

INDEPENDENT DIVISIONS AND DEPARTMENTS

1959-1960 and 1960-1961

CORNELL UNIVERSITY ANNOUNCEMENTS

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THE INDEPENDENT DIVISIONS

THE DIVISION OF SUMMER SESSION* AND EXTRAMURAL COURSES

CORNELL UNIVERSITY offers credit courses extramurally through its Division of Summer Session and Extramural Courses for persons who are unable to devote full time as students in any one of the schools or colleges of the University. Persons served in this manner are nonresident in the usual sense applied to the full-time student, are employed in the professions, in industry, in business, in public service, or otherwise, and for such reasons are unable to undertake full-time resident registration.

Courses are made available to students in off-campus centers and in regularly scheduled on-campus classes. In the first instance, the course is taught in an off-campus center located to accommodate students in sufficient number to warrant the offering. Registration for on-campus courses is available to students who commute to the campus.

Extramural students may register for any course in the University for which they have adequate preparation and for which they have the instructor's permission to enroll. The maximum registration permitted for a student in any term is two courses totaling not more than seven credit hours.

Requests for additional information should be addressed to the Director of the Division of Summer Session and Extramural Courses, Edmund Ezra Day Hall, Cornell University.

THE DIVISION OF UNCLASSIFIED STUDENTS

The Division of Unclassified Students is designed to assist the potentially able student whose basic interests and aptitudes lie outside the course in which he originally enrolled. Any student who has been in residence as a candidate for a degree in any of the colleges or schools of the University may apply for admission.

The Division accepts applications for either semester. The student who feels that he is misplaced or is uncertain of his objective should consult the Director as early as possible in his college career. After the sophomore year it is generally very difficult to effect a transfer.

Application should be made at the Office of the Director in Edmund Ezra Day Hall. In addition, the student must notify the Registrar of his

*See separate *Announcement of the Summer School* for information about summer programs.

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desire to transfer. The Administrative Committee prefers that applications be filed at least three or four weeks before the opening of either semester. At midyear, the student who makes application after he has been dropped is not in a position to make a strong case for himself. Applications for a given term cannot be accepted after instruction has commenced.

All students admitted remain under the direct supervision of the Director, who serves as their faculty adviser. Students are expected to consult with him at frequent intervals. He prepares a schedule of courses for each individual, calling on departments and college advisers where necessary. An unclassified student may elect courses for which he is qualified in any division of the University, subject, however, to the usual limitations on enrollment.

A student registered in the Division may apply for admission to any undergraduate college or school of the University. In considering his application, the admissions committee of the school or college to which he applies will take into consideration the recommendations of the Director of the Division and the quality of the work done during the student's registration in the Division.

Registration in the Division is on a semester basis. One semester is usually a sufficient period to determine a student's fitness for the newly chosen course. A second term of registration may be permitted in a few instances where definite progress has been made and it appears rather certain that the candidate will qualify for successful transfer. If at the end of two terms he has not been accepted by another school or college on the campus, he may not reregister in this Division.

The Administrative Committee has the same authority to admit students, drop them, place them on probation, or remove them from probation that is exercised by a special faculty with respect to the students of its college. Students in the Division are regular students in the University; if in good standing they may participate, like any other students, in extracurricular activities.

THE INDEPENDENT DEPARTMENTS

THE FOLLOWING information concerns the courses of instruction offered by the Departments of Military Science and Tactics, Air Science, Naval Science, Physical Education, and Clinical and Preventive Medicine. These departments are similar in that they serve the entire University and are not divisions of any school or college.

CREDITS

In the course descriptions that follow, the academic credit indicated will be recorded by the University Registrar for the successful completion of each course. Whether or not credit thus recorded will be counted by a college or school in satisfaction of its requirements for a particular degree is determined, however, by the faculty of the school or college concerned. For this information, the student should consult the Announcement of the academic division in which he is enrolled.*

UNIVERSITY FACULTY REQUIREMENTS

The University faculty has established certain requirements for a baccalaureate degree in addition to those prescribed by the faculty of the school or college which administers the degree. These requirements are administered by the Committee on Requirements for Graduation. Any student who wishes to consult the Committee concerning his status should first consult the member of the Committee who represents the school or college in which he is enrolled. The Committee consists of the following:

Dean C. A. Hanson (University Faculty), Chairman
Professor J. O. Mahoney (College of Architecture)
Director A. W. Gibson (College of Agriculture)
Professor James Campbell (School of Industrial and Labor Relations)
Professor H. J. Loberg (College of Engineering)
Dean H. B. Meek (School of Hotel Administration)
Professor Peter Olafson (Veterinary College)
Associate Dean R. L. Perry (College of Arts and Sciences)
Director B. L. Rideout (Division of Unclassified Students)
Professor Esther Stocks (College of Home Economics)

*An enrolled student may obtain the Announcement of any academic division by inquiring at the administrative office of his own division; a prospective student should write to the Announcements Office, Edmund Ezra Day Hall. Copies of the *Announcement of Independent Divisions and Departments* may be obtained at the Visitor Information Center, Edmund Ezra Day Hall.

THE REQUIREMENT IN PHYSICAL EDUCATION

The University faculty has established the following requirements in physical education for all students:

1. All undergraduate students must complete four terms of work, three hours a week, in physical education.
2. The requirement in physical education is a requirement of the first four terms, and postponements are to be allowed only by consent of the University Faculty Committee on Requirements for Graduation.
3. Exemptions from the requirement may be made by the Committee on Requirements for Graduation when recommended by the Medical Office or by the Department of Physical Education, or because of unusual conditions of age, residence, or outside responsibilities. An exemption recommended by the Department of Physical Education shall be given only to students who meet standards of physical condition established by the Department of Physical Education and approved by the Committee on Requirements for Graduation. Students who have been discharged from the armed forces may be exempted.
4. For students entering with advanced standing, the number of terms of physical education required is to be reduced by the number of terms which the student has satisfactorily completed (not necessarily including physical education) in a college of recognized standing.
5. Responsibility for the interpretation of the requirement and for its application in individual cases is placed upon the Committee on Requirements for Graduation.

The University requirement in physical education may be satisfied by four terms of work in the Department of Physical Education. For this purpose Physical Education 1, 2, 3, and 4 are available to men and Physical Education 52A and B, 53, and 54 to women.

THE REQUIREMENT IN MILITARY TRAINING

The University faculty has established the following requirement in military training for male students.

1. All undergraduate men students must complete four terms of work, three hours a week, in military training.
2. The requirement in military training is a requirement of the first four terms, and postponements are to be allowed only with the consent of the University Faculty Committee on Requirements for Graduation.
3. Students who are unable to meet the minimum physical standards established by the armed forces for admission to the basic courses in military training or who are ineligible for such courses under other regulations of the armed forces may be exempted. In the discretion of the Committee on Requirements for Graduation, exemptions from the

requirements may be granted to aliens and conscientious objectors. It is recognized, moreover, that some other conditions, such as those of age, residence, or unusual outside responsibilities, may be accepted by the Committee as bases for exemption.

4. The requirement may be offset by work taken in military science in institutions of recognized collegiate standing and in military schools approved in this regard by the Department of the Army or the Department of the Air Force.

5. For students entering with advanced standing, the number of terms of military training required is to be reduced by the number of terms which the student has satisfactorily completed (not necessarily including military service) in a college of recognized standing.

6. Responsibility for the interpretation of the requirement and for its application in individual cases is placed upon the Committee on Requirements for Graduation.

7. Students who have been enrolled in the armed services may be exempted from the requirement in military training by virtue of such service.

8. A special student admitted for a period of less than two years is exempted from the requirement in military training during that period.

9. Any student who is enrolled in a regularly constituted reserve component of the armed forces and who is pursuing a training program approved by the Committee on Requirements for Graduation may be allowed to postpone the satisfaction of the military training requirement while he is so enrolled, and any student who satisfactorily completes twelve months in such a program shall have thereby satisfied two terms of the University military training requirement.

10. Any student who has satisfactorily completed four terms of the NROTC Program will have satisfied the University requirement in military training, and any student registered in the NROTC Program may postpone the military training requirement for the term in which he is so registered.

11. Any student registered in the Big Red Band may postpone the military training requirement for the term in which he is so registered, and any student who satisfactorily completes a term of work in the Big Red Band shall be deemed to have satisfied one term of the University military training requirement.

The University faculty requirement in military training may be satisfied by successful completion of work taken in any one of three departments: the Department of Military Science and Tactics, the Department of Air Science, or the Department of Naval Science. Each department offers a four-year course, the first two years of which satisfy the University requirement. An entering student will be assigned

to one of these divisions prior to his registration in the University. This assignment will be made on the basis of his personal choice subject to quota limitations.

Specifically, the requirement may be satisfied:

(a) by four terms of work in the Department of Military Science and Tactics (Military Science 11, 12, 21, and 22); or

(b) by four terms of work in the Department of Air Science (Air Science IA, IB, IIA, IIB); or

(c) by four terms of academic work (Naval Science 101, 102, 201, and 202) in the Department of Naval Science. (According to their respective contractual agreements with the Navy, Regular and Contract NROTC students are committed to continue in the NROTC program for four years.)

STUDENT'S RESPONSIBILITY FOR FULFILLMENT OF CONTRACTS IN ROTC PROGRAM

The Committee on Student Conduct will examine cases in which students are disenrolled from the Army, Navy, or Air Force training programs for breaking their contracts or for other instances of apparent bad faith. In a clear instance of deliberate intent to avoid obligation to the armed services after the student has received substantial benefits, it is the committee's normal policy to require the student's withdrawal from the University, with suspension and parole available as less stringent penalties.

The committee has also requested the admissions officers at Cornell to refrain from admitting any candidate who has been dropped by another institution for attempting to avoid his obligations to a service.

MILITARY SCIENCE AND TACTICS

THE OBJECTIVE of the four-year course of instruction presented by the Department of Military Science and Tactics is to produce junior officers who by their education, training, and inherent qualities are suitable for continued development as officers in the United States Army. Instruction will cover military fundamentals common to all branches of the service. The aim is to provide a basic military education and, in conjunction with other college disciplines, to develop individual character and attributes essential to an officer.

The first two years of this course, Basic ROTC, are part of the University requirements for a baccalaureate degree unless the student satisfies this requirement by other means. Entering students who have had ROTC training in secondary or military schools are requested to bring DA Form 131 (Student's Record—ROTC) for presentation to the Military Department at the time of registration. The third and fourth years, Advanced ROTC, are elective and qualify a student for appointment as Second Lieutenant in the U.S. Army Reserve or the Regular Army.

All students will take the general military science curriculum. Basic Course students take one hour of school of the soldier and exercise of command and two hours of classroom work per week. Those students who elect the Advanced Course take not less than one hour of school of the soldier and exercise of command and four hours of classroom work per week.

11. *BASIC ROTC*. Fall term. Credit two hours. Hours: classroom M W 8, 9, 10, 11, or 12; or T Th 8, 9, 10, 11, or 12; and school of the soldier and exercise of command M T W or Th 2. Examinations M 5 p.m. when appropriate.

Two hours a week of classroom discussion and practical exercises in American military history.

12. *BASIC ROTC*. Spring term. Credit two hours. Hours: classroom M W 8, 9, 10, 11, or 12; or T Th 8, 9, 10, 11, or 12; and school of the soldier and exercise of command M T W or Th 2. Examinations M 5 p.m. when appropriate.

Two hours a week of classroom discussion and practical exercises in organization of the Army, and individual weapons and marksmanship.

21. *BASIC ROTC*. Fall term. Credit two hours. Hours: classroom M W 8, 10, 11, or 12; or T Th 8, 9, 11, or 12; and school of the soldier and exercise of command M T W or Th 2. Examinations T 5 p.m. when appropriate.

Two hours a week of classroom discussion and practical exercises in crew-served weapons and gunnery.

22. *BASIC ROTC*. Spring term. Credit two hours. Hours: classroom M W 8, 10, 11, or 12; or T Th 8, 9, 11, or 12; and school of the soldier and exercise of command M T W or Th 2. Examinations T 5 p.m. when appropriate.

Two hours a week of classroom discussion and practical exercises on map reading and role of the U.S. Army and national security.

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31. *ADVANCED ROTC*. Fall term. Credit three hours. Hours: classroom M W F 8, 10, 11; or T Th S 9; and school of the soldier and exercise of command M T W or Th 2 and 3. Examinations W 5 p.m. when appropriate.

Four hours a week of classroom discussion and practical exercises in leadership, small unit tactics, and communications.

32. *ADVANCED ROTC*. Spring term. Credit three hours. Hours: classroom M W F 8, 10, or 11; or T Th S 9; and school of the soldier and exercise of command M T W or Th 2 and 3. Examinations W 5 p.m. when appropriate.

Four hours a week of classroom discussion and practical exercises in military teaching principles, and organization, function, and missions of the branches of the Army.

41. *ADVANCED ROTC*. Fall term. Credit three hours. Hours: classroom M W F 8, 9, 12; or T Th S 10; and school of the soldier and exercise of command M T W or Th 2 and 3. Examinations Th 5 p.m. when appropriate.

Four hours a week of classroom discussion and practical exercises in operations and logistics.

42. *ADVANCED ROTC*. Spring term. Credit three hours. Hours: classroom M W F 8, 9, 12; or T Th S 10; and school of the soldier and exercise of command M T W or Th 2 and 3. Examinations Th 5 p.m. when appropriate.

Four hours a week of classroom discussion and practical exercises in military administration and personnel management, and service orientation.

AIR SCIENCE

THE STUDENTS enrolled in courses in the Department of Air Science constitute the Cornell Unit of the Air Force Reserve Officers' Training Corps.

The course of study is divided into the Basic Course covering the first two years and the Advanced Course covering the junior year, Summer Camp, and senior year in that order. Blocks of instruction total 480 hours, allocated as follows: freshman and sophomore years, 90 hours each; junior and senior years, 150 hours each. In addition, the Summer Camp provides 232 hours.

This program is designed to fulfill required academic standards in order that cadets may receive credit in proportion to their academic load, and to provide that fundamental training, both personal and professional, which will best fit the cadet to become a well-rounded junior Air Force officer possessing a high growth potential.

The Basic Course was designed with two additional objectives in mind: first, to interest the cadet in continuing in Air Force ROTC, and second, to prepare him along lines that will prove of long-range value to the Air Force whether he returns to civil life or becomes a member of the U.S. Air Force.

IA. *BASIC AIR FORCE ROTC*. Fall term. Credit two hours. Hours: M W 8, 9, 10, 11, 12, or 2; T Th 8, 9, 10, 11, 12, or 2; and, in addition, T W or Th 3.

Two classroom hours a week covering a general survey of air power designed to provide the student with an understanding of the elements and potentials of air power. Includes fundamentals of air power; military air powers of the world; military research and development; air vehicle industries; airlines and airways; general aviation; elements of an aircraft; and aerodynamics. Additionally, one hour a week of basic military training.

IB. *BASIC AIR FORCE ROTC*. Spring term. Credit two hours. Prerequisites, Basic Air Force ROTC IA. Hours: M W 8, 9, 10, 11, 12, or 2; T Th 8, 9, 10, 11, 12, or 2; and, in addition T W or Th 3.

Two classroom hours a week providing a general survey of air power to include the aircraft control, navigation, and propulsion systems; space vehicles; military instruments of national security; and professional opportunities in the U.S. Air Force. One additional hour per week of basic military training.

IIA. *BASIC AIR FORCE ROTC*. Fall term. Credit two hours. Prerequisite, Basic Air Force ROTC I. Hours: M W 8, 9, 10, 11, 12, or 2; T Th 8, 9, 10, 11, 12, or 2; and, in addition, T W or Th 3.

Two classroom hours a week providing a general survey of the roots and development of aerial warfare emphasizing the principles of war, concepts of employment of forces, and the impact of changing weapons systems. Treatment of aerial warfare is undertaken to include targets and weapons. Additionally one hour per week of basic military leadership training.

IIB. *BASIC AIR FORCE ROTC*. Spring term. Credit two hours. Prerequisite, Basic Air Force ROTC IIA. Hours: M W 8, 9, 10, 11, 12, or 2; T Th 8, 9, 10, 11, 12, or 2; and, in addition, T W or Th 3.

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Two classroom hours a week continuing the treatment of aerial warfare to include aircraft and missiles, bases, facilities, and operations. One hour a week of basic military leadership training.

IIIA. *ADVANCED AIR FORCE ROTC*. Fall term. Credit three hours. Prerequisite, Basic Air Force ROTC I and II. Hours: M T W Th 9, or 11; and, in addition, T W or Th 3.

Four hours a week of instruction developing knowledge and skills required of a junior officer in the Air Force. This includes staff organization and functions, communicating, instructing, and techniques of problem solving. One hour a week of leadership practice in the Leadership Laboratory.

IIIB. *ADVANCED AIR FORCE ROTC*. Spring term. Credit three hours. Prerequisite, Advanced Air Force ROTC IIIA. Hours: M T W Th 9, or 11; and, in addition, T W or Th 3.

Four hours a week in the officer development phase designed around the principles and practices of leadership. This includes basic psychology of leadership, the military justice system, and application of problem-solving techniques and leadership theory to simulated and actual Air Force problems. One hour a week of leadership practice in the Leadership Laboratory.

IVA. *ADVANCED AIR FORCE ROTC*. Fall term. Credit three hours. Prerequisite, Advanced Air Force ROTC III. Hours: M T W Th 9, or 11; and, in addition, T W or Th 3.

Four hours a week studying global relations of special concern to the Air Force officer, with attention to such aspects as weather, navigation, geography, and international relations. The study of weather and navigation embraces the areas of temperature, pressure, air masses, precipitation, weather charts, navigational charts, and dead reckoning navigation. The second phase of the course is devoted to a study of the major factors underlying international tensions—balance-of-power concepts, the League of Nations, the United Nations and regional security organizations; and the rise of superpowers—the United States and the U.S.S.R. One additional hour a week devoted to directing the cadet functions of the Leadership Laboratory.

IVB. *ADVANCED AIR FORCE ROTC*. Spring term. Credit three hours. Prerequisite, Advanced Air Force ROTC IVA. Hours: M T W Th 9, or 11; and, in addition, T W or Th 3.

Four hours a week devoted to a conceptual study of the military aspects of political geography; maps and charts; factors of power; and the geographic influences upon political problems with a geopolitical analysis of the strategic areas. The last weeks of instruction are devoted to a study of materials designed to help the cadet make a rapid, effective adjustment to active duty as an officer in the United States Air Force. Additionally, one hour a week is provided for actual leadership practice devoted to the cadet management of the Leadership Laboratory.

NAVAL SCIENCE

THE DEPARTMENT of Naval Science offers a four-year course in Navy and Marine Corps subjects which can be integrated into almost any major field of academic study with the exception of the following courses: premedical, medical, pre dental, pretheological, preveterinary, veterinary, medicine, music, or art. The student, upon graduation and meeting the physical requirements, will be commissioned as an Ensign, U.S. Navy; Ensign, U.S. Naval Reserve; Second Lieutenant, U.S. Marine Corps; or Second Lieutenant, U.S. Marine Corps Reserve. The course requires attendance at three one-hour classes and one two-hour laboratory session each week and participation in at least one summer cruise of about six weeks' duration. The student is required to accept a commission and report for a period of obligated active service immediately on attainment of his first baccalaureate degree. Upon acceptance in the course, he is placed in a draft-deferred status until graduation. However, should he not remain in the course his draft board will be notified of this fact.

In order to register for Naval Science, the student must enroll in the Naval ROTC Unit (Department of Naval Science) either as a Regular NROTC student or as a Contract NROTC student. In either case, he must be a male citizen of the United States; he must have reached his seventeenth and not have passed his twenty-first birthday on July 1 of the entering year. If he matriculates in a major field of study requiring five years for a first baccalaureate degree, he must not have passed his twentieth birthday on July 1 of the entering year, and he will be placed in a leave status with respect to the Department of Naval Science (draft deferment continues) during one of the five years. He must be unmarried until commissioned. He must pass the same physical examination that is given for entrance into the U.S. Naval Academy.

REGULAR NROTC STUDENTS are selected annually by State Selection Committees on the basis of a nationwide competitive examination. In addition to this selection, to be in the program at Cornell the students must apply to and be accepted by Cornell within the quota assigned Cornell by the Navy. If so accepted they are ordered to Cornell by the Navy. They are enrolled as Midshipmen, U.S. Naval Reserve, upon matriculating, and they receive free tuition, books, fees, and uniforms, and retainer pay at the rate of \$50 a month while pursuing the four-year course. They are required to participate in three summer cruises of six to eight weeks' duration. On graduation, they are commissioned Ensign, U.S. Navy, or Second Lieutenant, U.S. Marine Corps, and are required to serve on active duty up to four years. During their third year of active duty, they may apply for retention in the Regular

Navy or Marine Corps. If selected, they will continue in the service as career officers. Otherwise, they will be placed on inactive duty in the Reserve Component until their commissioned service (active and inactive) totals six years.

CONTRACT NROTC STUDENTS are selected on the campus by the Professor of Naval Science, Cornell University, during the freshman orientation period, and they are enrolled as civilians by executing a contract with the Navy upon matriculating. They receive free Naval Science textbooks and uniforms for four years, and a subsistence allowance of about \$27 a month during their last two years. They are required to participate in one summer cruise of about six weeks' duration immediately following their third year of Naval Science. Upon graduation, they are commissioned Ensigns, U.S. Naval Reserve, or Second Lieutenants, U.S. Marine Corps Reserve, and may be required to serve on active duty up to two years. They are obligated to serve a total of six years (active and inactive) as commissioned officers. They may apply for commissions as career officers in the regular Navy. Entering freshmen who desire to enroll as Contract NROTC students must apply at the Naval ROTC unit (Department of Naval Science) in Barton Hall. Selection starts on the campus at 0900 on the Wednesday (September 16, 1959, and September 14, 1960) preceding the registration days for the fall terms. The number of students who can be accepted is limited by quota set by the Department of the Navy.

During the second year at Cornell, the Regular or Contract students may apply for the Marine Corps Option. If accepted they will take the Naval Science courses followed by M in schedule below (301M, 302M, 401M, and 402M).

For further information write to the Professor of Naval Science, Naval ROTC Unit, Cornell University, Ithaca.

101. *SEAPOWER AND ORIENTATION*. Fall term. Credit 3 hours. Lecture/recitation M W F 9 or 11; T Th S 9 or 11; laboratory W or Th 2-4.

A study of the organization of the Department of Defense, the customs and the traditions of the Navy, and naval leadership; basic seamanship and the various types of naval forces; introduction to factors contained in the analysis of seapower. Required of all first-term Naval ROTC students.

102. *SEAPOWER AND ORIENTATION*. Spring term. Credit 3 hours. Lecture/recitation M W F 9 or 11; T Th S 9 or 11; laboratory W or Th 2-4.

Continuation of study in the analysis of seapower. A study of seapower's influence upon global history. The future employment of seapower. Basic shiphandling. Required of all second-term Naval ROTC students.

201. *PSYCHOLOGY OR PERSONNEL MANAGEMENT*. Fall term. This will be any one of several three-hour-credit courses offered by Cornell and taught by a civilian faculty member, which will prepare the student for Naval Science 402. Choice of the course is subject to agreement between the school or college and the Department of Naval Science. May be taken any time before Naval Science 402 is taken, but the third-term Naval Science student will be required to attend Naval Science laboratory W or Th 2-4.

302. *NAVAL WEAPONS*. Spring term. Credit 3 hours. Lecture/recitation M W F 8, 10, or 11; T Th S 10; laboratory W or Th 2-4. Required of all fourth-term Naval ROTC students.

301. *NAVAL MACHINERY*. Fall term. Credit 3 hours. Lecture/recitation M W F 9 or 10; T Th S 9; laboratory W or Th 2-4.

A study of the different types of naval engineering propulsion plants and of the principles of ship stability and buoyancy in the practice of damage control. Required of all fifth-term Naval ROTC students except mechanical engineering students (who are permitted to take heat power courses instead) and Marine Corps candidates.

301M. *EVOLUTION OF THE ART OF WAR*. Fall term. Credit 3 hours. Lecture/recitation 3 hours a week as arranged; laboratory W or Th 2-4.

A survey of the historical development of weapons, tactics, and materials; the classic principles of war illustrated by a study of selected battles and campaigns. Required of all fifth-term Naval ROTC students who are candidates for Marine Corps commissions.

302. *NAVIGATION*. Spring term. Credit 3 hours. Lecture/recitation M W F 9, or 10; T Th S 9; laboratory W or Th 2-4.

A study of the theory and technique of celestial and terrestrial navigation; dead reckoning, piloting, and use of navigational instruments. Required of all sixth-term Naval ROTC students except Marine Corps candidates.

302M. *MODERN BASIC STRATEGY AND TACTICS*. Spring term. Credit 3 hours. Lecture/recitation 3 hours a week as arranged; laboratory W or Th 2-4.

A survey of modern strategical and tactical principles, using contemporary historical events as illustrative material. Required of all sixth-term Naval ROTC students who are candidates for Marine Corps commissions.

401. *NAVAL OPERATIONS*. Fall term. Credit 3 hours. Lecture/recitation M W F 9 or 11; T Th S 9; laboratory W or Th 2-4.

A study of shipboard operations, including maneuvering board, tactical communications and instructions, rules of the nautical road, and the operational importance of weather and of fleet communications. Required of all seventh-term Naval ROTC students except Marine Corps candidates.

401M. *AMPHIBIOUS WARFARE, PART I*. Fall term. Credit 3 hours. Lecture/recitation 3 hours a week as arranged; laboratory W or Th 2-4.

A detailed study of the technique and history of amphibious warfare. Required of all seventh-term Naval ROTC students who are candidates for Marine Corps commissions.

402. *PRINCIPLES AND PROBLEMS OF NAVAL LEADERSHIP*. Spring term. Credit 3 hours. Lecture/recitation M W F 9 or 11; T Th S 9; laboratory W or Th 2-4.

A study of principles and techniques which will assist the newly commissioned officer in performing his leadership functions in the Navy. This will include his moral and professional leadership responsibilities as a naval officer. Emphasis is placed on the elements of personal example, good management practices, and moral responsibility. Required of all eighth-term Naval ROTC students except Marine Corps candidates.

402M. *AMPHIBIOUS WARFARE, PART II; LEADERSHIP AND NAVAL JUSTICE*. Spring term. Credit 3 hours. Lecture/recitation 3 hours a week as arranged; laboratory W or Th 2-4.

A continued study of the techniques of amphibious warfare; the procedures for and the responsibility of an officer in the administration of naval justice; the psychology of leadership. Required of all eighth-term Naval ROTC students who are candidates for Marine Corps commissions.

PHYSICAL EDUCATION

COURSES FOR MEN

ALL entering students are given a preregistration physical examination by their family physician. The Department of Clinical and Preventive Medicine prescribes individual work in corrective physical education when the need is evident.

All entering students are required to take a swimming test—to jump into deep water and swim 50 yards. Those who do not successfully complete the test will be assigned to Swimming Instruction. Those who pass the test will be assigned to regular physical education classes.

The program for the first year includes physical conditioning and an emphasis upon introducing students to a broad field of activities, particularly carry-over sports. In the second year the student will have an opportunity to participate in an activity program, selected from individual or team sports, or physical education classes.

SPECIFIC COURSES

1. *BASIC PHYSICAL EDUCATION*. Open to freshmen only. Three hours a week. M T W Th F 9, 10, 11, 12, 2, 3; S 9, 10, 11. TEAGLE HALL.

2. *BEGINNERS' SWIMMING*. Open only to those who have not passed the swimming test. Three hours a week, M T W Th F 9, 10, 12, 2. TEAGLE HALL POOL.

3. *CORRECTIVES*. Open to students recommended by Department of Clinical and Preventive Medicine. Three hours a week as assigned at Barton Hall on registration day.

4. *TEAM SPORTS (INTERCOLLEGIATE)*. Open only to those freshmen and sophomores already registered with the coach. New candidates will have to make the squad before credit can be obtained for physical education.

ELECTIVE PROGRAM

5. (a) *INTERMEDIATE SWIMMING* (fall term only). Intended to prepare men for Advanced Swimming and to build water skills to meet the swimming requirements of the NROTC. 2 hours a week. M T W Th F 11-3. TEAGLE HALL POOL.

b) *ADVANCED SWIMMING* (spring term only). Designed to meet swimming requirements of the NROTC and the American Red Cross Advanced Survival Swimming Course. 2 hours a week. M T W Th F 11-2-3. TEAGLE HALL POOL.

6. *BADMINTON*. Open only to those who have passed two terms of P.E. Two hours a week. M T W Th F 9, 10, 11, 12. BARTON HALL.

7. *BASKETBALL*. Open only to those who have passed two terms of P.E. Two hours a week. M T W Th F 9, 10, 11, 12, 4, 5. BARTON HALL.

8. *BOWLING*. Open only to those who have passed two terms of P.E. Two periods a week; 2 lines a period. M 2, 3; T W Th F 2, 3, 4. Fee, 35 cents a line. Bowl-O-Drome, West State St.

9. *BOXING*. Open only to those who have passed two terms of P.E. M W F 4:30 only. TEAGLE HALL.

10. *GOLF (INDOOR)*. Open only to those who have passed two terms of P.E. Professional instruction; equipment furnished. Two hours a week. First Monday in November to third Saturday in January; first Monday of spring term to last Saturday before spring recess. Fee \$5. BACON CAGE.

11. *GOLF (OUTDOOR)*. Open only to those who have passed two terms of P.E. and have played golf. Two days (9 holes a day). First day of classes to first Saturday in November; first Monday following spring recess to end of term. Fee, \$10 fall term, \$15 spring term, or \$1 a day.

12. *SQUASH*. Open only to those who have passed two terms of P.E. Two hours a week as assigned. M T W Th F S 9 a.m. through 9:30 p.m. SQUASH COURTS.

13. *PERSHING RIFLES*. Open only to those who have passed two terms of P.E. and are already members of Pershing Rifles.

14. *VOLLEYBALL*. Open only to those who have passed two terms of P.E. Two hours a week. M T W Th F 9, 10, 11, 12. BARTON HALL.

15. *WATER SAFETY COURSES*

(a) *ARC SENIOR LIFE SAVING*. Starts first Monday following spring recess. Daily Monday through Friday 4:30-6 p.m., until completed.

(b) *ARC WATER SAFETY INSTRUCTORS*. Starts first Monday of spring term. 30 hours. Mondays 7:30-10 p.m., until completed.

16. *TENNIS*. Open only to those who have passed two terms of P.E. 3 hours a week. First day of classes until first Saturday in November; first Monday following spring recess to end of term. 2, 3, 4. UPPER ALUMNI COURTS.

17. *WEIGHT LIFTING*. Open only to those who have passed two terms of P.E. Two hours a week. M T W Th F 4, 5. TEAGLE HALL.

18. *EQUITATION*. Open only to those who have passed two terms of P.E. Two hours a week by appointment made at Barton Hall on registration day.

19. *MARCHING BAND*. Fall term only. As assigned by Band Director.

COURSES FOR WOMEN

An orthopedic examination and motor ability tests are required of all freshman students and sophomore transfer students during the first week of the fall term.

Those whose physical, orthopedic, or motor ability examinations indicate a need for individual instruction or restricted activity are assigned to Physical Education 53 or to specially designated activities in Physical Education 54.

Each term is divided into an outdoor and an indoor season of seven weeks each. Activities continuing throughout the term (fourteen weeks) and those offered for a seven-week season are listed under Physical Education 54.

Physical Education 52A or 52B is required of all physically qualified students. Other activities may be selected from Physical Education 54 to complete the balance of the two-year requirement. Juniors and seniors may register without credit for activities of their choice.

52A. *ELEMENTARY DANCE*. Either term. Three hours a week as arranged. Seven weeks during the outdoor or indoor season.

18 INDEPENDENT DEPARTMENTS

This course, designed to develop control of the body as it moves in rhythmic pattern, acquaints the student with the physical aspect of dance training and aims to stimulate a better understanding of dance as an art form.

52B. *GYMNASTIC MOVEMENT*. Either term, indoor seasons only. Three hours a week as arranged.

Exercises and activities to increase endurance and develop physical poise.

53. *INDIVIDUAL GYMNASTICS (CORRECTIVES)*. Either term, indoor seasons only. Open only to students recommended by the Medical or Physical Education staff. Three periods a week as arranged.

Prescribed exercises adapted to the individual student's needs.

54. *ACTIVITIES*. Three hours a week as arranged.

Throughout the term (14 weeks): riding, intermediate dance (prerequisite, P.E. 52A), Senior Life Saving, Water Safety Instructors (spring term only).

Outdoor season. Fall term: archery, golf, hockey, tennis.

Spring term: archery, canoeing, golf, lacrosse, tennis.

Indoor season. Fall term: ballroom dancing, bowling, figure skating, golf, skiing, square and folk dancing, swimming.

Spring term: same as fall term.

THE DANCE

The following courses are designed to offer background in the history of the dance and experience in composition of dance forms and in technique of dance movement. In addition to the assigned meetings, there is a rehearsal schedule to meet production demands throughout the term.

200. *PRECLASSIC DANCE FORMS*. Either term. Credit three hours. Consent of the instructor. M T 4:30, Th 7:30 p.m. Miss Atherton and staff.

201. *MODERN DANCE FORMS*. Either term. Credit three hours. Prerequisite, Dance 200. M T 4:30, Th 7:30 p.m. Miss Atherton and staff.

202. *CHOREOGRAPHY FOR SOLO AND GROUP*. Either term. Credit three hours. Prerequisite, Dance 201. M T 4:30, Th 7:30 p.m. Miss Atherton and staff.

203-204. *INFORMAL STUDY*. Either term or throughout the year. Credit three hours. Open only to exceptionally qualified students. Prerequisite, Dance 202 and consent of the instructor. Hours to be arranged. Miss Atherton.

DEPARTMENT OF HORSEMANSHIP

Class instruction in forward seat once weekly by an accredited instructor; basic, intermediate, advanced.

Material covered: hands and seat, walk, trot, canter, elementary dressage, jumping, and cross country riding. For men, physical education credit is given for this course as an elective in the sophomore year. Classes are held in an indoor heated riding hall, outdoor rings, and cross country.

Consult the Director of Equitation for specific information.

CLINICAL AND PREVENTIVE MEDICINE

THE DEPARTMENT of Clinical and Preventive Medicine, besides offering clinical services for students who are ill, contributes to their total educational experience by offering academic courses.

201. *MENTAL HYGIENE*. Either term. Credit 2 or 3 hours. One evening a week as arranged. Registration by permission of instructor. Mr. Waldman.

Deals with some basic concepts of emotional adjustment, mental health, and illness. The more common behavioral and emotional disorders; current policies and practices with regard to referral, diagnosis, and treatment; the role of the teacher and parent in promoting mental health. Emphasis is on attitudes and procedures related to adjustment problems in the school and community.

381-382. *FIELD OBSERVATION AND EXPERIENCE IN COMMUNITY NUTRITION*. Given throughout the year. Credit one hour a term. Prerequisite or parallel with C.P.M. 392 and Engineering 2509. Registration by consent of the instructor. For Graduate School of Nutrition and Graduate School students only. A two-week full-time period just prior to the academic year and one or two weeks during the spring recess and/or immediately following final examinations in the spring term. Time and place as arranged. Professor Young.

Supervised observation and experience in the community nutrition program. Students must be prepared to defray expense of living costs in the community selected for the field experience. Every effort will be made to keep costs minimal.

392. *CLINICAL AND PUBLIC HEALTH NUTRITION*. Spring term. Credit three hours. Prerequisites, a course in nutrition, in physiology, and in biochemistry. Registration by permission of instructor. For graduate School of Nutrition and Graduate School students. M W F 10. Savage Hall 145. Professor Young and members of the medical staff.

Designed to familiarize the student with some of the applications of nutrition to clinical and public health problems.

FACULTY

Deane W. Malott, A.B., M.B.A., LL.D., D.C.S., *President of the University.*

Carl Arnold Hanson, B.A., Ph.D., *Dean of the Faculty and Chairman of the Committee on Requirements for Graduation.*

DIVISION OF SUMMER SESSION AND EXTRAMURAL COURSES

William Arthur Smith, Ph.D., *Director of the Division.*

DIVISION OF UNCLASSIFIED STUDENTS

Blanchard Livingstone Rideout, Ph.D., *Director of the Division.*

ADMINISTRATIVE COMMITTEE

Martin W. Sampson, M.S., *Associate Professor of Mechanical Engineering.* Term expires June 30, 1959.

Archie T. Dotson, Ph.D., *Associate Professor of Government.* Term expires June 30, 1959.

William A. Wimsatt, Ph.D., *Professor of Zoology.* Term expires June 30, 1960.

Gerald W. Lattin, Ph.D., *Associate Professor of Hotel Administration.* Term expires June 30, 1960.

Barbour L. Herrington, Ph.D., *Professor of Dairy Industry.* Term expires June 30, 1961.

J. Eldred Hedrick, Ph.D., *Professor of Chemical Engineering.* Term expires June 30, 1961.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

Colonel William H. Allen, Jr., *Artillery, U.S. Army, Professor of Military Science and Tactics.*

ASSOCIATE PROFESSORS

Lieutenant Colonel Marion K. Bandle, *Quartermaster Corps, U.S. Army.*

Lieutenant Colonel Maurice E. Jessup, *Artillery, U.S. Army.*
 Lieutenant Colonel Arthur L. Purcell, *Infantry, U.S. Army.*

ASSISTANT PROFESSORS

Major Colin M. Carter, *Corps of Engineers, U.S. Army.*
 Major Henry J. Ebrey, Jr., *Armor, U.S. Army.*
 Captain William C. Barott, *Infantry, U.S. Army.*
 Captain Louis S. Caras, *Quartermaster Corps, U.S. Army.*
 Captain David F. Edwards, *Artillery, U.S. Army.*
 Captain Maida E. Lambeth, *Women's Army Corps, U.S. Army.*
 Captain Jerry A. Kneisl, *Infantry, U.S. Army.*
 Captain Charles V. Yarbrough, *Infantry, U.S. Army.*

DEPARTMENT OF AIR SCIENCE

Colonel John D. Payne, *U.S. Air Force, Professor of Air Science*

ASSOCIATE PROFESSOR

Lieutenant Colonel Kenneth R. Stow, *U.S. Air Force.*

ASSISTANT PROFESSORS

Major Matthias F. Donelan, *U.S. Air Force.*
 Major Walter H. Baker, *U.S. Air Force.*
 Captain Andrew P. Iosue, *U.S. Air Force.*
 Captain Leo A. Polinsky, *U.S. Air Force.*
 Captain Robert B. Richardson, *U.S. Air Force.*
 Captain Donald J. Sheldon, *U.S. Air Force.*
 Captain John L. Pfeiffer, *U.S. Air Force.*

DEPARTMENT OF NAVAL SCIENCE

Captain Robert B. Bretland, *U.S. Navy, Professor of Naval Science, and
 Commanding Officer of the Naval ROTC.*

ASSOCIATE PROFESSOR

Commander Alex Baker, *U.S. Navy.*

ASSISTANT PROFESSORS

Major Robert E. Barde, *U.S. Marine Corps.*
 Lieutenant Philip "F" Gibber, *U.S. Navy.*
 Lieutenant Gilbert F. Murphy, *U.S. Navy.*
 Lieutenant (junior grade) Jon C. Liebman, *U.S. Navy.*

DEPARTMENT OF PHYSICAL EDUCATION AND ATHLETICS

Robert J. Kane, B.S., *Director of Athletics.*

Ross H. Smith, B.S., M.Ed., *Director of Physical Education for Men.*

Miss Dorothy H. Bateman, *Director of Physical Education for Women.*

C. V. P. Young, A.B., *Profesor of Physical Education, Emeritus.*

INSTRUCTORS FOR MEN

L. J. Adesso
George L. Cointe, A.B.
R. L. Cullen, B.S.
J. H. Fenner
P. J. Filley, B.S.
J. A. Freeman, M.S.
R. C. Greene, B.S.
G. L. Hall
John J. Jaffurs, B.S.
F. J. Kavanagh
C. B. Lent, M.S.
Richard Lewis, A.B.
G. S. Little

Hugh S. MacNeil, B.S.
T. J. McGory, Jr.
E. J. Miller, Jr., B.S.
L. C. Montgomery, B.P.E., B.S.E.
W. R. Moore, B.S.
James Ostendarp, A.B., M.S.
George D. Patte, B.S.
Edward G. Ratkoski, B.S.
R. H. Sanford, A.B.
Hanley Staley, M.S.
T. H. Thoren, B.S.
Carl Ullrich, B.S.
John West, M.Ed.

INSTRUCTORS FOR WOMEN

Miss Rachel Adams, B.A.
Mr. William Ames, M.A.
Miss May Atherton

Mrs. Kerstin T. Baird, M.A.
Miss Barbara Sterling, B.S.
Mr. Joseph Zeilic

DEPARTMENT OF CLINICAL AND PREVENTIVE MEDICINE

Norman S. Moore, M.D.,
Head of the Department
Ralph Alexander, M.D.
Lief Braaten, Ph.D.
Temple Burling, M.D.
C. Douglas Darling, M.D.
Paul Darsie, M.D.
Jennette Evans, M.D.
Audrey Gallon, M.S.S.W.
Grace Fiala, A.B.,
Research Associate
Raymond Haringa, M.D.
J. W. Hirshfeld, M.D.,
Research Associate

Jeffrey H. Fryer, M.D.
A. H. Leighton, M.D.
Ethel E. Little, M.D.
Frances McCormick, A.B., B.N.
Alexius Rachun, M.D.
Edward C. Showacre, M.D.
John Summerskill, Ph.D.
Marvin Waldman, Ph.D.
Henry B. Wightman, M.D.
Harold H. Williams, Ph.D.,
Research Associate
Jocelyn Woodman, M.D.,
Research Associate
Charlotte Young, Ph.D.