

# Naval Science

IN THE COLLEGE OF PROFESSIONAL STUDIES AND FINE ARTS

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## Faculty

**Chair:** Kaiser

**Professor:** Kaiser

**Associate Professor:** Langham

**Assistant Professors:** Arnold, C., Arnold, Z., Delavega, Fritts, Lee, Vingua

## Offered by the Department

Minor in naval science.

## NROTC Curriculum

The naval science program provides college students desiring to become Naval or Marine Corps reserve officers a basic professional background in the areas of leadership, ethics, and management; piloting and celestial navigation; nautical rules of the road; ship characteristics, design and propulsion; theory and employment of weapon systems; and development of warfare and amphibious operations. This curriculum is open to all university students. A graduate will be able to assume, through development of mind and character, the highest responsibilities of command, citizenship, and government.

The primary objectives of the Naval Science department curriculum are to provide:

1. An understanding of the fundamental concepts and principles of naval science;
2. A basic understanding of associated professional knowledge;
3. An appreciation of the requirements for national security;
4. A strong sense of personal integrity, honor and individual responsibility; and,
5. An educational background which will allow naval science students to undertake successfully, in later periods in their careers, advanced and continuing education in a field of application and interest to the Navy or Marine Corps.

## Naval Science Minor

(Minor Code: 31119) (SIMS Code: 665701)

The minor in naval science consists of a minimum of 15 units in naval science, 12 of which must be upper division.

Courses in the minor may not be counted toward the major, but may be used to satisfy requirements for preparation for the major and general education requirements, if applicable. A minimum of six upper division units must be completed in residence at San Diego State University.

## Courses (NAV S)

*Refer to Courses and Curricula and University Policies sections of this catalog for explanation of the course numbering system, unit or credit hour, prerequisites, and related information.*

### LOWER DIVISION COURSES

#### NAV S 101. Introduction to Naval Science (3)

Two lectures and two hours of activity.

Structure, principles, and practices; lines of command and control; logistical organizations; functions and services of major components of the Navy and Marine Corps; shipboard organization; ethics and basic leadership skills.

#### NAV S 102. Naval Engineering (3)

Ship characteristics and types including hull, electrical, auxiliary systems, stability and damage control. Operation advantages and disadvantages of steam, gas turbine, and diesel propulsion engines receive in-depth study. Leadership topics in an engineering setting.

#### NAV S 201A. Naval Leadership and Management I (3)

Prerequisites: Naval Science 101 and 102.

Ethics and integrity, progressing through management theory and practical functions of management, culminating with module on leadership. Exposure to complex ethical, managerial, and leadership issues.

#### NAV S 202. Sea Power and Maritime Affairs (3)

Sea power and maritime affairs; general concept of sea power including Merchant Marine; role of naval warfare components used to support the Navy's mission; sea power as an instrument of national policy; comparative study of US and Soviet strategies.

### UPPER DIVISION COURSES

(Intended for Undergraduates)

#### NAV S 301. Navigation (3)

Piloting, navigation, maneuvering, rules of nautical road. Use of charts, visual and electronic aids, operation of magnetic and gyro compasses, relative motion vector analysis, formation tactics, and ship employment. Tides, currents, wind, weather, navigation instruments, and characteristics of electronic navigation.

#### NAV S 302. Naval Operations (3)

Prerequisite: Naval Science 301.

Naval operations and operations analysis, ship handling, and afloat communications. Case analyses stress practical application of skills. Leadership traits in themes of communication counseling and conflict resolution applicable to naval operations.

#### NAV S 310. Evolution of Strategic Operations (3)

Forms of warfare through history to formulate sense of historical continuity in evolution of warfare, to develop a basic sense of strategy and alternative military actions, and to explore impact of historical precedent on military thought and actions.

#### NAV S 401A. Naval Weapons (3)

Prerequisite: Naval Science 302.

Develop working foundation and understanding of diversity and complexity of Navy and Marine Corps weapons systems including target detection and tracking, radar, sonar, electronic warfare systems, weapons warheads, fuzing, propulsion, guidance, launching, and fire control systems.

#### NAV S 402. Naval Leadership and Ethics (3)

Prerequisite: Naval Science 201A.

Naval leadership and management with emphasis on military justice administration, naval personnel management, material management, and administration of discipline.

#### NAV S 412. Fundamentals of Maneuver Warfare (3)

Current military developments, modern tactical principles, and warfare. Historical influences on operational, strategic, and tactical levels of maneuver warfare practices in current and future operating environments. (Formerly numbered Naval Science 410.)