



1-28

## A Signal Opportunity

The passage of the Morrill Act in 1862, establishing the land-grant institutions, constituted a milestone in higher education in America. It marked the beginning of a system of education truly national in character, designed to democratize educational opportunities and responsibilities and to meet the growing needs of a great nation.

The University of Minnesota is one of these land-grant institutions. As such it is deeply concerned with the service it renders not only to its students but to the State and the Nation as well.

It was no accident that the Congress in 1862 included military tactics among the subjects to be taught. One of the fundamental reasons for passing the Land-Grant Act was that of national defense. Merely maintaining the quality of the national domain was not of itself considered by the Congress as adequate national defense—important though that might be. The bill stipulated that military tactics must be taught.

The University of Minnesota cannot meet its minimum commitments to the State and Nation unless it offers instruction in military science and tactics. Through cooperation with the Army, Navy, and Air Force it provides officer training in these areas.

I urge that every able-bodied young man entering the University of Minnesota explore the opportunities in one of the Reserve Officer training programs. Enrolment therein will, I am certain, make a significant contribution to a student's total educational experience and to his preparation for his life's work.

It will also provide essential assistance toward the cost of college attendance. In some cases, indeed, it may open up an entirely new career.

Lastly, and perhaps most important of all, it will provide an opportunity for the student to meet in some small measure his responsibility to himself, his state, and his country.

*f. l. Morrill*  
President

## TABLE OF CONTENTS

### I. MILITARY SCIENCE AND TACTICS

General Information .....	6
Antiaircraft Artillery .....	9
Corps of Engineers .....	11
Ordnance Department .....	12
Quartermaster Corps .....	14
Signal Corps .....	15
Transportation Corps .....	17
Branch Immaterial .....	18
Medical Department .....	19
Medical Corps .....	20
Dental Corps .....	20
Medical Service Corps .....	21

### II. NAVAL SCIENCE

General Information .....	23
First Year .....	27
Second Year .....	27
Third Year .....	28
Fourth Year .....	28

### III. AIR SCIENCE AND TACTICS

General Information .....	30
First Year .....	32
Second Year .....	33
Third Year .....	34
Fourth Year .....	34

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# Military Science and Tactics

## ARMY ROTC

### GENERAL INFORMATION

The Reserve Officers Training Corps (ROTC) is the name applied to the program in Military Science and Tactics offered at all of the nation's land grant colleges, including the University of Minnesota. The purpose of this program is to produce reserve officers for the Army Officers Reserve Corps from among qualified university students, and to supplement the United States Military Academy as a source of Regular Army Officers.

The Reserve Officers Training Corps is not a component of the Army. It does, however, play an important part in the national defense framework of our nation. In its primary role of producing Reserve Officers, it is a vital element in fulfilling the traditional American concept of dependence on a large trained reserve rather than a large standing army.

### ROTC at the University

At the University of Minnesota, Military Science and Tactics is an elective four-year college course which the student may schedule in the same manner as any other elective course in his curriculum. The program, although laid out by the Army and taught by Army instructors, is administered by the University and academic credits applicable to graduation are given.

### **Reserve Commission**

The completion of the four-year course of instruction qualifies the student for appointment as a second lieutenant in the Officers Reserve Corps. Except in a national emergency, he cannot be required to render any service against his wishes. Certain minimum training requirements, however, are necessary for continuance of his commission.

### **Regular Army Commission**

Students who desire a Regular Army career have an excellent opportunity to secure a commission as a second lieutenant in the Regular Army if they meet certain qualifications during their ROTC enrolment. A large number of appointments in the Regular Army are now being made annually from selected ROTC graduates. Further information concerning this opportunity may be obtained from the Department of Military Science and Tactics.

### **Obligations**

Because of the federal subsidy involved, students assume two obligations in ROTC, upon their entrance into the third and fourth years (Military Science III and IV) of Military Science. They must agree to complete the remaining two years of ROTC if they continue enrolled in the University, and they must agree to accept a commission of second lieutenant (first lieutenant for medical students) in the Officers Reserve Corps, if offered, upon completion of the course.

### **Allowances**

All texts and uniforms are furnished by the department. There is no expense attached to the course. In addition, students who have been accepted for Military Science III and IV receive federal pay of \$27 per month during the two academic years, and \$75 per month during the six-week summer camp. This financial assistance is in addition to any benefits received under the "GI Bill."

### **Qualifications for Enrolment**

The following qualifications for enrolment for commission are required. Students who do not meet these qualifications may enroll in the course and receive university credit, but will not receive financial benefits or a Reserve Commission.

1. Enrolled as a regular student at the University.
2. Male citizen of the United States.
3. Not have reached 23 years of age for enrolment in Military Science I (26 years for medical and dental students).
4. Not have reached 27 years of age at the time of initial enrolment in Military Science III (31 years for medical and dental students).
5. Have sufficient time remaining in college curriculum to complete the ROTC course.

6. Physically qualified as determined by physical examination administered at time of enrolment.
7. Not a member of the Air or Naval Reserve.
8. Not previously commissioned in one of the Armed Services.

### Transfer of ROTC Credits

Students who have had ROTC at other institutions on the college level will be given quarter-for-quarter credit for such prior ROTC successfully completed. Students who have completed ROTC at military schools and high schools will be granted such credit for ROTC successfully completed as may be determined by each individual case.

### Credit to Veterans

Veterans who have completed twelve months of service in one of the Armed Services, and who are otherwise qualified, may be granted credit for Military Science I and II, and may be accepted for initial enrolment in Military Science III. Veterans who have completed six months and less than twelve months of service may be granted credit for Military Science I.

### Registration

Formal registration for Military Science and Tactics is effected in the same manner as registration for other academic courses of the University. Students add Military Science and Tactics to their academic program at the appropriate college registration point. **Due to the monetary allowance in Military Science III and IV, it is necessary that students registering for these courses secure prior acceptance by personal application at the Department of Military Science and Tactics, Room 110, Armory.**

### Army ROTC Branches

The Army is organized into a number of specialized branches, and students are trained for and assigned to one of these branches in either the Officers Reserve Corps or the Regular Army. Not all Army branches are represented by military science courses at the University. There is, however, a provision for students to secure a commission in a branch other than one of those offered at the University.

The first year of ROTC (Military Science I) is common to all branches except the Medical, Dental, and Pharmacy Corps. The curriculum of these branches is listed in the Description of Courses section of this bulletin. Prior to enrolment in Military Science II students must elect one of the Army branches offered at the University. Thereafter the greater portion of the military science subjects are studied in the tactics and equipment of the selected branch.



### Summer Camp

The "laboratory" for Military Science and Tactics is one six-week summer camp conducted during the summer between Military Science III and IV. The camp is part of the school program and attendance is required for full course credit and commission.

Students attend camp as civilians and participate in a 40-hour week of instruction in the practical application of theoretical subjects studied at the University. Separate camps are conducted by each branch of the Army for ROTC students.

Students are paid traveling expenses to and from camp and in addition receive pay of \$75 per month while at camp. All accommodations and food are furnished.

## ARMY ROTC

### First Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science I</b> (Common to all branches of the Army and Air Force)	None	1	3

#### COURSE NO.

- 1f The first quarter of Military Science I is designed to give the freshman student an understanding of basic military organization, with a background of military history and the evolution of United States military policy.
- 2w In the second quarter of Military Science I the student studies the evolution of warfare and the unchanging principle of war. The geographical foundations of national power and military problems of the United States are brought in to show how they have changed our military forces. Technical phases of the military service are shown by the teaching of maps and aerial photographs, military psychology and personnel management, and first aid and hygiene.
- 3s Military mobilization and demobilization, with the accent on mobilization of the Armed Services during World War II, are taught to show the student how total mobilization affects the economy of a large nation. In the latter part of the quarter leadership, drill, and the exercise of command are taught.

## ANTI-AIRCRAFT ARTILLERY

### Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science II (AAA)</b>	MS I	1	3

#### COURSE NO.

- 4f The first quarter of Military Science II in the Antiaircraft Artillery branch is composed of lectures on basic antiaircraft artillery automatic weapons, with the characteristics, capabilities, and limitations of machine guns and 40 mm. cannons.
- 5w The duties of gunners and cannoneers with the emphasis placed on service of the piece, duties of the range section, emplacements and march order are taught in the second quarter of Military Science II in the Antiaircraft Artillery branch.



ROTC anti-aircraft cadets receive instruction on the 90-mm. AAA gun M-2.

- 6s The third quarter of Military Science II in the Antiaircraft Artillery branch continues the study of anti-aircraft weapons. The emphasis, however, is placed on the study of larger caliber weapons such as the 90-mm. gun. The course will include nomenclature, functioning, and a general description of fire control equipment and types of ammunition.

### Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (AAA)</b>	<b>MS II</b>	<b>3</b>	<b>5</b>

#### COURSE NO.

- 151f Basic gunnery, including position finding, exterior ballistics, and orientation and synchronization of the anti-aircraft gun battery, takes up the main part of the first quarter in Military Science III in the Antiaircraft Artillery branch. Tactics of anti-aircraft units, communications, and automatic weapons problems also are taught during this quarter.
- 152w The second quarter of Military Science III in the Antiaircraft Artillery branch goes into the technical phases of motors and transportation and troop movements. The organization and mission of anti-aircraft groups and brigades are taught so that the student has at least a basic understanding and knowledge of the job done by an anti-aircraft unit.
- 153s Branch immaterial subjects take up most of the time in the third quarter of Military Science III in the Antiaircraft Artillery branch. Individual weapons and marksmanship are taught so that the student will have some understanding of how to protect himself in case of close enemy contact. Leadership, drill, and the exercise of command are stressed in the latter part of the quarter.

## Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (AAA)</b>	<b>MS III</b>	<b>3</b>	<b>5</b>

## COURSE NO.

- 154f Further instruction of a more complicated nature on the capabilities, limitations and employment of antiaircraft weapons is taught in the first quarter of Military Science IV in the Antiaircraft Artillery branch. Command and staff functions with the relationship between commanders and their staff are also taught.
- 155w Combat intelligence, its importance to the antiaircraft artillery unit and its influence on decisions, is taught in the second quarter of Military Science IV in the Antiaircraft Artillery branch, to familiarize the student with intelligence problems. The importance of teamwork in military operations, with the accent placed on the Army-Navy-Air Force team is taught in this quarter also.
- 156s Consolidated subjects. See "Branch Immaterial," pages 18 and 19.

## CORPS OF ENGINEERS

## Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science II (CE)</b>	<b>MS I</b>	<b>1</b>	<b>3</b>

## COURSE NO.

- 4f History and traditions of the Corps of Engineers: origin and history of the corps from the Revolutionary period to the present time. Characteristics of weapons and tactics of small units: engineer weapons and the role of engineers in small unit operations.
- 5w Hand tools and rigging: use and care of engineer hand tools; use of ropes, knots, lashing, and loadings. Mines, booby traps, and explosives: nomenclature, characteristics, and functioning of mines, traps, fuses, explosives, and demolition equipment; mine field installation. Camouflage basic principles and application.
- 6s Defense against chemical attack: chemical agents; defensive measures for personnel and materiel. Field fortifications: construction principles of intrenchments, emplacements, shelter, and obstacles.

## Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (CE)</b>	<b>MS II</b>	<b>3</b>	<b>5</b>

## COURSE NO.

- 151f Organization of engineer units—a general picture. Tactics of engineer units: methods of employment emphasizing the smaller units such as the squad, platoon, and company. Organization of combat divisions: a survey of the infantry, armored, and airborne divisions. Engineer signal communication: techniques of communication and description of signal equipment. Supply procedure for engineer units. Vehicle operation and maintenance for engineer units.
- 152w Bridge design and classification: nomenclature, fundamentals of design, Bailey bridges, and standard floating bridges; tactical bridging, fixed and floating.
- 153s Military roads and runways: nomenclature, design standards, surveys, drainage, grading, surfacing, repairing, and rehabilitation of roads and runways.



Minnesota cadets cutting timber piles for bridging.

**Fourth Year**

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (CE)</b>	<b>MS III</b>	<b>3</b>	<b>5</b>

COURSE NO.

- 154f Motor movements: an introduction to the technique and procedure involved in moving an engineer unit by automotive transportation. River crossing operations: includes principles of tactical operations and technical considerations such as site selection, equipment needed, and planning details.
- 155w Engineer support for the Air Force: organization, mission, equipment and capabilities of Aviation Engineer units. Engineer support of the communication zone and for the field type army. Construction utilities and job management: principles of the Department of the Army construction policy and standard plans, construction planning and scheduling, and the operation and maintenance of utilities.
- 156s Consolidated subjects. See "Branch Immaterial," pages 18 and 19.

**ORDNANCE DEPARTMENT**

**Second Year**

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science II (ORD)</b>	<b>MS I</b>	<b>1</b>	<b>3</b>

COURSE NO.

- 4f The role and place of the Ordnance Department in the Armed Forces. Survey of special requirements, classification, identification, and maintenance of military vehicles.

- 5w Small arms materiel: the historical and technical development of small arms. Artillery materiel: description, characteristics, principles of operation, and tactical employment. Ammunition materiel: classes, types, explosives, ammunition, and bombs.
- 6s The nomenclature, functioning and tactical employment of representative fire control instruments.

### Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (ORD)</b>	<b>MS II</b>	<b>3</b>	<b>5</b>

#### COURSE NO.

- 151f History, mission, organization, and operation of the Ordnance Department. Automotive materiel: characteristics, functions, construction and principles of operation, tests and measurements, current trends.
- 152w Advanced small arms materiel: advanced artillery materiel. Antiaircraft fire control systems: historical survey and introduction to standard symbols, mathematical methods, principles of operation and interrelation of the major components of control systems.
- 153s Advanced ammunition materiel: qualitative fundamentals. Ammunition supply: storage and distribution; accounting procedures and records; fundamentals of surveillance, maintenance, and destruction of ammunition.



*Firing the new recoilless 75-mm. rifle at Aberdeen Proving Grounds, Maryland.*

## Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (ORD)</b>	<b>MS III</b>	<b>3</b>	<b>5</b>

## COURSE NO.

- 154f Maintenance and supply: principles of ordnance general supply, to include receipt, storage, packaging, crating, and issue of materiel.
- 155w Materiel specialty: individual research and study which coordinates a selected ordnance topic with an appropriate engineering or scientific subject; the individual project to be expressed in the form of an extended term paper. Combat intelligence: general principles and technique with emphasis on ordnance intelligence.
- 156s Consolidated Subjects. See "Branch Immaterial," pages 18 and 19.

## QUARTERMASTER CORPS

## Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science II (QM)</b>	<b>MS I</b>	<b>1</b>	<b>3</b>

## COURSE NO.

- 4f Organization for supply in the Army: a general survey of the supply organization in the Army, organization and functions of the Quartermaster Corps: organization, mission, functions, installation, and activities. Classification of supplies, use of supply catalogs and basis of allowances.
- 5w Property accountability and responsibility: definition of terms, details of application. Research and development of supplies in Quartermaster Corps: the functions of the Quartermaster Service Board; laboratories; tests and measurements; current research and development. Organization, functions, and operations of quartermaster units: mission, capacity, major equipment, and employment of quartermaster units.
- 6s Supply procedures followed in units and organizations.

## Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (QM)</b>	<b>MS II</b>	<b>3</b>	<b>5</b>

## COURSE NO.

- 151f This course presents the supply procedures used at an Army station; the types, missions, and procedure employed in Army supply depots; the organization and functions of sales commissaries.
- 152w Storage, warehousing and materials handling at depots, camps, and stations: technique of storage, preservation and protection of supplies. Procurement, storage, and distribution of petroleum products.
- 153s A study of the quartermaster activities at a post and in the field, including bakery, laundry, salvage, graves registration, and food service.

## Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (QM)</b>	<b>MS III</b>	<b>3</b>	<b>5</b>

## COURSE NO.

- 154f Survey of the operations of the Quartermaster Corps in the zone of interior and in a theater of operations.
- 155w Fiscal procedures: organization, functions including definitions and terms, distribution of funds, records and codes. Procurement procedures: purchasing and contracting procedures and technique; mission, type, and organization for quartermaster inspection service. The organization and functions of combat arms and technical services, combat and technical intelligence.
- 156s Consolidated subjects. See "Branch Immaterial," pages 18 and 19.

## SIGNAL CORPS

## Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science II (SIG)</b>	<b>MS I</b>	<b>1</b>	<b>3</b>

## COURSE NO.

- 4f The first quarter of Military Science II in the Signal Corps branch is composed of lectures on the evolution of communications and communication equipment with the duties of communication personnel in installing, operating, and maintaining wire, radio, sound, pigeon, and visual means of communication.
- 5w Organization and mission of the Signal Corps with the emphasis placed on organization for national defense and the Department of Army is taught in the second quarter of Military Science II in the Signal Corps branch.
- 6s The third quarter of Military Science II in the Signal Corps branch continues the study of organization and signal communication practices. The emphasis, however, is placed on the organization, capabilities and functions of the infantry, armored and airborne divisions.

## Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (SIG)</b>	<b>MS II</b>	<b>3</b>	<b>5</b>

## COURSE NO.

- 151f Basic information concerning security and its importance in Army communications along with explanation of responsibility for the various types of signal orders issued, takes up the main part of the first quarter in Military Science III in the Signal Corps branch. Field wire and radio communications fundamentals plus message center and communication center procedure take up the latter part of this quarter.
- 152w The second quarter of Military Science III in the Signal Corps branch goes into the technical phases of signal supply and repair, with emphasis placed on the teaching of joint Army-Navy-Air Force nomenclature systems. The disposition of unserviceable property and the action taken on lost, destroyed, and damaged property also is taught.



*Signal Corps students using an Army SCR-300 at summer camp,  
Fort Monmouth, N. J.*

- 153s Career guidance plan for Signal Corps officers and courses of instruction available to Signal Corps officers at Army service schools, civilian universities, and industrial institutions. Individual weapons and marksmanship also are taught during this quarter. Leadership, drill, and the exercise of command are stressed in the latter part of the quarter.

### Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (SIG)</b>	<b>MS III</b>	<b>3</b>	<b>5</b>

COURSE NO.

- 154f Further instruction on the functions, capabilities, and practical application of various types of wire communication materiel, is taught in the first quarter of Military Science IV in the Signal Corps branch. Further material of a more complicated nature also is taught on radio communication.
- 155w Higher echelon signal communication, post-signal operations and administrative procedure are taught in the second quarter of Military Science IV in the Signal Corps branch. The administrative procedure will familiarize the student with the responsibilities, duties and problems of a post-signal officer.
- 156s The last quarter of Military Science IV in the Signal Corps branch continues the study of signal communication. Combat intelligence, with a short while spent on the career guidance plan for Signal Corps officers also is taught during this quarter.



## TRANSPORTATION CORPS

## Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science II (TC)</b>	<b>MS I</b>	<b>1</b>	<b>3</b>

## COURSE NO.

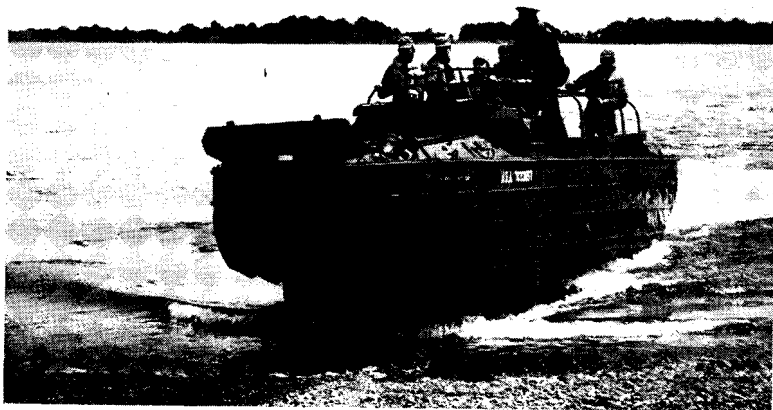
- 4f Introduction to transportation corps: history, organization, and mission; relation to other mediums of transportation.
- 5w Military highway transport: classes, characteristics, and employment of military motor vehicles, including various types of transportation truck units. Highway organization and operation: technique and procedure in moving military units by automotive transportation.
- 6s Economics of military transportation: general economic problems associated with transportation, military and civilian.

## Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (TC)</b>	<b>MS II</b>	<b>3</b>	<b>5</b>

## COURSE NO.

- 151f Organization and operation of railroads in the zone of the interior: terms and definition; duties of various officials; operating procedure; equipment. Military railway service: organization, missions, and functions of military railway transportation units.



*Transportation Corps students driving a "duck" at Fort Storey, Va.*

- 152w Control of military movements: the control techniques employed in railway freight and passenger movements; security of supplies, terminals, trucks, railroads, and ships. Operation of ports of embarkation and debarkation: normal operating procedures associated with overseas movements of men and materiel.
- 153s Stevedore operations: functions and duties of port units; types and nomenclature of vessels; loading and unloading ships. Harbor craft and marine maintenance: maintenance and operation of vessels utilized by the Transportation Corps.

### Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (TC)</b>	<b>MS III</b>	<b>3</b>	<b>5</b>

COURSE NO.

- 154f Military railway service in a theater of operations and problems associated with the operation of foreign railroads. The principles and procedures of movements control in a theater of operations. Supply problems of the Transportation Corps in a theater of operations.
- 155w Highway transport operations, traffic regulations and control, in a theater of operations.
- 156s Consolidated subjects. See "Branch Immaterial," below.

### BRANCH IMMATERIAL

(Advanced Consolidated Subjects)

Although an attempt is made to present instructional material common to all branches and services in *Military Science I*, certain consolidated subjects find a logical place in the progressive stages of training in each of the services and branches. The following units are presented as integrated elements in the courses identified by quarter, number, and title.

### Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Branch Immaterial</b>	<b>MS I</b>		

COURSE NO.

- 4f Elementary principles of leadership and exercise of command; application in close order drill.
- 6s Practical exercises in the technique of troop leadership and exercise of command as applied to military formations: squad, platoon, company, and battalion drill and ceremonies.

### Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Branch Immaterial</b>	<b>MS II</b>		

COURSE NO.

- 151f Advanced principles of leadership and exercise of command.
- 152w Individual weapons and marksmanship: description, characteristics, disassembly and assembly of basic weapons; marksmanship to include range firing with cal. .22 rifle.
- 153s Same as 6s, Military Science II.

## Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Branch Immaterial</b>	<b>MS III</b>		

## COURSE NO.

- 154f Military administration: correspondence, reports, records, and property accounts. Military teaching methods: technique of teaching methods employed in the Army; practical exercises.
- 156s An introduction to psychological warfare utilizing historical examples. Command and staff organization, principles, and procedures: definitions, duties, and mission of the various staff sections. Advanced leadership, drill and exercise of command: functions, duties, and responsibilities of commissioned officers.

## MEDICAL DEPARTMENT

## First Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science I (MSC, MC, DC) (Common to Medical, Dental, and Medical Service Corps of the Medical Department)</b>	<b>None</b>	<b>1</b>	<b>1</b>

## COURSE NO.

- 1f History and mission of ROTC in relation to the national defense program. Over-all organization of the Army. Exercise of command by the President through the cabinet and the General Staff. Organization and functions of individual units of the Medical Department.
- 2w Tradition of courtesies and customs observed in the service. Administration of military justice. Study of the Articles of War and the types and scope of court-martial. Methods and mechanism of army instruction.
- 3s History of the development and contributions of military medical service. Army technique in administration of first aid for protection of life and health. Military administration including preparation of military letters, orders, memoranda, etc.

## Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science II (MSC, MC, DC) (Common to Medical, Dental, and Medical Service Corps of the Medical Department)</b>	<b>MS I</b>	<b>1</b>	<b>1</b>

## COURSE NO.

- 4f History and mission of ROTC in relation to the national defense program and world situation. Over-all organization of Medical Department. Organization and functions of individual medical units. Duties and responsibilities of unit surgeons.
- 5w Organization and functions of medical service in a theater of operations, including echelons of medical service. Evacuation of casualties. Comparison of accident rate and preventive measures in the Army and industry.
- 6s Methods of procurement, storage and issue of Medical Department supplies. Number and variety of items required for efficient operation of the Medical Department. Introduction to map reading, including conventional signs and military symbols, elevation, distance, and direction.

**MEDICAL CORPS****Third Year**

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (MC)</b> (Medical students only)	<b>MS II</b>	<b>1</b>	<b>1</b>

## COURSE NO.

- 151f Current world events affecting the United States defensive policy. Army graduate professional educational program: training programs, internships, hospitals, status of students. Advantages of a professional army career.
- 152w Military preventive medicine: immunizations; control of respiratory, intestinal and insect-borne diseases; epidemiological studies of etiology; practical field sanitation.
- 153s Field medicine and surgery: use of blood, blood substitutions, and plasma; transportation of wounded; amputations and thoracotomy.

**Fourth Year**

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (MC)</b> (Medical students only)	<b>MS III</b>	<b>1</b>	<b>1</b>

## COURSE NO.

- 154f Current world events affecting the United States defensive policy. Advanced military preventive medicine: epidemiology of insect-borne diseases; social diseases; environmental problems unique to military life.
- 155w Military medical research development: survey of current projects and lessons of World War II. Medical aspects of atomic warfare: treatment of radiation casualties. Military aspects of chemical warfare: chemical agents and treatment.
- 156s Military psychiatry: psychiatric disorders peculiar to military life and combat conditions; psychiatric therapy. Personnel management: definition, history, and development of personnel management.

**DENTAL CORPS****Third Year**

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (DC)</b> (Dental students only)	<b>MS II</b>	<b>1</b>	<b>1</b>

## COURSE NO.

- 151f Mission of the Reserve Officers Training Corps: the important part it plays in the national defense program. Military preventive medicine: includes military immunizations, housing and barracks sanitation, waste disposal and insect control. General considerations of Army dental service and the Army regulations pertaining to dental service.
- 152w Organization of the Dental Corps and organization of the dental division up to and including the office of the surgeon general. Dental equipment and supplies: an explanation of the Army-Navy-Air Force catalog of medical materiel and the Medical series of War Department supply catalogs.
- 153s Dental services in a theater of operations and dental services within the zone of interior, including the functions and methods of operation of each. Command and staff relations of the dental surgeon and the surgeon.

## Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (DC)</b> (Dental students only)	MS III	1	1

## COURSE NO.

- 154f Further discussion of the world situation, national defense, and the ROTC. Military preventive medicine and military dental health; includes military oral surgery with a review of types of facial wounds involving the jaws and the first aid and emergency measures to be employed in the forward areas.
- 155w Medical aspects of atomic warfare and the medical aspects of chemical warfare. Military psychiatry and the factors entering into the stresses of combat. Personnel management to include the definition, history, and development of personnel management and how it may be obtained.
- 156s Dental reports and records and military dental research development. To briefly explain the methods and mechanisms of authorizing and supporting a research program. The organized reserve corps to include the purpose and mission of the ORC. Mobilization and the need for trained Medical Department personnel.

## MEDICAL SERVICE CORPS

## Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science III (MSC)</b> (Pharmacy students only)	MS II	1	1

## COURSE NO.

- 151f The mission of ROTC in relation to the national defense program and world situation. Accomplishment of Medical Department in the field of preventive medicine. Environmental and other physical forces affecting control of diseases of the respiratory and intestinal groups. Actual control measures employed by the Medical Department for prevention of disease.
- 152w Purpose, preparation, and disposition of records used by the Army Medical Department. History of development of pharmaceutical service in the Army. Development of depot system of supply, including distribution methods, special handling, and control of drugs and chemicals.
- 153s Duties of the pharmacy officer, including maintenance of adequate stocks of pharmaceuticals; storage of drugs, biologicals and chemicals; control of alcohol, alcoholic preparations, and narcotics. Compounding of pharmaceutical preparations.

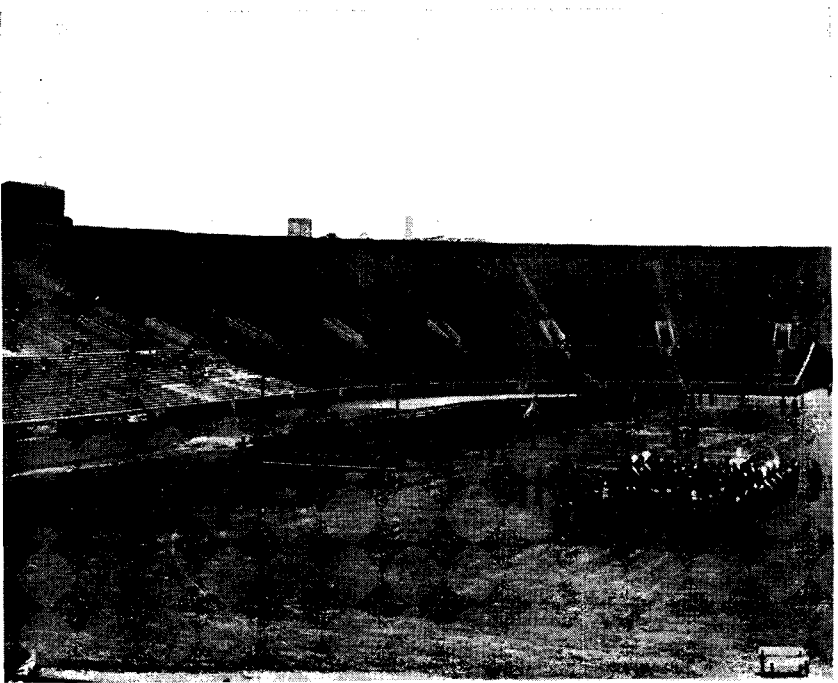
## Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Military Science IV (MSC)</b> (Pharmacy students only)	MS III	1	1

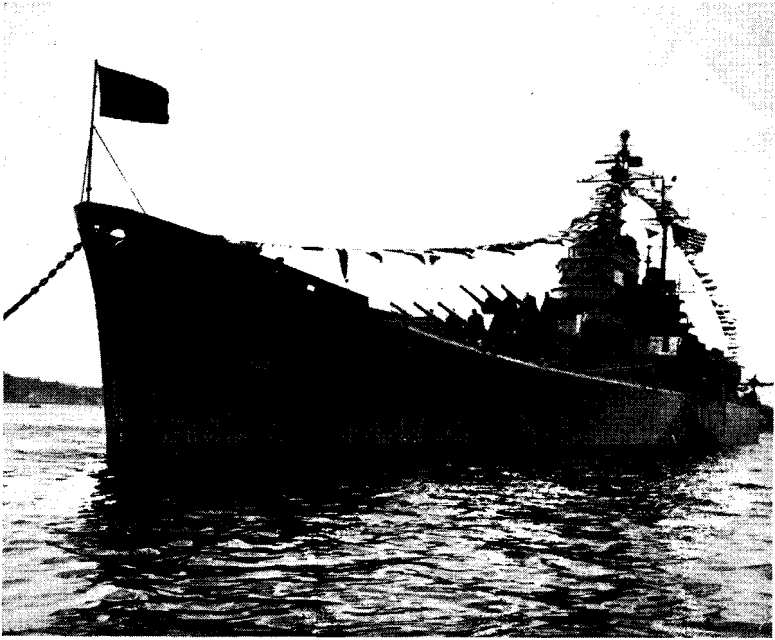
## COURSE NO.

- 154f Events of current international interest discussed in relation to the national defense program and ROTC. History and development of military personnel management. Current procedures for assignment and classification of military personnel. Elimination from the service of noneffective and undesirable personnel.

- 155w Casualties resulting from blast, heat, and radiation effects of atomic explosions. Study of preventive treatment for atomic casualties as known at present. Food service in the Army. Storage, issue, and preparation of food for large groups of personnel. Special procedures governing the feeding of Army hospital patients.
- 156s Medical aspects of chemical warfare. Effects of, and treatment for, different types of chemical agents. Administration of military hospitals. Duties and responsibilities of hospital commander. Functions of the administrative and professional services of the hospital.



*University of Minnesota ROTC students at the annual Spring Review.*



# Naval Science

## NAVAL ROTC

### GENERAL INFORMATION

The U. S. Navy and the U. S. Marine Corps obtain most of their officers from two sources: the Naval Academy at Annapolis, Maryland, and the Naval ROTC. These Naval ROTC units are established in fifty-two of the leading colleges and universities of the United States to provide, by a permanent system of training and instruction in essential naval subjects, a source from which qualified officers may be obtained for the Navy, the Marine Corps, the Naval Reserve, and the Marine Corps Reserve.

The Naval Reserve Officers' Training Corps was established in 1926 for the purpose of offering to certain college students the necessary Naval Science courses required to qualify them for commissions in the Naval Reserve upon graduation. The mission of the Naval ROTC was greatly expanded in 1946 to include the training of career officers for the Regular Navy. These two training programs now go hand-in-hand, and students enrolled therein are known as "Contract" and "Regular" students, respectively. Both classes of students take the same Naval Science courses and drills and are subject to the same privileges and discipline. They vary widely, however, in the method of selection, the benefits received, the obligations entailed, and the summer cruises required. These differences will be explained more fully in succeeding paragraphs.

Students enrolled in the Naval ROTC lead approximately the same life as their civilian contemporaries. In the same manner they make their own arrangements for board and lodging. Likewise, they may pursue any of the college extra-curricular activities which do not interfere with their Naval Science requirements. They may obtain outside employment on the same basis, provided they are able concurrently to maintain the high scholastic requirements. They wear the uniform when attending drills and other ceremonies and while engaged in summer training cruises.

Under the provisions of the Selective Service Act of 1948, all Naval ROTC students who are subject to induction under the provisions of that act are required to agree in writing to accept a commission upon completion of their training and to serve, subject to call by the Secretary of the Navy, not less than two years on active duty after receipt of their commission. Having signed this agreement, they will then be deferred from induction until the completion or termination of the course of instruction but shall not be exempt from registration.

For Regular Naval ROTC students, this is only a minor change from Public Law 729, which requires two years' active duty service. In the case of Contract students who are commissioned in the Reserve, this does not necessarily mean that they will be permitted or required to serve for two years on active duty. To be deferred from induction, however, they must agree to accept a commission and serve on active duty if called to do so.

### **Contract Naval ROTC Students**

For those college students who desire neither financial assistance from the Navy nor a Naval career, but who do wish to be available to serve their country in time of emergency as a Reserve officer, the Navy offers the Contract student status. Contract students are not selected for enrolment in the Naval ROTC by the competitive procedures employed in the selection of Regular students; instead, they are selected by the professor of Naval Science from among those students already in attendance at, or selected for admission by, the University. Contract students are civilians who enter into a mutual contract with the Department of the Navy, in which they obligate themselves to take certain Naval Science courses and drills and one summer training cruise. In return, the Navy provides the required uniforms, gives them a subsistence allowance of about \$27 per month during their junior and senior years, and offers a Reserve commission on graduation if qualified. They may also apply for Regular commissions, should they so desire. The approval of this request would be governed by the number of vacancies which existed at the time. Contract students must meet the same standards for enrolment, including the same physical qualifications, as Regular students, except that the lower age limit is sixteen years.

### **Regular Naval ROTC Students**

For those applicants who desire financial assistance from the Navy, with the possibility of a career in the Regular Navy or Marine Corps, the Navy offers the Regular student status. Under the provisions of Public Law 729, 79th



Congress, about 1,800 civilians and 200 enlisted personnel on active duty in the Navy and Marine Corps will be selected for enrolment in the Naval ROTC in the fall of each year.

The Regular student program provides not more than four years of Navy-subsidized education. Students, upon enrolment, are appointed midshipmen, USNR. The government pays the cost of tuition, textbooks, laboratory, and other fees of an instructional or administrative nature, as well as furnishing the necessary uniforms. Midshipmen receive retainer pay at the rate of \$50 per month to assist in defraying other expenses.

Students will normally attend college for four years. While in college, they may pursue any major course of study leading to a baccalaureate or higher degree except premedicine, medicine, predentistry, dentistry, preveterinary, veterinary medicine, pretheological, theology, pharmacy, music and art. The following additional requirements must be met:

Thirty-six quarter hours of Naval Science must be included in the curriculum.

Must have satisfactorily completed mathematics through solid geometry and trigonometry, and one year of college physics by the end of the sophomore year.

May enroll in five-year courses, provided the candidate will not be more than 25 years of age on July 1 of the calendar year in which he completes his fifth year. Such a student will be granted a one-year leave of absence, without compensation or benefits, in order to qualify for his degree.

In return for the benefits received under this program, the Regular Naval ROTC student is subject to the following requirements and obligations:

To remain unmarried until commissioned.

To complete such Naval Science courses and drills as may be prescribed.

To make three summer cruises (one to be aviation indoctrination), each of approximately six to eight weeks' duration.

To accept a commission in the Regular Navy or Marine Corps, if offered, and to serve on active duty for at least two years, if required by the Secretary of the Navy.

To serve a total of at least six years, in an active and inactive status, from the date of the original commission.

He is liable to release from his contract and separation from the Naval ROTC program at any time that, in the opinion of the Secretary of the Navy, the best interest of the Naval Service requires such action.

Regular students commissioned in accordance with this program may apply for Line, Supply Corps, and Civil Engineer Corps commissions as ensigns in the Regular Navy, or as second lieutenants in the United States Marine Corps, within the quotas allotted to each. At the end of two years' service as a commissioned officer, they may request retention in the Regular Navy or Marine Corps, or at their option be commissioned in the Reserve and released to inactive duty. Those officers selected for retention as career officers then compete on equal terms with all other Regular officers, regardless of the source from which appointed, and may apply for additional training and service in the

various specialties such as aviation, submarines, communications, ordnance, or engineering, which are open to all Regular officers.

Candidates who are unsuccessful in school after entry into the program, whether due to scholastic failure, inaptitude, misconduct, or other reasons, will be released from their contract and discharged from the Navy.

### Eligibility Requirements

To be eligible for consideration for Regular or Contract Naval ROTC student status, a candidate must:

Be a male citizen of the United States.

Have reached his seventeenth birthday (sixteenth for Contract students) and not have passed his twenty-first birthday on July 1 of the year in which he enters, unless contemplating undertaking a college course which takes five years to complete, in which case he shall not have passed his twentieth birthday on July 1 of that year.

Be unmarried.

Be physically qualified in accordance with the standards for midshipmen as set forth in the *Manual of the Medical Department, U. S. Navy*.

Be prepared to enter into an appropriate contract with the Secretary of the Navy, providing for the obligations set forth in the preceding paragraphs. Minors must obtain a signed agreement to the contract from their parent or guardian.

Be a high school graduate or possess an equivalent certificate.

Shall not be a member or former member of organizations which have been designated by the Attorney General to be totalitarian, fascist, communist, or subversive.

### Physical Requirements

The physical requirements for the Naval ROTC are exactly the same as those required of candidates for entry in the United States Naval Academy. These standards are necessarily exacting and have been established in the light of many years of experience by naval personnel on duty in all parts of the world under changing and extreme conditions of service.

The general requirements are that the candidate be physically sound, well-formed, and of robust constitution. Vision must be 20/20 uncorrected in each eye. Good color perception is required. Heart, lungs, and hearing must be normal. He must have at least 20 vital serviceable teeth with good occlusion and no caries. Weight must be in proportion to height and general build. The limits of height are 66 to 74 inches for persons under eighteen years of age and 66 to 76 inches for those over eighteen.

All Naval Science courses are available to any student not in the Naval ROTC who desires to take the course for academic credit only.



*University midshipmen learn to take bearings in a piloting class.*

## NAVAL ROTC

### First Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK	LAB. HRS. PER WEEK
<b>Naval Orientation</b>	None	3	3	2

#### COURSE NO.

- 11f Introduction to the Naval Service: traditions, customs, regulations and personnel. A study of the Department of Defense and the part the Navy plays within it. A study of the various types of ships and aircraft.
- 12w Undersea and amphibious warfare. A study of security, communications, intelligence, research and the psychology of leadership. A study of the history of American sea power.
- 13s History of American sea power, Naval correspondence, publications, basic seamanship, fundamentals of ship handling, rules of the road at sea, and ship maneuvers and formations.

### Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK	LAB. HRS. PER WEEK
<b>Naval Weapons</b>	NS 11, 12, 13	3	3	2

#### COURSE NO.

- 21f A study of the fundamental principles of naval weapons: their capabilities, limitations, and safety precautions associated with them, including explosives, guns, torpedoes, bombs, mines, depth charges, rockets, and net and boom defenses.

- 22w The basic principles of the employment and control of naval surface and anti-aircraft weapons.
- 23s The basic principles of fire control; the operation and employment of radar and sonar; the utilization of naval gunfire and the fundamental principles of the operation and employment of guided missiles.

### Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK	LAB. HRS. PER WEEK
<b>Navigation</b>	<b>NS 21, 22, 23</b>	<b>3</b>	<b>3</b>	<b>2</b>

#### COURSE NO.

- 51f Purpose of navigation; study of navigational instruments and their use; application of the principles of piloting and dead reckoning.
- 52w Application of the nautical rules of the road: study of aerology from the viewpoint of both the aviator and the surface mariner.
- 53s Application of the principles of celestial navigation by combining components to obtain a fixed position on the surface of the earth by observation of heavenly bodies. Accomplishment of combining dead reckoning, piloting and celestial methods of navigation to complete a typical navigator's day of work.

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK	LAB. HRS. PER WEEK
<b>History of the Art of War</b>	<b>NS 51</b>	<b>3</b>	<b>3</b>	<b>2</b>

#### COURSE NO.

- \*54w A study of the evolution of military weapons, tactics, strategy, and concepts of war from 490 B.C. to World War I.
- \*55s A study of the evolution of military weapons, tactics, strategy, and concepts of war from World War I to the present.

### Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK	LAB. HRS. PER WEEK
<b>Naval Engineering, Leadership, and Justice</b>	<b>NS 51, 52, 53</b>	<b>3</b>	<b>3</b>	<b>2</b>

#### COURSE NO.

- 61f Naval machinery: a study of the theory, construction, and operation of marine power plants.
- 62w Diesel engines and ship stability: study of the theory, construction, and operation of diesel and aircraft engines, and the principles of ship stability and buoyancy.
- 63s Naval justice and leadership: study of naval justice and the psychology of leadership.

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK	LAB. HRS. PER WEEK
<b>U. S. Military History and Amphibious Warfare</b>	<b>NS 54, 55</b>	<b>3</b>	<b>3</b>	<b>2</b>

#### COURSE NO.

- 64f\* American military history and policy: study of the development of weapons, tactics, and strategy of the land forces of the United States.

\* These courses are taken by those students selected as candidates for commissions in the United States Marine Corps.

- 65w\* Amphibious warfare: study of the principles of amphibious warfare and techniques.
- 66s\* Amphibious warfare: study of the principles of coordination, direction, and planning in amphibious operations.

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK	LAB. HRS. PER WEEK
Navy Supply	NS 51, 52, 53	4	4	2

COURSE NO.

67ft Introduction to Navy supply system and a study of the principles and practices involved in Navy supply ashore.

68w† A study of naval accounting and the principles and practices of supply afloat.

69s† A study of the operation of ship's stores, commissary stores, and clothing and small stores.

\* These courses are taken by those students selected as candidates for commissions in the United States Marine Corps.

† These courses are taken by those students selected as candidates for commissions in the Supply Corps.



*Polliwog to shellback process; crossing the equator on a summer cruise.*



## Air Science and Tactics

### AIR ROTC

#### GENERAL INFORMATION

Air Science and Tactics is open to all regularly enrolled male students who meet physical, age, and citizenship requirements. The course is designed to meet university educational standards and to train the student in military subjects so that he may qualify for a reserve commission.

The student will specialize in a military career field. This specialty will be the one that most closely parallels his university major. There may be cases where the student desires ROTC and is majoring in a subject that cannot be related to the specialized fields offered. These instances will be given individual consideration by the professor of Air Science and Tactics.

The Air ROTC student is not in the military service nor does he obligate himself to perform active military duty, except in time of national emergency.

The Air ROTC has a subunit at the Duluth Branch to serve intercollege transfers.

### Admission

The following qualifications for enrolment are required. Students who do not meet these qualifications may enroll in the course and receive university credit, but will not receive financial benefits or a reserve commission.

1. Enrolled as a regular student in the University of Minnesota.
2. Male citizen of the United States.
3. Not have reached 23 years of age for nonveterans or 25 years of age for veterans enrolling in the Basic Course.
4. Not have reached 27 years of age at the time of initial enrolment in the Advanced Course.
5. Have sufficient time remaining as an undergraduate in college curriculum to complete the ROTC course.
6. Physically qualified as determined by a physical examination administered at the time of enrolment.

A veteran with six months to one year of active service may receive credit for the first year of ROTC. A veteran with one year or more of active service may receive credit for the first two years of the course. This credit is normally granted on presentation of service statements, but the professor of Air Science and Tactics has the prerogative of modifying or refusing this credit in individual cases.

The Air ROTC is a department in the University of Minnesota and is a university course. The student enrolls in ROTC at the time of registration in his college as he does for any other university course.

### Benefits

Air ROTC is a four-year program composed of the Basic Course (first two years) and the Advanced Course (last two years) plus a six-week summer camp at an Air Force Base during the summer after his third year.

Students enrolled in the Basic Course will receive all textbooks and a uniform free of charge. Students enrolled in the Advanced Course will receive all textbooks free of charge and a subsistence allowance of \$27 per month. Advanced students will also receive an Air Force officers blue uniform which becomes his property upon graduation.

During the summer encampment he will receive food, housing, medical care, clothing, transportation, and pay at the rate of \$75 per month. These benefits are all exclusive of any others that he may be receiving from the Veterans Administration or under the "GI Bill."

### Credits

Air ROTC credits may be substituted for Humanity credits in the Institute of Technology; for elective credits in the colleges of Education; Science, Literature and the Arts; Agriculture, Forestry, Home Economics, and Veterinary Medicine; Pharmacy; and Medical Sciences. Air Science is accepted as a minor in the College of Science, Literature, and the Arts.

It is recommended that the student consult the bulletin of his school or college for ROTC credit allowances.

### The Reserve Commission

Each student who successfully completes the Air ROTC course and graduates from the University of Minnesota will be given a commission as a second lieutenant in the United States Air Force Reserve. Under this commission the officer may:

1. Apply for active duty for periods of from 15 days to 3 years.
2. Apply for pilot training as an officer.
3. Have his commission transferred to the Air National Guard.
4. Keep the reserve commission in force by meeting with his local Volunteer Air Reserve Unit.
5. Let the commission expire through inactivity.

Those students who maintain a top academic standing and participate in campus activities may qualify for appointment as distinguished military students. These individuals may then apply for a commission in the Regular Air Force. If this commission is tendered, there is no obligation to accept it.

### Course Curriculum

The first year of Air ROTC is composed of general military and national subjects. The second year is predominately general Air Force subjects plus the introduction to the field of specialization. The last two years are predominately the field of specialization. There are three specialized fields offered:

1. General Administration and Supply.
2. Communications.
3. Aircraft Maintenance Engineering.\*

## AIR ROTC

### First Year

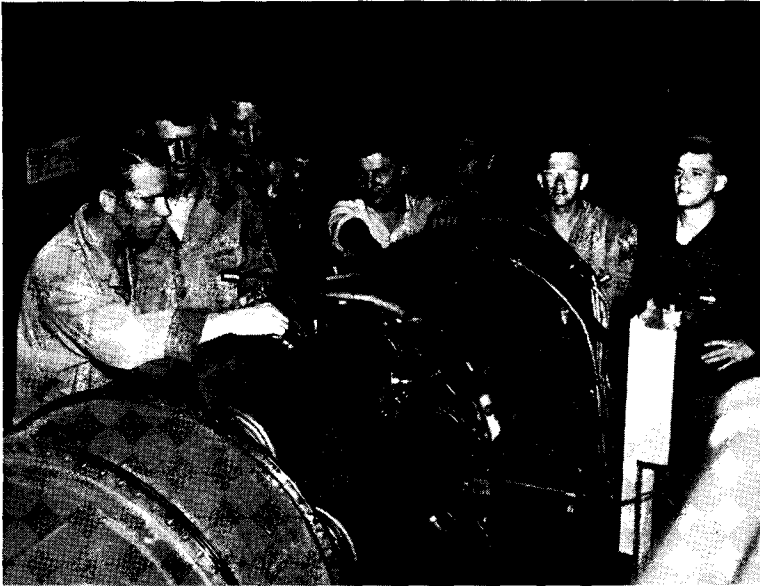
TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
Air Science I	None	1	3

#### COURSE NO.

- 31f Basic course in military organization, military policies of the United States, national defense act, the ROTC program, evolution of modern warfare, maps and aerial photographs.
- 32w Indoctrination course in geographical foundations of national power, military problems of the United States, military sanitation and first aid, leadership and drill, and exercise of command.
- 33s Instruction in military psychology and personnel management, problems of military mobilization and demobilization, leadership and exercise of command, ceremonies, parades, and reviews.

\* Course projected for school year 1950-51.





Students learn aircraft engineering by working on engines at Chanute Air Force Base, Rantoul, Ill.

## Second Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Air Science II</b>	<b>AS I</b>	<b>1</b>	<b>3</b>
COURSE NO.			
34f	Introduction to air science: study of aerodynamics, conventional and jet aircraft engines, and nontechnical instruction in weather, navigation, aerial maps and charts.		
35w	Basic instruction in the assigned field of specialization of administration and logistics or communications, or aircraft maintenance. Administration and logistics: administrative procedures, publications, military correspondence, and organizational funds. Communications: elements of electricity, direct current, magnetism, and magnetic induction. Aircraft maintenance: duties of the aircraft maintenance officer, maintenance mission, conventional and jet propulsion engines, and compound engines. Laboratory work in leadership and exercise of command for all second-year students.		
36s	Administration and logistics, pay and allowances, morning report, sick book, duty roster and guard book. Communications: alternating current, transformers, generators, motors, and resonant communication circuits. Aircraft maintenance: conventional and compound engines continued from 35w. Laboratory work in leadership and exercise of command for all second-year students.		

### Third Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Air Science III</b>	<b>AS II</b>	<b>3</b>	<b>5</b>

**COURSE NO.**

- 131f Administration and logistics: organization of the Department of Defense, Air Force supply, publications, requisitioning and receiving, and property accounting. Communications: introduction to USAF communications, the duties of the communications officer, Army-Navy nomenclature system, principles of telephony, and the teletypewriter. Aircraft maintenance: technical publications, Air Force maintenance and inspection procedures, fuel and fuel systems.  
All Air Science III students take air operations consisting of staff organization and planning, combat intelligence, combat operations, and logistical problems of air operations.
- 132w Administration and logistics: supply issue and turn-in slips, memorandum receipts, accounts, service stock, storage and warehousing, inventory, and stock control. Communications: radio communication, frequency, vacuum tube, modulation, antennas, radio wave propagation, radio communication equipment. Aircraft maintenance: oil systems, electricity, propellers, structure and component parts.  
All Air Science III students take psychology of leadership.
- 133s Administration and logistics: individual records, base administration, nonappropriated funds, special administrative responsibilities, transportation, logistics. Communications: history of radar, radar principles, radar system components, application of radar, visual and aural communication, supply and maintenance. Aircraft maintenance: hydraulic and pneumatic systems, instruments, and miscellaneous systems and equipment.  
Ten hours of administration will be taken by communications and aircraft maintenance students. Laboratory practice in leadership and command will be given to all students.  
Summer Camp (6 weeks). Administration and supply: Tinker Air Force Base, Oklahoma City, Oklahoma. Communications: Scott Air Force Base, Belleville, Illinois. Aircraft Maintenance Engineering: Chanute Air Force Base, Rantoul, Illinois.  
In cases where science field trips conflict with summer camp, the camp may be postponed until the following summer. It may be possible for out-of-state students to attend a camp in the Air Force area nearest their home.

### Fourth Year

TITLE	PRE-REQUISITES	CREDITS PER QUARTER	LECTURES PER WEEK
<b>Air Science IV</b>	<b>AS III</b>	<b>3</b>	<b>5</b>

**COURSE NO.**

- 134f Administration and logistics: logistical potential, economic mobilization, logistical planning, elements of logistics, geological problems, industrial mobilization. Communications: command and administration, communication inspections. Aircraft maintenance: introduction, ground service equipment, Air Force supply.  
All Air Science IV students will take military instructional methods and laboratory practice in instruction.

- 135w Administration and logistics: course being changed at time of printing—consult Air Science and Tactics Department. Communications: communication centers and message handling, training in communications. Aircraft maintenance: organizational maintenance, field maintenance, engine operating and conditioning. All students will take problems, principles, functions, and objectives of Air Force management, management seminars.
- 136s Administration and logistics: military law, court martial procedure, boards, laboratory practice, inspector general. Communications: functional communications systems, communications organization, administrative problems of the communications officer, supply procurement. Aircraft maintenance: cruise control, the air inspector, test flight. Leadership and command field laboratory work wherein senior students instruct all other ROTC students in the preparation for ceremonies, parades and reviews. Seniors conduct the final joint services Review for visiting inspecting officers.



*Grand March, Annual Armed Forces Ball.*