NAVAL SCIENCE

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The Naval Reserve Officers Training Corps (NROTC) program educates young men and women for service as commissioned officers in the United States Navy (USN) or Marine Corps (USMC). NROTC develops future officers mentally, morally, and physically, and instills in them the highest ideals of duty and loyalty and the core values of honor, courage, and commitment. The Naval Science program prepares students to assume the highest responsibilities of command, citizenship, and government.

ACADEMIC REQUIREMENTS

The Naval Science curriculum includes courses on topics such as Navy and Marine Corps organization, at-sea navigation, leadership, naval history, amphibious warfare, engineering, and weapons systems. Courses emphasize development of professional knowledge and leadership skills, which are placed in the context of military service immediately following graduation from Yale College.

Students in the NROTC program enroll in one Naval Science course per term. Some courses are required for both Navy and Marine option students, while others are specific to the branch of service. All NROTC students must also enroll in the Naval Science Laboratory each term.

Navy students must complete eight core curriculum courses offered by Yale College: two term courses in calculus to be completed by the sophomore year, two term courses in calculus-based physics (with laboratory) to be completed by the junior year, two term courses in English or equivalent writing courses, one term course in history or national security policy, and one term course in world culture or regional studies.

For Navy students, the usual sequence of Naval Science courses is:

<table>
<thead>
<tr>
<th>First-Year</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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</thead>
<tbody>
<tr>
<td>Introduction to Naval Science</td>
<td>Leadership &amp; Management</td>
<td>Naval Engineering</td>
<td>Naval Operations</td>
</tr>
<tr>
<td>Navigation</td>
<td>Seapower &amp; Maritime Affairs</td>
<td>Naval Systems</td>
<td>Leadership &amp; Ethics</td>
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Marine students must complete three core curriculum courses offered by Yale College, including two term courses in English or equivalent writing courses, and one term course in history or national security policy.

For Marine Corps students, the usual sequence of Naval Science courses is:

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<thead>
<tr>
<th>First-Year</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Naval Science</td>
<td>Leadership &amp; Management</td>
<td>Elective</td>
<td>Evolution of Warfare</td>
</tr>
<tr>
<td>Elective</td>
<td>Seapower &amp; Maritime Affairs</td>
<td>Fundamentals of Maneuver Warfare</td>
<td>Leadership &amp; Ethics</td>
</tr>
</tbody>
</table>

ADVISORY AND APPLICATION TO THE PROGRAM

Application to the National Scholarship Program Eligible applicants must use the online application to complete and submit all the required information to apply for the NROTC scholarship. Applicants select either the Navy or Marine Corps option and scholarship recipients are appointed midshipmen in either the United States Naval Reserve (USNR) or United States Marine Corps Reserve (USMCR), as appropriate. Scholarship recipients are granted the compensation and benefits authorized by law and current policy for a total period not to exceed four years (forty months or fifty months with approved fifth year benefits). During this period, the United States government pays for college tuition, authorized academic fees, a textbook stipend, and a subsistence allowance, and provides uniforms or compensation in lieu. Upon conferral of a degree, graduates are commissioned into the Navy or Marine Corps for a minimum of five years of active duty service. Yale students who matriculate without a scholarship may apply for the National Scholarship program during the fall term of their first year.

Application to the College Program Students without a scholarship, who are in their first or second year, may apply for enrollment in the College Program and compete for two- or three-year scholarships. If selected for the two- or three-year Scholarship Program, students receive the same benefits as students in the National Scholarship Program for their remaining undergraduate studies. Upon conferral of a degree, graduates of the College Program are commissioned into the Navy or Marine Corps for a minimum of three years of active duty service. Yale students interested in the College Program may apply directly to the Yale University NROTC Unit.

FACULTY OF THE DEPARTMENT OF NAVAL SCIENCE

Professor Captain Wayne Grasdock, USN (Adjunct)

Lecturers Lieutenant Garrett Alfstad, USN, Captain Timothy Brunstetter, USMC, Lieutenant Brandon Ordway, USN, Commander Adam Schlismann, USN, Lieutenant Brian Schoendorfer, USN
Courses

NAVY 100a or b, Naval Science Laboratory  Timothy Brunstetter
Leadership and practical application skills from the Professional Core Competency objectives that are not covered in other Naval Science courses. Focus on professional training that is not of an academic nature. Includes both classroom instruction and physical training. Topics and special briefings as determined by Naval Science faculty and the Naval Service Training Command. Required for NROTC students each term. Receives no credit; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.  o Course cr

* NAVY 111a, Introduction to Naval Science  Adam Schlismann
An overview of the naval service for first-year Naval ROTC students and others interested in pursuing the NROTC program. Organization, missions, customs and traditions, leadership principles, ethics, duties, and officer and career options in the U.S. Navy and Marine Corps. Discussion of shipboard organization and procedures, safety, and damage control prepares students for summer training aboard naval vessels. For enrollment credit only; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.  o Course cr

NAVY 112b, Navigation  Brandon Ordway
Introduction to surface-ship navigation and practical piloting in both restricted and open water. Celestial navigation theory, navigational charts and instruments, and electronic navigation. Weather and other environmental factors that affect naval operations. Navigation rules and regulations, maneuvering board concepts, and practical exercises. For enrollment credit only; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.  o Course cr

* NAVY 211b, Leadership and Management  Adam Schlismann
A study of leadership, ethics, resource management, and organizational behavior, with emphasis on situations commonly encountered by junior officers in the naval service. Classical theories of management, motivation, and communication; development of skills in organizational thinking and problem solving. Required for second-year NROTC students. For enrollment credit only; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.  o Course cr

* NAVY 212a, Seapower and Maritime Affairs  Wayne Grasdock
This course is a study of the U.S. Navy and the influence of sea power on history that incorporates both a historical and political science process to explore the major events, attitudes, personalities, and circumstances that have imbued the U.S. Navy with its proud history and rich tradition. Topics include: issues of national imperatives in peacetime, as well as war; varying maritime philosophies that were interpreted into naval strategies/doctrines; budgetary concerns which shaped force realities; and the pursuit of American diplomatic objectives. The course concludes with a discussion of the Navy’s strategic and structural changes at the end of the Cold War and its new focus, mission, and strategy in the post-September 11, 2001 world. For enrollment credit only; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.  o Course cr

NAVY 311a, Naval Engineering  Brandon Ordway
An overview of Naval engineering systems and a detailed study of the principles behind ship construction. Topics include ship design, hydrodynamic forces, stability, conventional and nuclear propulsion, electrical theory and systems, interior communications, damage control, hydraulics, and ship control. Basic concepts in the theory and design of steam, gas turbine, and diesel propulsion. For enrollment credit only; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.

NAVY 312b, Naval Systems  Quinlan Melvin
The characteristics and capabilities of the major systems and platforms used in the U.S. Navy. Technical concepts and scientific theory addressed through study of designations, characteristics, capabilities, and missions of ships and aircraft. How computers and electronic and space-based communications influence operational employment of various naval platforms. Classic theory of radar, sonar, and fire-control systems. For enrollment credit only; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.

NAVY 411a, Naval Operations and Seamanship  Quinlan Melvin
Study of relative motion, formation tactics, and ship employment. Introductions to Naval operations and operations analysis, ship behavior characteristics and maneuvering, applied aspects of ship handling, afloat communications, Naval command and control, Naval warfare areas, and joint warfare. Analysis of case studies involving related moral, ethical, and leadership issues. Prerequisites: NAVY 111 and 112. For enrollment credit only; cannot be applied toward the 36-course-credit requirement for the Yale bachelor’s degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.

* NAVY 412b, Leadership and Ethics  Wayne Grasdock
Exploration of Western moral traditions and ethical philosophy and of their applications to naval leadership in the twenty-first century. Topics include military leadership, core values, and professional ethics; the Uniform Code of Military Justice and Navy regulations; the roles of enlisted members, junior and senior officers, command relationships, and the conduct of warfare. Discussion of current and historical events in the United States Navy and Marine Corps. Prerequisite: NAVY 212. For enrollment credit only; cannot be applied
toward the 36-course-credit requirement for the Yale bachelor's degree. Grades earned in this course do not count toward GPA or eligibility for General Honors.