

Military Affairs

Overview

The Military Affairs Program, within the Division of Undergraduate and Interdisciplinary Studies (UGIS), comprises the three distinct military officer commissioning programs: Air Force Reserve Officers Training Corps (ROTC), Army ROTC, and Naval ROTC. The purpose of the program is to integrate the educational offerings of the separate military services into the regular University curricula. In performing academic functions, the Military Affairs Program operates the same as any other program within UGIS. Its military faculty members, though nominated by the three military services, are subject to the same selection process as other UC Berkeley faculty members, and the Academic Senate's Committee on Courses must approve its curriculum. Military Affairs courses are open to all Berkeley students, as well as to students from other East Bay colleges under cross-enrollment agreements or through UC Berkeley Extension.

No undergraduate majors or minors or graduate degrees are offered in any of the following programs; they are designed to supplement a student's degree program.

Aerospace Studies (Air Force ROTC)

The Department of Aerospace Studies (AS) provides instruction in military history and heritage, leadership principles, and national security. While the Aerospace Studies curriculum is designed to develop aspiring leaders in the Air Force and Space Force, AS courses are open to all students and do not require enrollment in AFROTC. The mission of AFROTC is to "Develop leaders of character for tomorrow's Air Force and Space Force." As such, AS courses emphasize student participation and involvement. Courses are conducted as seminars and require active student discussion. AS courses are presented in increasing topic depth and complexity as follows (note, AS courses do not have pre-requisite requirements):

- Freshman: Fall – AEROSPC 1A, Spring - AEROSPC 1B (1 credit hour each)
- Sophomore: Fall - AEROSPC 2A, Spring - AEROSPC 2B (1 credit hour each)
- Junior: Fall - AEROSPC 135A, Spring - AEROSPC 135B (3 credit hours each)
- Senior: Fall – MIL AFF 145A, Spring – MIL AFF 145B (3 credit hours each)

In addition to Berkeley students, AS courses are available to students from 31 Bay Area colleges and universities through our crosstown enrollment program (see airforcerotc.berkeley.edu (<https://airforcerotc.berkeley.edu/>) for a list of participating crosstown schools).

The Department of Aerospace Studies provides interested students with the opportunity to become a General Military Candidate in the AFROTC. To become an active cadet at Detachment 085, Berkeley or crosstown students must have at least three full academic years remaining in their bachelor's degree program. Under certain circumstances, a student may join the AFROTC program while simultaneously completing a graduate degree program.

Developing a leader's character requires more than academics. In addition to the AS courses, active cadets are required to attend:

- A weekly 2-hour leadership laboratory (LLAB) that is restricted to, and mandatory for all AFROTC cadets; LLAB consists of cadets organizing, leading and managing their own cadet military unit while accomplishing leadership training objectives.
- At least two 1-hour, cadet-led physical fitness sessions.
- Complete a military physical fitness assessment each term.

Active cadets develop their leadership through participation in volunteer projects, professional leadership organizations, officer development training, military internships. AFROTC cadets are eligible to compete for scholarships, which cover the costs of tuition, books, and fees. In addition, a \$300-\$350 monthly allowance is paid to scholarship cadets; a \$450-\$500 monthly allowance paid to all cadets in their last two years in the AFROTC program.

For more information on becoming a leader in AFROTC and a future officer in the Air Force or Space Force, see our website at airforcerotc.berkeley.edu (<https://airforcerotc.berkeley.edu/>).

Military Science (Army ROTC)

Program Overview: The Military Science curriculum is the Army's premier leadership development program and is open to all graduate and undergraduate students. This 4-year comprehensive program offers several distinct advantages for students interested in military service and leadership development. Divided into two parts, the Basic and Advance Course, it strives to develop leaders with the ability to influence, motivate, and guide individuals or groups toward achieving a common goal or vision. Our students graduate ready to lead in their chosen profession, in both the Army and private sector. For those interested in military service, the program offers select students the opportunity to commission as an officer and Army Reserve Officer Training Corps (ROTC) scholarships which can cover up to 3.5 years of tuition and student fees. Other scholarship benefits include a monthly stipend, additional military training (Airborne, Air Assault, Jungle Warfare), and internships with organizations such as Livermore Labs, MIT, and the Defense Threat Reduction Agency. Fully funded summer language opportunities are available through various partner universities and facilitate training in countries such as Japan, Mongolia, and Morocco.

Part I – Basic Course: The Basic Course is open to all students, graduate and undergraduate, seeking to develop leadership skills. This course series consists of four classes and introduces students to the Army, leadership fundamentals, and intragroup dynamics. Select students are allowed to enroll in an accompanying leadership lab and training exercises where they learn to implement classroom concepts and basic military field crafts. Students are encouraged to follow the two-year construct of the basic course but can elect to enroll at any point during the program.

- MIL SCI 1 Leadership Lab – Select Students Only
- Freshmen:
 - Fall – MIL SCI 2 Introduction to the Army and Critical Thinking (1 Unit)
 - Spring – MIL SCI 3 Introduction to the Profession of Arms (1 Unit)
- Sophomore

- Fall – MIL SCI 100 Leadership and Decision Making (2 Units)
- Spring – MIL SCI 101 Army Doctrine and Team Development (2 Units)

Part II – Advance Course: The Advance Course is available only to students who are approved to pursue a commission in the Army, Army Reserve, or Army National Guard. It is designed to teach all knowledge, skills, and behavior required of Army officers. Students are encouraged to synthesize lessons to form broader perspectives, deeper insights, and more robust problem-solving abilities. Topics are designed to facilitate entry into military service as students assume greater roles and responsibilities in the program.

- MIL SCI 1 Leadership Lab – Mandatory for all Advance Course students
- Junior:
 - Fall – MIL SCI 131 Training Management and the Warfighting Functions (3 Units)
 - Spring – MIL SCI 132 Applied Leadership in Small Unit Operations (3 Units)
- Senior:
 - Fall – MIL SCI 141 The Army Officer (3 Units)
 - Spring – MIL SCI 142 Company Grade Leadership (3 Units)

Completion of the Military Science curriculum provides a structured and rewarding pathway for students to develop leadership skills, receive financial support for education, explore diverse career opportunities, and serve their country with honor and distinction.

This program is open to non-UC Berkeley students through cross-town enrollment.

For more information on the Military Science curriculum or Army ROTC, please see our website at army.berkeley.edu (<https://army.berkeley.edu>) or email armyrotc@berkeley.edu

Naval Science (Naval ROTC)

The Department of Naval Science offers a program of instruction for men and women leading to commissions in either the US Navy or US Marine Corps. Naval Science courses are open to all university students or, subject to approval, may be taken through UC Berkeley Extension.

Students enrolled in the Naval ROTC program will normally complete the following courses during their first two years as part of their overall academic load: NAV SCI 1, NAV SCI 2, NAV SCI 3, and NAV SCI 10. Navy Option students will then complete the following courses during their junior and senior years: NAV SCI 12A, NAV SCI 12B, NAV SCI 401, and NAV SCI 412. Marine Option students will participate in a Marine seminar and complete the Fundamentals of Maneuver Warfare (NAV SCI 154) and Evolution of Warfare (NAV SCI 20). All Navy Option scholarship students must complete one year of calculus and one year of calculus-based physics by the end of their sophomore and junior years respectively.

Students are also required to attend weekly professional development laboratories each Thursday. These three-hour sessions offer the student midshipman an active role in the management and direction of the midshipman battalion and provide time for the midshipmen to explore professional topics. Student midshipmen also participate in four-to-six week summer training cruises throughout the world. While at sea and serving alongside Sailors and Officers, they apply theoretical aspects of their education and training to the real-world environment of the

U.S. Navy. Marine Option midshipmen attend Marine Corps Officer Candidates School in the summer between their junior and senior year.

To learn more about various NROTC scholarship opportunities, selection criteria, and the application process, please visit nrotc.navy.mil/scholarships (<http://www.nrotc.navy.mil/scholarships.html>).

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Aerospace Studies

AEROSPC 1A Foundations of the U.S. Air Force 1 Unit

Terms offered: Fall 2025, Fall 2024, Fall 2023

This course introduces students to the United States Air Force (USAF) and Air Force Reserve Officer Training Corps (AFROTC) with an overview of the basic characteristics, missions, and organization of the Air Force; additional topics include officership and professionalism, Air Force career opportunities, military customs and courtesies, and an introduction to USAF basic communication skills. Additionally, AFROTC cadets must attend weekly Leadership Lab. Leadership Lab is a weekly laboratory that touches on the topics of Air Force customs and courtesies, health and physical fitness, and drills and ceremonies.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture per week

Additional Details

Subject/Course Level: Aerospace Studies/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

AEROSPC 1B Foundations of the U.S. Air Force 1 Unit

Terms offered: Spring 2025, Spring 2024, Spring 2023

A survey course designed to introduce cadets to the U.S. Air Force and the Air Force Reserve Officer Training Corps (AFROTC). Featured topics include the history and structure of the U.S. Air Force, the Air Force's capabilities, career opportunities, benefits, Air Force installations, and communications skills. Additionally, AFROTC cadets must attend Leadership Lab. Leadership Lab is a weekly laboratory that touches on the topics of Air Force customs and courtesies, health and physical fitness, and drills and ceremonies.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture per week

Additional Details

Subject/Course Level: Aerospace Studies/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

AEROSPC 2A The Evolution of Air and Space Power 1 Unit

Terms offered: Fall 2025, Fall 2024, Fall 2023

This course is designed to provide a fundamental understanding of both leadership and team building. Students will learn that there are many layers to leadership, including aspects that do not always come to mind. Such things include listening, understanding themselves, being a good follower, and problem solving efficiently. Students will apply these leadership perspectives when completing team building activities and discussing things like conflict management. Students should demonstrate basic verbal and written communication skills. Note: AFROTC cadets will apply these lessons at Leadership Lab and Field Training.

Rules & Requirements

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture per week

Additional Details

Subject/Course Level: Aerospace Studies/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

AEROSPC 2B The Evolution of Air and Space Power 1 Unit

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course is designed to provide a fundamental understanding of both leadership and team building. Students will learn that there are many layers to leadership, including aspects that do not always come to mind. Such things include listening, understanding themselves, being a good follower, and problem solving efficiently. Students will apply these leadership perspectives when completing team building activities and discussing things like conflict management. Students should demonstrate basic verbal and written communication skills. Note: AFROTC cadets will apply these lessons at Leadership Lab and Field Training.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture per week

Additional Details

Subject/Course Level: Aerospace Studies/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

AEROSPC 100 Leadership Laboratory 0.0 Units

Terms offered: Fall 2025, Spring 2025, Fall 2024

Leadership Lab (LLAB) represents the hands-on portion of the Aerospace Studies courses. It presents a dynamic and integrated grouping of leadership developmental activities. LLAB is a student planned, organized, and executed practicum intended to maximize cadet leadership experience and preparation for easy transition to their active duty assignments. It is conducted under the supervision of AFROTC cadre. The course focuses on the leadership experiences of senior and junior cadets and provides training in basic military knowledge and skills to underclass cadets. Cadets are trained on proper uniform wear, grooming and appearance requirements, physical fitness, knowledge of military customs and courtesies, and military drill and ceremony.

Rules & Requirements

Prerequisites: Consent of instructor

Credit Restrictions: For Air Force cadets only.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of laboratory per week

Additional Details

Subject/Course Level: Aerospace Studies/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

AEROSPC 135A Leadership Studies 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

This course is a study of leadership, management fundamentals, professional knowledge, and communication skills required of an Air Force junior officer. Lecture, text, case studies, and class discussion will be used to examine all aspects of leadership including counseling, mentoring, empowering, problem solving, accountability and authority. Students will develop upon basic written and oral communications skills primarily through written assignments and oral presentations.

Rules & Requirements

Prerequisites: 135A is a prerequisite to 135B or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Aerospace Studies/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Emerson

AEROSPC 135B Leadership Studies 3 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course is a study of leadership, management fundamentals, professional knowledge, and communication skills required of an Air Force junior officer. Lecture, text, case studies, and class discussion will be used to examine all aspects of leadership including counseling, mentoring, empowering, problem solving, accountability and authority. Students will develop upon basic written and oral communications skills primarily through written assignments and oral presentations.

Rules & Requirements

Prerequisites: 135A or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Aerospace Studies/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Emerson

Military Affairs

MIL AFF 1 Military Physical Fitness 1 Unit

Terms offered: Fall 2025, Spring 2025, Fall 2024

This course teaches the fundamentals of physical fitness employed by the U.S. military to condition ROTC cadets for the physical demands they will face as military officers. The course consists of rigorous physical training under the supervision of military officers and noncommissioned officers. The goal of this course is to not only enhance one's level of physical fitness, but also to develop leadership qualities in the conduct and planning of physical fitness training. Physical training will include, but is not limited to: running up to five miles, team sports, aerobics, and other activities.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of session per week

Additional Details

Subject/Course Level: Military Affairs/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

MIL AFF 145A National Security Forces in Contemporary American Society 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

Conceptually examines the Armed Forces as an integral element of American society. Examines contemporary issues in civil-military relations and the national and international environment in which U.S. defense policy is formulated and implemented.

Rules & Requirements

Prerequisites: Upper division standing and consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Military Affairs/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

MIL AFF 145B Preparation for Active Duty 3 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course focuses on commissioning of cadets and their transition to active duty. The primary focus of instruction is officership, professionalism, and leadership. Topics for specific discussion include the military justice system, military ethics, core values, military professionalism and current issues affecting the Air Force, and a general introduction to base functions designed to ease cadets' transition to active duty. This course combines lecture and discussion with increased emphasis on the students' written and oral communication skills.

Rules & Requirements

Prerequisites: Upper division standing and consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Military Affairs/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

MIL AFF 180 Philosophy of Leadership 3 Units

Terms offered: Fall 2021, Spring 2021, Fall 2020

What is leadership? Does leadership remain fundamentally the same when you change scale or purpose, or does it in some way become fundamentally different? What is good leadership? Are the virtues of leadership universal and unchanging, or are they relative to your historical circumstances? Who can be a leader? Can leadership be taught, or is it something you are born with? How do we gain knowledge about leadership? Can we learn leadership through logic, reasoning from fundamental ideas, or do we require experimentation and empirical evidence? These are some of the questions we will be investigating through the close reading of classic texts on the philosophy of leadership, such as Plato's Statesman and Machiavelli's The Prince.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Military Affairs/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Emerson

MIL AFF 199 Supervised Independent Study and Research 1 - 4 Units

Terms offered: Fall 2025, Spring 2025, Fall 2024

Supervised independent study and research for undergraduate students who desire to pursue topics of their own selection.

Rules & Requirements

Prerequisites: Upper division standing and consent of the instructor

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer: 6 weeks - 2.5-10 hours of independent study per week

Additional Details

Subject/Course Level: Military Affairs/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Military Science

MIL SCI 1 Leadership Laboratory 0.0 Units

Terms offered: Fall 2025, Spring 2025, Fall 2024

The instruction includes organization and management of military units, physical training, drill and ceremonies, land navigation techniques, survival skills, and extensive first aid training.

Rules & Requirements

Credit Restrictions: The laboratory may be taken for eight semesters.

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of laboratory per week

Summer: 8 weeks - 4 hours of laboratory per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

MIL SCI 2 Introduction to the Army and Critical Thinking 1 Unit

Terms offered: Fall 2025, Fall 2024, Fall 2023

The purpose of this one credit hour seminar style course is to introduce the student to issues and competencies that are central to a commissioned officer's responsibilities. These initial lessons establish a framework for understanding officership, leadership, and the Army values. Additionally, the semester addresses "life skills" including comprehensive fitness, goal setting, cultural understanding, and time management. This course is designed to give accurate insight into the Army profession and the officer's role within the Army and to lay the foundation for further leadership development.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

MIL SCI 3 Introduction to the Profession of Arms 1 Unit

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course overviews leadership fundamentals such as setting direction, problem-solving, listening, presenting briefings, providing feedback, and using effective writing skills. Students will explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Barnes

MIL SCI 100 Leadership and Decision Making 2 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

The purpose of this two credit hour course is to develop the student's knowledge of self-awareness, self-confidence, and individual leadership skills. Through experiential learning activities, students develop problem solving and critical thinking skills, and apply communication, feedback, and conflict resolution skills. The course includes an introduction to the Army's operations order and troop leading procedures in the context of decision making applications.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

MIL SCI 101 Army Doctrine and Team Development 2 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course examines the challenges of leading tactical teams in the complex contemporary operating environment (COE). This course highlights the application of Army doctrine for offensive and defensive operations as context for tactical decision making and team building. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the face of ethical and cultural dilemmas.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Barnes

MIL SCI 131 Training Management and the Warfighting Functions 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

This course studies the practice and application of the fundamentals of Army leadership, officership, Army values and ethics, personal development, and small unit tactics. Students will focus on how to train fundamental tactical skills and explore the Army's capabilities and limitations within each warfighting function.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

MIL SCI 132 Applied Leadership in Small Unit Operations 3 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course examines the role communications, values, and ethics play in effective leadership at the platoon level. Topics covered include ethical decision-making, consideration of others, emotional intelligence, and a survey Army leadership doctrine. There is also added emphasis on improving each student's oral and written communication abilities.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 3 weeks - 11.5 hours of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

MIL SCI 141 The Army Officer 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

This course explores the application of mission command and the Army profession to address the dynamics of leading in the complex situations of current military operations. Students will examine differences in culture, military law, principles of war, and rules of engagement in the face of international terrorism. Students will also explore aspects of interacting with non-government organizations, civilians on the battlefield, and host nation support. The course places significant emphasis on developing the characteristics of an effective Army officer by utilizing historical case studies and scenarios to prepare students to face complex ethical leadership challenges.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

MIL SCI 142 Company Grade Leadership 3 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course explores leadership in a complex operational environment and applies the Army's operating concept and doctrine to conduct battle analysis briefings and to research the impacts of global partners, threats, challenges, and opportunities (PTCO). It introduces practical platoon leader knowledge for unit relationships, maintenance, supply, and finance requirements. Students will examine the Art of Command by using mission command scenarios to prepare them to face the complex ethical demands inherent in serving as a commissioned officer in the United States Army.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Military Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Naval Science

NAV SCI 1 Introduction to Naval Science 2 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

This curriculum provides guidelines for introducing students to the organization of the Department of Defense and the naval service, the long-held customs and traditions of the service, basic leadership, ethics and character development, the duties of a junior officer, and basic information concerning shipboard procedures and safety. It is the intent of this course to stimulate the students' interest for study and investigation in future courses.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

NAV SCI 2 Sea Power and Maritime Affairs 2 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

Traces the U.S. historical evolution of sea power, its concepts, theories and applications. Emphasizes the impact of world situation, U.S. national interest, changing technology, and naval leadership on the evolving concept of sea power. Relates historical developments to current trends. Examines briefly the U.S. Merchant Marine's and the former Soviet Navy's impact on sea power policy formulation.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Summer: 10 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

NAV SCI 3 Leadership and Management I 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

This course will cover basic management, decision making, and moral leadership. The student will learn to establish meaningful goals, prioritize among competing demands, and plan and forecast in a task-centered organization. The course includes exposure to measures of organizational effectiveness, methods to overcome resistance to change, effective communications, and techniques to aid in counseling, team building, and resolution of disciplinary and personnel matters.

Hours & Format

Fall and/or spring: 10 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

NAV SCI 10 Naval Ship Systems I: Engineering Systems 3 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

Principles of design and operation of ships. Emphasis on description and analysis of major types of propulsion plants, both conventional and nuclear. Principles of thermodynamic cycles, electrical theory, power generation and distribution, auxiliary machinery systems. Ship construction, strength and stability in intact and damaged conditions. Factors and design criteria for seaworthiness, structural integrity, and operational employment.

Rules & Requirements

Prerequisites: Mathematics 1A or 16A

Repeat rules: Course may be repeated for credit with instructor consent.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

NAV SCI 12A Navigation and Naval Operations I 3 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

Theory, principles, and procedures of terrestrial and celestial navigation and piloting techniques. A study of coordinating systems, including the celestial coordinate system, nautical charts and publications, position fixing, dead reckoning, nautical astronomy, the theory and methods of celestial navigation, and the theory and prediction of tides and current.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

NAV SCI 12B Navigation and Naval Operations II 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

Introduction to the various aspects of ship operations at sea. Principles of terrestrial navigation including the rules of the road for prevention of collisions at sea, vector analysis of relative motion, ship behavior and characteristics in maneuvering, precise ship positioning, use of aids to navigation, meteorology, and electronic navigation.

Rules & Requirements

Prerequisites: 12A or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

NAV SCI 20 Evolution of Warfare 3 Units

Terms offered: Spring 2025, Spring 2023, Spring 2021

Progressive analysis of the evolution of warfare from the ancient world to the present. Emphasis placed on causes of continuity and/or change of methods, as well as the influence of economic, moral, political, and technological factors on strategic thought.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Formerly known as: Military Affairs 20

NAV SCI 154 Fundamentals of Maneuver Warfare 3 Units

Terms offered: Spring 2024, Spring 2022, Spring 2020

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.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Formerly known as: Military Affairs 154

NAV SCI 400C Naval Laboratory 0.0 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

Emphasis is placed on professional training not of an academic nature. The laboratory is intended for topics such as drill and ceremonies, physical fitness and swimming testing, cruise preparation, cruise evaluation, sail training, safety awareness, preparation for commissioning, personal finances, insurance, and applied exercises in naval ship systems, navigation, naval operations, naval administration, and military justice. Other topics and special briefings will be conducted as determined by the Chief of Naval Education and Training or the Professor of Naval Science.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of laboratory per week

Additional Details

Subject/Course Level: Naval Science/Other professional

Grading: Offered for pass/not pass grade only.

Instructor: Broihier

NAV SCI 400D Naval Laboratory 0.0 Units

Terms offered: Spring 2011, Spring 2010, Spring 2009

Emphasis is placed on professional training not of an academic nature. The laboratory is intended for topics such as drill and ceremonies, physical fitness and swimming testing, cruise preparation, cruise evaluation, sail training, safety awareness, preparation for commissioning, personal finances, insurance, and applied exercises in naval ship systems, navigation, naval operations, naval administration, and military justice. Other topics and special briefings will be conducted as determined by the Chief of Naval Education and Training or the Professor of Naval Science.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of laboratory per week

Additional Details

Subject/Course Level: Naval Science/Other professional

Grading: Offered for pass/not pass grade only.

NAV SCI 400E Naval Laboratory 0.0 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

Emphasis is placed on professional training not of an academic nature. The laboratory is intended for topics such as drill and ceremonies, physical fitness and swimming testing, cruise preparation, cruise evaluation, sail training, safety awareness, preparation for commissioning, personal finances, insurance, and applied exercises in naval ship systems, navigation, naval operations, naval administration, and military justice. Other topics and special briefings will be conducted as determined by the Chief of Naval Education and Training or the Professor of Naval Science.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of laboratory per week

Additional Details

Subject/Course Level: Naval Science/Other professional

Grading: Offered for pass/not pass grade only.

NAV SCI 401 Naval Ship Systems II: Weapons Systems 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2023

An introduction to the principles and employment of naval weapons systems. This course will build on a foundation of mathematics and physics by exploring the physical theory of acoustic and electromagnetic wave generation and propagation, and how these concepts are applied to the design and functionality of RADAR, SONAR, and electronic warfare systems. Additionally, the course will cover electromechanical and pneumatic systems in the context of weapons design, to include guidance systems, fuzing, and weapons of mass destruction. To inform the real world effects of these systems, this course will examine topics such as weapons employment, blast damage, platform capabilities, case studies, and ethical issues.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Other professional

Grading: Letter grade.

NAV SCI 412 Leadership and Ethics 3 Units

Terms offered: Spring 2025, Spring 2024, Spring 2023

This course is the capstone leadership course. It is intended to provide the ethical foundation and tools required for success as a leader of a diverse work force, often under circumstances of substantial stress. The course is divided between the art of leadership and the technical aspects of integrating personnel development with the management of resources, although the emphasis is on leadership. It is designed to be given as a seminar or lecture/discussion in which principles, concepts, and concrete subjects are presented, discussed, and debated.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Naval Science/Other professional

Grading: Letter grade.