134 lives were lost, convinced the U.S. Congress that direct Federal involvement in efficient and standardized training was needed.

Congress passed the landmark Merchant Marine Act in 1936, and two years later, the U.S. Merchant Marine Cadet Corps was established. The first training was given at temporary facilities until the Academy's permanent site in Kings Point, N.Y. was acquired in early 1942. Construction of the Academy began immediately, and 15 months later the task was virtually completed. The Academy was dedicated on September 30, 1943. President Franklin D. Roosevelt, noted at that time that "the Academy serves the Merchant Marine as West Point serves the Army and Annapolis the Navy."

World War II required the Academy to forego normal operation and devote all of its resources toward meeting the emergency need for merchant marine officers. Enrollment rose to 2,700, and the planned course of instruction was reduced in length form four years to 18 months. Notwithstanding the war, shipboard training continued to be an integral part of the Academy curriculum, and midshipmen served at sea in combat zones the world over. One hundred and forty-two mid- shipmen gave their lives in service to their country, and many others survived torpedoings and aerial attacks. By war's end, the Academy had graduated 6,634 officers.

World War II proved that the Academy could successfully meet the needs of a nation in conflict. As the war drew to a close, plans were made to convert the Academy's wartime curriculum to a four-year, college level program to meet the peacetime requirements of the merchant marine. In August 1945, such a course was instituted.

The Academy has since grown in stature and has become one of the world's foremost institutions in the field of maritime education. Authorization for awarding the degree of bachelor of science to graduates was granted by Congress in 1949; the Academy was fully accredited as a degree-granting institution that same year; it was made a permanent institution by an Act of Congress, signed by President Dwight D. Eisenhower, in 1956.

The Academy's national value was again recognized as it accelerated graduating classes during the Korean and Vietnam conflicts, and for its involvement in such programs as training officers of the first U.S. nuclear-powered merchant ship, the SAVANNAH.

Admission requirements were amended in 1974 and the Academy became the first federal service school to enroll women students.

During the first Persian Gulf conflict in early 1991, and for many months prior to the war, both Academy graduates and mid-shipmen played key roles in the massive sealift of military supplies to the Middle East. Midshipmen training at sea have since participated in the sealifts to Somalia, Kosavo, Afghanistan and Iraq.

While the Academy's curriculum has changed dramatically since 1943 to reflect the technological advances of America's merchant marine, the institution has maintained its unswerving commitment to quality education and excellence among its midshipmen.

Student Information

Campus

The Academy campus and facilities comfortably accommodate the Regiment of Mid- shipmen. The design of the buildings is simple yet functional, and the campus has been laid out to take full advantage of the picturesque waterfront of Long Island's north shore. The Academy's buildings and walkways are named after individuals whose deeds have brought fame to America's merchant marine.

On the slope looking toward Long Island Sound stands a monument to the Academy's World War II casualties. Around this monument are grouped an outdoor swimming pool; a boat basin and the Yocum Waterfront Center; Gibbs Hall, with modern science and engineering laboratories; and Samuels Hall, with Humanities Department classrooms, the Global Maritime and Transportation School, the Department of Information Technology, a ship's bridge simulator, and laboratories for teaching nautical science. A beautiful interfaith chapel, which serves the religious needs of the regiment, stands on a grassy knoll to the south of the War Memorial.

Wiley Hall, facing Long Island Sound, is the chief administration center of the Academy. Formerly the home of automobile magnate Walter P. Chrysler, this historic building contains the offices of the Superintendent, Commandant of Midshipmen, Academic Dean, Public Affairs and other senior staff. East of Wiley Hall lies the center of the Academy campus, marked by a striking, 176- foot flagpole. Surrounding this landmark are Fulton Hall, the marine engineering and science building; Bowditch Hall, housing the Department of Marine Transportation and the 900-seat Ackerman Auditorium; and the Schuyler Otis Bland Memorial Library.

Delano Hall, the midshipman dining room, and six dormitory buildings - Barry, Jones, Rogers, Cleveland, Murphy, and Palmer Halls - complete the circle of buildings enclosing the main campus. The dormitories and dining room are connected by an underground promenade, which contains the midshipman lounge and can -teen, uniform shop, post office, laundry facilities, bank, barber shop, and ship's service store.

On the perimeter of the Academy are athletic fields for football, baseball, lacrosse and soccer, as well as tennis and handball courts and a quarter-mile surfaced track; Furuseth Hall, containing the Department of Naval Science, the Department of Professional Development and Career services, the Public Safety and security office, and the Administrative Services Department; Vickery Gate, home of the Admissions Office; O'Hara Hall, which has a spacious gymnasium, an indoor, olympic size swimming pool, and athletic facilities; Patten health clinic; and Land Hall, the Midshipmen Activities Center.

Although the majority of Academy buildings were constructed during World War II, ongoing modernization programs have rendered the classroom, laboratory and dormitory facilities virtually brand new.

On the northern border of the Academy lies the McNulty Campus, named after the "father" of the Academy, Rear Admiral Richard R. McNulty, who was instrumental in calling public attention to the need for a federal maritime officer training school. Located in this area is the American Merchant Marine Museum, a popular stop for campus visitors.

Library

The Schuyler Otis Bland Memorial Library is the Academy's major information resource center. The library supplies midshipmen, faculty and staff with a wide range of materials and services, which can also benefit visiting researchers. There is seating for 300 users,

including special conference rooms and study areas.

Designed to support the curriculum, the library book collection of over 180,000 volumes provides a broad range of information on the subjects studied at the Academy, with an extensive concentration of information and special collections on maritime subjects, both modern and historical.

Available at the library is a great deal of information in other formats: periodicals, sea charts, magazines and newspapers on microfilm, research reports on microfiche, computers and computer software, video and audio cassette tapes, files of engineering data, specialized indexes, compact discs, DVDs, CD-ROMs, computerized data bases, and an on-line public access catalog.

The library has on-line access to over 450 computer data bases in many disciplines, including science, technology, the social sciences, and the humanities. Its CD-ROM holdings include full texts of newspapers and many types of government documents. As part of its broad role as a resource center, the library also serves as a conference site for Academy programs. The library's premier conference facility, the Crabtree Conference Room, pro- vides a comfortable setting for a wide variety of maritime and scholarly activities attended by midshipmen, faculty and staff.

Midshipman Activities Center

Land Hall is the site of the Joseph B. Williams Midshipmen Activities Center and serves as the focal point of many extracurricular and recreational activities. The building contains club and meeting rooms, and is used for informal dinners and parties. The office of the Academy's social director is located here, as well as the Midshipman Pub, with its regulated hours of operation.

Food Services

The commissary in Delano Hall provides midshipmen with daily meals. Monday through Friday, breakfast and dinner are served buffet style, while lunch is served family style. On weekends, all meals are served buffet style. Breakfast, lunch and dinner are offered on Saturday. On Sunday, brunch and dinner are offered. In addition to regular menu selections, breakfast features a fruit bar. At lunch and dinner, there is a salad bar and soup bar.

The Seafarer Restaurant, open to the public as well as to midshipmen, is a cafeteria-style facility. It offers a full breakfast and lunch menu, Monday through Friday. the Seafarer is also open for evening meals, Monday through Thursday. It is closed on Saturday and reopens Sunday evening for pizza and snacks.

Healthcare Delivery System

Patten Clinic has a unique mandate to pro- vide midshipmen with the variety of medical, dental, and mental health services that are prerequisites for assignment to sea duty; application for a Merchant Marine Reserve, U.S. Naval Reserve (MMR, USNR) commission; and application for a U.S. Coast Guard (USCG) license.

Patten Clinic has three components: a Medical Clinic, a Dental Clinic, and Midshipman Counseling and Personal Development (MCPD). Patten Clinic is staffed by a combination of contract employees (through a long- standing contract with the North Shore-Long Island Jewish Health System (NSLIJ), and federal employees.

NSLIJ employees include: the Chief Medical Officer (CHO) and other NYS licensed physicians specializing in Adolescent Medicine; NYS Licensed Physicians' Assistants; NYS Registered Nurses; a NYS Registered Pharmacist; NYS Licensed Nurse Practitioners; a Program Coordinator; a NYS Registered Dental Hygienist; a NYS Licensed Mental Health Counselor and a NYS Licensed Clinical Psychologist. Federal employees include: Department Head of Health Services (DHS), a Licensed Dental Officer (unrestricted dental license in federal facilities), Medical Records Specialist, and a Certified Dental Assistant.

Patten Clinic meets the standards of the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) for medical clinics and the standards of the Health Insurance Portability and Privacy Act (HIPAA) safeguarding storage, transmission and confidentiality of midshipmen medical

information and records.

All three departments of Patten Clinic are housed in one building, which facilitates staff intercommunication and expedites many health-related processes for midshipmen.

Patten Clinic services are generally available by appointment Monday - Friday, 0730- 1730. Sick Call is Monday - Friday, 0800- 1000. Midshipmen in duty status who require emergency care or urgent care when the Clinic is closed will be transported by NY State Certified EMTs in the USMMA Ambulance to the Emergency Department at the North Shore University Hospital in Manhasset, NY. Emergency treatment provided by NSUH ED is covered (i.e., reimbursed) under the NSUH contract with the Academy. Necessary treatment is always provided, but if the requirement for treatment involves an excluded condition, the midshipman assumes financial responsibility for the cost incurred.

Health and Accident Insurance Coverage

Midshipmen actively enrolled in academic classes are provided basic medical, surgical and mental health coverage available through the Academy. The Academy's Chief Medical Officer and/or Head, Department of Health Services, may authorize health services to be provided by local health providers affiliated with The North Shore/Long Island Jewish Health System (NS-LIJ). Midshipmen are **required** to maintain continued enrollment in their existing family medical hospitalization and dental plan. If a midshipman has no access to family medical coverage, the Office of Admissions should be notified. It is important to note that while the Academy medical care is extensive, a midshipman is not entitled to unlimited care at government expense.

Examples of medical/insurance coverage which is outside the academy system and is not provided includes, but is not limited, to:

- obtaining care with an outside provider not included under the Academy contract;
- expediting treatment by using services not included under the Academy contract; or
- uncovered conditions or treatment for those conditions.

Conditions and/or treatments not covered include, but are not limited to:

- on-going treatment of pre-existing health conditions; elective medical examination and immunizations (e.g., pre-employment physicals and immunizations)
- elective surgery; • cosmetic surgery (except reconstructive surgery incidental to or following surgery resulting from trauma, infection or other covered diseases or injury);
- contact lens or eyeglasses examinations, for the prescription or fitting thereof;
- hearing aids and examinations for the prescription or fitting thereof;
- prescriptions and associated medical lab- oratory tests for treatment of dermatological conditions (e.g., acne);
- consultation for or extraction of third molars (wisdom teeth);
- dental care or treatment, other than injury to natural teeth, as provided by the Academy Dental Clinic or as authorized by the senior dental officer;
- dental implants;
- orthodontic care;
- substance use disorders; expensed incurred for treatment subsequent to or resulting from substance use (including alcohol);
- conditions incurred as a result of participation in an act in violation of Midshipmen Regulations, or Academy Policy;
- prenatal care maternity benefits or any condition arising from or out of pregnancy.

Career Services

The Department of Career Services and Professional Development is located on the second deck of Furuseth Hall. The department provides a range of Career Counseling services ranging from information regarding the midshipman's obligation, to resume assistance, to internship opportunities to graduate employment options. The department has resources to assist midshipmen in

communicating with organizations, learning about opportunities available with them, and in applying for positions. The department works with the alumni association to maintain a database of organizations participating in the internship program and employment of graduates.

For a full description of the functions of the department, see page 113.

Midshipman Counseling and Personal Development

Midshipman Counseling and Personal Development (MCPD), a component of the Department of Health Services, is located in Patten Clinic. MCPD, through a variety of ongoing programs, presentations and services, strives to provide midshipmen with the practical information, interpersonal skills and decision-making proficiency necessary for them to achieve their personal goals and career objectives. Particular attention is given to the plebes, who typically find the Academy environment challenging during their first year.

MCPDS staff includes a Director, a Midshipman Counselor, and support personnel. Using established assessment and counseling methods, MCPD can help midshipmen address any issue which might affect their performance at the Academy. Issues related to stress, interpersonal relationships, adjustment to Sea Year, and alcohol misuse, for example, can be addressed productively in accordance with established confidentiality guidelines (Health Insurance Portability and Accountability Act of 1996 and Academy policies.

MCPD works closely with the Department of Health Services; the Office of Superintendent; the Office of Commandant; the Office of Chaplain; and other Academy departments to instruct midshipmen about significant health- related issues and policies and to provide crisis-management support.

MCPD also participates in an ongoing training program for the Midshipman Human Relations Officers (HROs). The HROs apply this training to provide fellow midshipmen with accessible information regarding important Academy, military, and maritime health-related policies.

Varsity and Intramural Sports

The Academy seeks to promote mid- shipman growth as a “whole person” and is concerned with physical development and with nurturing character, leadership and intellect. Physical fitness and athletics are therefore an important part of midshipman life.

The varsity athletic program is comprehensive, but emphasis on intercollegiate competition is balanced with a midshipman’s academic obligations. The Academy strives to develop a healthy interest in athletics and to field teams that are competitive. This program offers physical development, recreation and a healthy focus for midshipman pride and loyalty. For male midshipmen, the Academy offers the following varsity sports: baseball, basketball, crew, cross-country, football, golf, lacrosse, pistol, intercollegiate sailing, soccer, swimming and diving, tennis, track and field, volleyball, and wrestling.

For female students, there are these varsity sports: basketball, crew, cross-country, pistol, intercollegiate sailing, softball, swimming and diving, track and field, and volleyball.

Physical Fitness Program

The Academy places great emphasis on the physical condition of its midshipmen. Fitness training is a complete physical conditioning program that develops and maintains the flexibility, aerobic endurance and muscular strength needed to perform the tasks required, and to counter the mental stress associated with maritime, naval and military service. Mid- shipmen must meet and maintain the physical standards described below from entrance to the Academy through graduation.

Physical Fitness Assessment (PFA): This consists of a series of strength and endurance events to measure an individual’s physical fitness in relation to their age and gender. The three events are curl-ups, push-ups, a 1.5 mile run/walk or 500 yard swim. During the academic year, there are three or more scheduled PFAs administered to the Regiment.

Physical Excellence Program (PEP): A midshipman or plebe candidate who fails the PFA and/or body fat requirement will be required to participate in the Physical Excellence Program. The PEP is a remedial

physical training and dietary/nutritional guidance program designed to assist midshipmen in passing the PFA and bringing body fat percentage to within Academy standards.

Intramurals: Over a four-year period, midshipmen are expected to participate in varsity athletics, club sports or intramurals. The Academy encourages this participation to help midshipmen remain physically fit, learn from the challenges of athletic competition, and develop a lifetime commitment to healthy physical activity. For midshipmen who choose not to participate at the varsity or club level, there are ample opportunities to join intramural activities. Company Officers are responsible for monitoring midshipmen to ensure that all students are taking advantage of the diverse athletic opportunities that the Academy offers.

Waterfront Activities

The Academy boasts one of the finest waterfront training programs in the country. With varsity, instructional and recreational programs available, there is something to offer every midshipman, either competitively or professionally. As a result, nearly 40 per- cent of the student body participates in the curricular elective or extra-curricular programs, making the Yocum Sailing Center home to one of the most popular activities on campus.

To support the curricular educational program, there are several modern, specially-equipped vessels that are used for professional training in both core and elective programs. The flagship of the fleet is the 224-foot training ship, KINGS POINTER. The vessel gets underway for routine training throughout the week, and takes part in weekend and weeklong training cruises along the East Coast.

In addition to the KINGS POINTER, the waterfront operates a 65-foot former USCG Icebreaker for professional training and a fleet of Rigid Inflatable Boats (RIBs) for a Fast Rescue Boat course, offered as an elective to upperclassmen with such interest.

In the extracurricular arena, the Varsity Intercollegiate Sailing Team is the most decorated sport at the Academy. With 15 North American Collegiate Championship titles won, 42 sailors named to the All-America Sailing Team and the only school to have 6 team members named as Collegiate Sailor of Year, Kings Point sailors are successful competitors, including alumni who have gone on to win National and World Championships and one Olympic Silver medal. The Academy fields teams in seven sailing disciplines: freshmen coed, single-handed men and women and double-handed women and coed, coed sloops and coed team racing. The USMMA competes against nearly 300 college varsity and club teams throughout the United States, in seven regions, and is perennially ranked in the top 20 teams in the nation as published in Sailing World Magazine.

The largest waterfront team is the Varsity Offshore Sailing Team. Midshipmen regularly compete in intercollegiate offshore events, day and overnight open races from Annapolis, MD to Newport, RI. During summer break, the team also completes in such high-profile events as Block Island Race Week, the Newport to Bermuda Race, the Halifax Race and NYYC Race Week.

The Offshore Sailing Team completes with ALCHEMY and HERCULES, two of the largest and fastest yachts in the centennial Newport to Bermuda Race. They recently smashed the elapsed-time record in the Around Long Island Regatta on ALCHEMY, and won the Service Academy trophy at the Farr 40 World Championship.

The Academy also offers Junior Varsity, recreational and instructional sailing programs during the fall, spring and summer months. The Kings Point fleet is comprised of keelboats ranging from 20 to 25-feet in length. The fleet is primarily used for the US SAILING Basic Keelboat instructional course. Once certified, midshipmen can sign out a boat for recreational sailing on local waters.

The Windsurfing Club enjoys recreational sailing on local waters. Midshipmen experienced in windsurfing teach new club members how to windsurf, and then make trips for recreation and competition to Montauk Point and Martha’s Vineyard each year.

For midshipmen interested in competitive rowing, the Kings Point Varsity Rowing Team (Crew) offers a challenging program of headstyle races as well as sprint competition.

The team has a state-of-the-art indoor rowing tank, weight room and Erg machines and four new carbon fiber four- and eight-person shells. Competing in novice, lightweight and women's regional events, the team annually travels to regattas such as the Head of the Charles and the Dad Vail National Championship.

The USMMA Power Squadron provides a direct supplement to the professional training in the educational programs. Ship handling, navigation and engineering skills are honed as the Power Squadron gets underway for training daily. The flagship of the fleet is the 75-foot MARINER. The workhorse of the fleet is the 65-foot former USCG Icebreaker tug GROWLER. Several smaller vessels serve as recreational and fishing vessels for the program. Each vessel is manned, maintained and commanded by midshipmen who get underway each weekend for training, goodwill and VIP cruises, fishing and program support throughout the region.

A club was recently formed for water-ski and wakeboard enthusiasts at the Academy. The club can be seen on any warm, windless day performing their stunts and instructing new members being towed behind BIG AIR, the club's 19-foot Celebrity ski boat.

Extracurricular Clubs and Activities

Midshipmen clubs and activities number nearly 30 and provide students the opportunity to expand their interests in regimental, professional, spiritual and personal areas of development. Among the many choices for membership are the Drill Team; the Fencing Club; the National Eagle Scouts; and the Debate Team. Other choices abound.

Land Hall, the student center, is the heart of the activities program and provides space for midshipmen to gather and pursue their interests. A Midshipmen Council, composed of elected students, midshipman officers and volunteers, helps plan activities both on and off the campus for the regiment. There is a full program of social events, dances, dinners and current movies. On campus for midshipmen recreation is a game room with electronic games billiards, table tennis and televisions.

Students with a literary bent participate in Academy publications, which include **Hear This**, the student newspaper; and **Midships,** the award-winning yearbook.

The Academy also has campus chapters of the Society of Naval Architects and Marine Engineers; the Council of Mater Mariners; and the Society of Women Engineers, among others, to supplement the academic and professional interests of midshipmen.

Musical Activities

The Regimental Band and Fanfare Trumpet Team, along with the Mariners Chorus and Chapel Choir, serve as the Academy's "musical ambassadors." Members of the Regimental Band live together in their own midshipman company.

The nationally-acclaimed band, which has made several recordings, plays for the morning colors ceremony. It has also performed at the Cotton Bowl, in Presidential Inaugural Parades, the Macy's Thanksgiving Day Parade, at Madison Square Garden and aboard the passenger ship QE2! Within the Band are a Pep Band, Stage Band and Jazz Ensemble.

The Mariners Chorus has sung with John Williams and the Boston Pops for the Statue of Liberty Centennial Concert and has appeared on television. Both the Chorus and the Chapel Choir perform at off-campus events.

While the Academy does not have a string orchestra, midshipmen who play string instruments are able to perform with the Great Neck Symphony Orchestra, an outstanding local community organization.

Cultural Activities

The Academy is connected to New York City—about 20 miles away—by excellent train and bus service. Most midshipmen master getting around Manhattan by the time they graduate. New York City offers unparalleled cultural amenities to students who are curious and willing to explore, and many of these resources can be enjoyed at very little expense. Popular music, theater, symphonies, operas, dance, ethnic neighborhoods, and museums—the list of things to do and see goes on and on.

The Academy, through its Arts and World Affairs Program, funds student-organized excursions to cultural events in New York City and other nearby locations. Every year, blocks

of tickets to leading Broadway shows are made available so that midshipmen may attend such events in groups. Other types of trips to Manhattan, as well as other cultural initiatives, are also supported.

The Museum

The American Merchant Marine Museum at the Academy allows midshipmen to see first hand our nation's rich maritime heritage. The museum's focus is the merchant marine from the beginning of steam propulsion to present day operations. Located in Barstow House on the Academy's McNulty Campus, the museum welcomes thousands of visitors each year.

Spiritual Life

Participation in religious activities and attendance at chapel services is voluntary, left to the needs and desires of the individual midshipman. The U.S. Merchant Marine Memorial Chapel, built by public subscription as a tribute to the officers and men of the merchant marine who lost their lives in the service of the nation, serves all faiths.

Chaplains are available to assist midshipmen with their spiritual and personal needs. The Protestant and Catholic programs include weekly Sunday services, a daily Catholic mass, Bible studies and social events. Other opportunities for spiritual growth include retreats, service projects, religious study pro- grams, and sacramental preparation classes.

Jewish and Latter-Day Saint midshipmen following their indoctrination period, can participate in worship with local area congregations, and are offered opportunities to attend special holiday observances.

Midshipmen of other faiths requiring special arrangements to attend a house of worship of their choice may obtain assistance from one of the chaplains.

Drug and Alcohol Policy

The Academy will not tolerate the use of illegal drugs or the abuse of alcohol by its midshipmen. Students who are found in violation of the Academy's drug and alcohol policy face serious disciplinary action.

Each appointee to the Academy receives a urine toxicology screen during indoctrination. The Department of Health Services also conducts mandatory toxicology screening of midshipmen before sea year assignment; prior to graduation as a prerequisite for licensing in the U.S. Coast Guard and commissioning in the U.S. Armed Forces; and whenever there is a reasonable suspicion that a student has used illegal substances. Additionally, the Office of Commandant conducts random urine toxicology screens of the Regiment during each school year. The Office of Commandant may also require midshipmen suspected of alcohol misuse to undergo a breath alcohol test (Breathalyzer).

The Office of Commandant will impose disciplinary action for midshipmen who commit alcohol-related violations of Midshipman Regulations. Consumption and possession of alcohol on Academy grounds, for example, will result in severe disciplinary action. In addition, under Superintendent's Instruction 2006-26 (Alcohol Awareness Education and Treatment Policy), midshipmen who commit alcohol-related violations are referred for assessment to the Alcohol Clinical Treatment Team of Midshipman Counseling and Personal Development.

Detailed instruction and information about the potential personal and professional consequences of substance use begins for each plebe candidate class upon entrance to the Academy. The relevant policies of the Academy, the U.S. Coast Guard, the U.S. Armed Forces and the maritime industry are also reviewed. Since a current working knowledge of these policies is crucial to a midshipman's success at the Academy and thereafter, additional training sessions are held regularly throughout the midshipman's four years at the Academy. Midshipman Counseling and Personal Development offers an ongoing variety of educational, treatment and counseling services to assist midshipmen in making decisions that maximize their opportunity to succeed.

As a prerequisite for appointment as Midshipman, Merchant Marine Reserve (MMR), U.S. Naval Reserve (USNR), all students who are U.S. citizens are required to read and initial a statement of understanding which out- lines U.S. Navy policy regarding drug and alcohol use and misuse, and the consequences for violating the policy.

Tattoo and Body Piercing Policy

In our current culture, tattoos, brands and body piercings are becoming more prevalent. The Academy has established a policy to address this issue, outlining what is acceptable and unacceptable in this area. The purpose of the policy is to ensure that mid- shipmen uphold a professional image when in uniform and avoid the serious health risks and long term consequences associated with a tattoo, brand or body piercing.

The following tattoos and brands are prohibited: Any that are on the face, neck or head; any that are prejudicial to good order or discipline, including those with offensive language, patently racist or extremist symbols, or sexually explicit depictions; and any that are partly or fully visible when wearing the Summer White uniform.

Tattoos or brands falling into one of the above categories must be removed within six months of identification at the expense of the individual student. Entering plebe candidates

Identified with a prohibited tattoo or brand will have until December 1 of plebe year to have the tattoo or brand removed, or face disenrollment.

The Academy's policy regarding body piercing prohibits the following: body piercing and jewelry on the tongue, or in areas that interfere with a student's duties, or that could lead to medical complications.

While in uniform, female midshipmen are permitted to wear single post earrings, one per ear on the earlobe. The earring must be gold, a 6mm (approximately 1/4") ball, plain with brushed matte finish. Small single pearl earrings are authorized for wear with Dinner and Formal Dress uniforms.

With the exception of earrings authorized for female midshipmen, neither male nor female students are permitted to have body piercings with associated jewelry that are visible when wearing the Summer White uniform or an athletic uniform when engaged in athletic competition.

Motor Vehicles

All upperclass midshipmen may own and use automobiles while in residence at the Academy. However, because of limited parking facilities on campus, only a small number of first classmen may keep their automobiles in a designated area of the Academy at their own risk. This is considered a privilege and is granted subject to compliance with Academy regulations. Upperclass students who are not authorized to use Academy parking facilities must make private garage arrangements since a local town ordinance prohibits overnight street parking.

Admissions

Each year, the Academy selects approximately 275 to 300 young men and women for entry into the plebe class. They come from every state of the Union, as well as from backgrounds reflecting every facet of American life. The Academy encourages diversity and recognizes the value of a Regiment of Midshipmen representing all races, colors, creeds and ethnic backgrounds found in this nation. Students from minority groups are strongly encouraged to apply for admission.

Certain general eligibility requirements for admission to the Academy do exist. Candidates must be of good moral character. They must be at least 17 years of age and must not have passed their 25th birthday before July 1 in the year of entrance. They must be citizens of the United States either by birth or naturalization, except for a limited number of international midshipmen specially authorized by Congress. Candidates must also meet the physical, security and character requirements necessary for appointment as U.S. Navy Reserve, Merchant Marine Reserve midshipmen. Candidates must obtain a Congressional nomination to the Academy; submit a completed application; and qualify scholastically. The Admissions Office evaluates each candidate's high school record and class rank, SAT or ACT standardized scores, recommendations from school officials, history of extracurricular activities, ability to pass a Candidate Fitness Assessment (CFA), and other evidence of character, leadership and potential for academic achievement. Admission to the Academy is based on all the above factors. The application deadline is March 1 (February 1 for international students).

Definition of Terms

The terminology listed below will be used frequently in this section on admission to the Academy. Candidates should familiarize themselves with these definitions:

Nominating Authority: A member of the U.S. Congress (House of Representatives or Senate). Each Representative and Senator may nominate 10 candidates to the Academy each year. The President and Vice President are **not** nominating authorities for the Academy. In addition, the U.S. Representative for Guam, the Virgin Islands, the District of Columbia, the Commonwealth of Puerto Rico, and American Samoa; and the governors of the Northern Mariana Islands and the Marshall Islands, may nominate 10 candidates annually.

Applicant: A man or woman applying to a member of Congress for a nomination to the U.S. Merchant Marine Academy.

Nomination: Submission by a nominating authority of an applicant's name as a nominee for consideration for appointment to the U.S. Merchant Marine Academy. The applicant must be a resident of the same state or territory as the nominating authority. Students should apply to the Academy at the same time that their nomination request is being evaluated.

Candidate: A man or woman who has applied to the Academy and has been designated as under consideration for admission.

Qualified Candidate: A candidate who meets the minimum requirements on the standardized entrance examinations and fulfills the other minimum criteria for admission consideration.

Principal Candidate: A candidate who has been found scholastically qualified and who will be admitted to the Academy contingent upon the completion of prescribed medical, security and midshipman, USNR, MMR program requirements.

Alternate Candidate: A scholastically qualified candidate who would replace

principal candidates who decline or fail to qualify for a final appointment, or who do not meet the requirements of the midshipman, USNR, MMR program.

Remedial: Term used to define the physical conditions requiring correction and/or compliance determined necessary by the U.S. Department of Defense Medical Examination Review Board (DODMERB) in order to be medically qualified. (Example: Removal of impacted wisdom teeth.)

Scholastic Requirements

Candidates should pursue studies in high school that will prepare them for the Academy's rigorous program. The quality of work is important. Eighty-two percent of the Class of 2011 ranked in the top 40 percent of their high school class.

To be appointed to the Academy, candidates must have satisfactorily completed their high school education at an accredited secondary school or its equivalent. They must have earned at least 18 units of credit. Four of these credit units must be in English; three units in mathematics (from algebra, geometry and trigonometry); and one unit in physics or chemistry with a laboratory. These requirements are minimal. The Academy strongly recommends that candidates take four years of mathematics and both physics and chemistry. Courses in mechanical drawing and machine shop are also desirable. Successful completion of pre-calculus or calculus satisfies the trigonometry requirement.

By March 1 of the year in which they are seeking admission, candidates must submit evidence with their official application showing the completion of all academic requirements. All required courses must be completed by June 15 or by the date of graduation from high school. Time extensions will not be granted.

Testing

All candidates are required to take either the standardized College Board's Scholastic Assessment Test (SAT I) or the standardized American College Testing Program's test (ACT) on scheduled dates at convenient testing centers throughout the country. Required testing must be completed by the first test date of the year in which admission is sought, unless permission is requested and received, in writing, from the Academy's director of admissions. All tests should be taken within 16 months prior to the month of enrollment. The minimum standardized SAT I or standardized ACT qualifying scores for admission will be determined by the Academy for each entering class. The Academy does not accept the non-standard or untimed administration of the SAT or ACT.

It is the candidate's responsibility to register for the examinations. Registration instructions are contained in information bulletins available at no cost to most secondary schools. Members of the U.S. Armed Forces should find copies available in their units' education offices. Bulletins may also be obtained by writing to:

College Board
P.O. Box 592
Princeton, NJ 08541
or

College Board
P.O. Box 1025
Berkeley, CA 94701
or

American College Testing Program
P.O. Box 168
Iowa City, IA 52240

Testing and registration information is also available through the Internet at **www.collegeboard.com** (for the College Board's SAT) or **www.act.org** (for the American College Testing Program).

In the event that you have any questions concerning test requirements, or if you are unable to meet the established examination deadline date, contact the Academy's Admissions Office.

Candidates must request the testing agency to submit their test scores to the U.S. Merchant Marine Academy, Kings Point, New York 11024-1699. The cost of the examination must be borne by the individual candidate. The Academy's SAT code number is 2923; its ACT code number is 2974.

Nominations

Candidates must be nominated to the Academy by a U.S. Representative or Senator (see

previous definition). Candidates may only be nominated by qualified authorities from their state or territory.

Nominating authorities select their nominees by any methods they wish, which may include a screening interview. This screening may be administered as early as July of the year before appointment is sought. Nominees must reside in the state or territory that the nominating official represents, or have a "home of residence" in the state or territory represented by the nominating official.

A candidate should apply for a nomination early. Some nominating authorities establish deadline dates for the receipt of nomination requests in order to allow adequate time for processing and evaluating requests. The ideal time for a candidate to apply for a nomination is in May of junior year in high school.

Nominating authorities must submit the names of their nominees to the Academy by January 31 of the school year in which admission to the Academy is sought.

You may request a nomination as a candidate for admission to the Academy by writing a letter and addressing it to an appropriate nominating authority. Be sure your full name is typed or printed legibly. A typewritten letter is preferred.

(Sample Letter)

Date _____

The Honorable _____ or
House of Representatives
Washington, D.C. 20515

The Honorable _____
United States Senate
Washington, D.C. 20510

Dear _____:
It is my desire to attend the United States Merchant Marine Academy. I respectfully request that I be considered one of your nominees for the class entering the Academy in the Summer of 20 _____.
The following personal data are provided for your information:

Full name _____
(Printed as recorded on birth certificate.)

Name of parents _____
Address *(include ZIP code and phone number)*

Permanent Address | **Temporary Mailing Address (if different)**

_____ | _____
_____ | _____
_____ | _____

My date of birth: _____ Place of birth: _____

Social Security number: _____

High School attended: _____
(Name and address)

My approximate standing is _____ in a class of _____

I have requested that a high school transcript of my work completed to date be forwarded to your office as soon as possible. I have also listed on the reverse side of this letter my results on the American College Testing (ACT) and/or College Board (SAT) examinations.
I have been active in high school extracurricular activities as indicated on the reverse side.
I would greatly appreciate your consideration of my request for one of your nominations.

Very respectfully,

(Signature)

Visiting the Academy

Visits to the Academy are available and strongly encouraged for prospective midshipmen. There are two types of visits available while Academy classes are in session.

Day Visit - *For high school juniors and seniors only.* Includes an admissions interview and an escorted campus tour. Students must arrive at the Admissions Office no later than 10:00 a.m. At that time, they may meet with an admission recruiter who will provide information and answer questions. At 11:20 a.m., visiting students are paired with

midshipman escorts for lunch with the Regiment of Midshipmen in Delano Hall. They then attend afternoon classes and activities with their escorts and finish at approximately 4 p.m.

Overnight Visit - *For high school juniors and seniors only.* This consists of an interview and accompanied overnight stay. Students must arrive at the Admissions Office by 3:00 p.m. At that time, they may meet with an admissions recruiter who will provide information and answer questions. At 4 p.m., visiting students are paired with their midshipman escorts. They will attend regular afternoon and early evening activities, such as sports practices and club meetings. Visiting students will have dinner with the Regiment of Midshipmen in Delano Hall and will stay overnight in the midshipman escort's room. The following morning, they will have breakfast in Delano Hall, attend morning classes with their escort and join the entire Regiment of Midshipmen for lunch in the dining hall. They will conclude at approximately 12:30 p.m.

Parents and family members who arrive with the student are invited to participate in the admissions interview. However, only the visiting student may attend meals and classes. Parents and family members may continue to tour the Academy on their own. Meals are available in the Seafarer Canteen. Overnight accommodations can be arranged at local hotels.

There are several periods during the year when escorted visits to the Academy are not available (although a meeting and interview with an admissions representatives may be possible):

- The weeks immediately before and after trimester final exams.
- The week of trimester break and the first week after midshipmen return from trimester break.
- The weeks of the winter holiday break.
- The period from the Friday before Memorial Day weekend until the middle of August.
- Several "blackout" dates during the course of the academic year due to special campus events.

During the periods when escorted visits are not available, students may still arrange an "Interview Only" with an admissions officer. Note that this option is not available during the period in July when Indoctrination of incoming freshmen (plebes) is underway. The Academy campus is closed to visitors during Indoctrination.

Students who are high school sophomores, or younger, may visit the academy for an "Interview Only" session, but may not participate in the Day or Overnight Visit programs until they have become high school juniors. Students interested in visiting the Academy should call, toll free, **1-866-546-4778**, or **516-726-5644 (x5643** and **x5646)** to schedule an appointment. All visits must be scheduled at least one week in advance.

International Students

The Code of Federal Regulations (CFR) permits the appointment of midshipmen from nations other than the United States. By law, no more than 30 international students may attend the Academy at any one time.

International students interested in applying to the Academy must contact the Admissions Office to obtain an International Application Package. They may **not** use the on-line application found on the Academy's website.

To obtain an International Application Package, send an e-mail to: **admissions@usmma.edu**, or write: Admissions Office, U.S. Merchant Marine Academy, 300 Steamboat Road, Kings Point, NY 11024-1699, USA, Att: International Applications.

All international applicants must take either the standardized SAT or the ACT. Applicants for whom English is not a native language must also take the Test of English as a Foreign Language (TOEFL) examination.

All completed International Applications must be received no later than February 1 of the year of enrolling at the Academy. In order for an application to be complete, the Academy must receive Parts I, II and III of the application; a biographical essay; all high school/secondary school (pre-university) and college/university transcripts (in English); letters of recommendation; your passing (at or

above minimum) SAT and/or ACT scores; and your passing (at or above minimum) TOEFL scores (if required). If your original transcript is not in English, you must also provide a certified translation of your transcript in English, with your other application paperwork.

If the Academy does not receive all of the above information by February 1, the application for admission will be denied.

All International Applicants must also supply the Admissions Office with the results of a full medical examination, in English, or accompanied by a certified English translation. All Academy midshipmen, as required by regulation, must be physically qualified to sit for the U.S. Coast Guard-administered merchant marine officer license examination, before completing their studies and graduating from the Academy. Medical disqualification is a cause for rejection of admission to the Academy.

The United States does not offer any scholarships, grants or other financial assistance or aid to international students for attending the Academy. All expenses are the student's responsibility. Their ability to pay for an Academy education must be demonstrated in order for them to receive an appointment to the Academy.

The Academy does provide enrolled international students with the same required uniforms, textbooks and transportation allowances that U.S. citizen midshipmen receive.

Security Clearance

In order to receive a commission at graduation as an officer in a reserve component of the U.S. Armed Forces, you will be required to complete an electronic form for a security clearance upon enrollment at the Academy. All questions must be answered accurately and truthfully so that your clearance is not delayed. To verify your place of birth, you will be asked to submit a certified copy of your birth certificate. Please address any inquiries about the security clearance to the Admissions Office. (Note: Effective September 28, 2008, graduates may need to comply with security clearance requirements necessary to obtain Transportation Worker Identity Cards. Check with the Admissions Office for further information.)

Dual Citizenship

The possession and use of a foreign passport in preference to a U.S. passport may raise doubts about your allegiance to the United States. A security clearance will be denied or revoked unless the foreign passport is surrendered.

Anyone indicating the possession of a foreign passport will be instructed to return that document to the appropriate country's embassy or consulate, requesting a return endorsement, which is required for the security clearance determination.

Anyone having dual U.S./foreign citizenship, without possessing a foreign passport of another country, most abrogate that country's citizenship.

Failure to comply with these instructions will result in a denial of a security clearance, of entry to the U.S. Navy Reserve or another Armed Forces reserve component, and in disenrollment from the Academy.

Applications

You should request an application and complete it prior to the March 1 application deadline. You are strongly encouraged to complete this application early even before receiving a nomination from your nominating authority. Early filing of an application will expedite processing your admission file.

Apply On-Line

U.S. candidates for admission to the Academy may apply on-line via the Internet. Go to the Academy's website, **www.usmma.edu**. Click on "Admissions" and then click on "Apply On-Line."

Candidate Reply Date

The Academy ascribes to the universal candidate reply date of May 1. All principal, and conditional appointees, and those designated as alternates, are required to notify the Academy either of accepting or declining their status by that date.

Medical Requirements

A candidate for admission to the Academy must meet the medical requirements for appointment as a U.S. Naval Reserve midshipman. Medical examinations are

conducted by a service academy examining facility designated by the U.S. Department of Defense Medical Examination Review Board (DoDMERB), and a final decision on a candidate's medical qualifications is made by that board. All candidates must be medically qualified for appointment by DoDMERB by April 16 of the year of entrance.

It is the candidate's responsibility to pursue medical processing to its conclusion in a timely manner. If, for any reason, an individual does not receive written or telephone notification from DoDMERB approximately 30 days after submitting an application to the Academy's Admission Office, he or she must contact DoDMERB's Scheduling Department at 1-800 -841-2706 to obtain a medical appointment date. Please notify DoDMERB if you have completed a physical examination for any other federal service academy.

Non-Swimmers

It is recommended applicants learn to swim before entering the Academy Fourth classmen must demonstrate the capability of swimming 100 yards using two basic strokes and 15 minutes of flotation. This requirement must be fulfilled prior to a midshipman's first shipboard training period.

Appointments

Candidates are appointed competitively by the Academy for the vacancies allocated to their state or territory area. Each state has an assigned number of appointees proportionate to its representation in Congress. After the Academy has selected its principal appointees, the remaining qualified candidates will be designated as alternates, to be appointed in order of merit should openings occur within their respective states.

In the event that a state fails to satisfy its allotment, appointments to fill the unfilled vacancies are determined from the national list of alternates, ranked in order of merit as described in the previous paragraph.

A candidate's competitive standing is established by test scores on the standardized SAT I or ACT examination, high school class rank, academic record, evidence of leadership potential, interest in a maritime career, and other factors that are considered effective indicators of motivation and probable completion of training. Bonus points are awarded to candidates with at least six months of sea service aboard merchant or naval vessels.

Rolling Admission

Highly qualified candidates with a completed application (Parts I, II, III, essay, high school transcript and senior courses in progress) will receive early notification of their appointment after a thorough evaluation of their qualifications. All other candidates will be notified of their status no later than April of the year in which they seek admission. Late appointment may be offered after 1 May in order to fulfill the incoming class size requirement.

Orientation/Briefing Day for Principal Candidates

All principal candidates are invited to visit the Academy on a selected date in mid-April for a briefing program. Candidates have an opportunity to meet and discuss the Academy's program with midshipmen, faculty and administrative personnel. Attendance is strictly voluntary. Travel arrangements and expenses must be borne by the candidates.

Armed Forces Enlisted Personnel

An individual who enters the Academy in an enlisted status in a component of the U.S. Armed Forces or U.S. Coast Guard will not have their existing military service obligation (MSO) terminated. However, attendance at the Academy may or may not be credited towards fulfillment of an MSO, depending on the circumstances of each case and the military department involved. Disposition of enlisted members of the U.S. Armed Forces who are admitted to the Academy and accept appointment as Midshipman, MMR, USNR, is addressed in Title 10 United States Code, Section 516, as well as in applicable service regulations. An enlisted member of the U.S. Armed Forces seeking admission to the Academy should obtain additional details and guidance from their command personnel office or career counselor.

Summary

Here, in summary, are the steps necessary for admission to the U.S. Merchant Marine Academy:

1. Request a nomination by contacting a U.S. Representative or Senator, preferably in May of your high school junior year.
2. Request, complete and return to the Academy your application as soon as possible, along with your high school transcript and any letters of recommendations. This material must reach the Academy no later then March 1 of your high school senior year. Applications completed early receive early attention.
3. You must pass a physical and medical examination administered by a central medical review board once the Academy receives your completed application. You must be physically and medically qualified by DoDMERB by June 1.
4. You must take either the College Board's standardized SAT I or the American College Testing Program's standardized ACT examination no later than the first test date of the year you are seeking admission. The Academy does not accept the non-standard or untimed administration of the SAT or ACT.
5. On or before April 10, if your application was complete and received by March 1, you will be notified either of your selection as a principal, conditional or alternate candidate, or of your failure to meet the requirements.
6. Alternate candidates are subsequently notified if and when they are designated as principal candidates.
7. For a full explanation of Academy admissions requirements and candidate terminology, please refer to the previous pages in this section.
8. The plebe class enters the Academy in early July.

Additional information may be obtained from:

Admissions Office
U.S. Merchant Marine Academy
300 Steamboat Road
Kings Point, New York 11024-1699
Telephone: (516) 726-5644 (x5643 or x5646)
Toll Free Number: 1-866-546-4778
E-mail: **admissions@usmma.edu**
FAX: (516) 773-5390
Website: https://www.usmma.edu

Expenses and Financial Aid

The major cost of attending the U.S. Merchant Marine Academy is borne by the Federal Government. There is no tuition charged. Midshipmen are provided with comfortable quarters and well-balanced meals. Basic medical and dental care while on board is provided through the Academy Patten Health Services Clinic.

Prescribed initial issues of uniforms and textbooks is provided without charge to midshipmen. In order to assure uniformity of appearance, quality and cost, all required items are purchased by the Academy with specifications approved by the Commandant of Midshipmen or the Academic Dean. In individual cases where additional textbooks are considered desirable, it is the responsibility of the midshipman to defray such costs. In addition, each midshipman, when entering the Academy, is required to purchase or possess an electronic scientific hand-held calculator with graphics display. Each incoming midshipman is also required to purchase a personal computer from the Academy. Details are furnished when applicants are notified of acceptance.

Midshipman Fees

All midshipmen are required to pay for mandatory educational and personal services and supplies not provided by the Federal Government. All students are responsible for the payment of Midshipman Fees. Failure to pay the required fees by the published due dates may jeopardize enrollment into the entering class, and may result in disciplinary action including suspension and or disenrollment from the Academy.

Services

This fee includes: **Barber** services (male and female); **Tailor** services; and access to **Laundry** full and self-service facilities**.**

Medical

This fee includes: **Health Insurance Program**-Supplemental accident insurance program.

Equipment (Plebe Year Only)

This fee includes: Purchase of a personal laptop computer with four year warranty coverage, next business day on-site repairs, and loss prevention service.

Total Midshipman Fees - Plebe (Freshman) Year

The charges for a member of the Class of 2015 are:

Services	$1,020.00
Medical	$85.00
Equipment	$1,800.00
Total	$2,905.00

Payment of Midshipman Charges may be made on-line at the USMMA web site.

Any check or credit card authorization returned by our bank will be subject to a return payment fee of $35.00. Midshipmen failing to pay their fees by the published payment due dates for each trimester will be assessed a late-payment penalty of $50.00 to reflect additional processing costs. In addition, failure to pay the required fees by the due dates may jeopardize enrollment into the entering class, and may result in disciplinary action including suspension and or disenrollment from the Academy. Midshipmen failing to pay their fees within 30 days of the original due date will be further assessed a Finance Charge of 2 percent per month on all outstanding balances. The Academy reserves the right to decline offering any new services to a midshipman whose account is delinquent. The above fees apply to the plebe class only.

Total Midshipman Fees- All Classes/Splits/Majors

On the basis of current Midshipman fee rates for the most recent (July 1, 2011-June 30, 2012) academic year, the total student charges for the four-year program (depending on major) are:

Plebe Class (Freshman)	.....$2905.00
Third Class (Sophomore)	.....$765.00
Second Class (Junior)	.....$765.00
First Class (Senior)	.....$1,380.00

Note: Actual Midshipman Fee rates generally increase in future academic years.

Refunds: Indoctrination Period

A full refund is authorized if a plebe candidate declines appointment and does not report to the Academy as ordered. Separation during the indoctrination period will result in full refund of the Activity Fee and the Equipment Fee for computer purchase; a partial refund for Services and Supplies Fees is authorized depending on the actual date of separation from the Academy. For candidates who expect to receive federal financial assistance, please take notice that the Academy follows the federal refund procedures.

Regular Academic Year

The Activity and Service fees are not refundable for separations after the first day of each trimester. Fees for Midshipman Supplies (Plebe Personal and Educational Issues) are refundable only to the extent that such issues have not yet been completed. The Equipment Fee (personal notebook computer) is not refundable. The computer, once purchased, becomes the midshipman's property.

All fees for midshipmen awaiting academic or other Board review decisions in the period between terms are refundable to the extent that services and supplies have not been consumed.

Issue items for which the U.S. Government has paid can never be exchanged for cash or credit. Refund checks, when applicable, will be mailed to the midshipman's home address on record (unless the midshipman specifies another address in writing) within 30 days after separation from the Academy.

Payment Deadlines

Incoming plebes are responsible for payment of first academic trimester fees prior to reporting to the Academy for indoctrination. For returning members of the upper classes, the fee deadline is on or before the first day of regular classes for each trimester in residence. Failure to pay the required fee by the deadline may result in the refusal of enrollment, suspension, or disenrollment.

Pay

Midshipmen, while assigned to sea for the shipboard training portion of the curriculum, are provided with quarters, meals and medical care. They are paid $974.40 per month (starting June 15, 2011) by the shipping companies, less certain minor expenses varying with each company. Midshipmen do **not** receive wages while in residence at the Academy.

Spending money and transportation costs during liberty and leave periods are considered a midshipman's own personal expense. Losses incurred by such acts as willful damage, breakage or mischief may be charged to a midshipman.

Official Travel

Midshipmen are reimbursed for official travel at the Federal Government-authorized mileage rate, or at the cost of traveling by common carrier at the government rate, whichever is less.

Student Loans, Grants, Scholarships

The Academy recognizes that some candidates may require financial assistance in order to meet required midshipman costs. Since the Academy does not offer direct financial aid, a limited number of hardship deferrals are available to prospective plebe candidates with demonstrated financial need. Approved candidates are allowed to defer payment of their midshipman fees pending receipt of their Federal Family Educational Loan Program and Pell Grant proceeds. Any midshipmen who have duly completed an application for Financial Aid Deferral (and were granted a hardship deferral) will be responsible for any amounts not covered by their financial aid.

Candidates are urged to act early and take the necessary steps to obtain financial assistance through the Federal Student Aid

program by filling out the Free Application for Federal Student Aid (FAFSA) starting January 1. The loans offered are the Federal Stafford Loan (student loan) and the Parent Loan for Undergraduate Students (PLUS).

Candidates are strongly encouraged to research the availability of these loans during the fall of their senior year in high school and to seek advice from high school guidance counselors. Moreover, the candidate or the candidate's parents should communicate with the Academy's Financial Aid Office in order to receive proper instructions and forms for an acceptable financial aid application package.

Based on the results of the FAFSA evaluation by the U.S. Department of Education, certain very needy midshipmen may be deemed eligible to receive Federal Pell Grant funds. In order to be considered for a Pell Grant, students must request financial assistance and submit a FAFSA.

Students who are eligible for the Federal Pell Grant program may also be eligible for the Academic Competitiveness Grant (ACG). This grant is for students who are enrolled full-time in their first and second academic years and who have graduated from a rigorous high school program of study. Students in their third or fourth academic year may also be eligible for a National Science and Mathematics Access to Retain Talent Grant (SMART). SMART grants are awarded to students who are eligible for a Pell grant, and who are majoring in science, technology, or engineering, and who have at least a 3.0 grade point average.

It is the policy of the Academy's Financial Aid Office to report to the U.S. Department of Education each midshipman's name, address and social security number through the National Student Loan Database System (NSLDS).

Outside scholarships and grants (from such organizations as the Lions Club, NAACP and other community service and educational organizations) may be used to offset a midshipman's fees and expenses. Students, therefore, are encouraged to apply for any scholar- ships and grants for which they may be eligible. Scholarship award checks should be sent to the Academy's Financial Aid Office.

Banking Facilities

A banking facility, the Navy Federal Credit Union, is located at the Academy. Spending money may be deposited there in a special checking or savings account which does not require a minimum balance, so that the mid- shipman will have ready access to funds while avoiding the risk of carrying cash in any quantity. There is an ATM located on campus.

Service Obligation After Graduation

When you graduate from the U.S Merchant Marine Academy, you will have achieved a milestone in your academic career. Since the Federal government has a substantial investment in your education, you will be required to fulfill the terms of a service obligation after graduation. This obligation is set forth in this section of the catalog.

The merchant marine is a component of the Nation's defense. It is the Federal Government's intention to have a sufficient number of highly trained licensed officers available to operate American flag merchant vessels in both peace and war. Your service in the merchant marine is the vehicle through which this goal is achieved.

The Law

With the passage of the Maritime Education and Training Act of 1980 (P.L. 96-453), Congress imposed mandatory service obligations, outlined in this section, for USMMA graduates. The obligations relate to a graduate's employment, maintenance of a U.S. Coast Guard license, commissioning in the reserve forces of the United States, and reporting compliance to the U.S. Maritime Administration (MARAD).

Graduate Service Obligation

Employment:

A graduate may fulfill the employment obligation portion of his/her service obligation in five ways as follows:

Serve in the foreign and domestic commerce and the national defense of the U.S. for at least five (5) years following graduation as:

1. A merchant marine officer in the U.S. flag fleet;
2. A commissioned officer on active duty in the U.S. Armed Forces or the National Oceanic and Atmospheric Administration (NOAA) Corps;
3. With the federal Government in a maritime-related position that serves the national security interest; or
4. If a determination has been made that no afloat positions are available for you, you may serve ashore in a U.S. maritime-related industry, profession or marine science.

By combination of the services specified above.

Maintenance of Coast Guard License:

Maintain (or upgrade) the license as an officer in the U.S. merchant marine, including all endorsements held at graduation, for six (6) years following graduation.

Service as a Commissioned Officer in the Reserves of the U.S. Armed Forces of the United States:

Apply for and accept, if tendered, an appointment as a commissioned officer in the reserves of the U.S. armed forces for at least eight (8) years following graduation.

Report Compliance to MARAD:

Report to MARAD annually concerning your compliance with the foregoing maritime service obligations, as set forth in the next paragraph.

You are required to complete a service obligation report in each year following your year of graduation to inform MARAD about your compliance with your service obligations. Regardless of the date of your graduation, each graduate must submit a service obligation report from between January 1 and March 1, starting the first January 1 after graduation and for at least an additional six (6) consecutive years thereafter. Graduates are required to file

reports through to the last report to demonstrate that all obligations have been satisfied. If a graduate completes the service obligations within the six years following graduation, each graduate should only have to file a total of seven (7) reports in order to give information on all six (6) years of service obligations.

Service as a Merchant Marine Officer

Unless a graduate serves as an active duty commissioned officer in the U.S. armed forces or in the NOAA Corps or in a maritime-related position with the Federal government serving the national security interests of the United States, he/she must first seek employment in the maritime industry as a licensed officer aboard vessels operating under the U.S. flag. Employment aboard such ships supports the government's objective of providing fully trained merchant marine officers to operate U.S. flag merchant vessels in peace and war.

For service obligation purposes, a year of employment aboard merchant vessels is defined as the median number of days of seafaring employment under Articles achieved by deck or engine officers in the most recent calendar year for which statistics are available. The median number of days required for each year will be posted on MARAD's web-based internet system at:

https://mscs.marad.dot.gov.

Maritime-Related Ashore Employment Option

Graduates who are unable to obtain employment as a licensed officer aboard a U.S.-flag vessel may work in a U.S. maritime-related industry, profession, or marine science. Prior to accepting a position, the graduate must seek a determination from the Maritime Administrator that such U.S.-flag vessel employment is not available. Additionally, the graduate must obtain approval of the position as meeting the maritime-related requirement. Among the areas of employment the Administrator may consider acceptable as U.S. maritime-related employment are positions of operational, management and administrative responsibility with organizations or maritime-related fields, such as:

- Steamship companies
- Stevedoring companies
- Vessel chartering and brokerage operations
- Cargo terminal operations
- Naval architecture
- Shipbuilding and repair
- Municipal and state port authorities
- Port development
- Marine engineering
- Tug and barge companies
- Oil and mineral operations
- State agencies involved in maritime affairs

The foregoing list does not set forth all types of positions, organizations, or fields that may be acceptable to satisfy the service obligation.

Waiver of the Service Obligation

The Federal Government realizes that there may be situations that prevent graduates from fulfilling the requirements of the service obligation contract. Waivers may be granted in cases where there would be undue hardship in the performance of satisfactory maritime service or when it is impossible to perform satisfactory maritime service due to an accident, illness or other justifiable reason as determined by the Maritime Administrator.

Deferment of the Service Obligation

The Maritime Administration may grant, upon request, a deferment for a period not to exceed two years of all or part of the service obligation contract. This deferment privilege exists only for graduates considered to have superior academic and conduct records while at the USMMA. Deferments are available only to individuals desiring to enter a marine or maritime-related course of study at an accredited graduate school or to accept a

scholarship of national significance, as determined by the Maritime Administrator, in a non-maritime related field.

Active Military Duty

Active duty as a commissioned officer with the Navy or any other branch of the U.S. armed forces or the NOAA Corps is a way of satisfying the employment portion of the service obligation contract. Graduates of the Academy have an understanding of naval procedures and operations that contribute to our national defense requirement for an adequate merchant marine, and can make a valuable contribution to the U.S. armed forces.

Federal Government Service

A graduate may fulfill the employment portion of the commitment by serving in a full time position with a Federal agency, if that position serves the national security of the United States in a maritime-related area. Positions with the Department of Homeland Security in the maritime sector are one example of acceptable Federal positions.

Navy Reserve Appointment

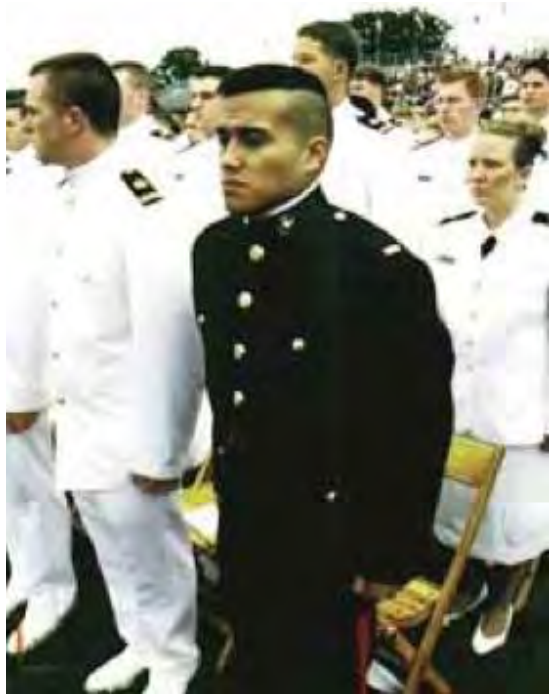
Any U.S. citizen who applies to the Academy also applies for an appointment as Midshipman, Merchant Marine Reserve, U.S. Navy Reserve. Your application will be reviewed by the Office-In-Charge of the Department of Naval Science. To qualify for a midshipman appointment you must have satisfactorily completed the Department of Defense Medical Examination Review Board (DoDMERB) entrance physical. You must also complete an Electronic Personnel Security Questionnaire (EPSQ) prior to reporting to the Academy.

The ESPQ is an honesty and loyalty check required prior to receiving a security clearance. This questionnaire must be honestly and thoroughly completed. Issues that will cause a problem include failure to report an arrest by civil or federal authorities, and possessing a non-U.S. passport, or dual country citizenship. If any of these issues apply, you should contact the Academy's Department of Naval Science for clarification of Navy policy and for guidance on resolving the issue.

In the event that a midshipman fails to display the qualities of leadership, character, and aptitude expected of a prospective commissioned officer in the U.S. Armed Forces, the Naval Service Training Command (NSTC) may terminate the midshipman's appointment. The midshipman is also separated from the Academy is such a case.

Reserve Military Duty

In order to comply with your service obligation you must apply for and accept an appointment as a commissioned officer in the U.S. Navy Reserve, U.S. Coast Guard Reserve, or any other Reserve or National Guard unit of an armed force of the United States. With the recommendation of the Officer-In-Charge, Department of Naval Science, and the Academy superintendent, you will receive your commission at graduation. Although officer appointment applications may be made to any armed force, the majority of graduates will be appointed as ensigns in the Merchant Marine Reserve, U.S. Navy Reserve. After appointment as Ensign, USNR, you must perform satisfactorily in the Navy Reserve for eight years. An individual's requirements and options under this program will vary depending on whether the graduate is working at sea or ashore. Details will be provided by the Naval Science Department either through their course of instruction or upon request.



Breach of Service Obligation

Graduates who breach their service obligation contract may be ordered to active duty in the U.S. armed forces. In lieu of being ordered to active duty, graduates may be required to repay the cost of the education provided by the Federal Government. The Maritime Administration's Office of the Associate Administrator for Policy and International Trade will make a determination of whether a graduate has breached the service obligation. Such decisions may be appealed to the Maritime Administrator.

The Regimental Program

The Regimental Program at the U.S. Merchant Marine Academy will be a vital part of your total educational experience as a midshipman. This program has one aim - to develop superior frontline leaders for the merchant marine fleet, the armed forces and the shoreside maritime and transportation industries.

All midshipman regimental activities and policies are designed to support this goal and to provide you with the experience and training necessary to be successful in your chosen area of endeavor.

Although you will devote the greatest portion of your daily schedule to academic pursuits, you will find that the regimental system also makes demands on your time. These two areas of midshipman life—the academic and the regimental—are highly compatible and together produce the type of graduate which is the Academy's goal.

The four classes of midshipmen bear the same designation used at the other U.S. service academies. Freshmen are called fourth classmen or plebes; sophomores, third classmen; juniors, second classmen; and seniors, first classmen. This terminology is employed throughout this catalog.

The Class System

Fundamental to regimental life is the "class system," a program which assigns responsibilities, duties and privileges to midshipmen based on their seniority. First classmen exercise command of the regiment under the supervision of the Academy's Commandant of Midshipmen and staff. First classmen have opportunities to serve in midshipman officer and squad leader billets. Underclassmen may serve as midshipman petty officers and team leaders, while plebes learn "follower-ship."

The regiment, under the midshipman regimental commander and staff, is divided into two battalions, each under a midshipman battalion commander.

These top-ranking midshipman officers work closely with the Commandant in carrying out policies relating to all facets of midshipman life. They receive practical leadership experience that helps develop self-confidence, improves their understanding of human relations, and instills in them a sense of responsibility. First classmen are granted privileges commensurate with their seniority and responsibility.

Second and third classmen are primarily responsible for assisting the first class in the indoctrination of the fourth class. The upperclassmen ensure that plebes display proper military bearing and practice correct military etiquette. The privileges granted the second and third classes are less than those enjoyed by the first class, but more liberal than those given to plebes. The fourth class year is a period of conditioning for both life at sea and many other undertakings that face midshipmen during their training and, afterward, as graduates. Regimental training is a primary reason why graduates of the Academy are

highly valued by all segments of the maritime industry and the U.S. Armed Forces for their bearing, maturity and ability to get the job done.

Plebe Indoctrination Program

Your experience at the Academy will begin in early July when you report aboard as a "plebe candidate" for a rigorous two-week indoctrination program. During indoctrination, you will undergo an intensive program of regimental training. One of the most important abilities you will learn is to value and budget your time. Your daily indoctrination schedule is rigid and time-consuming, requiring you to perform and accomplish tasks in specified periods.

Plebe year is very demanding. Under the class system, plebes have the greatest number of obligations and the fewest privileges. However, during your first year at the Academy, you will become well versed in the institution's traditions, develop a keen sense of pride and esprit de corps, and adjust to the requirements of the regimental program.

A Midshipman's Daily Schedule

During the academic year, the Monday through Friday daily routine is as follows:

6:00 .....Reveille for fourth classmen
6:30 .....Reveille for upper classmen
6:25-7:20 …….....Breakfast
7:30 …….....Room inspection
7:50 …….....Colors formation
8:00-11:20 …….....Classes
11:30 …….....Lunch formation
12:30-4:50 …….....Classes
5:00-7:00 .....Athletics, extracurricular activities
5:30-7:45 …….....Dinner buffet
8:00-11:30 …….....Study period

Friday afternoons and Saturday mornings are used for regimental parades and inspections, but the remainder of each weekend includes liberty and recreation.

Leave and Liberty

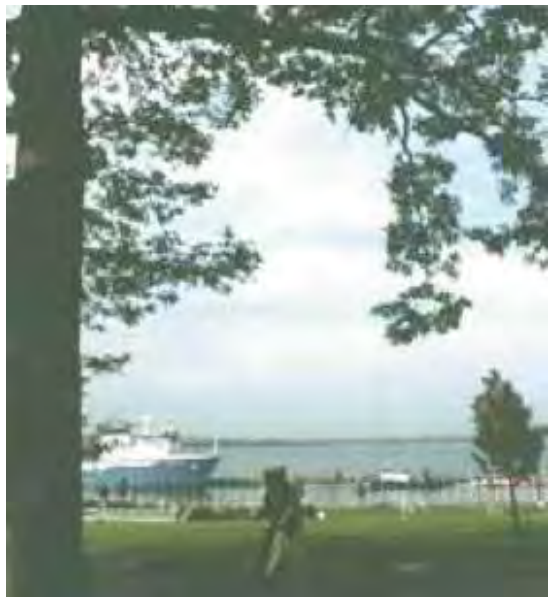
Midshipmen are granted a week of leave (vacation) at the end of the first term, usually in early November. They also receive four days of leave for Thanksgiving, and about two weeks of leave during the Christmas/New Year period. There is one week of spring leave at the end of the second term. This **may** coincide with the Easter and Passover holidays. In addition, upperclassmen receive annual leave during the month of July.

It is important that travel arrangements for leave periods do not extend beyond the beginning or end of those periods

Weekend liberty is available for all four classes. The extent of this liberty is dependent on class, academic and regimental performance, and Academy obligations. Plebes are the only class not usually granted overnight liberty.

In addition to weekend liberty, upperclass midshipmen are provided the opportunity to leave the Academy grounds for dinner a number of times each term, again depending on class, academic and regimental performance, and academy obligations.

The Commandant may grant sick or emergency leave to a midshipman when circumstances warrant, and may also grant special leave or liberty for participation in extracurricular activities and special events.



The Honor Code

The Honor Code at the Academy belongs to the regiment. It is designed to benefit all midshipmen by creating an atmosphere that improves the quality of life and the educational experience at the Academy.

The Honor Code is so simple that it is contained in one sentence: “A midshipman will not lie, cheat or steal.” This statement must be completely accepted and supported by every member of the regiment.

All midshipmen quickly learn that the honor code is designed to protect them in their daily living, to give greater value to their academic degrees, and to instill in them the principles of honesty and integrity so essential to a full and rewarding life.

Information Technology

The maritime industry could not function without the use of information technology. The same holds true for educating future mariners and marine industry professionals. The U.S. Merchant Marine Academy has a proud history of pioneering the use of simulators and simulation software in the engineering, transportation and logistics fields. Simulators and simulation software provide midshipmen the opportunity to acquire skills and knowledge critical to success in the maritime industry.

Many courses throughout the curriculum involve computer applications. Access to computer applications is provided by state-of-the-art laptop computers, computer equipped laboratories and electronic classrooms.

The Department of Information Technology serves as the focal point for planning, funding and operating the information technology infrastructure at the Academy.

Personal Computers

The Academy issues each incoming Plebe an official Academy laptop. The official laptop is the *only* personal computer a midshipman may have on campus. All midshipman laptops are connected to the Academy's network and network resources. The Academy network complies with all federal rules and regulations regarding personal computer and network use. Midshipmen are required to honor these rules and regulations without exception.

Midshipmen are authorized to purchase personal desktop printers at their own expense with printer driver software compatible with the Microsoft Windows 7 Enterprise operating system.

Network

The Academy is a "wired" campus, providing access throughout the dormitories, classrooms, library and public spaces, employing a combination of wired and wireless services. The local area network is based on a fiber-optic backbone and the latest high speed switching fabric available.

The network employs a state-of-the-art blade server and storage area network technologies, and provides access to e-mail, e-learning, file storage, web services, course management systems, public instant messaging networks, Voice Over IP (VoIP) telephony, video-conferencing, and under restricted circumstances, access to public e-mail networks. The Academy maintains a 200 megabit-per-second connection to the Internet.

The Academy is deploying a comprehensive wireless access system to complement access already available in electronic classrooms, the Bland Library, and selected public areas. Approximately 350 new wireless access points will be located in the barracks buildings and throughout the outdoor areas of the Academy's 82 acre campus.

Simulation

In 1975, the U.S. Maritime Administration installed a complex Visual Bridge Shiphandling Simulator at the USMMA for purposes of maritime training and controlled research into seafarer/ship issues. Designated as the Computer Aided Operations Research Facility (CAORF), this simulator was the first marine simulator to use Computer-Generated Imagery and set the standard for all simulators of this kind that followed.

CAORF also hosts part-task and full mission simulators for ship propulsion systems.

The Department of Marine Transportation maintains separate, state-of-the-art navigation laboratories in Bowditch Hall.

The Curriculum

The U.S. Merchant Marine Academy provides a four-year academic program leading to a bachelor of science degree, a license as a merchant marine officer (issued by the U.S. Coast Guard), and an appointment as a commissioned officer in a reserve component of the U.S. Armed Forces (including the Merchant Marine Reserve of the U.S. Navy). The curriculum is demanding, comprehensive and stimulating. It has been carefully designed to ensure that graduates are professionally competent, trained for leadership and responsibility, and well-rounded intellectually.

Midshipmen complete a series of required courses in the core curriculum. These courses provide a nucleus of knowledge in key academic and professional subjects. In the second trimester of the fourth class year, midshipmen begin preparing for a deck or engine license. They spend approximately one year at sea during their course of study at the Academy.

The academic year at the Academy is divided into three trimesters spanning eleven months, from late July to late June. Credit for courses is awarded in semester credit hours.

Core Curriculum

This core curriculum has several components:

A. Mathematics
B. Science
C. English
D. History
E. Comparative Literature and History
F. Naval Science
G. Physical Education and Ship's Medicine
H. Internship
I. Sea Year

Specific courses meeting these requirements are identified later in the course description section.

Major Programs

Midshipmen select their major course of study from among six programs:

A. **Marine Transportation** - A program combining nautical science and maritime business management.
B. **Logistics and Intermodal Transportation** - A program combining nautical science and logistics and intermodal management.
C. **Marine Engineering** - An engineering program focused on shipboard engineering operations.
D. **Marine Engineering Systems** - An engineering program emphasizing marine engineering design. Accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).
E. **Marine Engineering and Shipyard Management** - A program based on a marine engineering core and emphasizing the management of shipyards and other large engineering endeavors. ABET accredited.

License Programs

Midshipmen who have selected the Marine Transportation major or the Logistics and Intermodal Transportation major prepare for the third mate (deck officer) license examination. Marine Engineering, Marine Engineering Systems, and Marine Engineering and Shipyard Management majors prepare for the third assistant engineer (engineering officer) license examination.

Sea-Year Training

After completing the fourth class year in late June, half of the students (designated the B-split) will go to sea for one trimester, return to

campus for the second trimester of their third class year, then return to sea for the third trimester plus the first trimester of their second class year. They will return to campus for the second trimester of the second class year and remain on campus through graduation.

The other half of the class (designated the A-split) will remain in residence for the first trimester of the third class year, will go to sea for the second trimester and return to campus for the third trimester. Then they will go to sea for the second and third trimesters of their second class year, return for the first trimester of their first class year and remain on campus until graduation.

The choice of split, A or B, is made in the first trimester of fourth class year. Preference is granted to those midshipmen participating in varsity athletics or in other programs like the regimental Band.

Elective Courses

Elective courses enhance the midshipman's professional training and their intellectual curiosity. The number of elective courses varies by major.

Graduation Requirements

The minimum requirements for graduation are:

- Pass the required resident and sea project courses. (A four-year course of study is required by 46USC310.52.) A maximum of 5-1/2 years in attendance is permitted to complete degree requirements.
- Earn the number of semester credit hours required by the curriculum in which you are enrolled. Exemptions from courses completed at other accredited institutions or waived due to physical disability may lower the number of credits required for some students.
- Earn a Cumulative Quality Point Average (CQPA) of at least 2.000 for all courses taken.
- Earn a Cumulative Grade Point Average of at least 2.000 for all courses specifically required in your major.
- Pass all required license competencies.
- Pass the examination and receive a USCG third mate or third assistant engineer license. Those ineligible to receive the license (e.g., foreign national, medical disqualification for a duty-related injury) must nevertheless, pass the examination.
- Satisfy all necessary certifications as required by the USCG as specified for your program.
- Pass all required Naval Science courses prescribed by the Department of the Navy.
- Apply for and accept, if offered, an appointment as a commissioned officer in a Reserve Component of the U.S. Armed Forces (including the Merchant Marine Reserve of the U.S. Navy).
- Pass the Academy Physical Fitness Test.

The Program of Study

Prior to entering the academy, applicants are asked to list a tentative major. Near the end of the first trimester, plebes are asked to affirm their initial selection or to choose another major. An extensive orientation pro- gram and introductory professional course- work in the first trimester will assist them in making that decision. All major programs are described in this section.

The courses taken at the Academy following fourth class year will vary greatly depending on the major. The following is a detailed description of the major curricula and the course of study each entails.

The exact sequence of the course offerings in some cases may be modified due to staffing needs.

Marine Transportation Majors

The Department of Marine Transportation offers two majors: Marine Transportation and Technology, and Logistics and Intermodal Transportation. These majors all share a common nautical science and business core.

Nautical science courses prepare mid- shipmen specifically for their shipboard responsibilities and the third mate's license examination. The Nautical Science core also provides broad marine-oriented education to produce a well-trained and informed ship's

officer. This course of study includes general as well as specific maritime subjects which familiarize midshipmen with a ship as a system, its equipment and operation. Also covered are physical, economic, environmental and regulatory concerns. Specifically, midshipmen will study navigation and the rules for collision avoidance, naval architecture, materials handling, shipboard and portside cargo operations, safety of life at sea, pollution control, meteorology and oceanography, and the various domestic and international rules and regulations that govern these activities.

Maritime business courses give midshipmen a broad understanding of management issues and specific skills required for management decision-making. These skills complement the professional education of midshipmen and strengthen their performance as shipboard officers. Midshipmen also gain a basic foundation in business administration allowing them to pursue shoreside opportunities in the maritime field. The curriculum recognizes that marine transportation is part of the total transportation system, which is crucial to both domestic and international commerce, and the nation's defense. The specific courses in this area include Principles of Logistics and Transportation, Economics, Management, Marketing, Business and Maritime Law, Accounting and Finance, and International Business and Ocean Shipping.

Marine Transportation Program

The Marine Transportation major builds on this business core offering additional courses for those students planning a shoreside career in the maritime industry. Most of the courses in the major are maritime specific. Moreover, they are all designed to introduce students to parts of the industry where many Kings Pointers have made careers in the past, and are likely to venture in the future.

The course in Chartering and Brokerage, for example, relates to the tanker and dry bulk sectors of the maritime industry—an area in which many graduates have specialized and will continue to do so. The course in Marine Insurance covers a career that has also proven popular with Kings Pointers. The course in Maritime Law and International Law of the Sea introduces the student to Admiralty Law, a profession where Kings Pointers have distinguished themselves. The course in Human Resource Management is also industry specific. This course includes Maritime Labor Relations, which is an important aspect of the maritime industry. No manager in the industry can be effective without understanding the role of unions and other aspects of labor relations. The Marine Transportation major also includes one elective, which must be selected from the Maritime Business area (in addition to the free electives in each major that students can still take in any department).

In general, this major has been designed to give the students a greater understanding of the business aspects of the maritime industry. But the courses offered are not general business courses such as might be offered in a typical business school. Kings Point is in a unique position as the premier maritime academy, and this major draws on that expertise to offer a program teaching business skills as they relate to, and within the context of, the maritime industry. This is a program both academically sound and related to the career goals of our students.

With their broad educational background complemented by specific professional management skills, graduates of the Marine Transportation program enjoy a wide variety of career opportunities. All branches of the Armed Forces offer possibilities for active duty. The U.S. Coast Guard commissions graduates to serve in marine inspection and environmental regulation. In the commercial sector, job opportunities include serving on a merchant ship as an officer; in terminal operations management; ship and cargo surveying; vessel chartering and brokerage; sales and marketing; port administration; admiralty and business law; marine insurance; stevedoring; commodities trading; international banking and finance. Graduates can also serve in state and federal government agencies regulating transport and commerce; in the Foreign Service; and in research policy analysis.

Marine Transportation Curriculum

(Note: There are three academic terms in each 11 month academic year)

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
HH100	History of Seapower	3		3.00
HP101	Ethics Primer	1		1.00
KP100	Maritime Prof Studies	3	2	4.00
MC100	General Chemistry	3	2	4.00
MM101	Calculus 1	3		3.00
NS120	Intro to MMNR	2		2.00
PE101	Self Defense		2	1.00
		15	6	18.00
TERM 2				
DB110	Principles of Log & Trans	3		3.00
DN120	Terrestrial Navigation	2	2	3.00
HE101	English 1	3		3.00
MM120	Calculus 2 for Deck	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00
TERM 3				
DN110	Basic Fire Fighting	2		2.00
DN121	Celestial Navigation	3	2	4.00
DN140	Meteorology	3		3.00
MM210	Probability & Statistics	3		3.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		14	6	17.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
HH100	History of Seapower	3		3.00
HP101	Ethics Primer	1		1.00
KP100	Maritime Prof Studies	3	2	4.00
MC100	General Chemistry	3	2	4.00
MM101	Calculus 1	3		3.00
NS120	Intro to MMNR	2		2.00
PE101	Self Defense		2	1.00
		15	6	18.00
TERM 2				
DN110	Basic Fire Fighting	2		2.00
DN120	Terrestrial Navigation	2	2	3.00
DN140	Meteorology	3		3.00
MM120	Calculus 2 for Deck	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		13	6	16.00
TERM 3				
DB110	Prin of Log & Trans	3		3.00
DN100	Safety/Life at Sea	1	2	2.00
DN121	Celestial Navigation	3	2	4.00
DN130	Intro to Navigation Law	1	0	1.00
HE101	English 1	3		3.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		14	8	18.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 4				
DB210	Economics	3		3.00
DB230	Management	3		3.00
DB310	Accounting & Finance	3		3.00
DN100	Safety/Life at Sea	1	2	2.00
DN130	Intro to Navigation Law	1		1.00
HH310	Modern World	3		3.00
NS220	MM NR Officer	2		2.00
		16	2	17.00
TERM 5				
DS220	Navigation 1			2.00
DS221	Navigation Law 1			1.00
DS230	Cargo 1			1.00
DS240	Seamanship 1			1.00
DS241	Ship Struc & Term			1.00
EC120	Mar Engr for Deck			1.00
		0	0	7.00
TERM 6				
DN210	Cargo Operations	3		3.00
DN220	Electronic Navigation	2	2	3.00
DN230	Seamanship/Shiphandling	2	2	3.00
DN240	Tankship D1 Cargo	3		3.00
ELEC	Elective 1	3		3.00
NS402	Nav Leadership & Ethics	2		2.00
		15	4	17.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 4				
DS220	Navigation 1			2.00
DS221	Navigation Law 1			1.00
DS230	Cargo 1			1.00
DS240	Seamanship			1.00
DS241	Ship Struc & Term			1.00
EC120	Mar Engr for Deck			1.00
		0	0	7.00
TERM 5				
DN210	Cargo Operations	3		3.00
DN220	Electronic Navigation	2	2	3.00
DN230	Seamanship/Shiphandling	2	2	3.00
DN240	Tankship D1 Cargo	3		3.00
MM210	Prob & Statistics	3		3.00
NS220	MM NR Officer	2		2.00
		15	4	17.00
TERM 6				
DS320	Navigation 2			3.00
DS321	Navigation Law 2			2.00
DS322	Electronic Navigation			2.00
DS330	Cargo Operation 2			1.50
DS340	Seamanship 2			1.50
		0	0	10.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 7				
DB240	Marketing	3		3.00
DB300	Bus & Maritime Law	3		3.00
DM300	Info Tech Mgmt	3		3.00
DM320	Hum Res Mgmt Labor	3		3.00
HE202	English 2	3		3.00
PE200	Ship's Medicine		2	1.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		15	6	17.00
TERM 8				
DS320	Navigation 2			3.00
DS321	Navigation Law 2			2.00
DS322	Electronic Navigation			2.00
DS330	Cargo Operations 2			1.50
DS340	Seamanship 2			1.50
		0	0	10.00
TERM 9				
DS341	Ship Struc & Stability			1.50
DS390	Maritime Business			1.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	5.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 7				
DS341	Ship Struc & Stability			1.50
DS390	Maritime Business			1.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	5.50
TERM 8				
DB210	Economics	3		3.00
DB230	Management	3		3.00
DB300	Business & Maritime Law	3		3.00
DM300	Info Tech Mgmt	3		3.00
HE202	English 2	3		3.00
NS402	Nav Leadership & Ethics	2		2.00
PE200	Ship's Medicine		2	1.00
		17	2	18.00
TERM 9				
DB240	Marketing	3		3.00
DB310	Accounting & Finance	3		3.00
DM340	Maritime & Sea Law	3		3.00
ELEC	Elective 1	3		3.00
HH310	Modern World	3		3.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		15	4	16.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 10				
DM340	Maritime & Sea Law	3		3.00
DN410	Advanced Firefighting	1	1	1.50
DN420	Advanced Navigation	3	2	3.00
DN440	RADAR/ARPA	3	2	4.00
DN460	Bridge Watchstanding	1		2.00
EM300	Naval Arch (Deck)	3		3.00
		14	5	16.50
TERM 11				
DB410	Int Bus & Ocean Ship	3		3.00
DN421	Navigation Law	2		2.00
DN430	Maritime Comm	3	2	4.00
ELEC	Elective 2	3		3.00
HC400	Topics in History	3		3.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		14	6	16.00
TERM 12				
DM400	Marine Insurance	3		3.00
DM410	Chartering & Brokerage	3		3.00
DN470	License Seminar		3	1.50
ELEC	Elective 3	3		3.00
HH360	Modern American History	3		3.00
NS412	Advanced MMNR Officer	2		2.00
		14	3	15.50
		Total Credits		173.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 10				
DM320	Hum Res Mgmt Labor	3		3.00
DN410	Advanced Firefighting	1	1	1.50
DN420	Advanced Navigation	3		3.00
DN440	RADAR/ARPA	3	2	4.00
DN460	Bridge Watchstanding	1	2	2.00
EM300	Naval Arch (Deck)	3		3.00
		14	5	16.50
TERM 11				
DB410	Int Business & Ocean Ship	3		3.00
DN421	Navigation Law	2		2.00
DN430	Maritime Comm	3	2	4.00
ELEC	Elective 2	3		3.00
HC400	Topics in History	3		3.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		14	6	16.00
TERM 12				
DM400	Marine Insurance	3		3.00
DM410	Chartering & Brokerage	3		3.00
DN470	License Seminar		3	1.50
ELEC	Elective 3	3		3.00
HH360	Modern American History	3		3.00
NS412	Advanced MMNR Officer	2		2.00
		14	3	15.50
		Total Credits		173.50

Logistics and Intermodal Transportation Program

The principal objective of the Logistics and Intermodal Transportation Program is to prepare future leaders of the nation's commercial and military logistics and transportation systems. The goal is achieved through an integrated program of study and experiential learning, the cornerstone of which is an academic major. The Logistics and Intermodal Transportation Program builds on the Academy's traditional maritime core competencies to provide midshipmen with the knowledge and skills required to manage complex intermodal supply chains and to address the challenges facing the global transportation system.

Central themes of the major are the role of ports and maritime elements in logistical and intermodal systems, the development of a systems view, the application of information technology, and the importance of an international orientation.

Midshipmen who elect this major take the same core courses in Nautical Science, Maritime Business, and general education (math, science, and humanities), and they must also fulfill the requirements for a U.S. Coast Guard license as third mate.

Courses specific to the Logistics and Intermodal Transportation major include Integrated Logistics Management, Intermodal Transportation Systems, Intermodal Port and Terminal Operations, Global Supply Chain Management, and the capstone Logistics and Intermodal Seminar.

Elective options include such offerings as Operations Research for Transportation, Information Technology and Management, Defense Transportation System, and Environmental Management.

The major emphasizes the development of oral and written communications capabilities through research papers, written reports, and formal presentations. Teamwork skills are enhanced through case studies and applied research projects that focus on real-world tasks identified through the program's extensive industry outreach efforts. Problem solving abilities are refined through use of computer-based simulation and analysis software. Independent certification of professional competency through the American Society of Transportation and Logistics is an attractive optional component of the program. A guest lecture series brings prominent industry figures to the Academy to discuss current issues and career opportunities for graduates.

The internship experience for midshipmen enrolled in the Logistics and Intermodal Transportation Program is carefully structured to ensure that it is fully supportive of, and integrated with, the academic component. Based, in part, on the specific interests of individual midshipmen, internship placement is planned to provide the midshipman with exposure to best practice in leading-edge organizations within a particular segment of the logistics and intermodal industry.

Career opportunities for graduates of the Logistics and Intermodal Transportation Program are diverse and rewarding. Reflecting the changing nature of the maritime transportation system, fulfillment of the professional obligation may be accomplished through service in a wide variety of logistics and transportation occupations in commercial, government, and military domains. Examples of entry-level positions include logistics system coordinator, transportation analyst, intermodal terminal supervisor, customer service associate, logistics/transportation consultant, ITS (Intelligent Transportation Systems) specialist, traffic coordinator, shipping supervisor, and project manager, to name a few.

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
HH100	History of Seapower	3		3.00
HP101	Ethics Primer	1		1.00
KP100	Maritime Prof Studies	3	2	4.00
MC100	General Chemistry	3	2	4.00
MM101	Calculus 1	3		3.00
NS120	Intro to MMNR	2		2.00
PE101	Self Defense		2	1.00
		15	6	18.00
TERM 2				
DB110	Principles of Log & Trans	3		3.00
DN120	Terrestrial Navigation	2	2	3.00
HE101	English 1	3		3.00
MM120	Calculus 2 for Deck	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00
TERM 3				
DN110	Basic Fire Fighting	2		2.00
DN121	Celestial Navigation	3	2	4.00
DN140	Meteorology	3		3.00
MM210	Probability & Statistics	3		3.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		14	6	17.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
HH100	History of Seapower	3		3.00
HP101	Ethics Primer	1		1.00
KP100	Maritime Prof Studies	3	2	4.00
MC100	General Chemistry	3	2	4.00
MM101	Calculus 1	3		3.00
NS120	Intro to MMNR	2		2.00
PE101	Self Defense		2	1.00
		15	6	18.00
TERM 2				
DN110	Basic Fire Fighting	2		2.00
DN120	Terrestrial Navigation	2	2	3.00
DN140	Meteorology	3		3.00
MM120	Calculus 2 for Deck	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		13	6	16.00
TERM 3				
DB110	Prin of Log & Trans	3		3.00
DN100	Safety/Life at Sea	1	2	2.00
DN121	Celestial Navigation	3	2	4.00
DN130	Intro to Navigation Law	1	0	1.00
HE101	English 1	3		3.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		14	8	18.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 4				
DB210	Economics	3		3.00
DB230	Management	3		3.00
DB310	Accounting & Finance	3		3.00
DN100	Safety/Life at Sea	1	2	2.00
DN130	Intro to Navigation Law	1		1.00
HH310	Modern World	3		3.00
NS220	MM NR Officer	2		2.00
		16	2	17.00
TERM 5				
DS220	Navigation 1			2.00
DS221	Navigation Law 1			1.00
DS230	Cargo 1			1.00
DS240	Seamanship 1			1.00
DS241	Ship Struc & Term			1.00
EC120	Mar Engr for Deck			1.00
		0	0	7.00
TERM 6				
DL200	Integrated Logistics Mgmt	3		3.00
DN210	Cargo Operations	3		3.00
DN230	Seamanship/Shiphandling	2	2	3.00
DN240	Tankship D1 Cargo	3		3.00
HE202	English 2	3		3.00
NS402	Nav Leadership & Ethics	2		2.00
		16	2	17.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 4				
DS220	Navigation 1			2.00
DS221	Navigation Law 1			1.00
DS230	Cargo 1			1.00
DS240	Seamanship			1.00
DS241	Ship Struc & Term			1.00
EC120	Mar Engr for Deck			1.00
		0	0	7.00
TERM 5				
DN210	Cargo Operations	3		3.00
DN220	Electronic Navigation	2	2	3.00
DN230	Seamanship/Shiphandling	2	2	3.00
DN240	Tankship D1 Cargo	3		3.00
MM210	Prob & Statistics	3		3.00
NS220	MM NR Officer	2		2.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		15	8	18.00
TERM 6				
DS320	Navigation 2			3.00
DS321	Navigation Law 2			2.00
DS322	Electronic Navigation			2.00
DS330	Cargo Operation 2			1.50
DS340	Seamanship 2			1.50
		0	0	10.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 7				
DB240	Marketing	3		3.00
DB300	Bus & Maritime Law	3		3.00
DL300	Intermodal Trans System	3		3.00
DS220	Electronic Navigation	2	2	3.00
ELEC	Elective 1	3		3.00
PE200	Ship's Medicine		2	1.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		14	8	17.00
TERM 8				
DS320	Navigation 2			3.00
DS321	Navigation Law 2			2.00
DS322	Electronic Navigation			2.00
DS330	Cargo Operation 2			1.50
DS340	Seamanship 2			1.50
		0	0	10.00
TERM 9				
DS341	Ship Struc & Stability			1.50
DS390	Maritime Business			1.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	5.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 7				
DS341	Ship Struc & Stability			1.50
DS390	Maritime Business			1.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	5.50
TERM 8				
DB210	Economics	3		3.00
DB230	Management	3		3.00
DB240	Marketing	3		3.00
DB300	Business & Maritime Law	3		3.00
DL200	Integrated Logistics Mgmt	3		3.00
NS402	Nav Leadership & Ethics	2		2.00
PE200	Ship's Medicine		2	1.00
		17	2	18.00
TERM 9				
DL300	Intermodal Trans System	3		3.00
DN430	Maritime Comm	3	2	4.00
DN440	RADAR/ARPA	3	2	2.00
DN460	Bridge Watchstanding	1	2	4.00
HH310	Modern World	3	2	3.00
		13	8	16.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 10				
DL400	Intermodal Port Term	3		3.00
DN421	Navigation Law	2		2.00
DN430	Maritime Comm	3	2	4.00
EM300	Naval Arch (Deck)	3		3.00
HH360	Modern American History	3		3.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		14	6	16.00
TERM 11				
DL420	Global Supply Chain Mgmt	3		3.00
DN410	Advanced Firefighting	1	1	1.50
DN420	Advanced Navigation	3		3.00
DN440	RADAR/ARPA	3	2	4.00
DN460	Bridge Watchstanding	1	2	2.00
ELEC	Elective 2	3		3.00
HC400	Topics in History	3		3.00
		17	5	19.50
TERM 12				
DB410	Int Bus & Ocean Ship	3		3.00
DL450	Chartering & Brokerage	3		3.00
DN470	License Seminar		3	1.50
ELEC	Elective 3	3		3.00
NS412	Advanced MMNR Officer	2		2.00
		11	3	12.50
		Total Credits		173.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 10				
DL400	Intermodal Port Term	3		3.00
DN410	Advanced Firefighting	1	1	1.50
DN420	Advanced Navigation	3		3.00
ELEC	Elective 1	3		3.00
EM300	Naval Arch (Deck)	3		3.00
HH360	Modern American History	3		3.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		16	5	17.50
TERM 11				
DB310	Ac Int Business & Ocean Ship	3		3.00
DL420	Global Supply Chain Mgmt	3		3.00
DN421	Navigation Law	2		2.00
ELEC	Elective 2	3		3.00
HC400	Topics in History	3		3.00
HE202	English 2	3		3.00
		17	0	17.00
TERM 12				
DB410	Int Bus & Ocean Ship	3		3.00
DL450	Chartering & Brokerage	3		3.00
DN470	License Seminar		3	1.50
ELEC	Elective 3	3		3.00
NS412	Advanced MMNR Officer	2		2.00
		11	3	12.50
		Total Credits		173.50

Marine Engineering Program

The Marine Engineering program prepares midshipmen to serve as licensed officers in the U.S. Merchant Marine and to provide them with an engineering education that prepares them for a wide variety of professional positions including the career fields of ship construction, operation, marketing, maintenance, repair and survey.

The program focuses on the operational and applied aspects of the marine engineering profession. It allows midshipmen the opportunity to choose elective courses in order to tailor the program of study to meet their individual professional goals.

Graduates of the Marine Engineering program are exceptionally well suited for employment at sea as engineering officers, as well as ashore in the applied phases of the engineering spectrum such as power generation and technical marketing.

Engineering Majors

The Engineering Majors provide midshipmen with the education and training to design, build, operate, maintain and repair the engineering systems used on modern marine vessels and to prepare them for positions of increasing responsibility in the maritime and intermodal transportation industries.

The Engineering Majors also provide midshipmen with a sound, broad-based engineering education while simultaneously preparing them for an unrestricted license as a third assistant engineer of steam and motor vessels. The Academy offers three engineering majors: Marine Engineering; Marine Engineering Systems; and Marine Engineering and Shipyard Management.

The synergistic combination of classical engineering studies and operations-oriented training and experience offers graduates an unbeatable amalgamation of skills that prepare them for a broad range of professional occupations. The special nature of the Academy makes the engineering graduates well suited for professions in the maritime industry as well as in related fields such as power generation and intermodal transportation.

Marine Engineering Curriculum

(Note: There are three terms in each academic year.)

A-SPLIT

TERM 1		Class Hours	Lab Hours	Credits
DN110	Basic Fire Fighting	2		2.00
HE101	English 1	3		3.00
KP100	Maritime Pro Studies	3	2	4.00
MM101	Calculus 1	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00

B-SPLIT

TERM 1		Class Hours	Lab Hours	Credits
DN110	Basic Fire Fighting	2		2.00
HE101	English 1	3		3.00
KP100	Maritime Pro Studies	3	2	4.00
MM101	Calculus 1	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 2				
EE120	Intro to Elect Engr	2	2	2.50
EG111	Engineering Shop 1		3	1.00
ES110	Computer Engineering	2		2.00
HP101	Ethics Primer	1		1.00
MC100	General Chemistry	3	2	4.00
MM130	Calculus 2 for Engineering	4		4.00
NS120	Introduction to MMNR	2		2.00
PE101	Self Defense		2	1.00
		14	9	17.50
TERM 3				
EG100	Engineering Graphics	1	2	2.00
EM100	Introduction to ME	3	2	3.50
ES100	Engineering Mechanics	3		3.00
HH100	History of Seapower	3		3.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		13	8	16.50
TERM 4				
DN100	Safety/Life at Sea	1	2	2.00
ES200	Intro to Material Engr	2		2.00
ES210	Transport Process 1	3	2	3.50
HE202	English 2	3		3.00
MM232	Math Engineering 1	4		4.00
NS220	MMNR Officer	2		2.00
		15	4	16.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 2				
EG100	Engineering Graphics	1	2	2.00
EM100	Intro to Elect Engr	3	2	3.50
HH100	History of Seapower	3		3.00
MM130	Calculus 2 for Engineering	4		4.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		14	8	17.50
TERM 3				
DN100	Safety/Life at Sea	1	2	2.00
EE120	Intro to Elect Engr	2	2	2.50
EG111	Engineering Shop 1		3	1.00
ES100	Engineering Mechanics	3		3.00
HP101	Ethics Primer	1		1.00
MC100	General Chemistry	3	2	4.00
NS120	Intro to MMNR	2		2.00
PE101	Self Defense		2	1.00
		12	11	16.50
TERM 4				
DS210	Navigation 1			1.00
EC110	Navigation Law 1			1.00
EC111	Cargo 1			2.00
EC115	Seamanship			2.00
		0	0	6.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 5				
DS210	Deck Ds/Engr Project			1.00
EC110	Machine Shop 1			1.00
EC111	Marine Propulsion			2.00
EC115	Shipboard Systems			2.00
		0	0	6.00
TERM 6				
DB210	Economics	3		3.00
EE300	Electric Circuits	2	2	2.50
EG211	Engineering Shop 2		3	1.00
ELEC	Elective 1	3		3.00
EM200	Mar Engineering 1	3	2	3.50
ES301	Strength of Materials	2		2.00
HH310	Modern World	3		3.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		16	11	19.00
TERM 7				
EM301	Naval Arch (Engineering)	3		3.00
EM302	Mech Aspects of ME	3		3.00
ES310	Transport Process 2	3		3.00
HC400	Topics in History	3		3.00
MC300	Engineering Chemistry	3		3.00
NS402	Naval Leadership & Ethics		2	1.00
		15	2	16.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 5				
EG211	Engineering Shop 2		3	1.00
EM200	Marine Engineering 1	3	2	3.50
ES110	Computer Engineering	2		2.00
ES210	Transport Process 1	3	2	3.50
MM232	Math Engineering 1	4		4.00
NS220	MMNR Officer	2		2.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		14	11	17.00
TERM 6				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion			2.50
EC261	Marine Propulsion			2.50
EC262	Shipboard Systems			2.00
EC265	Refrigeration			1.00
		0	0	10.00
TERM 7				
DS390	Maritime Business			1.00
EC264	Naval Architecture			2.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	6.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 8				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion			2.50
EC261	Marine Propulsion			2.50
EC262	Shipboard Systems			2.00
EC265	Refrigeration			1.00
		0	0	10.00
TERM 9				
DS390	Maritime Business			1.00
EC264	Naval Architecture			2.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	6.00
TERM 10				
EE400	El Mach & Analog Elec	3	2	3.50
EM400	Marine Engineering 2	3	3	3.50
EM410	Marine Refrigeration	3	3	3.50
EM425	Gas Turbines	3		3.00
ES305	Materials Engineering Lab		2	1.00
NS412	Advanced MM NR Officer	2		2.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		14	14	17.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 8				
DB210	Economics	3		3.00
EE300	Electric Circuits	2	2	2.50
ELEC	Elective 1	3		3.00
ES200	Intro to Material Engr	2		2.00
ES301	Strength of Materials	2		2.00
HE202	English 2	3		3.00
NS402	Navl Leadership & Ethics	2		2.00
		17	2	17.50
TERM 9				
EM301	Naval Arch (Engineering)	3		3.00
EM302	Mech Aspects of ME	3	2	3.50
ES310	Transport Process 2	3	2	3.50
HC400	Topics In History	3		3.00
HH310	Modern World	3		3.00
MC300	Engineering Chemistry	2	2	3.00
		17	6	19.00
TERM 10				
EE400	El Mach & Analog Elec	3	2	3.50
EM400	Marine Engineering 2	3	3	3.50
EM410	Marine Refrigeration	3	3	3.50
EM425	Gas Turbines	3		3.00
ES305	Materials Engineering Lab		2	1.00
NS412	Advanced MM NR Officer	2		2.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		14	14	17.50

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 11				
EE401	Digital Elec & Instruments	2	2	2.50
ELEC	Elective 2	3		3.00
EM415	Internal Comb Engine	3	3	3.50
EM420	Diesel Simulator		3	1.00
EM460	ThermAn/Mar Power	2	2	3.00
HH360	Modern American History	3		3.00
PE200	Ship's Medicine		2	1.00
		13	12	17.00
TERM 12				
DB230	Management	3		3.00
DN410	Advanced Firefighting	1	1	1.50
ELEC	Elective 3	3		3.00
EM430	Diesel Maintenance		6	2.00
EM470	License Seminar		3	1.00
EP310	Engineering Economics	3		3.00
		10	10	13.50
			Total Credits	174.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 11				
EE401	Digital Elec & Instruments	2	2	2.50
ELEC	Elective 2	3		3.00
EM415	Internal Comb Engine	3	3	3.50
EM420	Diesel Simulator		3	1.00
EM460	ThermAn/Mar Power	2	2	3.00
HH360	Modern American History	3		3.00
PE200	Ship's Medicine		2	1.00
		13	12	17.00
TERM 12				
DB230	Management	3		3.00
DN410	Advanced Firefighting	1	1	1.50
ELEC	Elective 3	3		3.00
EM430	Diesel Maintenance		6	2.00
EM470	License Seminar		3	1.00
EP310	Engineering Economics	3		3.00
		10	10	13.50
			Total Credits	174.50

Marine Engineering and Shipyard Management Program

The Marine Engineering and Shipyard Management program prepares midshipmen as licensed officers in the U.S. Merchant Marine; provides an engineering education that prepares them for a wide variety of professional positions in ship construction and repair, ship systems and marine equipment design, research, operations, marketing, maintenance and survey; and imparts to them a solid engineering education that permits them to pursue graduate study and/or become licensed as a Professional Engineer, should they so choose. This curriculum puts particular focus on the management of ship construction and repair.

Marine Engineering and Shipyard Management Curriculum

(Note: There are three terms in each academic year.)

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
DN110	Basic Fire Fighting	2		2.00
HE101	English 1	3		3.00
KP100	Maritime Pro Studies	3	2	4.00
MM101	Calculus 1	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00
TERM 2				
EE120	Intro to Elect Engr	2	2	2.50
EG111	Engineering Shop 1		3	1.00
ES110	Computer Engineering	2		2.00
HP101	Ethics Primer	1		1.00
MC100	General Chemistry	3	2	4.00
MM130	Calculus 2 for Engineering	4		4.00
NS120	Introduction to MMNR	2		2.00
PE101	Self Defense		2	1.00
		14	9	17.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
DN110	Basic Fire Fighting	2		2.00
HE101	English 1	3		3.00
KP100	Maritime Pro Studies	3	2	4.00
MM101	Calculus 1	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00
TERM 2				
EG100	Engineering Graphics	1	2	2.00
EM100	Intro to ME	3	2	3.50
HH100	History of Seapower	3		3.00
MM130	Calculus 2 for Engineering	4		4.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		14	8	17.50

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 3				
EG100	Engineering Graphics	1	2	2.00
EM100	Introduction to ME	3	2	3.50
ES100	Engineering Mechanics	3		3.00
HH100	History of Seapower	3		3.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		13	8	16.50
TERM 4				
DB210	Economics	3		3.00
DN100	Safety/Life at Sea	1	2	2.00
EG112	Engineering Shop 2		3	1.00
ES200	Intro to Material Engr	2		2.00
ES210	Transport Process 1	3	2	3.50
HE202	English 2	3		3.00
NS220	MM NR Officer	2		2.00
		14	7	16.50
TERM 5				
DS210	Deck Ds/Engr Project			1.00
EC110	Machine Shop 1			1.00
EC111	Marine Propulsion			2.00
EC115	Shipboard Systems			2.00
		0	0	6.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 3				
DN100	Safety/Life at Sea	1	2	2.00
EE120	Intro to Elect Engr	2	2	2.50
EG111	Engineering Shop 1		3	1.00
ES100	Engineering Mechanics	3		3.00
HP101	Ethics Primer	1		1.00
MC100	General Chemistry	3	2	4.00
NS120	Intro to MMNR	2		2.00
PE101	Sef Defense		2	1.00
		12	11	16.50
TERM 4				
DS210	Deck Ops/Engr Project			1.00
EC110	Machine Shop 1			1.00
EC111	Marine Propulsion 1			2.00
EC115	Shipboard Systems 1			2.00
		0	0	6.00
TERM 5				
EG211	Engineering Shop 2		3	1.00
EM200	Marine Engineering 1	3	2	3.50
EP300	Engr Ship Ops	3		3.00
ES110	Computer Engineering	2		2.00
ES200	Intro to Mat Engineering	2		2.00
ES210	Transport Process 1	3	2	3.50
NS220	MMNR Officer	2	2	2.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		15	13	18.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 6				
EM200	Mar Engineering 1	3	2	3.50
EP200	Mfg Proc	2	1	2.50
EP300	Engr Ship Ops	3		3.00
ES301	Strength of Materials	2		2.00
MM230	Engineering Math 1	4		4.00
NS402	Naval Leadership & Ethics	2		2.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		16	7	18.00
TERM 7				
EE300	Electrical Engineering	2	2	2.50
EM301	Maintenance Mgmt	3		3.00
ES310	Marine Propulsion	3	2	3.50
HH310	Marine Propulsion	3		3.00
MC300	Shipboard Systems	2	2	3.00
MM350	Refrigeration	3		3.00
PE200	Ship's Medicine		2	1.00
		16	8	19.00
TERM 8				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion			2.50
EC261	Marine Propulsion			2.50
EC262	Shipboard Systems			2.00
EC265	Refrigeration			1.00
		0	0	10.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 6				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion			2.50
EC261	Marine Propulsion			2.50
EC262	Shipboard Systems			2.00
EC265	Refrigeration			1.00
		0	0	10.00
TERM 7				
DS390	Maritime Business			1.00
EC264	Naval Architecture			2.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	6.00
TERM 8				
DB210	Economics	3		3.00
EE300	Electric Circuits	2	2	2.50
EP200	Mfg Proc	2	1	2.50
ES301	Strength of Materials	2		2.00
HE202	English 2	3		3.00
MM230	Engineering Math 1	4		4.00
PE200	Ship's Medicine		2	1.00
		16	5	18.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 6				
EM200	Mar Engineering 1	3	2	3.50
EP200	Mfg Proc	2	1	2.50
EP300	Engr Ship Ops	3		3.00
ES301	Strength of Materials	2		2.00
MM230	Engineering Math 1	4		4.00
NS402	Naval Leadership & Ethics	2		2.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		16	7	18.00
TERM 7				
EE300	Electrical Engineering	2	2	2.50
EM301	Maintenance Mgmt	3		3.00
ES310	Marine Propulsion	3	2	3.50
HH310	Marine Propulsion	3		3.00
MC300	Shipboard Systems	2	2	3.00
MM350	Refrigeration	3		3.00
PE200	Ship's Medicine		2	1.00
		16	8	19.00
TERM 8				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion			2.50
EC261	Marine Propulsion			2.50
EC262	Shipboard Systems			2.00
EC265	Refrigeration			1.00
		0	0	10.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 6				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion			2.50
EC261	Marine Propulsion			2.50
EC262	Shipboard Systems			2.00
EC265	Refrigeration			1.00
		0	0	10.00
TERM 7				
DS390	Maritime Business			1.00
EC264	Naval Architecture			2.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			3.00
		0	0	7.00
TERM 8				
DB210	Economics	3		3.00
EE300	Electric Circuits	2	2	2.50
EP200	Mfg Proc	2	1	2.50
ES301	Strength of Materials	2		2.00
HE202	English 2	3		3.00
MM230	Engineering Math 1	4		4.00
PE200	Ship's Medicine		2	1.00
		16	5	18.00

A-SPLIT

TERM 9		Class Hours	Lab Hours	Credits
DS390	Maritime Business			1.00
EC264	Naval Architecture			2.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			3.00
		0	0	7.00

TERM 10				
EE400	El Mach & Analog Elec	3	2	3.50
EM400	Marine Engineering 2	3	3	3.50
EP310	Engineering Economics	3		3.00
EP400	Engineering Project Mgmt	3	1	3.00
EP461	Capstone Project Seminar		1	0.50
ES305	Materials Engineering Lab		2	1.00
MM450	Quant Method 2	3		3.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		15	13	18.50

TERM 11				
EM410	Marine Refrigeration	3	3	3.50
EM415	Internal Combustion Eng	3	3	3.50
EM420	Diesel Simulator		3	1.00
EM450	Mech Asp/ME (Mgmt)	3		3.00
EP401	Ship Prod Mgmt	3	1	3.00
EP462	Capstone Project Seminar		1	0.50
HC400	Topics In History	3		3.00
		15	11	17.50

B-SPLIT

TERM 9		Class Hours	Lab Hours	Credits
EM301	Naval Arch (Engineering)	3		3.00
ES310	Transport Process 2	3	2	3.50
HH310	Modern World	3		3.00
MC300	Engineering Chemistry	2	2	3.00
MM350	Quantitative Methods 1	3		3.00
NS420	Nav Leadership & Ethics	2		2.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		16	8	18.50

TERM 10				
EE400	El Mach & Analog Elec	3	3	3.50
EM400	Marine Engineering 2	3	3	3.50
EP310	Engineering Economics		3	1.00
EP400	Engineering Project Mgmt	3		3.00
EP461	Capstone Project Seminar	3	1	3.00
ES305	Materials Engineering Lab		1	0.50
MM450	Quant Method 2	3		3.00
		15	11	17.50

TERM 11				
EM410	Marine Refrigeration	3	3	3.50
EM415	Internal Combustion Eng	3	3	3.50
EM420	Diesel Simulator		3	1.00
EM450	Mech Asp/ME (Mgmt)	3		3.00
EP401	Ship Prod Mgmt	3	1	3.00
EP462	Capstone Project Seminar		1	0.50
HC400	Topics In History	3		3.00
		15	11	17.50

A-SPLIT

TERM 12		Class Hours	Lab Hours	Credits
DN410	Advanced Firefighting	1	1	1.50
EE401	Digital Elec & Instru	2	2	2.50
ELEC	Elective 1	3		3.00
EM470	License Seminar		3	1.00
HH360	Modern World History	3		3.00
NS412	Advanced MM NR Officer	2		2.00
		11	6	13.00
		Total Credits		176.50

B-SPLIT

TERM 12		Class Hours	Lab Hours	Credits
DN410	Advanced Firefighting	1	1	1.50
EE401	Digital Elec & Instru	2	2	2.50
ELEC	Elective 1	3		3.00
EM470	License Seminar		3	1.00
HH360	Modern World History	3		3.00
NS412	Advanced MM NR Officer	2		2.00
		11	6	13.00
		Total Credits		176.50

An important element of the Marine Engineering and Shipyard Management program is the design experience interwoven throughout a student's four years, culminating in the capstone design project in senior year. The student participates as part of a team tasked with developing a ship construction or ship repair project. The project is spread over two terms and finishes with a presentation of the final design to a panel of faculty and invited industry professionals. The Marine Engineering and Shipyard Management program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

Marine Engineering Systems Program

The Marine Engineering Systems program prepares midshipmen to serve as licensed officers in the U.S. Merchant Marine; provides an engineering education that prepares them for a wide variety of professional positions in such career fields as ship systems and marine equipment design, research, construction, operations, marketing, maintenance, repair and survey; and imparts to them an engineering education that permits them to pursue graduate study and/or to become licensed as a Professional Engineer, should they so choose. This program focuses on the design of marine power plants and their associated systems.

Marine Engineering Systems Curriculum

(Note: There are three terms in each academic year.)

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
DN110	Basic Fire Fighting	2		2.00
HE101	English 1	3		3.00
KP100	Maritime Pro Studies	3	2	4.00
MM101	Calculus 1	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00
TERM 2				
EE120	Intro to Elect Engr	2	2	2.50
EG111	Engineering Shop 1		3	1.00
ES110	Computer Engineering	2		2.00
HP101	Ethics Primer	1		1.00
MC100	General Chemistry	3	2	4.00
MM130	Calculus 2 for Engineering	4		4.00
NS120	Introduction to MMNR	2		2.00
PE101	Self Defense		2	1.00
		14	9	17.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 1				
DN110	Basic Fire Fighting	2		2.00
HE101	English 1	3		3.00
KP100	Maritime Pro Studies	3	2	4.00
MM101	Calculus 1	3		3.00
MP101	Physics 1	3	2	4.00
PE110	Swimming/First-Aid		2	1.00
		14	6	17.00
TERM 2				
EG100	Engineering Graphics	1	2	2.00
EM100	Intro to Elect Engr	3	2	3.50
HH100	History of Seapower	3		3.00
MM130	Calculus 2 for Engineering	4		4.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		14	8	17.50

A-SPLIT

TERM 3		Class Hours	Lab Hours	Credits
EG100	Engineering Graphics	1	2	2.00
EM100	Introduction to ME	3	2	3.50
ES100	Engineering Mechanics	3		3.00
HH100	History of Seapower	3		3.00
MP130	Physics 2	3	2	4.00
PE120	Aquatic Survival		2	1.00
		13	8	16.50

TERM 4				
DN100	Safety/Life at Sea	1	2	2.00
ES200	Intro to Material Engr	2		2.00
ES210	Transport Process 1	3	2	3.50
HE202	English 2	3		3.00
MM232	Math Engineering 1	4		4.00
NS220	MMNR Officer	2		2.00
		15	4	16.50

TERM 5		Hours	Hours	Credits
DS210	Deck Ops/Engr Project			1.00
EC110	Machine Shop 1			1.00
EC111	Marine Propulsion			2.00
EC115	Shipboard Systems			2.00
		0	0	6.00

B-SPLIT

TERM 3		Class Hours	Lab Hours	Credits
DN100	Safety/Life at Sea	1	2	2.00
EE120	Intro to Elect Engr	2	2	2.50
EG111	Engineering Shop 1		3	1.00
ES100	Engineering Mechanics	3		3.00
HP101	Ethics Primer	1		1.00
MC100	General Chemistry	3	2	4.00
NS120	Intro to MMNR	2		2.00
PE101	Self Defense		2	1.00
		12	11	16.50

TERM 4				
DS210	Deck Ops/Engr Project			1.00
EC110	Machine Shop 1			1.00
EC111	Marine Propulsion 1			2.00
EC115	Shipboard Systems 1			2.00
		0	0	6.00

TERM 5		Hours	Hours	Credits
EG211	Engineering Shop 2		3	1.00
EM200	Marine Engineering 1	3	2	3.50
ES110	Computer Engineering	2		2.00
ES210	Transport Process 1	3	2	3.50
MM232	Math Engineering 1	4		4.00
NS220	MMNR Officer	2		2.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		14	11	17.00

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 6				
DB210	Economics	3		3.00
EE300	Electric Circuits	2	2	2.50
EG211	Engineering Shop 2		3	1.00
EM200	Mar Engineering 1	3	2	3.50
ES301	Strength of Materials	2		2.00
ES305	Materials Engineering Lab		2	1.00
MM332	Math Engineering 2	3		3.00
PEEL1	PE Elective 1		2	0.50
PEEL2	PE Elective 2		2	0.50
		13	13	17.00
TERM 7				
ELEC	Elective	3		3.00
EM301	Naval Arch (Engineering)	3		3.00
ES310	Transport Process 2	3	2	3.50
HC400	Topics in History	3		3.00
MC300	Engineering Chemistry	2	2	3.00
NS402	Naval Leadership & Ethics	2		2.00
PE200	Ship's Medicine		2	1.00
		16	6	18.50
TERM 8				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion 2			2.50
EC261	Marine Propulsion 3			2.50
EC262	Shipboard Systems 2			2.00
EC265	Refrigeration			1.00
		0	0	10.00

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 6				
EC252	Electrical Engineering			1.00
EC253	Maintenance Mgmt			1.00
EC260	Marine Propulsion 2			2.50
EC261	Marine Propulsion 3			2.50
EC262	Shipboard Systems 2			2.00
EC265	Refrigeration			1.00
		0	0	10.00
TERM 7				
DS390	Maritime Business			1.00
EC264	Naval Architecture			2.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	6.00
TERM 8				
DB210	Economics	3		3.00
EE300	Electric Circuits	2	2	2.50
ES200	Intro to Material Engr	2		2.00
ES301	Strength of Materials	2		2.00
HE202	English 2	3		3.00
MM232	Math for Engineering 2	3		3.00
NS402	Nav Leadership & Ethics	2		2.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		17	6	18.50

A-SPLIT

		Class Hours	Lab Hours	Credits
TERM 9				
DS390	Maritime Business			1.00
EC264	Naval Architecture			2.00
HS211	Humanities Sea Project			1.00
STINX	Internship Report			2.00
		0	0	6.00
TERM 10				
EE400	El Mach & Analog Elec	3	2	3.50
EM415	Internal Combustion Engr	3	3	3.50
EM420	Diesel Simulator		3	1.00
EM480	ME Sys Design	3	3	3.50
EM481	Design Project 1		1	0.50
HH310	Modern World	3		3.00
MES01	MES Option 1	3		3.00
PEEL3	PE Elective 3		2	0.50
PEEL4	PE Elective 4		2	0.50
		15	16	19.00
TERM 11				
EM400	Marine Engineering 2	3	3	3.50
EM410	Marine Refrigeration	3	3	3.50
EM482	ME Design Project		1	0.50
HH360	Modern American History	3		3.00
MES02	MES Option 2	3		3.00
NS412	Advanced MM NR Officer	2		2.00
ES411	Machine Design 1	3		3.00
		17	7	18.50

B-SPLIT

		Class Hours	Lab Hours	Credits
TERM 9				
ELEC	Elective	3		3.00
EM301	Naval Arch (Engineering)	3		3.00
ES305	Mech Aspects of ME		2	1.00
ES310	Transport Process 2	3	2	3.50
HC400	Topics In History	3		3.00
MC300	Modern World	2	2	3.00
PE200	Ship's Medicine		2	1.00
		14	8	17.50
TERM 10				
EE400	El Mach & Analog Elec	3	2	3.50
EM415	Internal Combustion Engr	3	3	3.50
EM420	Diesel Simulator		3	1.00
EM480	ME Sys Design	3	3	3.50
EM481	Design Project 1		1	0.50
HH310	Modern World	3		3.00
MES01	MES Option 1	3		3.00
		15	12	18.00
TERM 11				
EM400	Marine Engineering 2	3	3	3.50
EM410	Marine Refrigeration	3	3	3.50
EM482	ME Design Project		1	0.50
HH360	Modern American History	3		3.00
MES02	MES Option 2	3		3.00
NS412	Advanced MM NR Officer	2		2.00
ES411	Machine Design 1	3		3.00
		17	7	18.50

A-SPLIT

TERM 12		Class Hours	Lab Hours	Credits
DB230	Management	3		3.00
DN410	Advanced Firefighting	1	1	1.50
EE401	Digital Elec & Instru	2	2	2.50
EM470	License Seminar		3	1.00
EM483	ME Design Project	1	2	1.00
MES03	MES Option	3		3.00
		10	8	12.00
	Total Credits			174.50

B-SPLIT

TERM 12		Class Hours	Lab Hours	Credits
DB230	Management	3		3.00
DN410	Advanced Firefighting	1	1	1.50
EE401	Digital Elec & Instru	2	2	2.50
EM470	License Seminar		3	1.00
EM483	ME Design Project	1	2	1.00
MES03	MES Option	3		3.00
		10	8	12.00
	Total Credits			174.50

The Marine Engineering Systems program allows a midshipman to choose from a group of specialty option courses, or minor tracks, which address the sub-specialties of marine engineering. The availability of specific option tracks will depend on midshipman interest. The option course groups (minors) that may be offered for the Class of 2009 include:

Aeronautical Engineering

Advanced Engineering Math	MM360
Gas Turbines	EM425
Aeronautical Engineering	EM427
Automation and Control	EE402
Computation Fluid Mechanics	ES428

Electrical Engineering / Power Controls

Advanced Engineering Math	MM360
Power Electronics	EE403
Power System Designs	EE404
Automation and Control	EE402

Environmental Engineering

Environmental Chemistry	MC340
Solid Waste Management	ES430
Air and Water Pollution Control	ES431
Hazardous Waste Management	ES432

LNG Design and Operations

Math/Science Elective	
LNG Design and Operations	
Gas Turbines	EM425
LNG Safety	

Naval Architecture

Math/Science Elective Form and Stability (substitutes for Naval Architecture for Engineers)	EM303
Resistance and Propulsion	EM441
Ship Structures	EM442
Introduction to Ship Design	ES420
Marine Dynamics	EM444

Nuclear Engineering

Atomic Physics	MP320
Advanced Thermal Science	ES400
Introduction to Nuclear Science and Engineering	ES420
Nuclear Engineering	ES421

Mechanical Systems

Math Science Elective	
Machine Design I	ES411
Machine Design II	ES412
Solid Modeling/Finite Element Analysis	ES413
Vibrations	ES410

Offshore Engineering

Introduction to Oceanography	MC370
Ocean Engineering	EM480
Offshore Power Systems	EM481
Offshore Oil Drilling and Production	EM482

An important element in the Marine Engineering Systems program is the design experience that is interwoven throughout four years, culminating in a major design project in senior year. The student participates as part of a team tasked with the design of a ship power plant. The project is spread over two terms and concludes with the presentation of the final design to a panel of faculty and invited industry professionals. The Marine Engineering Systems program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

Academic Policies and Procedures

The U.S. Merchant Marine Academy's academic regulations and procedures are stated in the Academic Policies Handbook. Each midshipman receives a copy of this guide upon entry to the Academy and is responsible for understanding its contents.

The following is a summary of the Handbook's most important provisions.

Grading

The Academy uses a letter-grade system with each letter grade assigned a numerical quality-point equivalent. The scholastic significance of the grades and related quality point equivalents are reflected in the following table:

Letter Scale	Quality-Point Value
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
P	0.00
F	0.00
I	Incomplete
E	Exempt
W	Withdrawal

Academic Status

A midshipman is considered to be proficient for a grading period if no F grade is received, and the trimester quality point average is 2.000 or greater. A midshipman achieves overall proficiency if these requirements are met and the cumulative quality point average is 2.000 or greater with no unresolved F grades. If these criteria are not satisfied, a midshipman is considered deficient.

A fourth class midshipman is permitted to adjust to the academic and regimental requisites through a special scale of academic requirements that increase in each succeeding trimester grading period of plebe year.

Midshipmen who do not fully satisfy the proficiency requirements may be placed, by the Dean, on academic warning, academic probation or in some other more significant deficiency status. Normally, a midshipman who is academically deficient has one grading period to regain proficiency.

A midshipman failing to meet the academic standards of the Academy may be recommended by the Dean to the Superintendent for disenrollment. The Academic Dean prepares his recommendation in conjunction with the Academic Review Board.

Scholastic Recognition

Midshipmen may earn Scholastic Quarterly Honor Stars on the following basis:

1. Gold Stars are awarded to all midshipmen who achieve a quality point average of 3.500 or above for one trimester with no course failures during that term.
2. Silver Stars are awarded to midshipmen who achieve a quality point average of 3.250 to 3.494 for one trimester with no course failures during that term.

Scholastic Honor Ribbons for Outstanding Sea Year Performance are given as follows:

An Honor Ribbon with Bronze Star is awarded to midshipmen with a quality point average of at least 3.500 for the sea year, no failing grades and above average Sea Year performance reports.

1. An Honor Ribbon is awarded to midshipmen with a quality-point average of 3.250 up to and including 3.494 for the Sea Year, no failing grades and above average Sea Year performance reports.
2. Midshipmen who have earned Sea Year ribbons for the first sea period and become eligible for such ribbons

after the second sea period wear a silver star with the ribbon in lieu of a second bronze star; or wear a bronze star if only a ribbon was previously awarded.

Graduation Honors

Scholastic Honors at graduation are awarded on the following basis:

1. *Summa Cum Laude* - A midshipman must have a cumulative average of at least 3.750 and finish in the top three percent of the graduating class.
2. *Magna Cum Laude* - A midshipman must have a cumulative average of at least 3.500 and be in the upper ten percent of the graduating class.
3. *Cum Laude* - A midshipman must have a cumulative average of at least 3.000 and be in the top 20 percent of the graduating class. Honors designations on the diploma will be based on the cumulative quality-point average at the completion of senior year.

Academic Loads

Midshipmen must carry the trimester credit hour load required by their academic curriculum for each resident trimester and Sea Year period. Special circumstances may require that a midshipman take less than the normal load, but not less than 12 trimester credit hours. A midshipman may "overload" and take additional credit hours in a trimester, but this will not reduce the need to take the normal load in all future trimesters. Consent of the Dean is required to overload.

Failed Courses

A midshipman who fails a course must either repeat the course in its entirety—the preferred method of resolving a failure—or undertake a remedial program.

Exclusion from Extracurricular Activities

The Academic Dean may restrict any midshipman not academically proficient from participation in any sports or extracurricular activities.

Setbacks

A midshipman may be set back to a succeeding year group by the Superintendent upon the recommendation of the Academic Dean. Setbacks are granted only when there is a compelling medical, compassionate or academic circumstance.

Advanced Standing

Federal law requires that a midshipman complete a four-year course of study at the Academy. Under exceptional circumstances, a midshipman who has finished at least one full year of the program is proficient under the academic standards prescribed in the *Academic Policies Handbook*, and who resigns and later reapplies for admission, may be granted advanced standing. In such cases, the coursework done at the Academy prior to resignation and subsequently at other colleges and universities will be considered in assigning a returning midshipman to an appropriate year group. Upon reentry, the midshipman is bound by the curriculum, catalog, and regulation in effect at the time of return.

Class Attendance and Excused Absences

Attendance at all classes at the Academy is required unless a midshipman is ill, in a special duty status or otherwise granted leave or liberty by the Commandant.

Coursework Taken at Another Institution

The Academy may accept transfer credits for courses taken elsewhere. Courses *may* be evaluated and *may* be deemed as an appropriate substitute for an existing course at the Academy. The midshipman *may* be required to substitute an appropriate course to complete the number of credits required for a term All decisions made by the appropriate academic department are final.

Midshipmen are encouraged to seek course approval for transfer *prior* to joining the Academy, and without exception, not later than the end of the first term of the plebe year.

All petitions for course exemption require an official transcript and a course description provided to the Registrar and appropriate department heads for evaluation.

Quality points, or grade for work accomplished elsewhere, are not included in the midshipman's Academy academic record. A maximum of twelve credits, including Advanced Placement (AP) credits, may be posted to a midshipman's record.

The Academy has a four-year residency requirement that cannot be shortened.

There are no exceptions to this policy and its requirements.

Kings Point Scholar Program

The Kings Point Scholar Program affords midshipmen an opportunity to explore a topic in depth beyond the degree to which it is represented in the curriculum.

Midshipmen who wish to undertake a major research project through the Kings Point Scholar Program should obtain the sponsorship of a faculty member for their project. The Office of the Dean will explain the program in detail to interested students.

The research paper completed through the Kings Point Scholar Program should make an important contribution to the chosen field of study. The research papers are maintained by the Academy in its Library. Past topics have included oil pollution, deep ocean mining, submarine tankers and the German intermodal transportation system, and the cruise industry.

Completion of the Kings Point Scholar Program can satisfy a midshipman's credit hour elective requirement for Engineering and Marine transportation majors. Marine Engineering Systems majors may complete the program in lieu of the four-course option.

Academic Advising

Each plebe is assigned a mentor, who is available through appointment to discuss a broad range of academic issues with a midshipman.

There is a midshipman academic officer in each company who is specifically responsible to work with students who are experiencing academic difficulty and to apply the various support systems to specific cases. The academic officers work closely with the Director of the Academic Center for Excellence (ACE).

The ACE provides midshipmen with the support they may need to achieve their goals and be successful in their educational pursuit. At the Center, midshipmen can develop effective learning habits that will prove to be beneficial, not only during their time at the Academy, but during their sea year and beyond graduation as well. Faculty members and mentors can refer a midshipman to the Center when they have concerns about their academic performance. Midshipmen are also encouraged to seek help for self-identified problems and concerns that they feel might hinder their academic success.

Each midshipman who comes to the ACE is given individual attention to create a personal success program based on his or her needs. In addition, through the Center, tutorial sessions may be set up for both group and individual sessions. The Center promotes effective, independent learning to achieve high academic goals at a school where good time management skills are essential to achieve educational success.

The Academic Board

The Dean, Assistant Deans, heads of the academic departments, Commandant, Registrar, President of the Faculty Forum, Chief Librarian, Director of the Waterfront and the Head, Department of Professional Development comprise the Academic Board.

The Board advises the Superintendent on all academic matters, making recommendations concerning academic policy, standards, honors and curriculum.

Privacy Acts

The Privacy Act of 1974 and the Family Educational Rights and Privacy Act of 1974 prohibit the disclosure of educational records to other persons or organizations without written consent. Grade reports, transcripts and other information cannot be released to anyone, including parents, other academic institutions and employers without such written consent. Notice of consent must be filed with the Office of the Registrar for each release of information.

Access to Academic Records

Midshipmen have access to their own academic records, and may request copies. These transcripts are "unofficial" copies and do not bear the impressed seal of the Academy. Official, sealed copies are not released to midshipmen under any circumstances. An individual review of an official record maintained by the Office of the Registrar may be made by appointment. The

Office of the Dean makes final decisions on questions arising from such reviews.

Graduation Rates

The following statistics indicate the rate of graduation at the Academy for classes of 2002 to 2010:

2002	2003	2004	2005
79.5%	76.2%	78.9%	77.3%

2006	2007	2008	2009
78.9%	77.4%	78.8%	65.5%

2010*
75.6%

(*Estimate)

Academic Departments, Faculty, and Course Descriptions

Note: For all faculty listings in this section of the catalog, the year when a faculty member joined the Academy staff follows each name. Other information includes the individual's faculty rank, degrees earned, where obtained, professional licenses held, and military affiliation. In a department that includes more than one discipline, the faculty member's area of specialization is indicated.

Superscripts used in this listing are:

[1]faculty member has received the Academy's Vice Admiral Gordon McLintock Award for Exemplary Leadership

[2]faculty member has received the Academy's Sue Alice McNulty Award for Distinguished Teaching.

[3]faculty member has received the Captain C.A. Prosser Award for Student Service.

[4]faculty member has held command at sea of an unlimited tonnage vessel.

This list is current as of June 6, 2011. The courses and descriptions in this section are subject to change.

Index to This Section

Department of Engineering

This department provides the faculty and facilities required to teach the programs in Marine Engineering, Marine Engineering Systems, and Marine Engineering and Shipyard Management. The department's chief responsibility is to prepare midshipmen for the U.S. Coast Guard license examination in engineering and to educate them as well-prepared marine engineers.

The Engineering Department faculty offices are in Fulton Hall, with classrooms and laboratories in both Fulton and Gibbs Halls. All laboratories are high quality and house modern equipment and instrumentation. There are laboratories for diesel and steam engineering, refrigeration, marine engineering, thermodynamics, materials testing, machine shop, mechanical engineering, welding, electrical machinery, control systems, electric circuits, engine room simulators and graphics.

The engineering curriculum reflects the integration of computers, especially personal computers, into the program.

DEPARTMENT HEAD

CAPT David J. Palmer, USMS (1995)
B.S., U.S. Merchant Marine Academy
M.S., Polytechnic University
Ph.D., Polytechnic University
License: STCW-95 Certified Third Assistant Engineer of Steam, Motor and Gas Turbine Vessels, Unlimited Horsepower; Nuclear Engineering Officer of the Watch, Engineering Duty Officer, Navy Nuclear Program.
Military: CDR, USNR

ASSISTANT DEPARTMENT HEAD

Hesham Shaalan, (2005)
B.S.E.E., University of Houston
M.E.E., University of Houston
Ph.D., Virginia Tech
Registered Professional Engineer - State of Texas

PROFESSORS

CAPT Douglas B. Brown, USMS (1991)
B.S., U.S. Coast Guard Academy
M.S., C.A.S., New York Institute of Technology
C.A.S., Harvard University
Licenses: Chief Engineer of Diesel Vessels Unlimited Horsepower; First Assistant Engineer of Steam Vessels, Unlimited Horsepower

Boris Butman (1987)
M.S., Leningrad Shipbuilding College
Ph.D., Leningrad Water Transport Institute of Technology

Gabriel-Dumitru Colef (1991)
B.E., CCNY
M.E.E.E., CCNY
Ph.D., CCNY
Registered Professional Engineer - State of New York

Jose Femenia (1995)
Director, Master of Marine Engineering Program
B.E. (Marine), SUNY Maritime College
M.S.M.E., CUNY City College
License: Third Assistant Engineer of Steam and Motor Vessels, Unlimited Horsepower
Registered Professional Engineer - State of New York

CDR Raymond F. Gardner, USMS (1998)[1,2]
B.S., U.S. Merchant Marine Academy
M.S., (M.E.), Polytechnic University
Licenses: Chief Engineer, Steam and Gas Turbines, Unlimited Horsepower; Third Assistant Engineer, Motor, Unlimited Horsepower
Registered Professional Engineer - States of New York and Connecticut

Mukund R. Patel (1997)
B.E.E. Sardar University
M.E., Gujarat University
M.S. (I.E.), University of Pittsburgh
Ph.D., Rensselaer Polytechnic Institute
Registered Professional Engineer - State of Pennsylvania
Chartered Engineer, United Kingdom

Sergio E. Perez (1993)[2]
B.S., Villanova
M.S., SUNY Stony Brook
Ph.D., SUNY Stony Brook

Paul Santamauro (2001)
B.S., U.S. Merchant Marine Academy
J.D., New England School of Law
License: First Assistant Engineer, Unlimited Horsepower, Motor Vessels; Third Mate, Steam and Motor Vessels of Any Gross Tons, Oceans.

CAPT William J. Sembler, USMS (1991)
B.S., U.S. Merchant Marine Academy
M.E. Stevens Institute of Technology
PhD, Polytechnic Institute of NYU
Licenses: Chief Engineer of Steam, Motor and Gas Turbine Vessels of Any Horsepower; Third Mate, Ocean Vessels of Any Gross Tons.
Registered Professional Engineer - State of New Jersey and New York

ASSOCIATE PROFESSORS

Michael R. Ales (2002)[2]
B.S., U.S. Naval Academy
M.S., Virginia Polytechnic Institute & State University
M.B.A., University of Southern Mississippi
Licenses: Chief Engineer, Stationery Power Plants, NIULPE (Illinois) Registered Professional Engineer - State of Wisconsin
Military: LT, USN

CAPT Elwood C. Baumgart, USMS (2002)
B.S., SUNY Maritime College
M.E., Stevens Institute of Technology
License: Chief Engineer, Steam, Motor and Gas Turbine Vessels, Unlimited Horsepower

William Caliendo (2005)
B.E., SUNY Maritime College
M.E., Stevens Institute of Technology
PhD, Stevens Institute of Technology
License: Third Assistant Engineer of Steam, Motor or Gas Turbine Vessels, Unlimited Horsepower.
Registered Professional Engineer - State of New York

Nagy Hussein (2007)
B.E., Suez Canal University
M.S., Howard University
Ph.D., Catholic University of America
Licenses: FAA Commercial Pilot Multi-Engine Third Assistant Engineer; FAA Ground Instructor

CAPT Joseph Poliseno, USMS (1990)
B.S., U.S. Merchant Marine Academy M.S., (M.E.), Polytechnic University License: Chief Engineer of Steam, Motor and Gas Turbine Vessels, Unlimited Horsepower

CDR John G. Tuttle, USMS (1996)
B.E., SUNY Maritime College
S.M., Massachusetts Institute of Technology
Charter Engineer, Professional Engineers Council, United Kingdom

Yvonne Traynham (2000)
B.S., University of Florida
M.S., University of New Orleans
Ph.D., University of New Orleans Registered Professional Engineer - States of Louisiana and Mississippi

ASSISTANT PROFESSORS

CAPT Peter Kahl, USMS (2010)
B.S., U.S. Merchant Marine Academy
MBA, Hofstra University
License: Chief Engineer of Motor and Gas Turbine Vessels of Unlimited Horsepower; Second Engineer of Steam Vessels of Unlimited Horsepower

Steven L. Pike (2011)
B.E., SUNY Maritime College
Licenses: First Assistant Engineer of Steam, Motor and Gas Turbine, Unlimited Horsepower
Qualified in Submarines (Enlisted)

LCDR David Pulis, USMS (2010)
B.S. U. S. Merchant Marine Academy
M.S., U.S. Merchant Marine Academy
License: Third Assistant Engineer of Steam or Motor Unlimited Horsepower
Military: LCDR, USNR

Brian Leonard (1990)
A.A., Mohegan Community College
B.S., Southern Illinois University
M.S., New York Institute of Technology Senior Reactor Operator, Certified SRO, General Electric Co.
Military: MM1 (SS), USN

Raymond L. Mathewson (2006)
B.E., SUNY Maritime College
M.S., Massachusetts Institute of Technology Engineers Degree, Ocean Engineering, MIT

INSTRUCTORS

Mario A. Fristachi (2011)
B.E., SUNY Maritime College
M.E., CUNY City College
J.D., St. Johns University School of Law
LL.M. NYU School of Law
License: Second Assistant Engineer of Steam or Gas Turbine Vessels, Unlimited Horsepower; Third Assistant Engineer, Unlimited Horsepower

TECHNICIANS

Engineering Laboratories Supervisory Engineer:

Mr. Richard C. Crook (2008)
B.S., U.S. Merchant Marine Academy
License: USCG Third Assistant Engineer, Steam or Motor, Unlimited HP
Military: LT, USNR

Howard Cohen (1978)
RCA Electrical Engineering Technology School
License: FCC Amateur Radio

Raymond Granville (2009)
Relevant Coursework, Licensures and Certifications: HTA School (U.S. Navy)
Master Training Specialist, USN
Certified Welder Plumbers Union
Certified to Operate Generators, USN

Joseph Kass (1982)
A.S., CUNY Licenses: Second Class Power Engineer - State of New York; Certified Welder; Certified Welding Instructor; Certified Welding Inspector.

PROFESSORS EMERITI

CAPT Moses W. Hirschkowitz, USMS (Ret.)
(Engineering: 1949-1995)
B.M.E., Clarkson
M.E.E., New York University
Licenses: Chief Engineer of Steam and Motor Vessels, Unlimited Horsepower; Nuclear Reactor Operator -N/S SAVANNAH.
Registered Professional Engineer - State of New York

Walter M. Maclean
(Engineering: 1987-1995)
Diploma, U.S. Merchant Marine Academy
B.S.M.E.,
M.E.,
D.E., California (Berkeley)
Licenses: Chief Engineer of Steam Vessels, Unlimited Horsepower.
Registered Professional Engineer - State of California

CAPT Robert T. Madden, USMS (Ret.)[2]
(Engineering: 1970-2001)
B.S., U.S. Merchant Marine Academy
M.S., Stevens Institute of Technology
License: Chief Engineer of Steam and Motor Vessels, Unlimited Horsepower
Military: CDR, USNR (Ret.)

CDR James A. Harbach, USMS (Ret)
B.S., U.S. Merchant Marine Academy
M.E., Cornell Engineer, Polytechnic University
Licenses: First Assistant Engineer (Steam), Unlimited Horsepower; Third Assistant Engineer (Diesel), Unlimited Horsepower.
Registered Professional Engineer - State of New Jersey

Note: Sea Year courses (with EC prefix) appear at the end of this course listing.

KP100 Maritime Professional Studies Credits: 4

This course has two objectives: to introduce the midshipman to the basic knowledge and skills of nautical science and marine engineering that are required of all officers in the merchant marine; and to expose the mid- shipman to enough of the basics of the two professional disciplines to allow an informed decision on which major to select. Topics covered in nautical science include the economic role of the merchant marine, merchant ship types, shipboard terms, dimensions, personnel organization, ship construction nomenclature, mooring with lines, mooring with ground tackle, and practical labs in knots, splices, and hitches for the bosun chair and stage. Topics covered in marine engineering include main propulsion shafting and bearing, types of propellers, energy conversion, heat transfer, components and cycle of steam plants, gas turbines, cycles of internal combustion engines, components of diesel propulsion, comparison of propulsion plants, components of hydraulic steering gear, and practical labs in the use of basic hand tools and pipe fitting.

Prerequisite: none
3 class hours a week
2 laboratory hours a week

EE120 Introduction to Electrical Engineering Credits: 2.5

This course covers the electrical principles necessary for understanding the electrical power system operation, testing, maintenance and trouble shooting procedures practiced aboard ships. It develops the basic understanding of electrical machines, batteries, controls, protection and safety.

Prerequisite: KP100
2 class hours a week
2 laboratory hours every other week

EE300 Electric Circuits Credits: 2.5

This course covers the concept of resistance, Ohm's Law, power, DC circuit analysis, Kirchoff's Voltage Law, Kirchoff's Current Law mesh and nodal analysis, network theorems, transient RC, RL and RCL circuits, resonance, AC circuit analysis, Ac power, power factor, power factor corrections, linear transformer, three-phase circuits.

Prerequisites: MM232 or MM230
2 class hours a week
2 laboratory hours every other week

EE400 Electric Machines Credits: 3.5

Theory, analysis, and applications of motors and generator actions, transformers and their operation, AC motors (three-phase and single phase), stepper motors, synchronous motors and generators, DC motors and generators, control systems, discrete process control, PLC's, power electronic converters, and AC and DC motor drives. Correct procedures for the operation of marine electric plant and electric machinery design considerations are stressed.

Prerequisite: EE300
3 class hours a week
2 laboratory hours every other week

EE401 Electronics Credits: 2.5

Theory, analysis, and applications of electronic circuits. diodes and diode circuits, BJT and FET transistors, DC biasing and AC analysis. Logic gates, Boolean algebra, Karnaugh maps, flip-flops, counters, registers. Computer construction and operation. Elements of feedback, operational amplifiers, active filters. Design of electronic devices and systems.

Prerequisite: EE300
2 class hours a week
2 laboratory hours every other week

EE402 Automation and Control Credits: 3

Introduction to various control criteria and methods of control. Control system analysis includes the study of: Laplace transforms; transfer functions; block diagrams; analysis of physical systems; computer modeling; system response; controllers; stability and tracking; error analysis; root locus analysis; design of feedback control systems; and frequency response.

Elective
Prerequisite: MM232 or MM230 EE300
3 class hours a week

EE403 Power Electronics Credits: 3

Fundamentals of modern power electronic switching devices and their uses for control of AC and DC systems. Rectifiers, phase-controlled rectifiers, inverters, converters, DC choppers, AC and DC machines drives.

Elective
Prerequisite: MM360
3 class hours a week

EE404 Power System Design and Analysis Credits: 3

Application of the skills acquired in mathematics, physics and engineering sciences for the design of electrical power systems, incorporating the generation, distribution and utilization of electrical energy. Particular

emphasis is given to developing the principles of designing the marine power system.

Elective
Prerequisite: EE300 and EE400
3 class hours a week

EE801 Guided Research in Electrical Engineering
Credits: 3

Individual project in electrical engineering involving literature searches, analysis, design or application. Expected at the end of the project is a thesis-like report which can be published as a paper or presented to an interested audience.

Prerequisite: Enrollment in MES Program, EE Option Track.

EG100 Engineering Graphics
Credits: 2

This course will cover mechanical drawing, sketching and CAD as it relates to the maritime industry. The primary focus will be on the use of a CAD program in order to prepare students for completing sea projects and upper level courses that require drafting. Coverage will include multi-view projections, pictorials, section views and auxiliary drawings; also, flow diagrams, dimensioning, tolerancing and fasteners.

1 class hour a week
2 laboratory hours a week

EG111 Engineering Shop 1
Credits: 1

An introduction to the principles and safe practices of basic machine tool operation and metals fitting and joining as found aboard merchant ships. The course treats the preparation and use of cutting tools used in drilling, turning, facing, shouldering, and threading of work pieces. The course also includes a basic introduction to common metal joining and cutting processes, including shielded metal arc oxyacetylene welding and cutting, brazing and soldering, and welding/joining/cutting equipment and consumables. The course prepares midshipmen for the first sailing period and lays the basic foundation for more extensive development of metal cutting and joining.

Prerequisite: KP100
3 laboratory hours a week

EG211 Engineering Shop 2
Credits: 1

A continuation of metal cutting and joining theory and practice employed in merchant ship fabrication and repair operations. Emphasis is on the theory and safe practices of plasma; gas metal; and tungsten arc welding, oxyacetylene welding, brazing, cutting and flame spray metal surfacing. U.S. Coast Guard and American Bureau of Shipping technical standards are treated. The course also incorporates lathe and tool room machine practices including plain and taper turning, chucks and chucking, knurling, internal and external threading and milling machine operations.

Prerequisite: EG111
3 laboratory hours a week

EG 300 Steel Maintenance and Repair in the Marine Environment Credits: 3

An introduction to marine materials and maintenance and repair processes applied on board ship and in shipyards. Expands the student's knowledge of welding, industry practices, joining, measurement and inspection by emphasizing physical fundamentals and personal skills. Topics also include repair and maintenance processes and procedures.

2 class hours a week
3 laboratory hours a week
Prerequisites: EG211 and ES200

EM100 Introduction to Marine Engineering Credits: 3.5

A survey of merchant propulsion plants, i.e., fossil-fueled steam turbine, diesel engine and gas turbine. Basic engine construction, operating principles and support systems of each propulsion type are covered. Basic principles of pumps, steering gears and refrigeration systems are also presented. The course is offered in preparation for the first sailing period and prepares midshipmen for their future concentration in the Marine Engineering curriculum.

Prerequisite: KP100
3 class hours a week
2 laboratory hours every other week

EM200 Marine Engineering 1
Credits: 3.5

This course will cover various topics related to marine engineering. An emphasis will be placed on the classification and construction of main and auxiliary boilers; pump performance; diesel engines; centrifugal, rotary, and reciprocating pumps; and air compressors.

Prerequisites: EM100
3 class hours a week
2 laboratory hours every other week

EM300 Principles of Naval Architecture Credits: 3

This course will cover the engineering fundamentals required for a practical understanding of naval architecture, including statics, engineering materials, and strength of materials; ship geometry and definitions; ship form and hydrostatic properties; initial and overall stability; trim; damaged stability, floodable length, and ship strength.

Prerequisites: **MP120 and MM120**
3 class hours a week

EM301 Naval Architecture for Marine Engineers
Credits: 3

This course will cover ship geometry and definitions: ship form, hydrostatic properties, initial and overall stability; trim; damage stability, floodable length, ship strength and structure, resistance and propulsion, ship control, and fundamentals of ship design.

Prerequisite: **ES301**
Corequisite: **ES310**
3 class hours a week

EM302 Mechanical Aspects of Marine Engineering
Credits: 3.5

Application of engineering mechanics, materials engineering and strength of materials to the design and selection of machine elements as components of marine engineering systems. Fasteners, joint connections, springs, bearings, gears, shafts and power transmission systems components are some of the elements considered.

Prerequisites: **ES200 and ES301**
3 class hours a week
2 laboratory hours every other week

EM303 Ship Form and Stability
Credits: 3

Coefficients of Form, lines, centers. capacities, hydrostatic calculations, trim intact stability, floodable length, damage stability, launching calculations, regulatory rules. Introduction to Application Software.

Elective
Prerequisites: **MM130 and MP101**
2 class hours a week
2 laboratory hours a week

EM400 Marine Engineering 2
Credits: 3.5

A core course which details operations and controls of pumps, boilers and turbines. Positive displacement and non-positive displacement pumps are investigated as to head verse capacity operating characteristics, shaft seals, and Net Positive Suction Head. The boilers are investigated with respect to regulations, design and operating procedures. Impulse and reaction turbines are investigated to the theory of operation and characteristic operating curves.

Prerequisites: **ES210, ES100 and EM200**
3 class hour a week
3 laboratory hours every other week

EM401 Marine Engineering for Marine Engineering Systems
Credits: 3.5

A core course which details design, operations and control of boilers, turbines and assorted marine auxiliary equipment. Piping system design is covered. The boiler auxiliaries are investigated with respect to regulations, design and operating procedures. Impulse and reaction turbines are investigated to the level of theory, design, operation and performance characteristic.

Prerequisites: **EM200, ES210, ES301, and ES310**
3 class hours a week
3 laboratory hours every other week

EM402 Marine Engineering 2 for Marine Engineering Systems **Credits: 3.5**

Design and Operation of evaporators, control valves, boiler fuel and combustion air systems, boiler combustion control and feedwater regulation, steam turbines, gas turbines and hydraulic steering gear systems. This is a required course for Marine Engineering Systems majors.

Prerequisites: **ES210, ES100, and EM200**
3 class hours a week
3 laboratory hours every other week

EM403 Marine Engineering 2 for Marine Engineering and Shipyard Management
Credits: 3.5

This course covers the design and operation of evaporators, pumps and piping systems, control valves and boiler fuel and combustion air systems, boiler combustion control and feedwater regulation, steam turbines and hydraulic steering gear systems. This is a required course for Marine Engineering and Shipyard management majors.

Prerequisites: **EM210 and ES100**
3 class hours a week

EM410 Marine Refrigeration
Credits: 3.5

This course will cover various topics related to marine refrigeration and air conditioning including cycle analysis, compressor construction and performance, heat exchange construction and performance, system controls, psychrometrics, refrigerant characteristics and recovery, and the calculation of heating and cooling loads.

Prerequisites: **ES310**
3 class hours a week
3 laboratory hours every other week

EM415 Internal Combustion Engines **Credits: 3.5**

Study of theoretical and operational cycles of diesel engines; engine performance and selection criterion;

fuel systems, lubrication systems; cooling systems; starting and reversing systems; governor systems; engine fuels, fuel injection; systems lubricants; manufacture and design of engine components; crankcase explosions; dynamic balancing of engine running gear.

***Prerequisite:* ES310**
3 class hours a week
3 laboratory hours every other week

EM420 Engine Room Simulator **Credits: 1**

Engine Room Simulation-based training is designed to enhance the potential third engineer's skills to properly make all the decisions that are necessary to operate a large horse- power engine room in a safe and effective manner. As the training progresses, machinery casualties are implemented in which the student must simultaneously find alternative means of operating the engine room while troubleshooting and correcting the casualty. Tuning of PID controllers will also be included.

Prerequisites: EM200 and EM415
3 laboratory hours a week

EM425 Gas Turbines **Credits: 3**

The Brayton cycle application to gas turbine power cycles, heat balance, turbine and compressor flow pas-sages, gas turbine design, construction, operation and maintenance, application to marine drives.

Prerequisites: ES310 and ES301
3 class hours a week

EM426 Compressible Flow **Credits: 3**

An introductory course in compressible flows concentrating in aeronautical engineering applications. This course covers normal and oblique shocks, Prandtl-Meyer expansions, Fanno flow, Rayleigh flow, shock reflection, super- sonic lift and drag, nozzles, diffusers and the method of characteristics for nozzle design.

Elective
***Prerequisites:* ES310**
3 class hours a week

EM427 Aeronautical Engineering **Credits: 3**

An introductory course in aeronautical engineering. The first half of this course concentrates on practical aspects of flight, history of flight, lift, forms of drag, transition to turbulence, parametric equations for airfoil performance, drag divergence, the effect of airfoil geometry on performance, supersonic flight, aircraft performance, NACA sections, ground effects and stability. The second half of the course focuses on more theoretical topics like stream and potential functions, basic plane potential flows, superposition and circulation.

Elective
3 class hours a week

EM430 Diesel Maintenance **Credits: 2**

Teardown of diesel engines to survey work required for a complete repair report. Data taken during teardown and rebuilding includes cylinder wear, ring wear, piston clearances, bearing clearances, and crankshaft alignment. Includes complete rebuilding and final assembly of engine. Analysis of maintenance problems and causes are made for each engine studied.

Prerequisites: EM415
4 laboratory hours a week

EM441 Resistance and Propulsion **Credits: 3**

Fundamentals of resistance, dimensional analysis, series and statistical approximation methods, Froude's laws, power estimation, model testing, interaction of ship and propeller, propeller theory and design, Propeller selection. Introduction to NAVCAD or other resistance and propulsion software.

Elective
***Prerequisites:* ES310 and MM332**
3 class hours a week

EM442 Ship Structures **Credits: 3**

This course will cover the analysis of loads and responses of ship structure (including hull girder bending), stiffened and unstiffened plates, rings, midship section design, introduction to regulatory rules, and the use of structural programs.

Elective
***Prerequisites:* ES310**
3 class hours a week

EM443 Introduction to Ship Design **Credits: 3**

Concept and preliminary design techniques incorporating owners requirements, economic considerations into a balanced ship design. Mathematical modeling, ships characteristics, general arrangements, hydrostatic and dynamic considerations, stability, structures, and propulsion Use of synthesis, hydrostatic, hydrodynamic and CAD software.

Elective
***Prerequisites:* EM303, EM441, and EM442**
2 class hours a week
2 laboratory hours a week

EM444 Marine Dynamics **Credits: 3**

Theory of water waves, spectral analysis of ocean waves, ship motions in regular and irregular waves, maneuvering course keeping. Use of sea-keeping and

maneuvering software.

Prerequisites: **MM332**
3 class hours a week

EM450 Ocean Engineering
Credits: 3

Introduction: overview of ocean engineering; ocean environment-ocean floor, ocean currents, tides, waves, ice; offshore structures-types of structures, wave forces on structures, wind and current forces on structures, off- shore pipelines; coastal processes and structures-types of structures, wave refraction, diffraction and reflection, wave run-up, wave forecasting, sediment transport and scour, dredging; underwater systems-diving and life-support, pressure vessels, submarines, remotely operated vehicles, habitats, energy systems instrumentation for ocean applications; environment, safety, and ethics.

Elective
Prerequisites: **ES310 and MC370**
3 class hours a week

EM451 Offshore Power Systems Credits: 3

Fundamentals of modern power electronic switching devices in their uses for control of AC and DC systems- rectifiers, phase control rectifiers, inverters, converters, DC choppers, AC and DC machine controllers; fundamentals of power hydraulics- pumps, actuators, hydraulic system components, energy evaluation in hydraulic systems, hydraulic system design and circuit analysis.

Elective
Prerequisites: **EE300**
3 class hours a week

EM452 Offshore Oil Drilling and Production Credits: 3

The hydrocarbon production chain; hydrocarbon production history; off-shore recovery systems; typical production and process systems; anatomy of an oil well; field development issues-geographical, economic, environmental, cultural/political; hazards and risk management.

Elective
Prerequisites: **EM450**
3 class hours a week

EM453 Port Development
Credits: 3

Layout and design of the infrastructure for water transportation-harbors, channels and ports. Nature of water movement; problems in designing for the coastal environment; features of harbors sites; structures and planning the design of port facilities; economics and regulations; infrastructure modeling.

EM481 Marine Engineering System Design Project 1
Credits: 0.5

First phase of the design project for Marine Engineering Systems majors, Students design teams complete trade-off studies related to marine power plants and systems.

Corequisite or Prerequisite:
EM480 and EM415
1 laboratory hour per week

EM482 Marine Engineering System Design Project 2
Credits: 0.5

A continuation of the design project for Marine Engineering Systems majors, Students design teams begin the design of systems for a marine vehicle including design calculations, equipment selection, and preparation of specifications and drawings.

Prerequisite: **EM481**
1 laboratory hour per week

EM483 Marine Engineering Design Project 3 Credits: 1

Completion of the design of the systems for a marine vehicle including design calculations, equipment selection, and preparation of specifications and drawings. Presentation of the final project to a faculty and industry panel. Prerequisite: Marine Engineering Systems Design.

Elective Prerequisites: **EM450**
Prerequisites: **EM482**
2 laboratory hours a week
3 class hours a week

EM460 Thermal Analysis of Marine Power Plants
Credits: 3

The application of thermodynamics, fluid mechanics and heat transfer to the design of marine power plants and systems. The course will cover the analysis of steam, diesel and/or gas turbine power plants and associated auxiliary systems.

Prerequisites: **ES310 and EM400**
2 class hours a week
2 laboratory hours a week

EM461 Mechanical & Thermal Aspects of Marine Engineering
Credits: 3

Application of engineering mechanics, materials engineering, strength of materials and thermodynamics to the design and selection of machine elements, as components of marine engineering systems. Power plant cycles as well as components are studied. Fasteners, bearings gears, shafts and power transmission systems components are some of the elements considered.

Prerequisites: **ES200, ES301, and ES310**
3 class hours a week

EM470 Marine Engineering License Seminar Credits: 1

This course focuses on the final preparation of marine engineering license candidates. It stresses the importance of environmental protection and the various international and U.S. laws mandating the minimizing of pollution by ship and, in particular, those aspects under the direct control of marine engineers. It also focuses on enhancing the third assistant engineer candidate's examination-taking skills and reinforcing the knowledge necessary to successfully pass the final comprehensive assessment examination in the program of study, the U.S. Coast Guard Third Assistant Engineer examination.

Prerequisites: All other required Marine Engineering (EM) courses
3 class hours a week

EM480 Marine Engineering Systems Design Credits: 3.5

The application of the engineering sciences to the design of marine engineering power plants and their associated systems and equipment. Steam power plant heat balances; piping system design; design and sizing of reduction gears; shafting system design; design considerations of pumps, compressors, and turbines.

***Prerequisites:* EM200 and EM310**
3 class hours a week 3 laboratory hours every other week

EO210 Materials and Processes for Marine Technology Credits: 2.5

An introduction to marine materials and maintenance/repair processes and procedures applied aboard ship and in shipyards, to expand the student's knowledge of machining, tool practices, joining, measurement and inspection by emphasizing physical fundamentals.

***Prerequisites:* EM100 and EG111**
2 class hours a week
3 laboratory hours a week

EO301 Electrical Technology Credits: 4.5

This course, limited to Maritime Operations and Technology (MOT) majors, covers the electrical engineering principles associated with theories, design, operation and maintenance of shipboard electrical systems. Topics covered include AC and DC circuit theory, measurement and instrumentation, magnetism, transformers, electronics, electrical machinery, power electronics, fuel cells, automation and control, and regulatory standards.

***Prerequisites:* MC130**
4 class hours a week
2 laboratory hours a week

EO401 Ship Systems Operations Credits: 2.5

This course, limited to Maritime Operations and Technology (MOT) majors, provides an in-depth knowledge of the engineering principles, construction, operations and maintenance of shipboard engineering systems other than the primary propulsion systems. Topics covered include hydraulics, refrigeration and ventilation (HVAC), deck machinery, evaporators, compressed air systems, and other general engineering subjects. Knowledge acquired in this course is intended to help prepare students for supervisory positions in seagoing and shoreside engineering operations.

***Prerequisites:* EM100**
2 class hours a week 2 laboratory hours every other week

EO402 Auxiliary Propulsion Machinery Credits: 3.5

This course, limited to Maritime Operations and Technology (MOT) majors, provides an in-depth knowledge of the engineering principles, construction, operations and maintenance of the engineering systems that support the engineering systems that support the operation of modern, large-scale diesel and steam propulsion machinery. Topics include principles of thermodynamics, heat balances, fuel and lube oil systems, heat exchangers, bearing theory and construction, starting systems, and boiler and jacket water treatment. Knowledge acquired in this course is intended to help prepare students for supervisory positions in seagoing and shoreside engineering operations.

***Prerequisites:* EM100**
3 class hours a week
2 laboratory hours every other week

EP200 Manufacturing Processes Credits: 2.7

Introduces manufacturing processes applied by shipyards and other manufacturing enterprises and expands the students' knowledge of machining, joining, forming, casting, forging, and corrosion protection by emphasizing their physical fundamentals. Topics also include modern shipyard production processes and procedures. For Marine Engineering and Shipyard Management majors only.

***Corequisite:* ES200**
***Prerequisites:* EM100 and EG111**
2 class hours a week
1 laboratory hour a week

EP300 Engineering Ship Operations Credits: 3

Introduces the basic managerial and economic principles of operations of a ship as an engineering system. Topics include: functions and responsibilities of the onboard engineering crew and shore-side

management; preventive maintenance and repair systems; statutory and classification requirements for ship operations; economics of ship operations, maintenance and repair; introduction to ship- yards, including location, layout, equipment and production processes; ship engineering and design; shipyard repairs, overhauls and conversions.

***Prerequisites:* EM100**
3 class hours a week

EP301 Shipyard Internship Credits: 3

Each midshipman enrolled into Shipyard and Marine Engineering Management Program must satisfactorily complete a six-week internship assignment at a shipyard or at a related facility as a requirement for graduation. The objectives of the internship include learning procedures and obtaining practical skills in specific areas of shipyard operations and management, improving the mid-shipman's potential by exposure to the practical management functions, and collecting data for a capstone design project to be completed during the Senior Class year. The internship is performed prior to the senior year. It is open for midshipmen enrolled into Shipyard and Marine Engineering Management Program.

***Prerequisite:* EP300**

EP310 Engineering Economics Credits: 3

Introduces economic logic and quantitative methods to provide a basis for engineering decision-making involving capital investment and cost effectiveness. Topics include cost estimating in ship operations and in shipyards, project evaluation and selection, economic decision-making, time factor of money, risk and uncertainty, depreciation, replacement policy, and tax considerations. Practical applications to ship design, operations and construction are presented as case studies.

***Prerequisites:* DB210**
3 class hours a week

EP400 Engineering Project Management Credits: 3

Introduces the midshipmen to the fundamentals of management of engineering projects related to ship operation, ship production and repair. The subjects include classification of projects, organizational structure and contracts; ship and machinery design process, design spiral and iterative process; design teams and decision- making process, practical application, methods and models; project estimating; work breakdown, planning and scheduling; computerized net- work scheduling systems; project monitoring and updating; project cost control. Practical experience in evaluation, calculation and justification of project decisions is gained while working on an individual assignment and as a member of a capstone design team.

***Prerequisites:* EP310 and EP301**
3 class hours a week
1 laboratory hour every other week

EP401 Shipyard Production Management Credits: 3.5

Introduces students to the fundamentals of management of manufacturing enterprises involved in ship construction and repair, and in fabrication of ship components, equipment and spare parts. The subjects include classification of shipyards; modern ship production methods; process design and improvement; production control, planning and scheduling; management organization and structures; computer based integrated management systems; labor and productivity management; quality assurance management; plant operations; productions; production cost control; capacity analysis. Practical experience is gained in case studies and in development of the capstone design project.

***Prerequisite:* EP300, EP200 and EP400**
3 class hours a week
1 laboratory hour every other week

EP440 Dry Dock Design and Operation Credits: 3

This course will cover the topics required for a practical understanding of the operation of dry docks and their design. The various types of drydocking facilities will be described, as well as the management of the docking evolution from both the ship operator's and docking facility's perspective.

Elective
***Prerequisites:* ES105, and EM301**
3 class hours a week

EP450 Computer-Integrated Manufacturing Credits: 3

This course, for Marine Engineering and Shipyard Management majors only, introduces the basic principles of computer-integrated manufacturing (CIM) with a specific emphasis on shipyard production. This course is taught by a team of instructors with a combination of lectures on theoretical subjects and two design projects. The lecture topics include fundamentals of CIM, components and methods, and practical applications in the shipyard. The objectives of the design projects are for the student to learn the procedures and obtain the practical skills in designing a program for numerically- controlled

milling machines and for robots.

Elective
***Prerequisites:* ES110, EG211, and EP401**
3 class hours a week

EP461 Capstone Project Seminar 1 Credits: 0.5

(For Marine Engineering and Shipyard Management majors only.) Introduces the student to the fundamentals of developing engineering projects related to ship operations, ship production and repair. Provides the student with laboratory time and the instructor's assistance while working on the initial stage of the capstone project - development of a bidding package, economic evaluation and justification, project management strategy and procedures. Practical experience of design management is gained in planning and scheduling the project activities and in arranging teamwork.

1 laboratory hour a week

EP462 Capstone Project Seminar 2 Credits: 0.5

(For Marine Engineering and Shipyard Management majors only.) Introduces the student to the fundamentals of developing engineering projects related to ship operations, ship production and repair. Provides the student with laboratory time and the instructor's assistance while working on the capstone project development stage. Typical examples of the tasks are design of modernization and/or improvement proposals, production processes and shipyard capacity analysis and evaluation. Practical experience of design management is gained in planning and scheduling the project activities and in arranging teamwork.

1 laboratory hour a week

EP463 Capstone Project Seminar 3 Credits: 0.5

(For Marine Engineering and Shipyard Management majors only.) Introduces the student to the fundamentals of developing engineering projects related to ship operations, ship production and repair. Provides the student with laboratory time and the instructor's assistance while working on the final stage of the capstone project, which includes final project report development and preparation of project presentation. Practical experience of design management is gained in planning and scheduling the project activities and in arranging teamwork.

1 laboratory hour a week

EP801 Resource-Driven Production Strategy Design Credits: 3

This course, for Marine Engineering and Shipyard Management majors only, introduces students to the methods of PERT-based analysis of production plans. The principles topics include: PERT and CPA systems; task-driven production schedules; constraints and assumptions; resource-driven schedules; workforce optimization; and balancing and leveling. Practical design assignments are given.

Elective
***Prerequisites:* EP400 and EP401**
3 class hours a week

ES105 Engineering Mechanics Credits: 4

This course is an analysis of the subject of statics and dynamics. The objective is to impart the understanding of statics and dynamics with the understanding of forces, moments, components of forces, centroids, Theorem of Pappus, truss analysis, moments of inertia, radius of gyration, kinematics and kinetics of systems of particles, and kinematics and kinetics of rigid bodies. A full mathematical understanding is expected.

***Prerequisite:* MP101 and MM130**
***Corequisite:* MM130**
4 class hours a week

ES200 Introduction to Materials Engineering Credits: 2

An introduction to the structure and properties of solids commonly used in engineering applications, with an emphasis on atomic, crystalline, and non-crystalline structures. States of equilibrium and non-equilibrium in solids and the effects of internal structure on the physical and mechanical properties of materials are considered.

***Prerequisites:* MP101 and MC100**

ES210 Transport Processes 1 Credits: 3.5

The development of thermodynamic principles and concepts. Systems of units. First law, conservation of energy, mass continuity. Properties of pure substances. Ideal and real gases. Second Law, including the Carnot cycle, entropy, availability and available energy. Gas-gas and gas-vapor mixtures. Reactive systems analysis.

***Prerequisites:* MM130**
3 class hours a week
2 laboratory hours every other week

ES301 Strength of Materials Credits: 2

Stress and strain, thin-walled cylinders, Poision's ratio, statically indeterminate members, thermal stresses and Mohr's circle. Torsion in shafts. Shear and moment in beams. Beam deflections. Columns: Euler's formula and other column formulas.

***Prerequisites:* ES100**
2 class hours a week

ES305 Materials Engineering Laboratory Credits: 1

This laboratory will cover tension test, as well as compressive, torsional, bending, and impact, destructive materials testing with statistical evaluation in reporting of test data. Strain gauge measurement, phase transformation of steels, metallography are also covered. Non-destructive testing and evaluation to include using visual, ultrasonic, dye penetrant and radiographic methods as well as hardness testing is performed. The course relates materials engineering testing to industry standards.

Prerequisites: ES200 and ES301
Corequisite: ES301
2 laboratory hours a week

ES310 Transport Processes 2

Credits: 3.5

Principles of fluid statics including manometry, forces on submerged surfaces, buoyancy, and stability. Bernoulli's equation. Reynolds trans- port equation and flow continuity. Incompressible viscous flow including flow in pipes and ducts. Similitude. Drag and lift. Introduction to the fundamental laws of heat transfer. Steady-state conduction. Fin heat transfer, heat generated, transients with small internal resistance. Forced convection.

***Prerequisites:* ES210**
3 class hours a week
2 laboratory hours every other week

ES400 Advanced Thermal Science Credits: 3

Application of thermodynamic principles to the analysis of internal combustion engines, gas turbines, and steam power plants. One dimensional compressible flow, including nozzle flow with normal shocks. Thermal radiation principles and applications. Heat exchangers.

Elective
***Prerequisites:* ES310**
3 class hours a week

ES401 Thermal System Optimization Credits: 3

The simulation and optimization of thermal systems, including gas turbines, air conditioning, steam propulsion. Components are simulated, using various modeling techniques, and combined into systems. The systems are examined for operating characteristics and optimization within a concept.

Elective
***Prerequisites:* EM480**
3 class hours a week

ES410 Vibrations Credits: 3

Theory of mechanical vibrations, free and forced vibration of damped and undamped single degree of freedom systems, natural frequencies and critical speeds, instability, dynamic balancing isolation techniques, vibration testing and analysis techniques, introduction to modal analysis, introduction to acoustics, human response to vibration and noise.

Elective
***Prerequisites:* MM332 and ES301**

ES411 Machine Design 1 Credits: 3

Application of mathematics, engineering sciences, and general design factors to the design and analysis of components used in marine machinery. Includes factors in design, stress and deflection analysis, dynamic loading, energy methods, stress concentration and fatigue, fracture, and statistical considerations. Basic design practices for shafting gears, fluid film and antifriction bearings, bolted joints and brakes.

Elective
***Prerequisites:* MM332 and ES301**
3 class hours

ES412 Machine Design 2 Credits: 3

Application of the principles covered in machine Design I to the design of a complete machine, such as a pump or compressor. Some aspects related to hydraulic design will be also covered. Each student (either individually or as part of a team, based on the number of students enrolled in the class) will be expected to complete a design based on a specification that will be provided. Drawings and a detailed design report will be required for the design, In addition, an oral presentation will be made during which the design will be described.

Elective
***Prerequisites:* MM332 and ES301**

ES413 Solids Modeling & Finite Elements Analysis Credits: 3

Solids modeling and principles of finite-element analysis: model preparation; element types; mesh generation; restraints; applied loads; dis- placements; strains; stresses; dynamic analysis; evaluation of results; optimization. Applications related to computer-aided manufacture and inspection. Each student will submit a project consisting of the modeling and analysis of an original design.

Elective
***Prerequisites:* MM332, ES301, and ES310**

ES420 Introduction to Nuclear Physics and Engineering Credits: 3

This is a team taught course covering Nuclear Physics and Nuclear Engineering. The Nuclear Physics portion will cover nuclear structure, radioactivity and reactions; particle accelerators; binding energy; fission and fusion;

scattering and attenuations of radiation; nuclear instrumentation; radiation safety. The Nuclear Engineering portion will cover nuclear reactor components; reactivity effects and the fission process in reactors; reactor dynamics; neutron characteristics; neutron life cycle; delayed neutrons; macroscopic cross sections and mean free path; diffusion lengths and multiplication factors in reactors; production and loss rate formulas and reactor startup calculations. Additional items include: Types of Reactors, Nuclear Trends/Data, Fission Process, Fission Products, Distribution of Energy due to Fission, Fission Yield Curve, Prompt Neutrons, Delayed Neutrons, Reactor Dynamics, Properties of Neutrons, Macroscopic Cross Section, Mean Free Path, Slowing Down and Diffusion Length, Effective Multiplication Factor, Fermi Age, Buckling, Production and Loss Rate Formula for Xenon and Iodine, Reactor Operations and expected gage changes, Calculation for Startup of a Nuclear Reactor including Critical Rod Height.

Elective
Prerequisites: MP325
2.5 class hours a week (average)
2 laboratory hours every other week
Equivalent to MS420

ES421 Nuclear Engineering
Credits: 3

The application of the engineering sciences to the operation and design of nuclear power plants including associated support systems. The following topics are explored: Advanced Nuclear Reactors including Weight and Space Design Considerations, Combined Cycles, Pressurized Water Reactors, Gas Cooled Reactors, Boiling Water Reactors, Radioactive Radiation Vs. Thermal Radiation, Neutron Life Cycle, Fission Process, Nuclear Trends, Types of Nuclear Reactors, Pressurized Water Reactor: Primary System, Secondary System, Pressurizing System, Main Coolant Pump Switching & Thermal Design Limits, Scram Setpoints, Interlocks, Up Power and Down Power Evolutions and effects on Pressurizer, Primary Relief System, Emergency Cooling System, Discharge System, Reactor Core, Rod Control, Reactor Startup and Shutdown, Reactor Scram and Decay Heat Considerations, Reactor Plant Control Panel, Emergency Cooling, Three Mile Island, Reactor Plant Casualties, Primary Purification System & Chemistry Design considerations, Hydrogen Addition System, Emergency Core Cooling System and Emergency Shutdown, Primary Shielding and Dose Rate.

Elective
Prerequisites: ES420
3 class hours a week

ES423 Advanced Internal Combustion Engines
Credits: 3

This elective will be offered to all first class midshipmen interested in gaining a deeper appreciation of the internal combustion engine. Several different engine combustion applications will be presented: diesel; spark- ignited; prechamber spark ignited; and gas turbines. The course will have both practical and analytical components. Some cycle analysis using MatLab will be performed to study certain engine applications. The student will gain an in-depth under- standing of the current state-of-the-art strategies in engine combustion, engine performance and emission reduction.

Elective
Prerequisites: MM310 or MM332
3 class hours a week

ES428 Fluid Dynamics
Credits: 3

An introductory course in computational fluid dynamics (CFD), with practical applications. The first half of the course covers theoretical aspects of CFD: the Navier-Stokes, continuity and energy equations, finite differences, implicit and explicit solutions, analytical and computer solutions of simple flows, solution of systems of equations, Reynolds-Averaged Navier-Stokes models, and meshing. Second half course work will include tutorial using commercially available CFD softwork.

Elective
Prerequisites: ES310
3 class hours a week

ES430 Solid Waste Management **Credits: 3**

An analysis of solid waste generation, collection, salvage, cost analysis, and system design. Emphasis is placed on the engineering considerations associated with various options of disposal, with a heavy focus on waste to energy generation.

Elective
Prerequisites: MC340
3 class hours a week

ES431 Air and Water Pollution Control **Credits: 3**

A study of the causes and ramifications of air and water pollution. Design and operational techniques to minimize pollution are considered. Included are studies of relevant physical and chemical processes, including mass-transport and chemical equilibrium.

Elective
Prerequisites: MC340
3 class hours a week

ES432 Hazardous Waste Management **Credits: 3**

An analysis of hazardous waste generation and current management practices. Emphasis is placed on engineering treatment and disposal methods such as physiochemical processes, biological processes, stabilization and solidification, and thermal methods, as well as land disposal. Site remediation such as quantitative risk, characterization and remedial technologies are also discussed.

Elective
3 class hours a week

ES801 Alternative Energy Systems Design Credits: 3

This is a system design-based course that focuses on today's promising zero pollution, alternative energy technologies. These include solar photovoltaic, wind generation and fuel cells. The student develops a fundamental understanding of each technology, and is required to develop in- depth expertise on a technology, or fact of a technology, of their choice. In addition, the student participates in the "hands-on" construction of the integrated technologies, KP Alternative Energy systems. Communication with off-campus renewable energy technology companies is required.

Prerequisites: None
3 class hours a week

SEA YEAR

First Sailing Period

Engineering Courses

EC110 Machine Shop Credits: 1

This course provides practice using the lathe skills learned during plebe year in a shipboard environment. This course consists of the fabrication of a metal project using the ship's tools. As an alternative, midshipmen may provide photographic and technical report documentation of actual projects fabricated for the ship.

EC111 Marine Propulsion1 Credits: 2

This course is a study of the main propulsion machinery, the associated support systems, and the operational procedures related to the ship's main propulsion system. The project focuses on either main propulsion diesel, steam turbine, or gas turbine plants. The objective is to begin developing the skills necessary to be a proficient shipboard engineering officer as well as to provide practical, hands-on experience.

EC115 Shipboard Systems 1 Credits: 2

This course is a study of the ship's auxiliary machinery, the ship's support systems, and the operational procedures related to the ship's main propulsion system. This project also includes safety equipment and systems and provides the midshipman with practical operating experiences.

Second Sailing Period Engineering Courses

EC252 Electrical Engineering Credits: 1

This course studies the electrical systems on board the ship, including electrical generation, distribution, motor control, and lighting. Some know- ledge of troubleshooting is studied.

EC253 Maintenance Management Credits: 1

This course focuses on the logistical support of maintaining the ship in good operating condition, including inventory management, maintenance and repair activities, and planning shipyard work.

EC260 Marine Propulsion 2 Credits 2.5

Similar to Marine Propulsion 1, but with focus on steam plants with more depth of knowledge.

EC261 Marine Propulsion 3 Credits 2.5

Similar to Marine Propulsion 1, with focus on diesel plants with more depth of knowledge.

EC262 Shipboard Systems 2 Credits 2

Similar to Shipboard Systems 1, but with more depth of knowledge.

EC264 Naval Architecture Credits 2

This course is the study of the ship's structure and construction. It is designed to provide an understanding of classification, definitions shipboard construction, trim and stability, materials, and structural details.

EC265 Refrigeration Credits 1

This course is the study of the ship's heating, ventilation, and air conditioning system and the ship's stores refrigeration system. It includes investigating the system devices, principles of operation, and the procedures for maintenance and repair.

First Sailing Period Deck Courses

EC120 Marine Engineering for Deck Midshipmen Credits: 1

This course is designed to provide deck midshipmen with an overview of the ship's mechanical and electrical systems. The objective is to provide them with enough knowledge on how the ship functions to make them better ship's officers. The study focuses on equipment or systems that tend to affect the operation of the ship.

EC121 Marine Engineering for Ship's Officers Credits: 1

Similar to EC120, except tailored to the Ship's Officer's program. The Ship's Officer's program includes more engineering, so that the midshipman will be competent to

fill unlicensed shipboard engineering positions upon graduation as a “Qualified Member of the Engine Department - QMED.”

Second Sailing Period Deck Courses

SE257 Marine Engineering for Ship’s Officers 2 Credits: 1

Similar to EC121, except the project is more in-depth, and the midshipman is required to spend a minimum of 90 days as an engine cadet.

Department of Humanities

The department offers two introductory English courses. The first course, in plebe year, gives primary emphasis to composition and introduces midshipmen to classic works of literature to develop writing skills through close reading and critical analysis. A second English course, given in an upper-class year, focuses on literature of various genres and ages, and provides additional work on composition. Midshipmen have opportunities to reflect on the complexities of human life, culture and history, and the psychology of human conflict and cooperation.

During their second sailing period, midshipmen complete a Humanities Project, a long comparative essay that correlates literary, biographical or historical reading with shipboard observations about leadership.

The English Support Program provides an additional hour of remedial work in grammar and composition to selected plebes enrolled in English 1.

The department offers three history courses. The History of Sea Power, which plebes must take, grounds midshipmen in maritime and naval history, including the role of sea power during the two 20th century world wars. Sea Power also is designed to reinforce basic writing, critical reading and speaking skills.

The History of the Modern World, offered in an upper-class year, examines key transnational events and issues that have shaped our societies.

Since USMMA graduates will enter an international transportation industry, they will find the broad perspective gained from this course essential to their understanding of the world.

Modern American History, also given to upper-class midshipmen, explores the wellsprings of contemporary American life. The course describes the events that have shaped our society since 1945 to seek a better understanding of the issues we face today.

All midshipmen take one course from a grouping entitled Topics in Literature and History, of non-survey courses, focused on aspects of literature, culture, and history. Through analysis of particular topics, the courses explore the roots, evolution and expressions of cultural systems to expose students to cultural, historical or literary analysis. Each course has strong writing and public speaking components and gives midshipmen responsibility for facilitating classroom discussion.

DEPARTMENT HEAD

Joshua Smith (2003)
(History)
A.S., Maine Maritime Academy
M.A., St. Andrew's University
M.A., East Carolina University
Ph.D., University of Maine

ASSISTANT DEPARTMENT HEAD

Jeffrey F. Taffet (2002)
(History)
B.A., Franklin and Marshall
M.A., Georgetown
Ph.D., Georgetown

PROFESSORS

Jane Pacht Brickman (1981)
(History)
B.A., Queens College
M.A., Ph.D., CUNY

Laury Magnus (1981)
(English)
B.A., Brooklyn College
M.Phil., Ph.D. CUNY

Rosanne Wasserman (1991)
(English)
B.A., Indiana
M.F.A., Columbia
Ph.D., CUNY

ASSOCIATE PROFESSORS

Howard L. English, Jr. (2001)
(History)
B.S., Fordham
M.A., Fordham
M.B.A., Iona College
Ph.D., Fordham

Melanie Ross (2004)
(English)
A.B., Princeton
Ph.D., New York University

Christopher R. Trogan (2006)
(English)
B.A., Columbia
M.A., Columbia
M.A., CUNY
Ph.D., CUNY

ASSISTANT PROFESSORS

Jennifer L. Speelman (2011)
(History)
B.A., Pennsylvania State
M.A., Temple
Ph.D., Temple

Gregory F. Sullivan (2006)
(History)

B.A., University of California, Berkeley
M.A., Yale University
Ph.D., Yale University

PROFESSORS EMERITI

Arthur L. Donovan
(History, 1988-2003)
A.B., Harvard
M.S., Wisconsin
Ph.D., Princeton

Robert P. Gardella
(History, 1977- 2006)
B.A., Rice
M.S., Ph.D., Washington

Jacques Szaluta[2]
(History, 1965-2001)
B.S., New York University
M.A., Ph.D., Columbia

Note: Sea Year courses (with HS prefix) appear at the end of this course listing.

HC200 Chinese Civilization

Credits: 3

Introduction to key aspects of the historical and contemporary culture of China. Analysis of geographical environment, population dynamics, spoken and written languages, classical thought and religion, the imperial order, traditional society and economy, premodern science and technology, China's modern encounters with the West, foreign imperialism in China, the rise of power of nationalist and communist movements, and China's recent experiences under state socialism.

3 class hours a week

HC201 Studies in Comparative Culture

Credits: 3

The social, economic, political structures, and religious and cultural foundations of non-Western societies. Perspectives on contemporary developments in selected areas, focusing on the distinct historical evolution of cultures and comparison to Western developments. Areas vary from year to year.

3 class hours a week

HC420 Empires and Consolidated States

Credits: 3

Comparative analysis of two important imperial systems in world history - Rome and Han China. Major themes include politics and government, military strategy and tactics, ideological and religious rationalization for empire, and the processes by which imperial systems "rise and fall." The consolidation of nation-states of

modern times, comparing key social, political, military, and cultural facets in the emergence of France and Japan in the seventeenth and eighteenth centuries.

3 class hours a week

HC425 American Enterprise: Business, Management, Labor & Economic Development Credits: 3

An exploration of the evolution of the American economy to enable students to understand the modern economy and the new workplace they will encounter. The study of business, technological innovation, labor and labor relations, as well as issues and debates surrounding American economic development and competitiveness.

3 class hours a week

HC430 Leadership in Modern Times: A Biographical and Psycho-Historical Approach Credits: 3

Examination of major figures in the nineteenth and twentieth centuries. The study of biographies from traditional and psycho-historical perspectives. Figures selected for study include F. D. Roosevelt, Eisenhower, Clinton, Thatcher, Nightingale, Freud, Gandhi, Malcolm X, MacArthur, and Hitler.

3 class hours a week

HC435 The World and American History Credits: 3

Topics in American history, from the colonial period to the present, set in the context of parallel or contemporaneous developments in other parts of the world; aspects of American history seen in a global perspective.

3 class hours a week

HC440 Introduction to Cinema Credits: 3

This course introduces cinema as an international art form, providing basic concepts, vocabulary, and examples of films and directors to enable students to make educated judgments about the cross-cultural themes, values, and pleasures of the film.

3 class hours a week

HC453 Introduction to India Credits: 3

This course provides an introduction to Indian history and civilization. The early development of urban civilization in the Indus Valley, the development of Hinduism, the coming of Islam, and the establishment of the Mughal Empire, the arrival of the Europeans particularly the British, the independence movement and the problems of the post-independence era are covered.

3 class hours a week

HC455 History of Modern China Credits: 3

This course offers a history of China from the fall of the Ming to the present. Special emphasis will be placed on nationalism, imperialism, and the rise of the Chinese Communist Party.

3 class hours a week

HE101 English 1 Credits: 3

Fundamentals of composition, grammar, critical reading, and analysis of essays and literature. Expo- sure to research techniques and forms, including library and Internet. Development of communication skills through oral presentations, graded essays, and papers.

3 class hours a week

HE202 English 2 Credits: 3

Study of literature and composition. Intensive writing, combined with the study of literary genres through selected works of drama, poetry, short stories, and novels. Continued work in technical writing and research.

***Prerequisite:* HE101**
3 class hours a week

HE110 English Support Program Credits: 0

An additional hour of English for selected students enrolled in English I. Students will work intensively to develop writing skills.

1 laboratory hour a week

HE301 Literature of the Sea Credits: 3

A survey of the greatest writing about the sea, from Homer and "The Sea- farer," through Melville and Conrad, to Patrick O'Brian and Jimmy Buffett. Students share and write stories of their own Sea Year adventures.

Elective
3 class hours a week

HE302 ShakespeareCredits: 3

The study of works and textual and performance interpretation of Shakespeare's drama, including analysis of his histories, tragedies, comedies, and romances. The selection includes Richard III, Henry IV (Part I), The Taming of the Shrew, As You Like It, A Midsummer Night's Dream, Much Ado About Nothing, Twelfth Night, Romeo and Juliet, Hamlet, Othello, King Lear, and The Tempest.

Elective
3 class hours a week

HE400 The Growth of Self in Literature and film Credits: 3

This course explores the theme of the quest for the self, as expressed in literature and film. Additionally, the course focuses on the two similar but divergent media of literature and film as vehicles for dramatizing character and character

development. In literary works, films, and film adaptations, students will trace protagonists' struggles with their inner demons as well as the evils of their societies as they move toward maturity and articulate inner lives. Four of five literary works will be examined, both as texts and in film versions or adaptations.

Elective
3 class hours a week

HE410 War and Peace in Literature, History and Film
Credits: 3

This course studies the cultural continuity of war and peace themes from the ancient to the modern world. Since its Homeric beginnings, war literature has continued to occupy a sizable place in the literary canon and folk/popular culture. The course will examine great works of literature and film that seek to understand the meaning of war from individual and historical frameworks.

Elective
3 class hours a week

HE420 The Making of the Modern Mind Credits: 3

This interdisciplinary course focuses on the forces of cultural definitions at the turn of the twentieth century. The course explores the interconnections among the arts, literature, and history. The areas studied will be broken into four units: Cubism and Fragmentation; Impact of Freud on the Arts; Existential Response to War and the Holocaust; and African-American and Feminists Statements. The course will conclude with a consideration of the role of art in the twenty-first century.

Elective
3 class hours a week

HG401 Public Speaking
Credits: 3

This course is designed to develop professional competency in oral communication. Its primary emphasis is on speech design and speaking, whether as individuals addressing professional audiences or in small groups working on problems or tasks usually performed by investigative teams. The course's learning tasks culminate in two speeches given toward the end of the term -- one to inform and one to persuade.

Elective
3 class hours a week

HG402 Public Speaking and Technical Writing Credits: 3

This course is designed to develop professional competency in oral and written communications. Its primary emphasis is on speaking, whether as individuals addressing professional audiences or in small groups to work on problems or tasks usually per- formed by investigative teams. The course's learning tasks culminate in two speeches given toward the end of the term -- one a technical report and one to persuade.

Elective
3 class hours a week

HH100 The History of Sea Power Credits: 3

An introduction to the circumstances and traditions of seafaring, the concept of sea power and its applications, the strategic doctrines and military history of the U.S. Navy, and the origins and consequences of federal maritime policy in the 20th century.

3 class hours a week

HH310 Modern World History
Credits: 3

This course examines key issues of the modern world. It will focus on exploring political, economic and/or intellectual change and the impact of interactions between a number of different areas of the world. There is a focus on significant transnational events over an extended time period. Each instructor will choose a theme, or series of themes, to organize the material. This course is not intended to be comprehensive. Themes may also change by term.

3 class hours a week

HH360 Modern American History Credits: 3

This course examines the evolution of society within the United States from the end of the Second World War to the present. During the term, mid- shipmen will examine a series of key cultural and social changes that occurred during this period and, when appropriate, will assess the political, economic, demographic, ideological and the international contexts for those changes.

3 class hours a week

HH370 Holocaust: Its Historical and Ethical Meaning
Credits: 3

A study of the history and ethical implications of the Holocaust. The course includes aspects of Jewish history and anti-Semitism, World War II, and German efforts to eliminate the European Jewish population. Beyond the study of the facts, the course will engage students in critical analysis of the psychological and ethical meaning of these events.

Elective
3 class hours a week

HH371 Studies in Ethical Theories and Issues
Credits: 3

Introduction to theories of ethical conduct and the practical application of theory to difficult political, social, and business dilemmas. The course seeks to stimulate students' moral imagination to raise recognition of ethical issues.

3 class hours a week

HH400 History of the South

Credits: 3

This course will explore the relation- ship between the South and major events and trends of American his- tory. A major portion of the course will be devoted to understanding the Civil War, military and politically. Students will learn what has made the South a distinctive region and how Southern history has converged with the larger history of the United States.

Elective
3 class hours a week

HH410 American Government
Credits: 3

This course focuses on the major principles, structures, and policies of government in the United States. In particular, the Constitution and its development , the ways in which government has changed over the centuries, and current political controversies and figures will be considered and studied.

Elective
3 class hours a week

HH420 The U.S. and the Third World **Credits: 3**

The course will serve as introduction to key issues and events in the history of United States relations with the Third World. Students will analyze how and why the United States, as a primary participant in the world system, dealt with events in Asia, the Middle East, and Latin America. Stu- dents will also discuss the modern implications of historical United States actions abroad, exploring how current global relationships evolved.

3 class hours a week

HH430 The History of Latin American-U.S. Relations
Credits: 3

This course will serve as introduction to key issues and events in the his- tory of Latin American-United States relations. Students will analyze how and why the United States has attempted to protect, control, or serve its southern neighbors. The course also will examine how Latin Americans responded to political, cultural, and economic initiatives of the United States.

3 class hours a week

HI703 Independent Study
Credits: 3

A course of individual study, research, or design on a suitable topic, with the course syllabus and content con- structured under the direction of a faculty member and approved by the department head.

HI704 Maritime History Independent Study
Credits: 3

A course of individual study, research, and writing based on the leading figures of the maritime field, including Joe Curran, Paul Hall, William Francis Gibbs, Malcolm McLean, Admiral Alfred Thayer Mahan, Samuel Bowditch, or William Webb. Papers will become chapters in a biographical compendium of maritime leaders.

HL300 Introduction to Conversational Spanish
Credits: 3

This course is designed to develop Spanish-language conversational skills. Every effort will be made to create a homogeneous group, based on students' representations of their previous exposure to the study of Spanish, as well as the instructor's evaluation of each student on the first day of class. The level at which the course will be taught will reflect students' prior experience. The course focuses on making the student con- versant in a variety of culturally authentic situations likely to be experienced as a visitor in a Hispanic country.

Elective
3 class hours a week

HL301 Intermediate Conversational Spanish
Credits: 3

This course has been designed for the student who has already been exposed to elementary and intermediate Spanish. The focus of this course is to enable the learner to function in a variety of authentic business and social settings The course will propel the student from the "tourist" in language settings to one who begins to feel comfortable in "living" the language in a more vocational and commercial environment.

Elective
3 class hours a week

SEA YEAR

Second Sailing Period

HS211 Humanities Sea Project
Credits: 1

A reading and writing project to be completed by all midshipmen during their second sailing period.

Department of Marine Transportation

The department administers the marine transportation program for midshipmen. It is also responsible for major portions of the Maritime Business and the Logistics and Intermodal Transportation curricula. The department offers courses in three disciplines: Nautical Science, Maritime Business, and Logistics and Intermodal Transportation.

Courses are given in the core curriculum to provide midshipmen with nautical science and management skills, as well as a knowledge of the transportation process necessary for successful careers in the maritime industry. The core includes courses in management, law, economics, transportation, logistics, intermodal and port operations, navigation, seamanship, marine safety and meteorology.

In addition, the department offers advanced elective courses in relevant areas. These courses can be grouped to give midshipmen a more in-depth exposure to a particular subject area. Students interested in concentrating their electives are advised to contact faculty advisors for specific information and advice. The department's administrative and faculty offices, classrooms and most of its laboratories are located in Bowditch Hall. The Marine Transportation Department conducts classes in navigation, ship handling and cargo operations in labs and classrooms situated in Bowditch Hall. Integrated Navigation Labs 1 & 2 (INL1 and INL2) each have 16 interactive ownships where each ownship workstation is semi-isolated and has full hydrodynamic capability and includes radar, electronic chart system, physical conning control, and large panel visualization. Marine Transportation Lab 1 (MTL1) has a capacity for 24 students and for training in electronic navigation, electronic chart systems, containership stowage, supply chain management, and liquid cargo handling including LNG. Marine Transportation Lab 2 (MTL2) has a capacity for 18 students for training with electronic navigation, electronic chart systems. Marine Communications Lab (B106) has a capacity for 16 students for practice and certification in GMDSS using the latest in fully integrated simulation. A seamanship laboratory in Samuels Hall is also maintained and operated by departmental faculty. The department provides hands-on training in ship operations utilizing the vessels and dockside facilities of the Waterfront Activities Department.

An important component of deck officer training is achieved through the use of a ship's bridge simulator, located in the Computer Aided Operations Research Facility (CAORF) in Samuels Hall. This full task bridge simulator offers midshipmen the opportunity to practice bridge team management as well as vessel maneuvering under realistic conditions.

DEPARTMENT HEAD

CAPT George Edenfield, USMS, (2003)[4]
(Marine Transportation)
B.S., U.S. Merchant Marine Academy
License: Master of Steam and Motor Vessels of Any Gross Tons, Oceans (STCW95); Tankerman PIC; Medical PIC; Fast Rescue Boat: GMDSS Operator/Maintainer

ASSISTANT DEPARTMENT HEADS

CAPT Jon S. Helmick, USMS (1995)[4]
(Logistics and Transportation)
Director, Logistics and Intermodal Program
B.A., University of Miami
Ph.D., University of Miami
License: Master of Steam, Motor, Auxiliary Sail, and Sail Vessels of Any Gross Tons, Oceans

CAPT Timothy D. Tisch, USMS (2002)[4]
(Marine Transportation)
Assistant Department Head-Nautical Sciences
B.S., SUNY Maritime College
M.S., U.S. Naval Postgraduate School

Ph.D., U.S. Naval Postgraduate School
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator

PROFESSORS

CAPT Fiaz H. Arain, USMS (1991)[4]
(Marine Transportation)
B.S., University of Wales, Cardiff
M.B.A. (Finance), University of Bridgeport
M.S., Ph.D. (Transportation Planning and Engineering), NYU-Polytechnic University
License: Master of Steam and Motor Vessels of Any Gross Tons, Oceans (STCW95)

Michael B. Cohn (1978)
(Economics)
B.A., Yeshiva
M.A., Ph.D., New York University

CDR Dennis Compton, USMS (1981)
(Marine Transportation)
B.S., M.S., SUNY Maritime College
Licenses: Master, Inland Steam or Motor Vessels of Any Gross Tons; Chief Mate of Steam and Motor Vessels of Any Gross Tons, Oceans (STCW95)

CAPT Brian J. Hall, USNR
B.S., U.S. Merchant Marine Academy
M.S., SUNY Maritime College
License: Master Steam or Motor Vessels Any Gross Tons, Oceans (STCW95); Tankerman PIC; Medical PIC; Fast Rescue Boat.
Military: Captain U.S. Navy (RC)

CAPT Douglas A. Hard, USMS (1966) [1,2,4]
(Marine Transportation)
B.S., U.S. Merchant Marine Academy
M.B.A., Pennsylvania (Wharton)
M.S., Polytechnic Institute of New York
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans, Military: Captain, USNR

CDR Mark E. Huber, USMS (1980)[2]
(Marine Transportation)
B.S., SUNY Maritime College
M.S., Long Island University
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator; Tankerman PIC (DL)

Gary A. Lombardo (2002)
(Maritime Business)
B.S., New Hampshire College
M.S., University of Southern California
Ph.D., University of Oregon

CAPT David B. Moskoff, USMS (2001)[4]
(Marine Transportation)
B.S., SUNY Maritime College
MIT Masters of Information Technology, American Intercontinental University
License: Master of Steam and Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator

CAPT Cynthia L. Robson, USMS (1996)[4]
(Marine Transportation)
B.S., Texas A&M (Texas Maritime Academy)
M.A., University of Houston (Clear Lake)
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans; Limited Master Ocean, Sail or Auxiliary Sail Vessels

CDR Paul J. Zerafa, USMS (1986)
(Marine Transportation)
B.S., SUNY Maritime College
M.S., New York Institute of Technology
M.S., Long Island University
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator and Maintainer

ASSOCIATE PROFESSORS

CAPT Thomas M. Dorr, USMS (2003)[4]
(Marine Transportation)
B.S, M.S., SUNY Maritime College
Licenses: Master of Steam or Motor Vessels of Any Gross Tons (STCW95); GMDSS Operator: Tankerman PIC (DL & LG)

Chang Q. Guan (2002)
(Logistics and Transportation)
Diploma, Jimei Institute of Navigation, Fujian, P.R. China
B.S., SUNY Maritime College
M.S., SUNY Maritime College
Ph.D., New Jersey Institute of Technology
License: Third Mate, Unlimited (People's Republic of China)

CDR Stephen C. Hempstead, USMS (2004)
(Marine Transportation)
B.A., M.A., University of Rhode Island
B.S., Massachusetts Maritime Academy
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator; Tankerman PIC (DL)

CDR Daniel M. Hunt, USMS (1990)[2]
(Marine Transportation)
B.S. Nautical Science, USMMA
M.A. Teachers College, Columbia University
License: Chief Mate of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator

LCDR Ronald F. Jablonski (1983)
(Marine Transportation)
B.S. SUNY Maritime College
M.S. SUNY Maritime College
Second Mate of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95)

CDR John F. Ryan, USMS (2005)
(Marine Transportation)
B.S., SUNY Maritime College
M.S., SUNY Maritime College
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); First Class Pilot

CAPT Ann Sanborn, USMS (1993)[2,4]
(Marine Transportation)
B.S., Texas A&M (Texas Maritime Academy)
J.D., University of Houston
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95)
Member of the Bar - State of Texas

ASSISTANT PROFESSORS

CDR Kelly Curtin, USMS (2010)
(Marine Transportation)
B.S., University of Southern California
M.S, SUNY Maritime College
License: Master Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator Tankerman PIC (DL)
Military: Lieutenant, USNR

CDR Preston C. De Jean, USMS (2011)
B.S., University of Louisiana at Lafayette
J.D., Southern University Law Center
LL.M. Tax, Golden Gate University – San Francisco
Member of the Bar: State of Louisiana
Military: Lieutenant Colonel, Logistician, USAR (Ret.)

CDR Kevin Duschenchuk, USMS (2011)
(Marine Transportation)
B.S., SUNY Maritime College
License: Master Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator; Tankerman PIC (DL)

CAPT John H. Hagedorn (1996)[2,4]
(Marine Transportation)
B.S., SUNY Maritime College
License: Master of Steam or Motor Vessels of any Gross Tons, Oceans (STCW95)

CDR Kevin Hasson, USMS (2011)
(Marine Transportation)
B.S., U.S. Merchant Marine Academy
License: Master Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator, Fast Rescue Boat, ECDIS, Medical PIC
Military: Lieutenant, USNR

CDR William J. Lindman, USMS (2010)
(Marine Transportation)
B.S. Marine Transportation, SUNY Maritime College
M.S. Transportation Management, SUNY Maritime College
License: Master of Steam or Motor Vessels of not more than 1600 gross tons, Oceans (STCW95); Chief Mate of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); Designated Duty Engineer (Motor) not more than 4000 horsepower (STCW95); GMDSS Operator

CDR John L. Lutz, USMS (2005)
(Marine Transportation)
B.S., U.S. Merchant Marine Academy
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator

CDR Emil A. Muccin, USMS (2010)
(Marine Transportation)
B.S., U.S. Merchant Marine Academy
M.B.A. Pace University
Licenses: First Class Pilots License-Great Lakes; Master-1600 GT of Steam or Motor Vessels Oceans; Second Mate of Steam or Motor Vessels of Any Gross Tons, Oceans (STCW95): ASQ Certified Quality Engineer; ASQ Certified Quality Auditor ASQ Certified Six Sigma Green Belt.

CAPT Michael C. Murphy, USMS, (2011)[4]
(Marine Transportation)
B.S., U.S. Merchant Marine Academy
License: Master of Steam and Motor Vessels of Any Gross Tons, Oceans (STCW95); GMDSS Operator/Maintainer; Medical Care Provider; ECDIS

CDR Peter A. Schneider, USMS (2011)
(Maritime Business)
B.S., MIT
M.B.A., Baruch
Ph.D. Business, CUNY

PROFESSORS EMERITI

CAPT Raymond Eisenberg, USMS (Ret.)
(Marine Transportation: 1941-1946)
Diploma, Pennsylvania Sate Nautical School
License: Master of Steam and Motor Vessels, any Gross Tons, Oceans.

CAPT Robert J. Meurn, USMS (Ret.)[1,2,4]
(Marine Transportation: 1978-2003)
B.S., U.S. Merchant Marine Academy
M.A., George Washington University
License: Master of Steam or Motor Vessels of Any Gross Tons, Oceans.
Military: Captain, USNR (Ret.)

Note: Sea Year courses (with DS prefix) appear at the end of this course listing.

KP100 Maritime Professional Studies Credits: 4

This course will present descriptive material covering the basic elements of nautical science and marine engineering. Topics covered in the nautical science portion of the course will include the economic role of the merchant marine, ship types, shipboard terms, dimensions and personnel organization, ship construction nomenclature, mooring with lines, mooring with ground tackle, and practical labs in knots, splices and hitches for the bosun chair and stage. Topics covered in the marine engineering portion of the course will include main propulsion shafting and bearing, types of propellers, energy conversion, heat transfer, components and cycle of steam plant, gas turbines, cycles of internal combustion engines, components of diesel propulsion, comparison of propulsion plants, and components of hydraulic steering gear. Engineering practical labs will cover the use basic hand tools and pipe fitting.

3 class hours a week
2 laboratory hours a week

DB110 Principles of Logistics and Transportation Credits: 3

This course examines the fundamentals of the transportation system and the complex environment in which it operates. The elements of the supply chain and the principles of logistics will be explored. The economic, operating, and service characteristics of individual modes will be surveyed. Cost factors, demand, pricing, and regulations of transportation services will be examined. The goal of the course is to provide students with a solid understanding of the principal elements of logistics and transportation systems and a grasp of important terminology, with emphasis on the role of each mode of transportation in intermodalism and integrated logistics systems.

DB210 Economics Credits: 3

Scope and method of economics: allocative mechanisms and economic systems; supply and demand analysis; pricing and resource allocation under various market conditions; cost curve analysis; national income accounting; theory of income determination; fiscal policy; money and banking; monetary policy

DB230 Management
Credits: 3

A comprehensive course designed to explore the world of a manager with emphasis on the principles and practices of management. This course focuses on the managerial functions of planning, controlling, staffing, directing and motivating individuals and work- groups. The objective is to enhance midshipmen knowledge and thinking about the workings of organizations and the relevance of management concepts as they embark on their professional careers.

DB240 Marketing Credits: 3

This course examines the role of marketing from the perspective of a marketing manager who needs knowledge of customer/consumer behavior to develop, evaluate and implement effective strategies intended to influence those behaviors to achieve the firm's objective. Among the topics covered are: market research and analysis, consumer behavior, marketing strategies, distribution, and pricing. Special emphasis will be given to marketing services of transportation companies.

DB300 Fundamentals of Business and Maritime Law
Credits: 3

An introduction to the American legal system and business law and an analysis of the public policy behind the law. A presentation fundamental concepts of law to give the students an understanding of the role and importance of maritime law in shipping and transportation. Topics include: nature and sources of the law, jurisdiction, constitutional law, administrative law, torts, contracts, rights of seamen cargo, collision, salvage and maritime pollution.

3 Class hours a week

DB310 Finance and Accounting Credits: 3

The principles of accounting essential to the development of a good accounting information system will be studied. The methods of collecting financial information and their processing to produce the financial statements necessary for good management control will be developed. The journal, the ledger, trial balance, adjustments, depreciation, statement preparation and analysis will be covered. Budgeting and cost controls are developed. This course will familiarize students with concepts and terminology of business finance: DCF, NPV, IRR, break-even analysis, capital budgeting, and cost of capital will be introduced. Microcomputer software and business oriented simulation will be used.

DB410 International Business and Ocean Shipping
Credits: 3

A comprehensive course covering the international environmental forces and their influence on all of the functional areas of the international firm - marketing, finance, management and operations - with special emphasis on the international ocean shipping firm and its central role in international trade and global logistics. This survey course is designed to help mid- shipmen develop an increased aware- ness and understanding of international business and global business issues, as well as their impact on international ocean shipping firms.

DB498 Maritime Economics
Credits: 3

An analysis of the Economics of the Maritime Industry. The course covers the various sectors of the industry: Dry Bulk, Liquid Bulk and General Cargo. Costs of providing shipping services and the demand for these services are studied. This leads to an analysis of the pricing of ships and shipping services. The regulatory framework of the industry is also considered. For disadvantages of intermodalism, awareness of the intermodal services, terminals, equipment, and information systems currently in operation and under development, and under- standing of how individual modes and intermediaries interact in intermodal systems, and a grasp of the key challenges faced by commercial and military intermodal transportation man- agers and knowledge of some of the strategies that can be employed in dealing with these concerns.

DL200 Integrated Logistics Management Credits: 3

This course examines the theory and practice of logistics management in the modern business environment, with attention to parallels between business and military logistics. Key objectives of the course are to provide midshipmen with an in-depth understanding of the operation of key elements in logistics systems, comprehension of the interrelationships among individual components of supply chains, awareness of the structure and purpose of logistics information systems, knowledge of how the logistics function interfaces with other business functions, and a grasp of the principal tools and techniques used in the analysis of logistics systems. Emphasis is on system optimization for the purpose of achieving competitive advantage, cost reduction, and customer satisfaction.

DL300 Intermodal Transportation Systems
Credits: 3

This course explores the important concepts and operational specifics of commercial and military intermodal transportation, primarily as they pertain to the movement of freight. It is designed to provide students with an appreciation of the development and characteristics of the present inter- modal transportation system, comprehension of the advantages and disadvantages of intermodalism, awareness of the intermodal services, terminals, equipment, and information systems currently in operation and under development, and under- standing of how individual modes and intermediaries interact in intermodal systems, and a grasp of the key challenges faced by commercial and military intermodal transportation man- agers and knowledge of some of the strategies that can be employed in dealing with these concerns.

DL340 Management of Transportation Enterprises
Credits: 3

Building on the foundation laid in earlier logistics and intermodal transportation major courses, this elective will examine the challenges inherent in managing today's businesses operating both modally and in intermodal service. The course will focus on the regulatory, financial, economic, and global environments impacting such businesses. Particular attention will be paid to intermodal issues where appropriate. The course will be conducted under the case analysis method, and will be augmented by speakers from transport management, financial institutions, and relevant government agencies. Because the case method will be used, class participation provides a significant part of the final grade, and class preparation will be closely monitored. This course fulfills the elective requirement for Logistics and Inter- modal Transportation majors.

Elective
Prerequisite: DB110
3 Class hours a week

DL350 Introduction To Railroad Operations
Credits: 3

This course is designed to introduce the student to the operational aspects of that segment of the nation's infrastructure that moves passengers and freight over steel rails. Sufficient detail is provided to ensure an under- standing of the physical plant, operational capabilities and limitations, the maritime interface, comparative advantages and limitations of rail transportation, and its niche in inter- modal transportation.

Elective
Prerequisite: DB110
3 Class hours a week

DL400 Intermodal Port and Terminal Operations
Credits: 3

A detailed analysis of the economic, legal, and practical dimensions of intermodal terminal operations. Subjects covered include gate operations, yard management, cargo-handling equipment, terminal information systems, maintenance and repair, documentation, port administration, and labor-management relations. Challenges related to productivity, infrastructure constraints, increasing vessel size, and new technologies are addressed. Emphasis is on the central role of intermodal ports and marine transportation in achieving the goal of "seamless" transportation.

DL420 Global Supply Chain Management
Credits: 3

Designed to provide students with an understanding of the unique functional, legal, cultural, and strategic issues that characterize international freight logistics. Topics addressed include global sourcing, international inventory management, system optimization, global transportation options, international terms of sale and documentation, global information management, international logistics strategies, and organizing the firm to achieve effective global logistics management. The development of managerial decision-making skill in the global context is facilitated through the use of case studies and computer simulation exercises.

DL440 Introduction to Air Transportation
Credits: 3

This course will examine the back- ground, operations and future of the commercial domestic and international air transport industry and U.S. military aviation. Through the perspective of shippers, passengers, carriers, facilitators, airports, and government, the course surveys the services pro- vided, equipment used, airports, cost and rate structures, documentation, government policies and regulations, independent and alliance business arrangements, insurance, routing techniques and optimization, analysis of operations and competitive alternatives, and plans for the future. The course will also provide a better understanding of the growing importance that the communication of information has on purchasing and operating commercial and military air transportation services.

Elective
Prerequisite: DB110
3 Class hours a week

DL450 Logistics and Intermodal Seminar
Credits: 3

A capstone course structured to integrate the lessons learned in prior course work, internships, and the sea year experience. Through case studies and applied research projects dealing with current challenges provided by industry, government, and military organizations, the seminar provides midshipmen with the opportunity to apply their knowledge and skills in solving "real-world" problems in logistics management intermodal transportation, and port operations. Midshipmen regularly interact with, and make presentations to, officers of organizations providing issues and problems.

DL460 Defense Transportation Systems Credits: 3

This course explores the important concepts and operational specifics of the Defense Transportation System (DTS), primarily as they pertain to the deployment of forces "from fort to fox- hole." It is designed to provide students with an appreciation of the characteristics of the present transportation system, challenges faced by the DTS, and an awareness of the services, terminals, equipment, and information systems currently in operation. The course will also discuss the logistical support provided to the tactical operations of a brigade task force.

Elective
Prerequisite: DB110
3 Class hours a week

DM300 Information and Technology Management
Credits: 3

This course provides midshipmen with broad knowledge of information systems and relevant issues faced by managers and administrators in organizations. The course focuses on information technology—computer hardware, software, networks/telecommunications, and protocols and procedures, as a tool to solve business problems. The student will explore the principles and practices of managing and developing information systems and technology in an enterprise and assess their impacts on management, organizations and society. This course is required for all Marine Transportation majors and may be taken as an elective by other midshipmen. Class size limited to 30 students.

3 Class hours a week

DM320 Human Resources Management Credits: 3

A comprehensive course designed to assist future ship's officers with the basic tools in dealing with the "people" issues. Topics include organization and administration of the human resource function, selection and placement, performance appraisal, fringe benefits, wage and salary administration, and major personnel issues in today's maritime milieu.

DM340 Admiralty and International Law Credits: 3

An in-depth study of U.S. admiralty law and the public international law of the sea. Major decisions and the principles upon which they are based will be examined in relevant contexts. Admiralty topics include: liens, personal injury, collision, carriage of cargo salvage, general average, and pollution. International law topics include: sources of law, jurisdiction, territorial sea, contiguous zone, continental shelf, exclusive economic zone, high seas and the deep seabed. U.S. oceans policy will be discussed under each of these topics.

3 Class hours a week

DM390 Entrepreneurship and Management of Start-Ups
Credits: 3

This course explores the factors that transform an idea into a serious business opportunity of choice. It covers significant aspects of a new business start-up and/or a small privately-held firm; incorporates researching the background; development; implementation of ideas; and producing a business plan for the venture that will facilitate the future practice of entrepreneurship in the maritime industry. It lays the groundwork for networking with alumni practitioners and enhances a simulated entrepreneurial experience.

DM400 Marine Insurance
Credits: 3

This course will familiarize the student with the fundamentals of marine insurance, the ocean marine hull and cargo policies, third party liability insurance (P and I insurance), the categories of marine losses, and general average and salvage adjustments. This course is required for all Marine Transportation majors and may be taken as an elective by students who have completed the pre- requisites. Class size limited to 30 students.

DM410 Chartering and Brokerage Credits: 3

This course will provide a basic understanding of how charter parties are constructed, how chartering decisions are made, how vessels characteristics and voyages are analyzed, the functions of brokers and agents and vessel sales and purchases. This course is required for all Marine Transportation majors and may be taken as an elective by Logistics and Intermodal and Marine Operations and Technology majors. Class size limited to 30 students.

3 class hours a week

DN100 Safety of Life at Sea
Credits: 2

Students successfully completing this course will be able to take charge of the preparation, embarkation and launching of survival craft. They will be able to manage a boat under oars or motor, and take charge of an inflatable life raft. Students will know the correct use of all survival equipment and what action to take to preserve the lives of those in their charge. An official test to obtain U.S. Coast Guard certification will also be given.

1 class hour a week.
2 laboratory hours a week

DN110 Basic Firefighting & Safety
Credits: 2

This course provides the student with the knowledge and experience to handle shipboard fires by initially developing fire prevention, extinguishment, suppression, and techniques. Subsequently, the student will be made aware of fire and its behavior. Students will be shown how to use fire prevention, extinguishment, and suppression equipment properly and effectively in dealing with fires and hostile environments. Students will be instructed in the safe use of respirators and on the subject of fit testing of respirators. This is an STCW 95 course required as part of USCG licensing. All competencies must be successfully completed.

2 class hours a week
One 8-hour lab field exercise at a fire training facility

DN120 Terrestrial Navigation
Credits: 3

This required course is designed to teach the student the technical and practical concepts of Terrestrial Navigation. Areas covered include terrestrial coordinates, nautical charts, navigation publications, piloting, navigation aids, compass corrections, the computation of tides and tidal currents. Practical chart work laboratories, simulator time, and a laboratory on the training vessel provide extensive practice. This course is required of all Deck Midshipmen and is offered in the Second Term of Fourth Class Year.

2 class hours a week
2 laboratory hours a week

DN121 Celestial Navigation
Credits: 4

Introduction to the study of celestial bodies, their locations and apparent motion relative to an observer on Earth, their ephemera elements of the celestial sphere, concepts and use of time including predictions of celestial phenomena. The course will encompass celestial theory derived from qualitative and quantitative analysis of the combined coordinate systems for reductions to celestial lines of position. Celestial observations will be used to determine compass error. Studies will also involve practical application through use of the sextant, azimuth ring, alidade, and other standard shipboard equipment and publications.

3 class hours a week
2 laboratory hours a week

DN130 Introduction To Navigation Law
Credits: 1

This required course is an introductory study of the various statutes governing the operation of watercraft subject to U.S. jurisdiction. Emphasis is placed on the International Navigational Rules Act of 1977 (which implemented the 72COLREGS, the regulations resulting from the 1972 Convention on International Regulations for Preventing Collisions at Sea). An introduction to the Inland Navigational Rules Act of 1980 (which implemented the new unified Inland Rules of the Road presently applicable on the navigable water of the United States) will be provided. This course is required of all Deck Midshipmen and is offered the Third Term of Fourth Class Year for B-split sea year training assignees and First Term Third Class Year for A-split assignees.

1 class hour a week

DN140 Meteorology
Credits: 3

This course will cover the principles of modern meteorology as is applicable to the marine environment. The course encompasses the following: the earth-atmosphere system; weather elements; atmospheric thermodynamics; wind systems; cyclones and anticyclones, air masses, fronts, and middle-latitude cyclones; violent local storms; tropical storms; the synoptic weather map; weather service for merchant shipping; weather forecasting; ocean waves; sea ice and ice accretion; weather map construction and analysis; optimum shiprouting utilizing the prevailing and projected weather conditions to advantage; weather routing to avoid adverse conditions; practice of practical shipboard reporting procedures.

3 class hours a week

DN210 Cargo Operations
Credits: 3

This course will cover the principles of materials handling and their applications to the movement of marine cargoes, safe cargo operations, certification of cargo gear, stresses on cargo gear, mathematical calculations of safe and efficient cargo stowage, and prevention of moisture damage due to cargo and ship sweat. In addition,

this course will examine ship stability and trim and practical applications of these principles in the loading of vessels carrying break-bulk, bulk, and container cargoes. A container loading project will be required to be completed involving computing of stowage, trim, KG, GM and LCG.

3 class hours a week

DN220 Electronic Navigation Credits: 3

The purpose of this course is to present information needed by the deck officer or member of the bridge team to use and understand various land-based and space-based electronic navigation systems including global positioning system (GPS), electronic chart display and information system (ECDIS), radar navigation, automatic radar plotting aids (ARPA), automatic information systems (AIS), gyro compasses, autopilot operations, depth sounders, speed indicators, and integration of bridge systems. Fundamental collision avoidance in compliance with The Rules of the Road, use of radar transfer plotting, and typical USCG test questions in electronic navigation are also covered.

Prerequisite: DN120
2 class hours a week
2 laboratory hours a week

DN230 Seamanship and Shiphandling Credits: 3

This course presents concepts and practices of seamanship, shiphandling and maneuvering, conventional and new propulsion and steering systems, interaction between vessels, and constraining channels, use of tugs, mooring and anchoring and port arrival/departure. Studies also include ground tackle and maneuvering with anchors, towing, ice seamanship, heavy weather, right whale collision avoidance, emergencies and special situations. A part task or full mission bridge simulator will be used in laboratories to allow the midshipmen to apply practical shiphandling skills. A practical seamanship review will be accomplished in the rope locker and will run concurrently with an assistant instructor.

2 class hours a week
2 laboratory hours a week

DN240 Tanker Operations Credits: 3

This course is a combination of classroom lectures and practical demonstrations using laboratory equipment, such as the liquid cargo/ballast-handling simulator. This course is designed to satisfy the cargo training requirement set forth in Qualifications for Tankerman and for Persons in Charge of Transfers of Dangerous Liquids and Liquefied Gases. 46 C.F.R.§ 13.209 and to meet the requirements for specialized training of personnel serving on oil and chemical tankers as specified in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, (STCW) and the 1995 amendments o f STCW. In addition, this course reflects the most current regulatory requirements affecting the tanker industry as well as safe industry practice found in various fleet manuals, trade publications and manufacturers' manuals. Successful completion of this course is a prerequisite to assignment aboard an oil/chemical tanker during the second sailing period of sea year as well as satisfying one element of the federal regulation leading to an endorsement on the Merchant Mariners Credential (MMC) as a Tankerman, Person-in-Charge PIC (DL).

3 class hours a week

DN241 Advanced Tanker Operations Credits: 3

An in-depth study of inert gas systems, crude oil washing operations and related safety topics that impact the role of a deck and engineering officer on a modern tanker. This course is designed to satisfy both international (IMO) and domestic (ISCG/shipping company/union) requirements for specialized training of individuals in the areas of crude oil washing and inert gas systems. Certificates will be issued upon successful completion of the course.

Elective
Prerequisite: DN240
3 class hours a week

DN300 Fast Rescue Boat Credits: 1.5

This course aims to provide the training for candidates to launch and take charge of a fast rescue boat, in accordance with Section A-V1/2 of the STCW Code. This course is offered as an elective to both deck and engine midshipmen. On meeting the minimum standard of competence in fast rescue boats, a midshipman will be competent to handle and take charge of such boats during or after launch in adverse weather and sea conditions. They will also be able to operate a fast rescue boat engine. Midshipmen will know the correct use of all locating devices, including communication and signaling equipment between the rescue boat and a helicopter and the ship; and how to carry out search patterns.

Elective
Prerequisites: DN100
1 class hour a week.
1 laboratory hour a week.

DN410 Advanced Firefighting Credits: 2

This course will cover the organizing and training of fire

parties and controlling fire-fighting operations aboard ships. The course will address the fire detection and firefighting equipment aboard ships and the investigation of incidences concerning fires.

Prerequisite: **DN110**
1 class hour a week
1 laboratory hour a week
***one 8-hour laboratory* field exercise at a fire training facility**

DN420 Advanced Navigation Credits: 3

This navigation course expands upon previous navigation courses stressing an in depth understanding of advanced concepts of navigation. Topics include the theory, and applications of various chart projections, sailings, magnetism and the earth's magnetic field, magnetic compass adjustments, leeway, voyage length and arrival times, and the theory of tides and tidal currents.

3 class hours a week

DN421 Navigation Law (Rules of the Road) Credits: 2

This required course is an in-depth study of the various statutes governing the operation of watercraft subject to U.S. jurisdiction. Particular emphasis is placed on both the International Navigational Rules Act of 1977 (which implemented the 72COLREGS, the regulations resulting from the 1972 Convention on International Regulations for Preventing Collisions at Sea) and the Inland Navigational Rules Act of 1980 (which implemented the new unified Inland Rules of the Road presently applicable on the navigable water of the United States). Also discussed are the underlying legal concepts and constitutional issues associated with both international and domestic navigation law as pertains to the American mariner. This course is required of all Deck Midshipmen and is offered in the First and Second Terms of First Class Year.

2 class hours a week

DN430 Maritime Communications Credits: 4

This course is designed to satisfy the requirements necessary to earn the STCW-95 endorsement as a Global Maritime Distress and Safety System Operator. It covers all of the material delineated in the U.S. Coast Guard approved model course in GMDSS. A midshipman who successfully completes this course will be able to operate the radio communications equipment required on board GMDSS-compliant vessels. Non-GMDSS communications systems (signal flags and Morse Code by flashing light) will also be addressed.

Prerequisite: **DN220**
3 class hours a week
2 laboratory hours a week

DN435 Coastal and Inland Vessel Management Credits:3

This course introduces the maritime student to the nature and operations of companies that operate vessels within the littoral zone of the United States and the environment in which they operate. This includes tug and towing companies, barge companies and passenger vessel operators, port authorities, government and non-government agencies, trade associations, labor organizations and other groups that control and influence this significant segment of the maritime industry. Present day industry issues and concerns will be discussed. This course will also look at equivalent working environments in other parts of the world.

3 class hours a week

DN450 Tankship Liquified Gases Credits: 3

The purpose of this course is to meet the training requirements for Liquid Gas Vessel Person in Charge. This 40 hour course provides individuals with a thorough working knowledge of liquid gas tankship 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 paragraphs 22 – 34 in the STCW '95 Code and 46CFR Part 13 Table 13.121(F).

Elective
Prerequisites: **DN110, MC100, and DN240**
3 class hours a week

DN455 ECDIS Credits: 3

The purpose of this required course is to meet the training requirements for the operational use of electronic chart display and information systems (ECDIS). This course provides students with the knowledge, skill and understanding of ECDIS and electronic charts to the thorough extent needed to safely navigate vessels whose primary means of navigation is ECDIS. The course emphasizes both the application and learning of ECDIS in a variety of underway contexts. Successful completion satisfies present STCW training requirements and permits a USCG course certificate to be awarded upon graduation.

Prerequisites: **DN120, DN220, and DS322**
2 class hours a week
2 laboratory hours a week

DN460 Bridge Watchstanding
Credits: 2

This course is intended for Midshipmen at the U.S. Merchant Marine Academy who are preparing themselves for licensing as watchkeeping deck officers. It is intended to be a 52-hour capstone course taken after completion of all other courses in the curriculum related to watchkeeping duties and the midshipman has completed all of the required at-sea training. The course will be taught by appropriately qualified and certified instructors and will allow for the practice and demonstration of watchkeeping skills. This course will challenge the student's decision-making abilities, passage planning skills, and bridge team management techniques. The course is taught at USMMA to midshipmen in the deck license programs. It is scheduled as a one-term or semester course. In order to meet the 52 hour course requirement, the course must provide the students with a minimum of 13 hours of lecture and pre-briefing, 26 hours of simulated experience and 13 hours of debriefing. This course is adapted from the model course developed by the Maritime Academy Simulator Committee (MASC) with the aid of the U.S. Coast Guard and Maritime Administration.

1 class hour a week
2 laboratory hours a week

DN470 License Seminar
Credits: 2

This required course provides an intensive review in the topics and problems covered on the U.S. Coast Guard Second and Third Mate Exam, by means of review, problem solving and examination. Topics that will be reviewed and examined include seamanship, cargo handling and stowage, meteorology/oceanography, navigation theory, ship construction terminology and navigation law. Types of navigation problems that will be review include computing and plotting lines of position (visual bearings, radar, meridian transit, Polaris, sun lines and star lines), sailings (parallel, mid-latitude, Mercator, and great circle), computing time of meridian transit and sunrise/set, tide and tidal current calculations, and determination of compass error by terrestrial and celestial means (bearings, azimuth, amplitude, Polaris). This course is required of all First Class Deck Midshipmen prior to the United States Coast Guard License Exam and is offered in the Third Terms of First Class Year.

3 laboratory hours a week

DN480 Tankerman Engineer
Credits: 3

An in-depth. study of the transport of bulk liquid cargoes by tank-ship. The course topics include: vessel design/construction, oil/chemical cargo characteristics, cargo systems, ballasting/deballasting, tank cleaning, gas freeing/enclosed space entry, inert gas systems, crude oil washing operations, oil pollution regulations and control and tanker safety. Successful completion of this course meets the USCG requirements for training of individuals pursuing an endorsement as "Tankerman Engineer." Additionally, this course incorporates the material required under STCW 78/95 for specialized training of individuals serving on tank-ships carrying dangerous oil and chemical cargoes. The material presented reflects current regulation and accepted industry practice which is presented through a combination of classroom lectures and practical demonstrations

Elective
3 class hours a week

DN485 Piloting
Credits: 3

The purpose of this course is to prepare the students for the USCG First Class Pilot Exam for Chart number12366-Tallman Island to Execution Rocks. Students will prepare for the exam by studying the Inland Navigation Rules, Tides and Currents, New York Traffic Service(VTS) Regulations, Coast Pilot Descriptions of the area, and by drawing Chart 12366 from memory. In addition to classroom instruction, students will make several trips through the area aboard Academy training vessels.

Elective

Prerequisites: DN120, DN230, and DN425
2 class hours a week
2 laboratory hours a week

SEA YEAR

DS210 Deck Operations for Engineers
Credits: 1

The objective of this sea project is for the engine midshipman to acquire the knowledge and practices of deck seamanship, firefighting, and SOLAS operations necessary to successfully perform the duties of a ship's licensed engineer. Using the ship as a laboratory, this portion of the Sea Project will require the engine midshipman to observe various deck operations and thus enhance his understand how the Deck and engine departments cooperate in order to fulfill the mission of the ship.

DS220 Navigation 1
Credits: 2

The objective of this sea project is for the midshipman to acquire the navigational skills and practices necessary to successfully perform the duties of a ship's licensed deck officer. This is to be achieved by the shipboard practice of computations learned from in-residence courses in celestial and terrestrial navigation, and writing in-depth descriptions of

navigational publications that will prepare the midshipman for capstone navigation courses in first class year. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

Prerequisite: **DN120 and DN121**

DS221 Navigation Law 1
Credits: 1

The objective of this sea project is for the midshipman to acquire the knowledge and practices of Navigation Law necessary to successfully perform the duties of a ship's licensed deck officer. Using the ship as a laboratory, this portion of the Sea Project will build upon the midshipman's knowledge of gained from in-residence course work. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS230 Cargo Operations 1
Credits: 1

Using the ship as a laboratory, the objective of this sea project is for the midshipman to acquire the knowledge of safe and efficient stowage and handling of cargo necessary to successfully perform the duties of a ship's licensed deck officer. This sea project will be completed by deck-officer endorsement candidate midshipmen.

DS240 Seamanship
Credits: 1

The objective of this sea project is for the midshipman to acquire the knowledge and practices of seamanship necessary to successfully perform the duties of a ship's licensed deck officer. Using the ship as a laboratory, this portion of the Sea Project will build upon the midshipman's knowledge of seamanship terminology, practices and procedures gained from in-residence course work. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS241 Ship Structure and Terminology Credits: 1

The objective of this sea project is for the midshipman to acquire the knowledge of merchant ship structure, dimensions and terminology necessary to successfully perform the duties of a ship's licensed deck officer. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS320 Navigation 2
Credits: 3

The objective of this sea project is for the midshipman to acquire the navigational skills and practices necessary to successfully perform the duties of a ship's licensed deck officer. This is to be achieved by the shipboard practice of computations learned from in-residence courses in celestial and terrestrial navigation, and writing in-depth descriptions of navigational publications that will prepare the midshipman for capstone navigation courses in first class year. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

Prerequisite: **DN120 and DN121**

DS321 Navigation Law 2
Credits: 2

The objective of this sea project is for the midshipman to acquire the knowledge and practices of Navigation Law necessary to successfully perform the duties of a ship's licensed deck officer. The project concentrates on examining the major differences between the International and Inland Navigation Rules. The project will build upon the knowledge gained from in-residence course work and the first sailing period. It will prepare the midshipman for the Navigation Law Class offered in first class year. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS322 Electronic Navigation
Credits: 2

The objective of this sea project is for the midshipman to acquire the knowledge and skills concerning electronic navigation and communications necessary to successfully perform the duties of a ship's licensed deck officer. This will be accomplished by researching and then completing extensive written responses to questions concerning shipboard electronic systems used for communication. For electronic navigation systems, after a period of research and practice, the midshipman will demonstrate proficiencies according to detailed checklists included in the project. These responses will build upon knowledge and skills gained from in-residence courses, and will prepare midshipmen for navigation courses in the First Class year. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS330 Cargo 2 Credits: 2

Using the ship as a laboratory, the objective of this sea project is for the midshipman to acquire the knowledge of safe and efficient stowage and handling of cargo necessary to successfully perform the duties of a ship's licensed deck officer. This project will build upon the knowledge gained in DN210 Cargo Operations and first sailing period. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS340 Seamanship 2
Credits: 1.5

The objective of this sea project is for the midshipman to acquire the knowledge and practices of seamanship necessary to

successfully perform the duties of a ship's licensed deck officer. In addition to basic seamanship subjects, advanced topics such as ship handling and the use of tugs are incorporated into this project. The sea project will build upon knowledge gained from DN230 Seamanship/Shiphandling as well as material from the first sailing period. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS341 Ship's Structure and Stability Credits: 1.5

The objective of this sea project is for the midshipman to acquire the knowledge of merchant ship structure, dimensions, terminology and stability necessary to successfully perform the duties of a ship's licensed deck officer. This project will build upon the knowledge gained from in-residence course work and the first sailing period. This sea project will be completed by all deck-officer endorsement candidate midshipmen.

DS390 Maritime Business Credits: 1

This course is taken by midshipmen of all majors during the second sailing period. It is designed to both introduce the midshipman to the business side of the maritime operations and to pro- vide an understanding of the total transportation network which ocean shipping is a part of. Midshipmen are required to research information and practices aboard their ship to answer questions concerning these topics.

Department of Mathematics and Science

This department offers courses in physics, chemistry and mathematics. All midshipmen take these courses, generally during their first two years. In the Fourth Class year, mathematics and science courses comprise approximately 40 percent of the academic program. The courses are designed to teach the fundamental concepts that midshipmen will use in later courses in the Engineering and the Marine Transportation curriculums. The department also provides a strong science background required of all educated people in our world of high technology.

All midshipmen are required to take two terms of Physics and one term of General Chemistry. Both courses have a strong laboratory component so that midshipmen can experience the experimental side of science. The department maintains general science laboratories that incorporate the recent technologies of microelectronics, lasers and computers. State of the art equipment using PC-based data acquisition is used in the Nuclear, Engineering Chemistry, and Physics Laboratories. The department is also responsible for the operation of the Class of '81 Astronomical Observatory. The mathematics and sciences laboratories, offices, and observatory are located in the Fulton/Gibbs building.

All midshipmen take two terms of Calculus. In addition, Marine Transportation, Maritime Operations and Technology, and Logistics and Intermodal Transportation students take one term of Probability and Statistics; Marine Engineering students take one term of Engineering Mathematics; Marine Engineering Systems students take two terms of Engineering Mathematics; and the Marine Engineering and Shipyard Management students take one term of Engineering Mathematics and two terms of Quantitative Methods.

Because mathematics is so important to nearly every area of study at the Academy, all entering midshipmen take an assessment examination administered by the department. Students are placed into Calculus 1, or extended Calculus 1. Extended Calculus provides midshipmen with an extra hour of instruction per week.

The physics and chemistry courses are rigorous. The physics courses are calculus-based. Physics 1 has Calculus 1 as a corequisite, and Physics 2 has Calculus 2 as a corequisite. Midshipmen majoring in Marine Engineering, Marine Engineering Systems and Marine Engineering and Shipyard Management take an Engineering Chemistry course in their Second Class Year.

The department also offers electives that, in addition to providing advanced study, reflect some of the scholarly and research efforts of the faculty. Examples of such electives are Environmental Science, Environmental Chemistry, Advanced Engineering Math, Astronomy, Chemistry of Hazardous Materials, Atomic Physics, and Nuclear Physics. Marine Engineering and Marine Engineering Systems majors are required to take one of our electives from an approved list and some electives are required as part of the Marine Engineering Systems minor tracks.

The Nuclear Engineering minor track is one of the department's oldest and most successful programs, dating back to the 1960s, when the Academy trained personnel for America's first nuclear merchant ship, the SAVANNAH. Presently, midshipmen taking this sequence find employment opportunities in the nuclear power industry or enlist in the navy's nuclear service. The Atomic and Nuclear Physics courses are given by the Mathematics and Science Department, while the Nuclear Engineering courses, which follow, are given by the Engineering Department.

DEPARTMENT HEAD

Argyrios Doumas (1998)
(Physics)
Professor
B.S., Maryland
Ph.D., Texas A&M

ASSISTANT DEPARTMENT HEAD

Mark J. Hogan (1999)
(Physics)
Associate Professor
B.S., Haverford College
M.S., Ph.D. National University of Singapore

PROFESSORS

David Dellwo (1977)
(Mathematics)
B.A., Carroll
B.S., M.S. D.E.S., Columbia

H. Leroy Hutson (1989)
(Mathematics)
M.S., Ph.D., Rutgers

Charles F. Weber (1972)
(Mathematics)
B.S., Manhattan
M.S., Ph.D., New York University

Michael E. Melcer (1996)
(Chemistry)
B.S., SUNY Stony Brook
M.S., Ph.D., SUNY College of Environmental Science and Forestry

ASSOCIATE PROFESSORS

Lowell A. Cummings (2004)
(Physics)
B.S., University of New Mexico
M.S., Bowling Green State University
Ph.D., New Mexico State University

Yuri Fedyunin (2005)
(Physics)
B.S., Moscow Electrical Engineering College
M.S., Ph.D., Moscow State University

Joshua S. Friedman (2005)
(Mathematics)
B.S., SUNY Binghamton
M.A., SUNY Stony Brook
Ph.D., SUNY Stony Brook

ASSISTANT PROFESSORS

Alexander Retakh (2010)
(Mathematics)
B.A., NYU
Ph.D., Yale University

Paul Serafino (2004)
(Physics)
B.S., Trinity College
Ph.D., Yale University

David Shinn (2010)
(Chemistry)
B.S., Univ of South Carolina
M.S., Univ of Hawaii
Ph.D. Emory University

Dianne Taha (2005)
(Information Technology)
B.A., Harpur College, Binghamton University
M.S., New York Institute of Technology

PROFESSORS EMERITI

Laurence M. Cassar (1967-2002)
(Physics)
B.S., M.S., St. John's University
Ph.D., Adelphi

Albert Stwertka (1954-1995)
(Physics)
B.S., Bard College
M.A., Columbia
Ph.D., Adelphi

Career Advisors: Environmental Science: M. Melcer
Nuclear Engineering: A. Doumas

ES420 Introduction to Nuclear Physics and Engineering
Credits: 3

In the Nuclear Physics portion: nuclear structure, radioactivity and reactions; particle accelerators; binding energy; fission and fusion; scattering and attenuations of radiation; nuclear instrumentation; radiation safety. In the Nuclear Engineering portion: nuclear reactor components; reactivity effects and the fission process in reactors; reactor dynamics; neutron characteristics; neutron life cycle; delayed neutrons; macroscopic cross sections and mean free path; diffusion length and multiplication factors in reactors; production and loss rate formulas and reactor startup calculations.

Elective
Prerequisites: MP325
2.5 class hours a week
2 laboratory hours every other week

MC100 General Chemistry
Credits: 4

Fundamental concepts including matter, energy, measurement units, density, specific gravity and heat capacity; structure of the atom; the periodic table; bonding; formulas and equations; the liquid state; solutions of electrolytes, acids, bases and salts; pH and methods of expressing concentrations; the gas laws and the kinetic-molecular theory; reaction rates; chemical and ionic equilibria.

Corequisite: MM101
3 class hours a week
2 laboratory hours a week

MC300 Engineering Chemistry
Credits: 3

Lecture includes traditional topics with applications to engineering: buffer solutions, hydrolysis, water chemistry, heats of reaction, organic chemistry, combustion of hydrocarbons, calculation of percent excess air, electro- chemistry, corrosion, redox equations, and colligative properties. The laboratory explores heats of reaction, melting point, fractional

distillations, freezing point depression, heats of reaction using Hess's law, titration curves and determination of half cell potentials.

Prerequisite: MC100
2.5 Class hours a week
2 laboratory hours every other week

MC310 Introduction to Environmental Science Credits: 3

The basic principles of environmental science, covering such topics as ecosystems, population dynamics, energy and matter resources, environmental toxicology, pest control, air, water, and soil resources and air, water and soil pollution, conventional energy usage and energy alternatives.
Elective
3 class hours a week

MC340 Environmental Chemistry Credits: 3

Fundamental concepts and applications in environmental chemistry: organic chemistry relevant to environmental issues; properties of solutions and solution chemistry; water pollution and treatment; air pollution and emission treatment vs. impact; chemistry of hazardous materials in the environment and the reduction, treatment and disposal of hazardous waste.

Elective
Corequiste: MC300
2.5 class hours a week
2 laboratory hours every other week

MC370 Introduction to Oceanography Credits: 3

Introduction to the history of oceanography: earth structure and plate tectonics; ocean topography; sediments; seawater chemistry and ocean physics: atmospheric and ocean circulation: wave dynamics and tides; the marine ecosystem; productivity and marine animals; marine resources and environmental concerns.

Elective
Prerequisites: MC100 and MP130
3 class hours a week

MC460 Chemistry of Hazardous Materials Credits: 3

A study of the hazards posed by the many chemicals that surround us today, including corrosives, flammables, explosives, toxic substances, oxidizers, water-reactive chemicals and radioactive materials. Methods of chemical hazard identification: classification, safe handling, personal protection, handling of spills, and introduction to the Code Of Federal Regulations. Emphasis is placed on the safe transportation of hazardous materials. Lecture topics are supported with demonstrations in the laboratory.

Elective
Prerequisite: MC100
3 class hours a week

MC900 Chemistry Seminar Credits: 3

The content of this course is determined by the student interest and by instructor availability. Examples of possible topics are organic chemistry, bio-chemistry and physical chemistry.
Elective
3 class hours a week

MM101 Calculus I Credits: 3

Linear, exponential, power, logarithmic and trigonometric functions; concept of the derivation from an analytic, geometric and numerical point of view; differentiation formulas; applications of derivatives.

3 class hours a week

MM120 Calculus 2D For Deck Midshipmen Credits: 3

Antiderivatives; the definite integral; applications to business and economics; the Fundamental Theorem of Calculus; techniques of integration; applications of integration.

Prerequisite: MM101
3 class hours a week

MM130 Calculus 2E For Engineering Midshipmen Credits: 4

Antiderivatives; the definite integral; the Fundamental Theorem of Calculus; techniques of integration; numerical integrations: improper integrals; applications of integration to Physics and Engineering; sequences and series.

Prerequisite: MM101
4 class hours a week

MM210 Probability and Statistics For Deck Midshipmen Credits: 3

An introduction to probability and statistics; sample spaces, probability, counting, conditional probability, independence, Bayes' Theorem, random variables. Expectation, variance, Chebychev's Theorem. The Binomial, Poisson, Uniform, Normal, Exponential and "t" distributions; Central Limit Theorem with application to confidence intervals and hypothesis testing.

Prerequisite: MM120
3 class hours a week

MM232 Mathematics for Engineers 1 Credits: 4

First order differential equations; integrating factor; higher order linear equations with constant coefficients, auxiliary equation, undetermined coefficients, Laplace transforms; applications to damped and forced simple harmonic motion.

Probability, permutations and combinations; probability density functions, expectation and variance; binomial and normal distributions; Central Limit theorem; confidence intervals.

***Prerequisite:* MM130**
4 Class hours a week

MM332 Mathematics for Engineers 2 Credits: 3

Multivariable calculus: graphs, contour maps, vector products; partial and directional derivatives: gradient, extrema; multiple integrals; Fourier series; eigenvalue problems; wave and heat equations.

***Prerequisite:* MM232**
3 class hours a week

MM352 Engineering Mathematics for Management 2 Credits: 3

Central limit theorem; statistical inference and estimation; confidence intervals; estimating proportions and differences between means; testing statistical hypothesis; linear regression; properties of regression coefficients; surfaces in 3D, planes; dot and cross products of vectors; partial derivatives; gradients and directional derivatives, chain rule; optimization.

***Prerequisite:* MM232**
3 class hours a week

MM360 Advanced Engineering Math Credits: 3

The divergence and curl; line and surface integral; Green's Theorem; the integral theorems of Gauss and Stokes; analytic functions; Laplace's Equation; conformal mapping; complex integration; Cauchy Integral Theorem and Formula; applications to fluid dynamics.

Elective
***Prerequisite:* MM332**
3 class hours a week

MM450 Quantitative Methods 2 For Shipyard Management Majors Credits: 3

This course is designed to familiarize students with modeling in operations research. Topics include project management; linear programming, integer programming; inventory analysis; queuing theory; simulation, network analysis and the transportation and assignment algorithms. Both deterministic and stochastic models are emphasized. Excel is applied.

***Prerequisite:* MM352**
3 class hours a week

MM900 Mathematics Seminar Credits: 3

The content of this course is determined by the student interest and by instructor availability. Examples of possible topics are linear algebra, partial differential equations, and numerical methods.

Elective 3 class hours a week

MP101 Physics 1 Credits: 4

Mechanics and waves: kinematics and dynamics of a particle; systems of forces; work, energy and power; momentum; rigid body dynamics and statics; fluid dynamics; simple harmonic motion; wave motion; and sound.

***Corequisite:* MM101**
3.7 class hours (average) a week
0.8 lab hours (average) a week

MP130 Physics 2 Credits: 4

Light, thermodynamics, gravitation and electromagnetism: geometrical and wave optics; heat and thermodynamics; gravitation; electric field; electric potential; capacitance; DC circuits; magnetic force; magnetic field; electromagnetic induction; and AC circuits.

***Corequisites:* MM120 *or* MM130**
***Prerequisite:* MP101**
3.5 class hours (average) a week
1.0 lab hours (average) a week

MP320 Astronomy Credits: 3

Observations of astronomical objects at the Academy observatory. History of Astronomy; telescopes and detectors; light, atoms and gravity; structure and formation of the solar system; stellar structure and stellar life cycle; black holes; white dwarfs and neutron stars; galaxies and cosmic structure; Big Bang Cosmology; inflation; life on other planets.

Elective
***Corequisite:* MP130**
2 class hours a week
2 laboratory hours a week

MP325 Atomic Physics Credits: 3

Modern concepts of the structure and properties of atoms; atomic nature of matter; quantum theory of light; theory of relativity; quantum mechanics; the Hydrogen atom; introduction to molecular structure.

Elective
***Prerequisites:* MM232 and MP130**
2.5 class hours a week (average)
2 laboratory hours every other week

MP900 Physics Seminar Credits: 3

The content of this course is determined by the student interest and by instructor availability. Examples of possible topics are advanced mechanics and advanced electricity and magnetism.

Elective 3 class hours a week

MX7XX Independent Study
Credits: 3

A course of individual study, research, or design on a suitable topic, with the course syllabus and content constructed under the direction of a faculty member and approved by the department head.

Elective
Prerequisite: 2.75 QPA or department permission

Department of Naval Science

The U.S. Navy and America's merchant marine have shared a close, mutually supportive relationship since the Revolutionary War. Today, that relationship is especially vital as merchant ships carry critical raw materials and other necessary cargoes, while naval ships ensure safe and open sea lanes for our nation's ocean commerce.

Graduates of the Academy are appointed as Ensigns in the U.S. Navy Reserve, unless they apply and are accepted for active duty service in the Navy or apply and are accepted for active duty or reserve service in one of the other U.S. Armed Services.

The mission of the Department of Naval Science is to provide appropriate instruction to prepare midshipmen for commissions in the U.S. Navy Reserve. This instruction will enable these officers to operate effectively with the Navy in time of peace, national emergency or war, and to perform other tasks and functions as directed by higher authority.

The curriculum focuses on the skills and knowledge graduates will need to serve as officers in the Navy Reserve. All midshipmen take courses in Merchant Marine Reserve and Leadership and Ethics.

DEPARTMENT HEAD

CAPT John L. Bryant, USN (2011)
B.S., Rutgers University
MBA, U.S. Naval Postgraduate School

ASSISTANT DEPARTMENT HEAD

LT Christopher Morrissey, USN (2008)
B.S., University of South Florida

ASSOCIATE PROFESSORS

LT Richard Slye, USN (2009)
B.S., U.S. Naval Academy

LT Jack Donahue, USN (2011)
B.A., College of the Holy Cross

LT Derek Ferguson, USN (2011)
B.S., Univ of Massachusetts

NS120 Introduction to Merchant Marine Reserve **Credits: 2**

A plebe year introduction to the United States Navy. Topics include the ships, aircraft and weapons of the United States Navy plus a thorough review of all Navy Warfare Communities and how the Navy fights at sea. Required for all plebe midshipmen.

2 class hours a week

NS220 Naval Science for the Merchant Marine Reserve Officer **Credits: 2**

This course provides midshipmen with the professional knowledge to understand the operation of a merchant ship as a naval auxiliary or its operation with the Navy in time of war or national emergency. Topics include: Merchant Ship Self Defense, Convoy Operations, Communications, Naval Control and Protection of Shipping, and the Role of the Merchant Marine in National Security. Required for all third class midshipmen.

2 class hours a week

NS402 Fundamentals of Leadership and Ethics **Credits: 2**

An advanced study of leadership and ethics issues and administrative

management topics required to function as a newly appointed naval officer. This course in the Naval Science curriculum covers junior officer responsibilities in naval administration, and integrates the professional competencies developed in prior course work and professional training. Required of all second class midshipmen.

2 class hours a week

NS412 Advanced Naval Science for the Merchant Marine Reserve Officer
Credits: 2

This course provides all candidates for commissioning with the professional information and skills needed to per- form the functions and assume the responsibilities of an officer in the Navy Reserve. Included in this course are classes on Leadership, Performance, Resource, and Career Management. Required for all first class midshipmen.

2 class hours a week

Department of Physical Education and Athletics

The importance of the Physical Education and Athletics programs at a federal service academy cannot be overemphasized. Each midshipman must maintain a healthy lifestyle and appropriate habits, and consistently meet or exceed the level of physical conditioning required to meet USNR commissioning requirements.

Midshipman participation in intramurals, club sports, and intercollegiate sports programs and activities is expected. The Academy's mission, history, and reputation is that of a premier source of future leaders in the commercial maritime industry and armed forces. Leaders must know how to follow and work effectively and collaboratively as part of a team. Competitive sports activities convey life-long lessons on the importance of strategy, tactics, and the importance of preparation in successful outcomes. Good team and leadership skills are the outcome of the fast pace of competitive sports activities.

The department is responsible for ensuring that each midshipman acquires the skills involved in swimming, aquatic survival, self-defense and first aid. Additional physical education experiences are offered through the Physical Education Activities courses. All midshipmen annually take an Academy physical fitness test patterned after the U.S. Navy's Physical Readiness Test.

The department additionally provides necessary instruction in ship's medicine. Plebes learn the basics of emergency health care, including cardiopulmonary resuscitation (CPR). An advanced ship's medicine course is offered in the upper-class years, focusing on medical treatments proven effective at sea where comprehensive medical care may be not available.

The athletic program offers 22 varsity team and intramural sports. These teams have been successful at levels ranging from NCAA Division III National Champions to Conference Champions. The varsity teams are:

Fall

Football, Men's Soccer, Men's and Women's Cross Country, Women's Volleyball, Men's and Women's Sailing and Crew

Winter

Men's and Women's Basketball, Wrestling, Men's and Women's Swimming and Diving, Men's and Women's Indoor Track and Field.

Spring

Baseball, Lacrosse, Men's and Women's Outdoor Track and Field, Men's Tennis, Softball, Men's and Women's Sailing and Crew.

DEPARTMENT HEAD

Susan J. Petersen-Lubow (1979)
B.S., Springfield
M.S., Hofstra

DEPUTY DEPARTMENT HEAD

William Fell (2004)
B.S., U.S. Naval Academy
M.S., Troy State University
Certificate, Sports Management Institute

PROFESSIONAL FACULTY

Rob Alfheim (2004)
B.S., Sacred Heart
M.S., Northern Illinois

Cassie Arroyo (2007)
B.S., Southhampton College

Matt Dempsey (2008)
B.S., Castleton State,
M.S., Castleton State

Doug Dwyer (2004)
B.S., Southern Connecticut
M.S., Adelphi

Melinda Eng (2001)
B.S., Hofstra University
M.S.Ed. Wagner College

Tom Gill (1992)
B.S., Hofstra University
M.S., North Carolina

Greg Ilaria (2008)
B.S., College. Of New Jersey
M.S., Springfield College

Greg Lott (2010)
B.A., Dickinson,
M.S., Canisius College

Dan Mehleisen (2010)
B.S., Union College

David Muchnick (2010)
B.A., SUNY Geneseo
M.S., SUNY Cortland

Danny Nee (2010)
B.A., St. Mary's of the Plains
M.S., Kansas State

Chad Nice(2008)
B.S., Cornell

Mike Notebaert (2007)
B.S., Ithaca
MBA, Dowling

Charles E. Pravata (1988)
B.S., Adelphi
M.S., Brooklyn College

Sean Raffile (2009)
B.S., Southern Connecticut

James Seitelman (2010)
B.S., Springfield College
M.S., Springfield College

Alexa Shields (2008)
B.S., College Of New Jersey
M.S., Rutgers

Michael Smolens (1992)
B.S., Springfield
M.S., Adelphi

Sean Tedesco (2001)
B.S., University of Connecticut
M.B.A., Adelphi

Michael Toop (2005)
B.S., U.S. Merchant Marine Academy
M.S., SUNY Albany

Meg Walsh (2006)
B.A., Rowan
MBA, Rider

PE105 First Aid/Self Defense
1 credit

First aid/self-defense is combined into two parts; first aid, and self-defense. Each section is worth 50% of the total grade. First aid is designed to train students to recognize and provide elementary care for victims of illness and injury according to current first aid standards. Students will learn to administer proper respiratory and cardiac care in emergency situations. Self-defense is designed to train midshipmen to defend themselves during combative situations while out at sea, on liberty, or working in the maritime industry. The course covers basic techniques, and strategies of self-defense. During the course Midshipmen learn physical techniques as well as strategies to avoid potentially dangerous situations. The Midshipmen actively practice defensive skills, and have the opportunity to utilize both physical and non-physical skills in real-life simulations. *Required course offered first, second, third terms to fourth classmen*

2 laboratory hours per week

PE115 Swimming 1 credit

Students receive instruction in the various strokes and procedures utilized in water survival situations. Students also develop their fitness component through work in the pool. Individual remedial instruction is available for students with little or no experience in the water. This course fulfills STCW requirements in selected aquatic survival techniques. *Required course offered first, second term to fourth classmen*

2 laboratory hours per week

PE120 Aquatic Survival
1 credit

Students learn how to react in a correct manner during water emergency situations, take measures appropriate to his/her own survival and to the survival of others. Students also receive instructions in the prevention of aquatic emergencies and the use of survival equipment. This course fulfills STCW requirements in aquatic survival techniques. *Required course offered second, third term to fourth classmen.*

***Prerequisite:* PE115**
2 lab hours per week

PE200 Ship's Medicine
1 credit

This is a course of instruction which will allow ship's personnel to provide emergency medical care with a degree of competence to increase chances of survival at sea. Midshipmen will be versed in anatomy, physiology, emergency medical techniques and equipment, as well as their proper application. This course fulfills the STCW requirements for advanced first aid. *Required course offered in the third, second and first class year.*

***Prerequisite:* PE105**
2 laboratory hours per week

PE201 Emergency Medical Technician (EMT)
3 credits

This program is approved by the New York State Department of Health, Emergency Medical Services Program. It addresses information and techniques currently considered to be the responsibilities of the basic life EMT. The program consists of lecture, instruction, practical skills training and clinical observation. This course is conducted in compliance with NY State curriculum, policies and guidelines.

Elective

PE300 Physical Education Activity Courses
0.5 credits

Students are introduced to the basic principles and skills of a number of different activities. These courses provide an opportunity for development of skill, strength, stamina, leadership and sportsmanship in an enjoyable setting. Students also develop an understanding for many of these "lifetime activities" and the importance of a healthy lifestyle well into the future. *Midshipmen are required to take 2 credits during their third, second or first class year.*

2 laboratory hours per week (for 6 weeks)

Listed below are the courses offered (Level II courses feature advanced levels of instruction):

PE301	Basketball
PE303	Boxing
PE304	Fitness and Conditioning
PE305	Golf
PE306	Life Skills
PE307	Project Adventure
PE308	Racquetball
PE309	Rifle
PE310	Pistol
PE311	Sailing I
PE312	Sailing II
PE314	Tennis I
PE 316	Volleyball
PE 317	Weight Training
PE 318	Badminton
PE 319	Sports and Cooperative Games I
PE 320	Sports and Cooperative Games II
PE 321	Touch Football
PE 322	Soccer
PE 323	Softball
PE 325	Wrestling
PE 326	Conditioning Swimming
PE 329	Scuba I
PE 330	Scuba II
PE 331	Wellness for Life
PE 332	Sports Psychology

Department of Professional Development and Career Services

The Department of Professional Development and Career Services consists of:

- Office of Shipboard Training
- Office of Career Services

The Shipboard Training Program

All midshipmen, as an integral part of their professional training, participate in a cooperative educational program during the two periods of their sea year. Training aboard ship is designed to give the midshipman practical knowledge of the performance and operating characteristics of various classes of vessels, the operating requirements in different trade routes, and labor relations in the ocean shipping industry.

The first sea period lasts approximately 135 days. During this period, the midshipman is assigned to different types of dry cargo vessels. The midshipman then returns to the Academy to build on his/her experiences at sea. The second sea period is longer, roughly 265 days. During this period, the midshipman finishes his/her sea service requirement of 300 days aboard ocean going vessels and completes an internship with a company or organization with involvement in the transportation or marine engineering industry.

Academy Training Representatives assign midshipmen to vessels, monitor and guide their progress, and maintain liaison between the midshipmen, the shipping companies, and the Department of Shipboard Training.

The shipboard training program provides midshipmen with the opportunity to use a ship as a seagoing laboratory. Midshipmen are given a number of courses called the “Sea Project” which, in addition to their shipboard duties, they are required to complete and submit for evaluation and grading. The assignments are carefully designed to ensure that midshipmen, while aboard ship, apply the knowledge and skills learned in the Academy classrooms and acquire a firm foundation for advanced study when they return to the Academy. In addition to written assignments, midshipmen take oral and written examinations after returning from sea.

Aboard ship, marine transportation majors are assigned to the vessel’s Deck Department, and engineering majors to the Engineering Department. Sea project courses concentrate on subject matter appropriate to the midshipman’s major.

Should a midshipman, prior to the second sailing period, acquire a definite maritime career goal, the department may arrange a program of shipboard assignments to provide opportunities for specialized experience in the last sailing period.

During the second sailing period, midshipmen with a strong interest in a career with the sea services of the U.S. Armed Forces or National Oceanographic and Atmospheric Administration (NOAA) may request a 30-day assignment aboard a vessel of the U.S. Navy, U.S. Coast Guard, U.S. Army Corps of Engineers or NOAA Corps. Midshipmen may also request a 30-day assignment aboard U.S. - flag tug and towing vessels.

Internships

The second sea period includes a two-to six-week internship assignment ashore, depending on the midshipman’s major, to provide the opportunities to observe and participate in the management operations of a maritime, transportation, or engineering related organization. This will enable the midshipman to acquire concepts of organization, decision-making, operating procedures and proper work ethic. The midshipman makes his/her own decision regarding where to do the internship and whether the assignment will be for two, four or six weeks. Depending upon a midshipman’s field of specialty and interest, the midshipman may be assigned to a shipping company, ship- yard, ship repair facility, ship brokerage and chartering firm, stevedoring firm, marine surveyor’s office, towing company, port and terminal facility, or a similar enterprise. Optional internship assignments are also available with shore-based commands of the U.S. Armed Forces. Midshipmen are required to complete a written report on their experience, which is submitted to their designated Academy Training Representative for evaluation and grading.

The following is a description of the specific internship programs:

STINA Internship (Management Orientation) Program - 2 Weeks Credits: 1

STINB Internship (Management Orientation) Program - 4 Weeks Credits: 2

STINC Internship (Management Orientation) Program - 6 Weeks Credits: 3

This program provides each midshipman an opportunity to observe the management environment in an Academy mission (maritime, transportation, engineering, government agency, Armed Forces, etc.) related organization for periods of two to six weeks. Ranging from a basic survey to participation in executive, mid- and entry-level management projects, the midshipman's choice of an internship requires investigation of the organization's background and history; current organizational structure; decision-making processes; operating procedures; and work place ethics. The midshipman demonstrates in a written report a comprehension and understanding of these factors as well as basic management concepts as applied to the host organization. The minimum two week internship must be completed by all majors as part of courses required for graduation.

STIND Shipyard Management Internship - 6 Weeks Credits: 3

This program is open to midshipman enrolled in the Marine Engineering and Shipyard Management Program who has completed courses in Engineering Shop and Ship Engineering Operations, combines the requirements of the STINA Internship (Management Orientation) Program with specific objectives of the Marine Engineering and Shipyard Management major. This program is also available to Marine Engineering Systems majors with special permission from the Head of the Department of Engineering. The specific objectives include learning procedures and obtaining practical skills in specific areas of shipyard operations at a major or a mid-sized shipyard or repair facility, and collecting data for a capstone design project in the first class year. Upon completion of the internship, the midshipman demonstrates in a written report a comprehensive and understanding of the management concepts and engineering operations at the host facility. The minimum six week internship must be completed by all Marine engineering and Shipyard Management majors as part of the courses required for graduation. Upon application, Professional Service Time in Lieu of Ship Service Time may be requested for up to 50 days of the STIND Shipyard Management Internship period.

Career Services

The Career Services Office assists midshipmen with career development starting in their plebe year and continuing until graduation. The Office provides a series of presentations by Academy personnel, alumni and industry partners focusing on obligation-fulfilling careers that also fulfill a midshipman's personal goals.

The Office presents two annual career fairs: "Sea Fair" each fall; and "The Shipping-Out Fair" each spring. In addition, off-campus events are arranged, such as tours of shipping companies and industry conferences. There are numerous on-campus career information and recruiting events through the year. When possible, these evening presentations are hosted by a midshipman liaison who is interested in a career with a specific company. The Career Placement Program Officer maintains a close relationship with maritime companies, unions and government/military contacts. Up-to-date information is shared with midshipmen via Intranet or by email Employment announcements are also posted on the Career Services Bulletin Board and in the USMMA Alumni Foundation Job Bulletin. The Office assists midshipmen with application procedures and other professional correspondence. Videotaped "mock interviews' and one-on-one coaching are available, when requested. The Office maintains as open-door policy.

DEPARTMENT HEAD

CAPT Eugene R. Albert (2004)[3]
B.S., U.S. Merchant Marine Academy
M.S., Albertus Magnus
Licenses: Master of Steam and Motor Vessels of Any Gross Tons, Oceans;

ACADEMY TRAINING REPRESENTATIVES

CAPT Donald C. Farmer, USMS (2001)
B.S., U.S. Merchant Marine Academy
License: Master of Steam and Motor Vessels of Any Gross Tons, Oceans.
Military: LT, USNR (Ret.)

LCDR Ian Jones, USMS (2010)
B.S., U.S. Merchant Marine Academy
MA: American Military University
License: Third Mate of Steam and Motor Vessels of
Any Gross Tons, Oceans.
Military: LT, USNR

CAPT Stephen T. Treacy (2011)
B.S., U.S. Merchant Marine Academy
J.D., St. John's University School of Law
Military: CAPT, USN (Ret.)
Admitted: NY, NJ, and Federal Bars

CAREER PLACEMENT PROGRAM OFFICER

Veronica Cassidy Barry, (2006)
B.S., Niagara University
Career Development Facilitator, University of Wisconsin at Madison
Graduate Studies, SUNY Maritime College

The Global Maritime and Transportation School

The Global Maritime and Transportation School (GMATS) provides world-class professional education and training programs (including content design, development, and delivery), instructional services, research studies, and technical assistance that enhance the safety, security, efficiency, and environmental soundness of maritime operations and global transportation systems.

Our mission is to prepare private sector, government and military professionals to be global leaders and innovators in maritime operations, inter-modal systems, and transportation security.

GMATS Instructional Divisions:

1. *Engineering*—The Engineering Programs division at GMATS is dedicated to offering professional education in the areas of Marine Engineering, Diesel Engine Technology, Applied Electricity, and Refrigeration Technology. The engineering laboratories offer the student hands-on training opportunities unparalleled in the industry.
2. *Nautical Science*—The Nautical Science Division is dedicated to providing the best in professional education for all areas of the maritime industry. We have the facilities and personnel to meet the technological and regulatory issues facing today's mariners.
3. *Security and Transportation*—The Security and Transportation programs at GMATS are designed to meet the needs of personnel in every level of the transportation industry, from management trainees to the seasoned professional. Our courses cover programs from complex maritime and inter-modal transportation logistics systems to the latest requirements in transportation security.
4. *Research and Special Projects*—The Research and Special Projects division conducts applied research and specialized studies; performs operational assessments and process improvement activities; and provides a wide range of technical assistance and instructional services.

Conferences and Seminars

In addition to regularly scheduled courses and custom programs, GMATS assists both government organizations and private companies with developing and offering seminars and conferences.

GMATS Contact Information
Telephone: 516-726-6100
Fax: 516-726-6158
E-mail: info@gmats.usmma.edu
Internet: http://www.gmats.usmma.edu

DIRECTOR

CAPT John E. Hanus, USMS (1992)
B.S., U.S. Merchant Marine Academy
Licenses: Second Assistant Engineer, Steam and Motor (unlimited); Chief Engineer of Motor Vessels (limited horsepower); Third Mate, Steam and Motor Vessels of Any Gross Tons Upon Oceans (Sailing Vessels limited)
Military: CDR, USNR

ASSOCIATE DIRECTOR

CAPT Joseph Martucci, USMS (2003)
B.S., U.S. Merchant Marine Academy
M.S., City College of New York
License: Chief Engineer, Steam and Motor Vessels (Unlimited)
Military: CAPT, USNR (Ret.)

Administration and Staff

Administrative titles at the Academy differ from those at civilian colleges, but in essence the responsibilities that accompany the titles are the same. The *Superintendent* is akin to a college president and ultimately governs all aspects of Academy operation. The *Academic Dean*, like a college dean of faculty, is responsible for the curriculum and the supervision of the academic departments. The *Chief of Staff* is the principal executive for management control. The *Commandant of Midshipmen* is akin to the dean of students and handles all midshipmen affairs of a non-academic nature, including military organization, conduct and discipline. The *Assistant Superintendent for Facilities* oversees the facilities, infrastructure, and logistics support of the Academy. The *Assistant Superintendent for Strategy & Policy* oversees the Academy's strategic planning, program assessment, Congressional relations, and public affairs activities. These administrative officers comprise the Academy's senior staff, and are assisted by capable office personnel in the daily operation of the institution.

Board of Visitors

Public Law 453, approved by the 96th Congress on October 15, 1980, provides for an annual inspection of the Academy by Congress through a Board of Visitors of nine members who are appointed in January of each year. The Board consists of one Senator appointed by the Vice President; two Members of the House of Representatives appointed by the Speaker of the House of Representatives; the Chairmen of the Commerce, Science, and Transportation Committee of the Senate, the Committee on Armed Services of the House of Representatives as *ex-officio* members; two Senators appointed by the chairman of the Commerce, Science, and Transportation Committee of the Senate; and three Members of the House of Representatives appointed by the chairman of the House Committee on Armed Services of the House of Representatives.

Advisory Board

Public Law 453 also establishes an Advisory Board consisting of not more than seven persons of distinction in education and other fields relating to the purposes of the Academy who serve without pay. The members of the Board visit the Academy at least once during the academic year at the call of the chairman. The board's purpose is to examine the course of instruction and the management of the Academy and advise the maritime administrator and the superintendent of their findings.

Staff

Following each name is the year of joining the staff. Also listed are job title, degrees earned, where obtained, professional licenses, and military status.

The list starting on the next page is current as of June 10, 2011.

Office of the Superintendent

Shashi N. Kumar (2007)
Interim Superintendent
Graduate, Indian Maritime Academy
M.S., Maine Maritime Academy
Ph.D., University of Wales
License: Master Mariner (U.K.) Unlimited

CAPT Eric Y. Wallischeck, USMS (1984)
Chief of Staff
B.S., U.S. Merchant Marine Academy
Graduate, Harvard University, John F. Kennedy School of Government, Executive Fellows Program

Ilene Kreitzer (2011)
Academy Counsel
B.A, Stony Brook University
J.D., Boston University

CAPT Reed R. Bonadonna, USMS (2001)
Director, Maritime Center for Ethics
B.A., Virginia Military Institute
M.A., Clark University
Ph.D., Boston University
Military: COLONEL (Retired), USMCR

Office of the Academic Dean

Shashi N. Kumar (2007)
Academic Dean
Graduate, Indian Maritime Academy
M.S., Maine Maritime Academy
Ph.D., University of Wales
License: Master Mariner (U.K.) Unlimited

Dianne Taha (2000)
Assistant Academic Dean for Academic Programs
B.A., Harpur College, SUNY Binghamton
M.S., New York Institute of Technology

(Vacant)
Assistant Academic Dean for Support Programs

Office of the Registrar

Lisa Jerry (2003)
Academy Registrar
B.S., New York Institute of Technology
M.S., New York Institute of Technology

Maribeth Widelo (2009)
Academy Assistant Registrar
B.A., Assumption College
M.A., Emerson College

Bland Library

George J. Billy (1977)
Chief Librarian
B.A., Rutgers University
M.L.S., Pratt Institute
M.A., Adelphi University
Ph.D., City University of New York

Donald Gill (1997)
Reader Services Librarian
B.S.C.E., CCNY
M.L.S., St. John's University

Marilyn Stern (1991)
Technical Services Librarian
B.A., CCNY
M.L.S., LIU
Medical Library Association Certification
Senior Member Academy of Medical Information Professionals Certification

Department of Information Technology

Howard D. Weiner (2004)
Chief Information Officer
Internal Controls Officer
Chair, Institutional Effectiveness Council
A.S., Montgomery Community College
B.S., Pennsylvania State University
M.S., The American University

Marilyn Hetsel
Assistant CIO
Manager of Academy Simulation Systems

Department of Waterfront Activities

CDR Christopher Gasiorek, USMS (2005)
Director of Waterfront Activities/Sailing Master
B.S., U.S. Merchant Marine Academy
License: Master, Steam and Motor Vessels of any Gross Tons, Oceans
First Class Pilot, Great Lakes and Lower Mississippi River

Richard J. Cain (1997)
Assistant Director of Waterfront Activities
License: 100 ton near coastal

Rick Dominique (1999)
Director of JV and Recreational Sailing
B.S., SUNY Maritime College

Office of the Assistant Superintendent for Strategy and Policy

CAPT William Rospars, USMS (2011)
Assistant Superintendent for Strategy and Policy
B.S., U.S. Coast Guard Academy
J.D., Columbia University
Military: CDR, USCGR (Ret.)

(Vacant)
Director of External Affairs

(Vacant)
Public Information Officer

Catherine DeCoursey (2011)
Parents Program Coordinator
B.A., Juniata College

Office of Admissions

CAPT Robert E. Johnson, USMS (2004)
Director of Admissions and Financial Aid
B.S., U.S. Military Academy
M.A., University of Tennessee
M.A., Naval War College
Military: COL, USA (Ret.)

CDR Michael E. DeRosa, USMS (1998)
Assistant Director of Admissions and Financial Aid
B.S., Manhattan College
M.B.A., Manhattan College
U.S. Air Force Squadron Officer School
U.S. Air Force Air Command and Staff College
Military: LtCol, USAFR (Ret.)

LCDR Norman R. Johnsen, USMS (1997)
Recruitment Specialist
B.S., Western Connecticut State University
M.S., Western Connecticut State University

Sdenka F. Kelly, (2002)
Financial Aid Specialist
B.S., SUNY Oneonta

LT Tyrone Broxton, USMS (2006)
Recruitment Specialist
B.A., Lebanon Valley College

LT Tina T. Schoggers, USMS (2007)
Recruitment Specialist
B.P.S., New York Institute of Technology
M.S., New York Institute of Technology

LT Kelly Ann Gualtieri, USMS (2007)
Recruitment Specialist
B.S., College of Staten Island

Office of the Academy Chief Financial Officer

Kelly Butruch (2008)
Academy CFO
B.A., St. Francis College
MPA, John Jay College of Criminal Justice
Certificate in Operations and Inspection

Osvaldo Jorge, (1987)
Senior Accountant
B.B.A., University of Puerto Rico (San Juan)

Office of the Human Resource Officer

Raymond A. Venkersammy (2004)
Human Resources Director (Acting)
B.S., St. Johns University

Vivian Baierwalter (1985)
Human Resources Specialist

Raymond A. Venkersammy (2004)
Human Resources Specialist
B.S., St. Johns University

Carol Coogan (1997)
Human Resources Assistant

Office of the Chief Procurement Officer

Maximilian Diah (2004)
Chief of Contracting Office
A.A., Strayer University
B.A., Strayer University

Deborah Porter (1997)
Contract Specialist

Carmen Feliz (2010)
Contract Specialist
A.A., Nassau Community College
B.A., SUNY Old Westbury

Douglas Pader (2011)
Contract Specialist
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