Naval Science - Navy ROTC (NAVS)

Course information contained within the Bulletin is accurate at the time of publication in August 2023 but is subject to change. For the most up-to-date course information, please refer to the Course Catalog.

NAVS 1001. Naval Orientation. 3 Credit Hours.
A three-hour course designed to familiarize the student with the history, characteristics and present employment of sea power. Particular emphasis is placed upon our naval forces and their capability in achieving and maintaining national objectives. Naval organization and operational functions are discussed in conjunction with sea power concepts. Additionally, the student is given an insight into the Naval Service, shipboard organization and safety, time-management skills and study techniques. NOTE: Fall only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 1002. Sea Power and Maritime Affairs. 3 Credit Hours.
A three-hour course providing a broad survey of naval history designed to add historical perspective to current defense problems. Topics include: naval power as an aspect of national defense policy, navies as an instrument of foreign policy, strategy selection, resource control, technology, and personnel management. NOTE: Spring only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 1003. Naval Science Drill. 0 Credit Hours.
A no-credit laboratory promoting naval leadership and professional development. While emphasis is given to military drill, leadership development, and physical fitness, the course also includes lectures from sources in and out of the Navy. Guest speakers cover topics on leadership, Navy career paths, equal opportunity, rights and responsibilities, AIDS awareness, terrorism/counter-terrorism, naval warfare doctrine, employment of naval forces, ethics and values, operations security, and safety. NOTE: This course is taken at the University of Pennsylvania.

Repeatability: This course may be repeated for additional credit.

NAVS 2001. Leadership & Management. 3 Credit Hours.
This three-hour course emphasizes principles of leadership, personnel and material management, and subordinate development in the context of the naval organization. Practical applications are explored through experiential exercises and case studies. NOTE: Fall only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 2002. Navigation. 3 Credit Hours.
A three-hour course, with comprehensive study of the theory and practice of terrestrial, celestial, and electronic navigation and the laws of vessel operations. Topics include fundamentals of coastal and harbor piloting, nautical astronomy, electronic navigation, and means of navigating without reference to land. International and inland nautical Rules of the Road are studied. Case studies and practical exercises are used to reinforce the fundamentals of marine navigation. NOTE: Spring only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 3001. Naval Ships Systems I: Engineering. 3 Credit Hours.
A three-hour course designed to familiarize the student with the engineering concepts necessary for an understanding of the structural design and mechanical operation of naval vessels. Emphasis is placed on: understanding the methods used for propulsion, including nuclear, internal combustion and gas turbine engines; understanding the generation and distribution of electrical power; analyzing various shipboard support systems used (such as distillation and air conditioning); and, basic considerations and techniques for hull design of naval vessels, including the concepts of buoyancy, equilibrium, stability, and the effects of flooding on the design characteristics. NOTE: Fall only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 3002. Naval Ships Systems II: Weapons. 3 Credit Hours.
A three-hour course on the theory and concepts of weapon systems are examined using the systems approach. Topics include: sensors and detection systems, tracking systems, computational systems, weapon delivery systems, the fire control problem, and systems integration. This course provides preliminary insight into the basic principles that lead to further development and comprehension of the technology underlying all modern weapon systems. Case studies used to illustrate and reinforce concepts introduced in the course. NOTE: Spring only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 3003. Evolution of Warfare. 3 Credit Hours.
This three-hour course is designed to add broad historical perspective to understanding military power. Treating war and the military as an integral part of society, the course deals with such topics as: war as an instrument of foreign policy, military influences on foreign policy, the military as a reflection of society, budgetary operations, personnel management and strategy selection. NOTE: Offered in even-numbered years. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 4001. Naval Operations and Seamanship. 3 Credit Hours.
Three-hour course on modern naval operations including relative motion analysis pertaining to ships at sea, underway replenishment, naval meteorology, ship handling, and tactical communications. The process of command and control and leadership is examined through case studies of actual incidents at sea. NOTE: Fall only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 4002. Leadership and Ethics. 3 Credit Hours.
The capstone, three-hour course of the NROTC curriculum provides the ethical foundation and basic leadership tools to be effective Navy/Marine Corps officers. The topics of responsibility, accountability, ethics, the law of armed conflict, military law, division organization and training, and discipline are introduced through practical exercises, group discussion, and case studies. NOTE: Spring only. This course is taken at the University of Pennsylvania.

Repeatability: This course may not be repeated for additional credits.

NAVS 4003. Fundamentals of Maneuver Warfare. 3 Credit Hours.
This course prepares future military officers and other leaders for service by studying modern tactical principles, current military developments, and other aspects of warfare and their interactions with and influences on maneuver warfare doctrine. There is a specific focus on the United States Marine Corps as the premier maneuver warfighting organization. Study also includes historical influences on tactical, operational, and strategic levels of maneuver warfare practices in the current and future operating environments.

Repeatability: This course may not be repeated for additional credits.