

**FORT
LEWIS**

A. & M. COLLEGE



CATALOG NUMBER 1949-1950



SERIES NO. I

JULY 1949

THE STATE BOARD OF AGRICULTURE

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*Elected June 9, 1949, to fill vacancy

Fort Lewis A & M College

Catalog—1949-1950

Hesperus, Colorado

Agriculture

Forestry and Range Management

Preliminary Work for Veterinary Medicine

Elementary Education (Teacher Training)

Business Administration and Commercial Subjects

Engineering

Home Economics

Physical Education

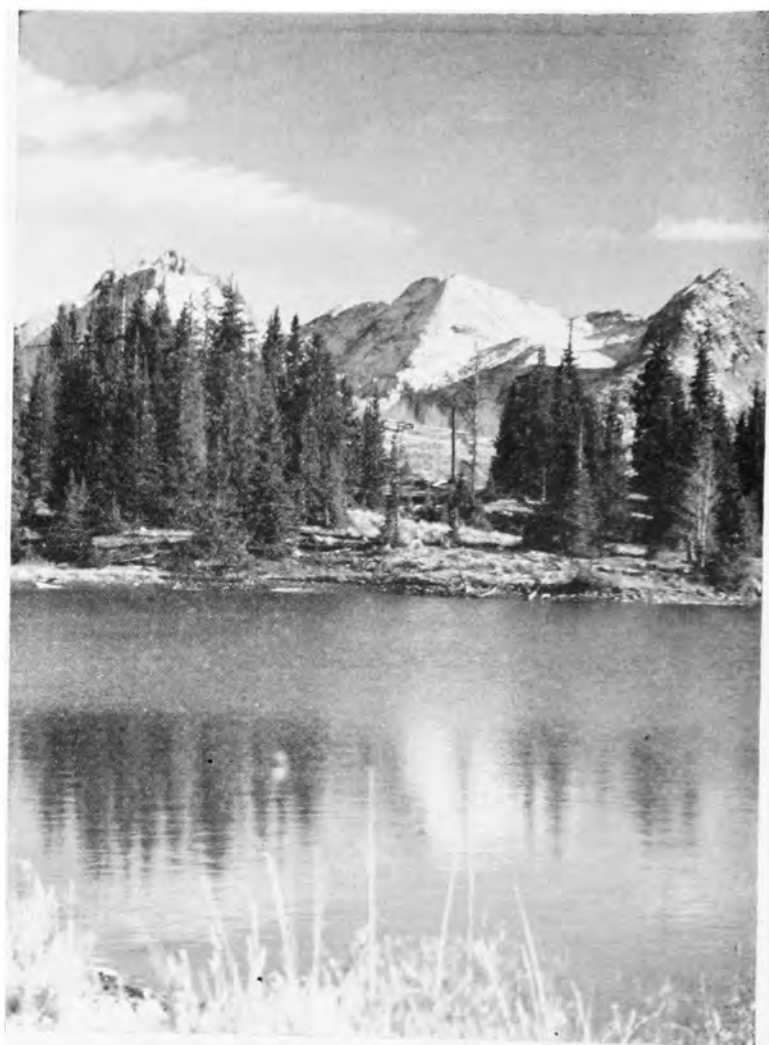
Science and Arts

Foundation Training for Other Major Fields

FORT LEWIS A & M COLLEGE BULLETIN

Series 1, No. 1

May, 1949



Grenadier Range Over Molas Lake.

—Photo by Partridge.

COLLEGE CALENDAR

Summer Quarter*

1949

June 20, Monday, 8:00 a. m.—Registration. Classes begin at 1:00 p. m.

July 4, Monday.—Independence Day holiday.

August 1, Monday.—Colorado Day holiday.

August 17, Wednesday.—Last day of summer quarter.

Fall Quarter

1949

September 19, 20, Monday and Tuesday.—Freshman Days. All new students report at 8:00 a. m. Monday.

September 21, Wednesday.—Registration for all students.

September 22, Thursday.—Classes begin at 8:00 a. m.

November 11, Friday.—Homecoming.

November 23, Wednesday.—Thanksgiving holidays begin at noon. College opens at 8:00 a. m. Monday, November 28.

December 16, Friday.—Last day of first quarter.

Winter Quarter

1950

January 3, Tuesday.—Registration for all students.

January 4, Wednesday.—Classes begin at 8:00 a. m.

March 17, Friday.—Last day of second quarter.

Spring Quarter

1950

March 27, Monday.—Registration for all students.

March 28, Tuesday.—Classes begin at 8:00 a. m.

May 3, Wednesday.—Fort Lewis Day for High School Seniors.

May 30, Tuesday.—Memorial Day holiday.

June 4, Sunday.—Baccalaureate Service.

June 9, Friday.—Final Convocation.

* Note: For information concerning courses offered during the summer quarter, address inquiries to The Registrar, Fort Lewis A & M College, Hesperus, Colorado.

ADMINISTRATIVE OFFICERS

- Rea, Charles Dale**, B. S. (Colorado A & M College), M. S. (University of Southern California), (Graduate study at University of Colorado) _____ President
- Lory, Charles A.**, Ped. B. (Colorado State Normal School), B. S., M. S., LL. D. (University of Colorado), D. Sc. (University of Denver), LL. D. (Colorado College), D. Ed. (Colorado State College of Education), D. Sc. (Colorado A & M College) _____ President Emeritus
- McLain, Charles W.**, B. S., M. S. (Colorado A & M College) _____ Vice President; Professor of Physics
- Good, Margaret**, A. B. (University of Denver), (Graduate study at Northwestern University, University of Denver, University of Colorado, and Colorado A & M College) _____ Registrar; Instructor in Psychology
- Colley, Robert H.**, B. S. (University of Denver), (Graduate study at University of Denver) _____ Business Manager
- Pierce, Margaret J.**, B. A. (University of Denver), B. N. (University of Colorado School of Nursing) _____ College Nurse

FACULTY

- Bergman, Walter F.**, B. S., M. S. (Colorado A & M College) _____ Associate Professor of Physical Education; Coach
- Broomell, Myron H.**, B. A., M. A. (University of Colorado), (Graduate study at University of California and Ohio State University) _____ Associate Professor of History
- Butler, Walter C.**, B. S. (Colorado A & M College), M. A. (Colorado State College of Education) _____ Associate Professor of Mathematics
- Cunningham, Ena**, B. A. (University of New Mexico) _____ Associate Professor of Home Economics; Dietitian

- Good, Margaret, A. B.** (University of Denver), (Graduate study at Northwestern University, University of Denver, University of Colorado, and Colorado A & M College)-----
-----Registrar; Instructor in Psychology
- Hershberger, Inez, A. B.** (Kalamazoo College), (Graduate study at University of Wisconsin, University of Chicago, University of Colorado, and University of Mexico)-----
-----Assistant Professor of Language and Dramatics
- Hickman, Francis W., B. S.** (New Mexico School of Mines)-----
-----Associate Professor of Engineering
- Hills, Ralph E., B. S.** (State Teachers College, West Chester, Pa.), Ed. M. (Temple University), (Graduate study at University of Southern California)-----Assistant Professor of Music
- Johnson, Franklin F., B. S.** (Colorado A & M College), (Graduate study at University of Nebraska)-----Associate Professor of Animal Husbandry
- Kinlaw, Lorine, A. B.** (Flora Macdonald College), M. A. (Duke University)-----Associate Professor of English
- Koonce, Dwight, B. S.** (Colorado A & M College), M. S. (Utah State College of Agriculture)-----
-----Head of the Agricultural Division; Professor of Agronomy
- Lowry, Wayne F., B. A.** (Milton College)-----
-----Assistant Professor of Chemistry and Physics
- McLain, Charles W., B. S., M. S.** (Colorado A & M College)-----
-----Vice President; Professor of Physics
- Moinat, Arthur D., B. S.** (Colorado A & M College), M. S. (Oregon State College), Ph. D. (University of Illinois)-----Professor of Biology
- Morrow, Evelyn Y., B. S.** (East Central State College, Oklahoma), M. S. (Oklahoma A & M College), (Graduate study at Colorado State College of Education)-----Associate Professor of Commerce
- Nethery, Ruby, A. B., M. A., B. L. S.** (University of Oklahoma), (Graduate study at Columbia University)-----Librarian
- Pierce, Joseph E., B. A.** (University of Denver), M. S. (Purdue University), (Graduate study at Purdue University)-----Professor of Chemistry
- Taylor, Faith, B. S.** (Wisconsin State Teachers College), M. A. (Northwestern University)-----Associate Professor of Education

Instructors In Veterans Related Training Program

John A. Drott (Director), 337 13th St., Durango, Colorado.

T. Ralph Bennett, 3250 E. 3rd, Durango, Colorado.

Owen C. Callison, Ignacio, Colorado.

A. Frank Campbell, 170 E. Park, Durango, Colorado.

Clyde J. Gores, Cortez, Colorado.

Keith Harrison, 706 6th Ave., Durango, Colorado.

Russell E. Hindmarsh, Dolores, Colorado.

Eldon B. Hiner, 802 6th Ave., Durango, Colorado.

Harvey H. Hollar, 575 8th St., Durango, Colorado.

Lester F. Keeter, Cortez, Colorado.

Clyde S. Linderholm, Dove Creek, Colorado.

Harry L. Longenbaugh, Cortez, Colorado.

Kenneth D. Lull, Hesperus, Colorado.

Edison Mason, Rte. 2, Durango, Colorado.

Jesse McCabe, Dolores, Colorado.

John W. Ritter, Mancos, Colorado.

Talbot L. Rudolph, Pagosa Springs, Colorado.

Paul R. Rutherford, Jr., Hesperus, Colorado.

Cecil E. Sharp, Dolores, Colorado.

L. A. Stowe, Dove Creek, Colorado.

EXPERIMENT STATION STAFF

Koonce, Dwight, B. S., M. S. Associate Agronomist

Ingalls, James E., B. S., M. S. Animal Husbandman

Fort Lewis A & M College

Fort Lewis A & M College, formerly the Fort Lewis Branch of Colorado A & M College, became an independent institution in 1948. Like its former parent institution, Fort Lewis A & M College is administered by the State Board of Agriculture, and is an integral part of the agricultural college system of the State of Colorado.

Besides foundation courses in the general Sciences and Arts, Fort Lewis offers specialized courses in Agriculture, Forestry and Range Management, Engineering, Business Administration and Commercial Subjects, Education (Teacher Training), Home Economics, Physical Education, and preliminary work for Veterinary Medicine. Present arrangements allow a student to obtain two full years of work in most of these fields, and three full years in the field of Education. Expansion of course offerings to cover a full four-year curriculum has been authorized, and will be carried out as rapidly as conditions warrant.

Credits earned at Fort Lewis are transferable to other colleges and universities. The College is coeducational. The school year is planned on the quarter system, and special opportunities for study are made available during the Summer Quarter.

The San Juan Basin Branch Station of the Colorado Agricultural Experiment Station is located at the College. Agricultural research at Fort Lewis A & M College is conducted in cooperation with the Colorado Agricultural Experiment Station. Projects consist of the testing of field and horticultural crops, under high altitude conditions, and the production and distribution of foundation seed; also of Animal Investigation on the comparison of types of beef cattle and inbreeding for the improvement of strains. Most of the agricultural facilities of the College, which include pastures and feed production, are utilized in this livestock and crop improvement program.

In cooperation with the Veterans Administration a vocational agricultural program serves veterans living in Dolores, Montezuma, La Plata, and Archuleta Counties. The objective of this training is to aid the veteran in acquiring proficiency in farming skills and managerial abilities and to help him become established in worthwhile farming enterprises. Instructors are maintained in the field and most of the instruction is given to the student on the farm.

HISTORY

A land-grant school was established at Fort Lewis in 1911, when the lands of the Fort Lewis Military Reservation and Indian School, comprising 6,318 acres, together with buildings, were transferred from federal to state ownership. An agricultural and vocational high school was maintained until 1933, and rural teacher-training courses were offered after 1915. Courses of college rank have been offered since 1927, and exclusively since 1933.

LOCATION

Fort Lewis is situated fourteen miles west of Durango, Colorado, in the heart of the geographical region known as the San Juan Basin. At an altitude of nearly a mile and a half above sea level, both summer and winter climates rival those of many famous resorts. Here mountain and desert regions meet, in a setting unmatched for scenic beauty and economic variety. Few locations afford a more interesting combination of features appealing alike to the agriculturalist, the forester, the mining man, the nature lover, the tourist, and the archaeologist. Here, where mining is a long-established industry, agricultural possibilities have only begun to be realized, and the College is playing an important part in their development. Here is found some of the most beautiful scenery in the world, and within easy traveling distance are many points of scientific and scenic interest.

During the school year, the College sponsors several excursions for the benefit of students who wish to visit near-by points of interest.

EDUCATIONAL AND SCENIC POINTS

The location of Fort Lewis gives easy access to many National Parks and National Monuments, National Forests, scenic drives through mountain and desert country, ancient Indian ruins and areas of present-day Indian culture. Not far away are Indian Reservations of the Navajo, Apache, Ute, and other tribes, and both Indian weaving and Indian jewelry are famous products of this region.

Thirty-five miles from the campus is **Mesa Verde National Park**, which contains the most notable and best preserved prehistoric cliff dwellings in the United States. Ruins of other prehistoric towers, pueblos, and cliff dwellings are found in the **Hovenweep National Monument** and the **Yucca House National Monument**, in the same vicinity. Near by in northern New Mexico are the **Aztec Ruins National Monument** and the **Chaco Canyon National Monument**, which are also prehistoric sites. Near these is **Shiprock**, a vast rocky spire rising abruptly from the floor of the desert, which challenges the most experienced

mountain climbers. At a somewhat greater distance, in Colorado, are the **Great Sand Dunes National Monument** and the **Black Canyon of the Gunnison National Monument**, the latter reached from Fort Lewis over the famous **Million Dollar Highway** between Silverton and Ouray, one of the great scenic drives of the United States. In southeastern Utah are the **Natural Bridges National Monument** and the **Rainbow Bridge National Monument**. An easy trip into Arizona brings one to the **Canyon de Chelly National Monument** with its prehistoric cliff dwellings, and finally to the **Grand Canyon National Park**, where the Colorado River has produced a panorama of erosion which is acclaimed as the most sublime spectacle in the world.

North and northeast of Fort Lewis lie the La Plata and the San Juan Mountains, among which are many of the most spectacular peaks in the Rockies. The Needle Mountains, in particular, have been described as the American Alps.

College Life

Fort Lewis has proved a unique experience for many. In a setting which is both rural and spacious, open to the famed Colorado sunlight, yet never out of sight of mountains snowcapped through most of the year, faculty and students mingle in a spirit of democratic friendliness. The small size of the student body makes it possible for each student's problems to be considered individually, both in class and out, and social pretensions do not exist. There are no fraternities or sororities; nearly all of the students and staff make their home on the campus during the school year, and social events are shared by all. Comfortable housing and dormitory accommodations are available, and unmarried students eat together in the College dining hall.

Student Activities.—The range of extracurricular activities is wide, including intercollegiate athletics, intramural sports contests, and other individual winter and summer sports; formal and informal social affairs, such as dances, picnics, banquets, parties, and get-togethers; student government activities; and activities of a considerable variety of special interest groups. Student assemblies are held periodically for purposes of recreation and information, and prepared programs are presented both by student groups and by speakers and performers drawn from outside the campus. A few special excursions, sponsored by the College, require extra expense by students participating, but by far the greatest portion of the total cost of extracurricular activities is covered by the regular student activity fees. The student recreation



Agriculture is of major interest to both Students and Farmers.

hall, which includes a student cooperative store, is maintained by the student body, and students plan the student social program.

Student Government.—The affairs of the student body are managed by the Student Council, consisting of specially elected officers, together with duly elected presidents of classes and housing groups. Acting as the executive committee of the student body, the Student Council considers all problems brought before it and presents its findings to the general assembly of the students. Faculty advisers are ex officio members of the Student Council and other agencies of student government.

Student Publications.—The College publishes a student newspaper, **Smoke Signals**, and a student annual or yearbook, **The Cadet**, which are written and edited by students under competent faculty direction. Both publications have received wide acclaim for their high quality, and are popular reading among the student body. Students may receive regular academic credit for their work on these publications.

Special Interest Groups.—Students interested in **winter sports** find ample opportunity for skiing, ice skating, and tobogganing. **Tennis** and **horseshoe** courts are popular in spring and fall. **The Ag Club** attracts students who are agriculturally minded, and presents an annual Rodeo. Among hobby groups organized from time to time, the **Camera**

Club is the most recent, and enlists many members. **Music and dramatics** are activities offering both recreational and educational opportunities, and students may earn regular academic credit by participating. Vocal and instrumental ensembles attract many besides those taking individual lessons in piano and other instruments. **The Dramatic Club** is open to all students, and tryouts are held for each of the plays given throughout the year at student assemblies and on community occasions. Participants not only develop their acting abilities, but also learn principles of stage design and set construction, costuming, make-up, playwriting, and direction.

Senior Day.—On the annual Senior Day holiday, Fort Lewis students and faculty are hosts to all high-school seniors in the San Juan Basin. The program for the day includes games, picnics, athletic exhibitions, social dancing, and a major performance by the college Dramatic Club, and future college students have an opportunity to become acquainted with the Fort Lewis campus and its faculty and student body.

The Alumni Association.—All students who have been regularly enrolled at Fort Lewis are members of the Fort Lewis Alumni Association, which promotes the welfare of the College by uniting former classmates. The Association meets annually on Homecoming Day. November 11 is the Homecoming date in 1949; Fort Lewis alumni will gather to talk over old times and cheer the Fort Lewis football team in its contest with the gridsters from Trinidad Junior College.

Intercollegiate Athletics.—Fort Lewis athletic teams have brought the College a well-earned distinction. Fort Lewis A & M College is a member of the Colorado Junior College Conference, and extra-conference games are played with four-year colleges in Colorado and near-by states. After two years of participation within this Conference, athletes are still eligible for two more years of competition in four-year colleges or universities.

The small size of the student body permits athletic participation by a very large proportion of the total number of students. During the 1948-1949 season, 50 per cent of the men enrolled as students tried out for intercollegiate sports, and 42 per cent made the squads. In basketball, almost the entire enrollment played on varsity or B squads or in intramural games.

The traveling squads see much of the surrounding country, since many games are played at a distance of several hundred miles. Mileage traveled by football and basketball squads during the 1948-1949 season totaled 7,500 miles.

The "A" Club.—The lettermen's club is an organization of ath-

letes who have earned awards in sports. Its purpose is to maintain high standards in intercollegiate athletics.

Women's Athletics.—All women students may participate in the athletic program of the college, which is designed to encourage women's athletics and to develop qualities of leadership and good sportsmanship. Awards are given for participation in various activities.

Living Accommodations

The Dining Hall.—All students living in the dormitories take their meals in the Dining Hall, and other students have the privilege of doing so. Meals are planned and supervised by a trained dietitian and made available at moderate cost. Serving is cafeteria style, and tables for small groups promote informal good fellowship among the students.

Dormitories.—Lory Hall, for women, and Snyder Hall, for men, are modern, well-appointed buildings in attractive locations on the campus, affording comfortable accommodations for social life as well as single and double rooms of approved design for student residence and study. Students' rooms are furnished with beds and mattresses, dressers, study tables, chairs, curtain rods; students supply their own bedding, including pillows, linen, curtains, lamps, rugs, and other decorative equipment.

Other Housing.—Apartments for married students and light-house-keeping rooms are available in Veterans' Village and in Downey Apartments. Apartments have one, two, and three bedrooms. These units are completely equipped with basic furnishings, other than bedding and linen, dishes, cooking utensils, lamps, radios, curtains, rugs, and other decorative equipment.

GENERAL INFORMATION

REQUIREMENTS FOR ADMISSION

An application for admission, accompanied by a transcript of the high-school record, must be submitted before the time of registration. It should be submitted early enough to permit a reply to reach the applicant (preferably by September 1); it may be submitted as soon as the applicant has graduated from high school.

In Colorado, application blanks may be secured from any high-

school principal. Applicants from outside Colorado should write to The Registrar, Fort Lewis A & M College, Hesperus, Colorado, requesting an application blank.

Any graduate of an accredited high school is eligible for admission, provided his or her high-school course includes the prescribed units tabulated below. Applications from graduates of unaccredited high schools, or from applicants lacking one or more of the prescribed units will be passed upon according to the merits of the individual case.¹ Students of mature years who have not graduated from high school may be admitted provisionally, subject to their demonstrating ability to do work of college grade.

Potential students not desiring regular college status, who wish to pursue a special course of study, may be admitted as special students at the discretion of the President and the Registrar.

Prescribed Entrance Units	All Divi- sions except Engineer- ing ²	Engineer- ing
English -----	3	3
Mathematics:		
Algebra -----	1	1½
Plane Geometry -----	1	1
Solid Geometry -----	--	½
Science (one unit each from any two of the following: Chemistry, Physics, Social Science) -----	--	2
History -----	--	1
³ Electives -----	10	6
	<hr/> 15	<hr/> 15

Advanced Standing.—Students may be admitted to Fort Lewis A & M College by transfer from other recognized institutions of higher learning upon presentation of a transcript of credit, including a certificate of honorable dismissal. Credits so transferred will be evaluated according to the merits of the individual case.

¹Students lacking high-school credit in advanced algebra or solid geometry are afforded opportunity to clear the deficiency after entering college. Those lacking other prescribed entrance credits may be required to include corresponding subjects in their college curriculum. Graduates of accredited high schools outside Colorado are eligible for admission if they are eligible at land-grant colleges in the state where they graduated. In other cases, applicants may be required to pass a standard college-entrance test, such as the General Educational Development Tests applicable to veterans.

²Entrance requirements for industrial arts students should be read in the first column.

³Of the 10 electives units permitted, not more than 6 (for Engineering, not more than 4) may be in vocational subjects such as agriculture, shop, home economics, or commercial subjects.

CREDITS, GRADES, AND SCHOLASTIC REQUIREMENTS

Credits.—A “credit hour” represents one class or lecture period, or one two-hour or three-hour laboratory period, per week for one quarter. Such credit hours, in colleges using the quarter system, are commonly known as “quarter” hours. Credit in physical education is given on the basis of one-half credit hour per quarter.

Grades and Quality Points.—Official report of grades is by letter only, as follows:

A (Excellent)	I (Incomplete)
B (Good)	WP (Withdrawn while passing)
C (Average)	WF (Withdrawn while failing)
D (Poor, but passing)	
E (Condition)	
F (Failure)	

The grade of E is given when the student's work in the course is of a quality only slightly below passing. It may be raised to D by subsequent passing of a “condition examination,” which must be taken before the end of the regular quarter next following the quarter in which the grade of E was incurred. A condition not so removed becomes a failure (F).

The grade of I means that the student's work in the course is excusably incomplete (for example, because of illness), and additional time has been granted. A grade of I automatically becomes F if the work is not completed within one year from the end of the quarter for which the grade of I was reported.

In computing a student's scholastic average, the following scale of quality points is used: A, 4; B, 3; C, 2; D, 1. The total number of quality points earned is divided by the total number of credit hours for which the student was registered, disregarding courses in which the grade of WP has been reported.

Changes in Registration; Dropping a Course.—After the close of registration, changes in a student's program are subject to the following rules: No new course may be added after the first week of regular class sessions except with the approval of the instructor concerned, and in no case later than the third week of regular class sessions. A course may be dropped, without discredit and without record, by any student during the first three weeks of the quarter, and by students in their first quarter of college attendance, during the first eight weeks of the quarter. After the expiration of these time limits, a grade of either WP or WF will be reported in a course which is dropped. After the seventh week of the quarter (except as noted above for students in their first quarter of college attendance), the grade of WF is manda-

tory unless the student is dropping all courses and withdrawing from college.

Exemption from Final Examinations.—At the option of the instructor, a student may be excused from the final examination in a course if his grade therein will otherwise be A in both daily work and examinations.

Scholastic Requirements.—In general, students should maintain a scholastic average of 2 quality points, equivalent to an average grade of C, when preparing for transfer to other colleges or eventual graduation from college. Students whose scholarship is below a passing average will be allowed to continue in attendance, so long as their presence is not considered detrimental to the educational purposes of the institution, but the College reserves the right to dismiss or place on probation students whose work is notably below standard. Special scholastic eligibility requirements are imposed on students participating in intercollegiate contests and in other student activities.

Class Attendance.—Regular attendance is expected of all students, and it is the responsibility of the student to present to the instructor a written explanation for any absence from class or laboratory periods. Work missed through absence must be made up, and extra work may be assigned as a penalty for unexcused absences. Unjustifiable absences may be made the ground for failure in the course, or for other disciplinary action.

CERTIFICATES—GRADUATION

Two-Year Certificates.—A certificate of accomplishment, representing the completion of two years of college study, is awarded at the Final Convocation in June to each student who has earned 93 hours of college credit.

It is to be noted that while the completion of 93 quarter hours represents a widely recognized standard minimum quantity of study to be achieved in two years of college work, many colleges and universities require for graduation, in four-year courses, a number of credits which is more than double this standard minimum. This is particularly true in the case of engineering and other technical programs. Students, therefore, who plan further college study after completing two years at Fort Lewis A & M College, are advised to include in their two years at Fort Lewis a quantity of work which will correspond to the quantity required at the college to which they intend to transfer.

Teaching Certificates.—A student completing the required three-year program of study in Education is granted a teaching certificate which entitles the holder to teach in the rural schools of Colorado. This certificate is valid for a five-year period, and is renewable.

SCHOLARSHIPS AND LOANS

Recognition-of-Merit Scholarship.—The State Board of Agriculture authorizes the award of a limited number of Recognition-of-Merit Scholarships. To qualify for one, a student must be an entering freshman, have ranked in the upper one-third of the graduating class, and have demonstrated capacity for leadership through activity participation. The value of this scholarship amounts to \$35.00 each quarter to be applied to registration and tuition fees. The award is good for one year, but can be extended for another year if the holder maintains a cumulative average which would place him in the upper one-fourth of the freshman class, and which would hold throughout the entire sophomore year.

Joint-Honor Scholarship.—Scholarships awarded by Colorado State Institutions of Higher Learning are accepted at Fort Lewis, where they have a value of \$35.00 per quarter. The holders must maintain a cumulative average within the upper one-fourth of their respective classes in order to keep the scholarship from year to year.

Employment.—A number of students find employment on the farm and campus. This reduces living expense. Application for employment, with statement of training and needs, should be sent to the President.

Loan Funds.—Three funds have been established to give assistance to needy students, the Snyder Memorial Loan Fund, the Marie Ochsner Memorial Loan Fund, and the Fort Lewis Alumni Loan Fund. Money may be borrowed after the completion of one quarter's work by worthy students. Formal application must be made to the loan-fund committee. Notes for all approved loans must be signed by the student and parents, and are drawn for one year or less.



Scene from one of the many Dramatic Club Productions.

EXPENSES

Tuition and Fees

General Arts—per quarter	\$ 44.00
All Other Divisions—per quarter	47.00
Non-resident tuition (paid in addition to resident tuition)—per quarter	10.00

Students registered for fewer than 12 hours will be allowed a deduction at the rate of \$3.00 per hour.

Applied Music Fees

(in addition to regular tuition)

One half-hour lesson (voice or instrumental) per week—per quarter	15.00
Two half-hour lessons (voice or instrumental) per week—per quarter	25.00
One half-hour lesson (voice or instrumental) per week—per quarter for persons not regularly enrolled	18.00

Special Fees

Late registration	5.00
Fee for schedule change requested by student	1.00
Special examination fee	3.00
Transcript of credits after the first one, which is free	1.00

Associated Students Fees

Fee for all student-sponsored activities—per quarter	11.50
Fee for the yearbook, the "Cadet"; collected at the beginning of the quarter when student first registers	4.50
Students registered for fewer than 6 hours will not be assessed the Associated Students Fees.	

Deposits

(unused portion returnable)

Room deposit	10.00
Apartment deposit	20.00
Laboratory breakage deposit	5.00

Residence Hall Fees

Fall Quarter, 1949—Board and room.....	118.50
Winter Quarter, 1950—Board and room.....	110.50
Spring Quarter, 1950—Board and room.....	110.50

The basic rate for a student's room is \$7.50 per month per student. A few single rooms are available at \$10.00 per month per student. The rate for meals is \$8.00 per week for three meals per day, Monday through Friday. Meals are served Saturday and Sunday at extra charge for those who request them.

Apartments for married students, furnished, with utilities supplied are \$28, \$30, and \$32 per month.

Fee Regulations

Payment of Fees.—All tuition, fees, and deposits for the quarter are payable at time of registration.

Refunds.—A student withdrawing during the first week of the quarter may have all tuition and college fees refunded except the registration fee of \$5.00. A student withdrawing after the first week of the quarter but before the close of the fourth week may have one-half of the tuition and college fees for that quarter refunded, except the registration fee of \$5.00. No refund will be made after the close of the fourth week.

Claims for refunds for tuition and fees must be made when the student officially withdraws from college. All requests for the return of deposits must be made within two weeks after the close of the quarter or upon official withdrawal from college.

COURSES OF STUDY

On the next few pages are outlined courses of study to be followed by students wishing to specialize in several technical fields, such as Agriculture (including Agronomy and Animal Husbandry), Forestry and Range Management, Engineering, Business, Education (Teacher Training), Home Economics, and Physical Education, as well as those students who prefer to follow a more general course with a major field in General Science and Arts.

These curricula have been planned with reference to the requirements of typical four-year colleges at which students may be likely to continue their work after two years at Fort Lewis A & M College. Students are advised, however, to check their selection of courses and subjects of study against the published requirements of the particular institution to which they intend to transfer.

The freshman course in English Composition and two years of Physical Education are required of all regular students.

AGRICULTURE

Students specializing in this field and planning a four-year course should register for the following program of courses during the freshman year:

		FRESHMAN YEAR			
		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
Ag 1	Crop Production	(5-0)	..	..	5
AH 1	Introductory Animal Husbandry	(3-4)	5	..	..
B 1, 3	General Botany	(3-0)	3	3	..
B 2, 4	General Botany Laboratory	(0-4)	2	2	..
C 1, 3	Inorganic Chemistry	(3-6)	..	5	5
E 2, 3, 4	English Composition	(3-0)	3	3	3
ES 44	American Government	(3-0)	..	3	..
H 1	General Horticulture	(4-2)	..	..	5
M 10	Algebra	(5-0)	5	..	..
PE 1, 2, 3	Physical Education	(0-2)	0.5	0.5	0.5
			18.5	16.5	18.5

Selection of courses during the sophomore year will depend on the field of specialization. Students may pursue a course in General Agriculture, or may specialize in Agronomy (plant science) or in Animal Husbandry (animal science). Those selecting the field of Agronomy may further specialize in General Agronomy, Field Crops, or Soils; those selecting Animal Husbandry, in General Animal Production, Animal Nutrition, or Dairy Manufactures. Other related fields of

specialization are Horticulture (in plant science), and Poultry and Entomology (in animal science).

Courses in the field of agriculture train students for practical farming and ranching, commercial and industrial work in relation to plant and animal production, state and federal government activities in connection with agriculture, teaching of agricultural subjects (including vocational agriculture), and related scientific and research activity. Attention is called to the importance of practical farm or ranch experience, which students should endeavor to obtain during or in connection with their college courses.



Courses in Home Economics offer many opportunities.

General Agriculture

SOPHOMORE YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
Ag 2	Soils	(5-3)	..	6	..
Ag 18	Irrigation Practices	(3-0)	..	..	3
AH 12	Feeds and Feeding	(4-2)	..	5	..
C 11	Organic Chemistry	(3-6)	5	..	..
E 23	Public Speaking	(3-0)	..	..	3
En 1	Farm and Home Insects	(3-1)	5	..	..
ES 1	Economics	(5-0)	..	5	..
FM 1	Farm Carpentry	(6-6)	2	..	..
FM 5	Farm Blacksmithing	(0-6)	..	2	..
FM 12	Farm Machinery	(1-6)	..	..	3
M 11	Trigonometry	(3-0)	..	..	3
PB 21	General Bacteriology	(3-0)	..	..	3
PB 22	General Bacteriology Laboratory	(0-4)	..	..	2
Z 5	Invertebrate Zoology	(3-4)	5	..	..
PE 4, 5, 6	Physical Education	(0-2)	0.5	0.5	0.5
			<hr/> 17.5	<hr/> 18.5	<hr/> 17.5

Animal Husbandry

SOPHOMORE YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
AH 5	Livestock Judging	(0-4)	2	..	..
AH 7	Elements of Dairying	(2-2)	..	..	3
AH 9	Principles of Animal Nutrition	(5-0)	..	..	5
AH 12	Feeds and Feeding	(4-2)	..	5	..
AH 30	Meats	(0-8)	..	4	..
C 11	Organic Chemistry	(3-6)	5	..	..
E 23	Public Speaking	(3-0)	..	..	3
En 1	Farm and Home Insects	(3-4)	5	..	..
ES 1	Economics	(5-0)	..	5	..
PB 21	General Bacteriology	(3-0)	..	..	3
PB 22	General Bacteriology Laboratory	(0-4)	..	..	2
Z 5	Invertebrate Zoology	(3-4)	5	..	..
PE 4, 5, 6	Physical Education	(0-2)	0.5	0.5	0.5
	Electives		..	3	..
			<hr/> 17.5	<hr/> 17.5	<hr/> 16.5

Students not planning a four-year technical course are offered the opportunity of a two-year course in practical agriculture, affording training in agricultural principles and procedures which may prove of immediate value in students' own farm and ranch activities.

Course of Study In Practical Agriculture

FRESHMAN YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
Ag 01	Field Crop Production	(5-0)	5	..	..
Ag 02	Cereal Crop Production	(5-0)	..	5	..
Ag 03	Forage Crop Production	(5-0)	..	..	5
AH 1	Introductory Animal Husbandry	(3-4)	5	..	..
AH 5	Livestock Judging	(0-4)	..	2	..
AH 01	Types and Breeds of Livestock	(3-0)	..	3	..
AH 02	Livestock Practicum	(2-9)	..	..	5
B 1, 3	General Botany	(3-0)	3	3	..
B 2, 4	General Botany Laboratory	(0-4)	2	2	..
FM 1	Farm Carpentry	(0-6)	2	..	..
FM 5	Farm Blacksmithing	(0-6)	..	2	..
FM 12	Farm Machinery	(1-6)	..	..	3
Z 1	Invertebrate Zoology	(3-4)	..	..	5
PE 1, 2, 3	Physical Education	(0-2)	0.5	0.5	0.5
			17.5	17.5	18.5

SOPHOMORE YEAR

Ag 04	Soil Management	(5-0)	5	..	..
Ag 05	Crops Seminar	(3-0)	..	3	..
AH 7	Elements of Dairying	(2-2)	..	..	3
AH 12	Feeds and Feeding	(4-2)	..	5	..
AH 30	Meats	(0-8)	..	4	..
AH 03	Animal Husbandry Seminar	(5-0)	..	..	5
En i	Farm and Home Insects	(3-4)	5	..	..
ES 1	Economics	(5-0)	..	5	..
ES 01	Farm Accounting	(0-6)	3	..	..
ES 02	Farm Management	(4-0)	..	..	4
H 1	General Horticulture	(4-2)	..	..	5
M 1	Basic Mathematics	(5-0)	5	..	..
PE 4, 5, 6	Physical Education	(0-2)	0.5	0.5	0.5
			18.5	17.5	17.5

FORESTRY AND RANGE MANAGEMENT

A college course in this field of specialization prepares qualified candidates for professional employment, either with various governmental agencies or by private enterprise, in forest management, forest industries, forest recreation, game management, range management, and grazing. Since the field is limited, colleges impose special requirements on students; reference is made to those set forth, as typical, in the Bulletin of the Colorado A & M College, Fort Collins, Colorado, including the requirement of practical field instruction during residence in an organized summer camp.

The following program of courses is recommended for the first two years:

FRESHMAN YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
B 1, 3	General Botany	(3-0)	3	3	..
B 2, 4	General Botany Laboratory	(0-4)	2	2	..
B 23	Plant Classification	(1-8)	..	..	5
C 1, 3	Inorganic Chemistry	(3-6)	..	5	5
E 2, 3, 4	English Composition	(3-0)	3	3	3
ES 44	American Government	(3-0)	..	3	..
F 3, 4	Principles of Conservation	(2-0)	..	2	2
F 34	Basic Mapping	(0-8)	3	..	..
M 10	Algebra	(5-0)	5	..	..
M 11	Trigonometry	(3-0)	..	..	3
PE 1, 2, 3	Physical Education	(0-2)	0.5	0.5	0.5
			16.5	18.5	18.5

SOPHOMORE YEAR

Ag 2	Soils	(5-3)	..	..	6
C 11	Organic Chemistry	(3-6)	5	..	..
CE 1	Elementary Surveying	(3-3)	4	..	..
E 23	Public Speaking	(3-0)	..	..	3
E 47, 48, 49	Modern Literature	(2-0)	2	2	2
ES 1	Economics	(5-0)	..	5	..
ES 50	Sociology	(5-0)	..	..	5
G 1	Physical Geology	(3-4)	..	5	..
Ph 15	General Physics	(3-4)	..	5	..
Z 5	Invertebrate Zoology	(3-4)	5	..	..
PE 4, 5, 6	Physical Education	(0-2)	0.5	0.5	0.5
			16.5	17.5	16.5

ENGINEERING

The customary divisions of the field of engineering are Civil, Electrical and Mechanical Engineering. Related fields are those of Industrial Arts and Industrial Arts Education. Civil engineering comprises such activities as irrigation engineering, highway engineering, structural engineering, sanitary engineering. Electrical engineering deals with the applications of existing techniques in the field of electricity, and the development of new engineering applications. Mechanical engineering relates to the design, construction, and operation of machinery, the generation and transmission of power, and the use of machines in economic production, including such machinery as steam turbines, steam boilers, diesel engines, air-conditioning and refrigeration machinery, and new materials of construction.

The following program of courses is recommended for all engineering students in the freshman year:

FRESHMAN YEAR			Hours			Quarters and Credits		
			Lec.-Lab.			I	II	III
C 1, 3, 5	Inorganic Chemistry	(3-6)	5	5	5			
E 2, 3, 4	English Composition	(3-0)	3	3	3			
ES 43	Introduction to Government	(3-0)	3					
ES 44	American Government	(3-0)		3				
M 15, 16, 17	Freshman Engineering Mathematics	(5-0)	5	5	5			
ME 1, 2	Mechanical Drawing	(0-6)	2	2				
ME 3	Descriptive Geometry	(1-6)			3			
PE 1, 2, 3	Physical Education	(0-2)	0.5	0.5	0.5			
			18.5	18.5	16.5			

In the sophomore year, the recommended program varies with the field of engineering chosen, as follows:

Civil Engineering

SOPHOMORE YEAR			Hours			Quarters and Credits		
			Lec.-Lab.			I	II	III
CE 1	Elementary Surveying	(3-3)	4					
CE 4	Advanced Surveying	(2-3)			3			
CE 11	Engineering Problem Solution	(0-3)	1					
CE 15	Theoretical Mechanics (Statics)	(4-0)		4				
E 23	Public Speaking	(3-0)			3			
E 47, 49	Modern Literature	(2-0)	2		2			
ES 1	Economics	(5-0)		5				
M 36, 37, 38	Engineering Mathematics (Calculus)	(4-0)	4	4	4			
Ph 25, 26, 27	General Physics	(3-4)	5	5	5			
PE 4, 5, 6	Physical Education	(0-2)	0.5	0.5	0.5			
			16.5	18.5	17.5			

Electrical Engineering**SOPHOMORE YEAR**

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
CE 1	Elementary Surveying	(3-3)	4		
CE 11	Engineering Problem Solution	(0-3)	1		
CE 15	Theoretical Mechanics (Statics)	(4-0)		4	
E 23	Public Speaking	(3-0)			3
E 47	Modern Literature	(2-0)	2		
EE 1	Principles of Electric and Magnetic Circuits	(5-0)			5
ES 1	Economics	(5-0)		5	
M 36, 37, 38	Engineering Mathematics (Calculus)	(4-0)	4	4	4
Ph 25, 26, 27	General Physics	(3-4)	5	5	5
PE 4, 5, 6	Physical Education	(0-2)	0.5	0.5	0.5
			16.5	18.5	17.5

Mechanical Engineering**SOPHOMORE YEAR**

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
CE 1	Surveying	(3-3)	4		
CE 11	Engineering Problem Solution	(0-3)	1		
CE 15	Theoretical Mechanics (Statics)	(4-0)		4	
ES 1	Economics	(5-0)		5	
E 23	Public Speaking	(3-0)			3
E 47	Modern Literature	(2-0)	2		
M 36, 37, 38	Engineering Mathematics (Calculus)	(4-0)	4	4	4
ME 5	Machine Drawing	(0-6)	2		
ME 15	Mechanism	(3-0)			3
ME 16	Mechanism Laboratory	(0-6)			2
Ph 25, 26, 27	General Physics	(3-4)	5	5	5
PE 4, 5, 6	Physical Education	(0-2)	0.5	0.5	0.5
			18.5	18.5	17.5



There are work opportunities for the needy student.

BUSINESS

Within this general field, the principal areas of specialization are those of Accounting and Business Administration, General Business, and Secretarial Science. Students in these fields may seek employment after two years of college study, or may transfer credits to other institutions for further undergraduate or graduate work. Attention is called to the possibility open for students to carry an undergraduate major in General Science and Arts, with elective courses in the field of Business, as a preliminary to graduate work in the field of Business Administration.

The recommended programs for the first two years are as follows:

Accounting and Business Administration

FRESHMAN YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
B 13	Introduction to Biological Science	(3-3)	..	4	..
BA 1	Introduction to Business Administration	(3-0)	..	3	..
BS 1, 2	Typewriting	(0-6)	2	2	..
BS 30	Introduction to Accounting	(0-6)	3	..	..
BS 31	Proprietorship and Partnership .....	..	..	..	..
	Accounting	(0-6)	..	3	..
BS 32	Corporation Accounting	(0-6)	..	..	3
BS 36	Payroll and Security Accounting	(3-0)	..	..	3
E 2, 3, 4	English Composition	(3-0)	3	3	3
E 47, 48, 49	Modern Literature	(2-0)	2	2	2
M 1	Basic Mathematics	(5-0)	..	..	5
Ph 1	Introduction to Physical Science	(4-0)	4	..	..
PE 1, 2, 3	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 61, 62, 63	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives .....	..	3	..	2
			17.5	17.5	18.5

SOPHOMORE YEAR

BA 2	Money and Banking	(3-0)	..	..	2
BS 21	Filing Systems	(0-3)	3	..	..
BS 34	Cost Accounting	(0-6)	3	..	..
BS 35	Advanced Accounting Problems	(3-0)	..	3	..
E 22	Vocabulary Building	(3-0)	..	..	3
E 23	Public Speaking	(3-0)	..	..	3
Ed 10	General Psychology	(4-0)	4	..	..
ES 1	Economics	(5-0)	..	5	..
ES 35	Geography	(5-0)	5	..	..
ES 43	Introduction to Government	(3-0)	3	..	..
ES 44	American Government	(3-0)	..	3	..
ES 50	Sociology	(5-0)	..	..	5
ES 90	Current World Problems	(3-0)	..	..	3
PE 4, 5, 6	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 64, 65, 66	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives .....	..	..	5	..
			18.5	17.5	17.5

General Business

FRESHMAN YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
B 13	Introduction to Biological Science	(3-3)	..	4	..
BA 1	Introduction to Business Administration	(3-0)	..	3	..
BS 1, 2	Typewriting	(0-6)	2	2	..
BS 10, 11	Theory of Shorthand	(3-0)	3	3	..
BS 12	Intermediate Shorthand	(3-0)	..	..	3
BS 30	Introduction to Accounting	(0-6)	3	..	..
BS 31	Proprietorship and Partnership				
	Accounting	(0-6)	..	3	..
BS 32	Corporation Accounting	(0-6)	..	..	3
E 2, 3, 4	English Composition	(3-0)	3	3	3
E 22	Vocabulary Building	(3-0)	..	..	3
Ph 1	Introduction to Physical Science	(4-0)	4	..	..
PE 1, 2, 3	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 61, 62, 63	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives		2	..	5
			17.5	18.5	17.5

SOPHOMORE YEAR

BA 2	Money and Banking	(3-0)	..	..	3
BS 13, 14	Advanced Shorthand	(3-0)	3	3	..
BS 18	Office Practice	(1-1)	..	..	3
BS 19	Secretarial Practice	(1-4)	..	3	..
BS 21	Filing Systems	(0-3)	3	..	..
BS 34	Cost Accounting	(0-6)	3	..	..
BS 35	Advanced Accounting Problems	(3-0)	..	3	..
BS 36	Payroll and Social Security Accounting	(3-0)	..	..	3
ES 1	Economics	(5-0)	..	5	..
ES 50	Sociology	(5-0)	..	..	5
Ed 10	Psychology	(4-0)	4	..	..
PE 4, 5, 6	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 64, 65, 66	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives		4	3	3
			17.5	17.5	17.5

Secretarial Science

FRESHMAN YEAR

		Hours	Quarters and Credits		
		Lec.-Lab.	I	II	III
B 13	Introduction to Biological Science	(3-3)	..	4	..
BS 1, 2	Typewriting	(0-6)	2	2	..
BS 10, 11	Theory of Shorthand	(3-0)	3	3	..
BS 12	Intermediate Shorthand	(3-0)	..	..	3
BS 30	Introduction to Accounting	(0-6)	3	..	..
BS 31	Proprietorship and Partnership Accounting	(0-6)	..	3	..
BS 36	Payroll and Social Security Accounting	(3-0)	..	..	3
E 2, 3, 4	English Composition	(3-0)	3	3	3
E 22	Vocabulary Building	(3-0)	..	..	3
Ph 1	Introduction to Physical Science	(4-0)	4	..	..
PE 1, 2, 3	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 61, 62, 63	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives		2	2	5
			17.5	17.5	17.5

SOPHOMORE YEAR

BS 13, 14	Advanced Shorthand	(3-0)	3	3	..
BS 18	Office Practice	(1-4)	..	..	3
BS 19	Secretarial Practice	(1-4)	..	3	..
BS 21	Filing Systems	(0-3)	3	..	..
E 23	Public Speaking	(3-0)	..	..	3
E 47, 48	Modern Literature	(2-0)	2	2	..
Ed 10	Psychology	(4-0)	4	..	..
ES 1	Economics	(5-0)	..	5	..
ES 50	Sociology	(5-0)	..	..	5
ES 86	World History	(4-0)	4	..	..
PE 4, 5, 6	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 64, 65, 66	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives		2	4	6
			18.5	17.5	17.5

EDUCATION

(Teacher Training)

In this field, a three-year program of study is outlined, designed to train students for teaching careers in the elementary and grammar school grades. Students preparing for teaching in high schools or colleges may also profit by electing some of the courses offered under this heading.

The three-year program of courses is as follows:

FRESHMAN YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
B 13	Introduction to Biological Science	(3-3)	..	4	..
E 2, 3, 4	English Composition	(3-0)	3	3	3
ES 43	Introduction to Government	(3-0)	3	..	..
ES 44	American Government	(3-0)	..	3	..
ES 86, 87, 88	World History	(4-0)	4	4	4
ES 90	Current World Problems	(3-0)	..	..	3
M 1	Basic Mathematics	(5-0)	..	..	5
Mu 77	Appreciation of Music	(3-0)	3	..	..
Ph 1	Introduction to Physical Science	(4-0)	4	..	..
PE 35	Personal Hygiene	(3-0)	..	3	..
PE 36	Community Health	(3-0)	..	..	3
PE 1, 2, 3	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 61, 62, 63	Physical Education (women)	(0-2)	0.5	0.5	0.5
			17.5	17.5	18.5

SOPHOMORE YEAR

E 22	Vocabulary Building	(3-0)	..	..	3
E 23	Public Speaking	(3-0)	..	..	3
E 47, 48, 49	Modern Literature	(2-0)	2	2	2
E 68, 69	Children's Literature	(3-0)	..	3	3
Ed 10	Psychology	(4-0)	4	..	..
Ed 39	Introduction to Elementary Education	(4-0)	4	..	..
Ed 41	Introduction to Teaching of Social Studies	(4-0)	..	..	4
Ed 44	Introduction to Teaching of English	(3-0)	..	3	..
ES 35	Geography	(5-0)	5	..	..
ES 80, 81, 82	American History	(3-0)	3	3	3
PE 4, 5, 6	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 64, 65, 66	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives .....		..	5	..
			18.5	16.5	18.5

JUNIOR YEAR

E 26	Public Discussion	(3-0)	3		
Ed 40	Introduction to Teaching Arithmetic	(4-0)	4		
Ed 42	Teaching of Reading	(3-0)		3	
Ed 43	Teaching Health and Physical Education	(3-0)	3		
Ed 45	Philosophy of Education	(3-0)			3
Ed 46	School Management	(5-0)	5		
Ed 47	Observation and Methods	(5-0)		5	
Ed 48	Student Teaching	(4-6)			6
Ed 105	Educational Psychology	(3-0)		3	
ES 1	Economics	(5-0)		5	
ES 50	Sociology	(5-0)			5
	Electives		2		4
			17	16	18

HOME ECONOMICS

Specialization in this field prepares students both for more effective homemaking and parenthood and for professional careers in a wide variety of activities. Examples of the latter include teaching, extension service work, dietetical services in hospitals, schools, business firms, and social institutions, managerial positions in connection with child care, foods and nutrition, and vocational education projects, occupational therapy and other social service, and various commercial enterprises.

The program of courses will vary after the first year, according to the particular line of interest. The recommended program for the freshman year is as follows:

FRESHMAN YEAR

		Hours	Quarters and Credits		
		Lec.-Lab.	I	II	III
C 1, 3	Inorganic Chemistry	(3-6)		5	5
E 2, 3, 4	English Composition	(3-0)	3	3	3
E 47	Modern Literature	(2-0)	2		
ES 43	Introduction to Government	(3-0)	3		
ES 44	American Government	(3-0)		3	
HE 01	Orientation	(1-0)	1		
HE 1	Color and Design	(1-4)	3		
HE 80	Elementary Textiles and Clothing	(5-0)		5	
HE 83	Principles of Clothing Selection	(0-10)			5
M 1	Basic Mathematics	(5-0)			5
Z 5	Invertebrate Zoology	(3-4)	5		
or					
B 1	General Botany	(3-0)	3		
and					
B 2	General Botany Laboratory	(4-0)	2		
PE 61, 62, 63	Physical Education (women)	(0-2)	0.5	0.5	0.5
			17.5	16.5	19.5

PHYSICAL EDUCATION

All regular students are required to carry one-half quarter hour of Physical Education credit throughout their first two years of college. Beyond this, a student may elect to pursue a specialized course of study in this field leading to a degree in Physical Education, with the ultimate aim of a professional career in coaching, teaching physical education, or supervision of recreational activities. For men students, the following two-year program of courses is recommended:

For Men

FRESHMAN YEAR

		Hours Lec.-Lab.	Quarters and Credits		
			I	II	III
E 2, 3, 4	English Composition	(3-0)	3	3	3
ES 90	Current World Problems	(3-0)	..	..	3
ES 86, 87	World History	(4-0)	4	4	..
M 1	Basic Mathematics	(5-0)	..	..	5
PE 10	Theory and Practice of Tennis	(2-0)	2	..	..
PE 17	Officiating and Management of Sports	(3-0)	..	..	3
PE 21, 22, 23	Physical Education Laboratory	(0-5)	2	2	2
PE 35	Personal Hygiene	(3-0)	..	3	..
PE 36	Community Health	(3-0)	..	..	3
VP 21	Human Anatomy and Physiology	(5-0)	..	5	..
Z 5	Invertebrate Zoology	(3-0)	5	..	..
			16	17	10

SOPHOMORE YEAR

C 1	Inorganic Chemistry	(5-4)	..	5	..
E 23	Public Speaking	(3-0)	..	..	3
E 47, 48	Modern Literature	(2-0)	2	2	..
Ed 10	General Psychology	(4-0)	4	..	..
Ed 15	Methods in Teaching Football	(4-0)	4	..	..
Ed 16	Methods in Teaching Basketball	(4-0)	..	4	..
ES 43	Introduction to Government	(3-0)	3	..	..
ES 50	Sociology	(5-0)	..	..	5
PE 12	Training Room Methods	(3-0)	..	..	3
PE 24, 25, 26	Physical Education Laboratory	(0-5)	2	2	2
PE 43	Industrial Recreation	(3-0)	..	..	3
PE 50	Methods of Baseball	(2-0)	2	..	..
Ph 15	General Physics	(3-4)	..	5	..
			17	18	16

Women students majoring in physical education may select such courses from the above schedule and from a list of acceptable electives as may fit in with the requirements of their major.

OTHER SPECIALIZED FIELDS

Students preparing for training in such professional fields as medicine, veterinary medicine, dentistry, law, business administration, and other professions requiring graduate study beyond the B. S. or B. A. degree, ordinarily follow an undergraduate course concentrated largely in General Science and Arts. The selection of courses should follow the requirements of the college or university from which the student expects to graduate.

Pre-Veterinary Course

FRESHMAN YEAR

		Hours	Quarters and Credits		
		Lec.-Lab.	I	II	III
Ag 1	Crop Production	(5-0)	..	..	5
B 1, 3	General Botany	(3-0)	3	3	
B 2, 4	General Botany Laboratory	(0-4)	2	2	
C 1, 3, 5	Inorganic Chemistry	(3-6)	5	5	5
E 2, 3, 4,	English Composition	(3-0)	3	3	3
ES 90	Current World Problems	(3-0)	..	..	3
M 10	Algebra	(5-0)	5	..	
Ph 15	General Physics	(3-4)	..	5	
PE 1, 2, 3	Physical Education (men)	(0-2)	0.5	0.5	0.5
			18.5	18.5	16.5

SOPHOMORE YEAR

C 11, 15	Organic Chemistry	(3-6)	5	5	..
E 16	News Reporting	(3-0)	..	..	3
E 23	Public Speaking	(3-0)	..	..	3
E 47, 48, 49	Modern Literature	(2-0)	2	2	2
Ed 10	General Psychology	(4-0)	4	..	
ES 1	Economics	(5-0)	..	5	
ES 50	Sociology	(5-0)	..	..	5
ES 82	American History	(3-0)	..	..	3
Z 5, 7	Zoology	(3-4)	5	5	
PE 4, 5, 6	Physical Education (men)	(0-2)	0.5	0.5	0.5
			16.5	17.5	16.5



Womens' Athletic Association is an active organization.

GENERAL SCIENCE AND ARTS

Under this heading is comprised instruction in such general sciences as chemistry, physics, biology (botany, zoology), and geology and in the field of the arts, which includes language and literature, music, mathematics, history, and the social studies (sociology, economics, government, and psychology)

Students may work for a college degree in one or more of these fields, either with the aim of acquiring a general cultural education or for the purpose of developing a vocational specialty; the vocational possibilities include both practical employment (for example, as a chemist) and teaching at the high-school or college level. An undergraduate major in General Science and Arts is a proper foundation for graduate study and training in many of the professions, such as law and medicine. Many of the specific courses in General Science and Arts are included in the recommended programs for the several specialized fields of study set forth on the preceding pages.

Students electing to major in General Science and Arts should select courses with reference to the requirements of the college or university from which they expect to graduate, but it is recommended that the selection be broad enough to include representative courses in each of certain major groups. These groups may be stated as follows: Physical science, language and literature, history and social science, and mathematics.

For students who wish to specialize in the study of chemistry, within the field of General Science and Arts, the following program of courses is recommended:

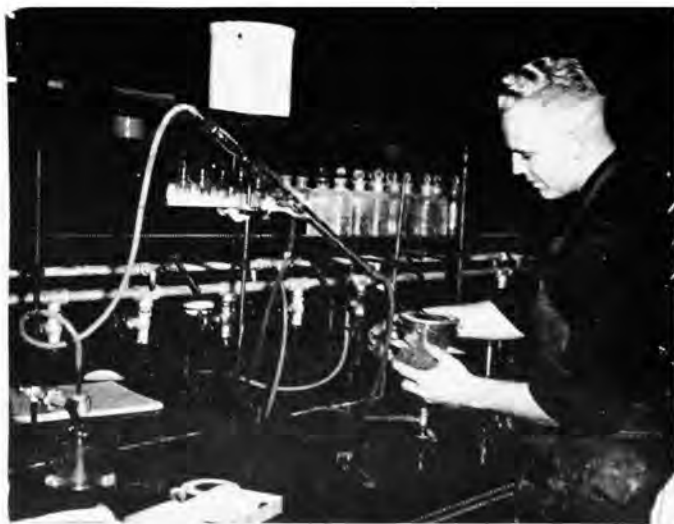
Course In Chemistry

FRESHMAN YEAR

		Hours	Quarters and Credits		
		Lec.-Lab.	I	II	III
C 1, 3, 5	Inorganic Chemistry	(3-6)	5	5	5
E 2, 3, 4	English Composition	(3-0)	3	3	3
E 47, 48, 49	Modern Literature	(2-0)	2	2	2
ES 43	Introduction to Government	(3-0)	3	..	..
ES 44	American Government	(3-0)	..	3	..
ES 90	Current World Problems	(3-0)	..	..	3
M 15, 16, 17	Freshman Engineering Mathematics	(5-0)	5	5	5
PE 1, 2, 3	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 61, 62, 63	Physical Education (women)	(0-2)	0.5	0.5	0.5
			18.5	18.5	18.5

SOPHOMORE YEAR

C 11, 15, 17	Organic Chemistry	(3-6)	5	5	5
C 31	Inorganic Qualitative Analysis	(2-6)	5	..	..
C 33	Quantitative Analysis	(3-6)	..	5	..
C 36	Quantitative Analysis	(2-9)	..	..	5
E 23	Public Speaking	(3-0)	..	..	3
M 36, 37, 38	Engineering Mathematics (Calculus)	(4-0)	4	4	4
PE 4, 5, 6	Physical Education (men)	(0-2)	0.5	0.5	0.5
PE 64, 65, 66	Physical Education (women)	(0-2)	0.5	0.5	0.5
	Electives		4	3	..
			18.5	17.5	17.5



Chemistry is required in technical courses.

DESCRIPTION OF COURSES

Note: Following the titles of individual courses, which are grouped in alphabetical order by department, the Roman numerals indicate the quarter (Fall, I; Winter, II; Spring, III) during which the course offered. Arabic numerals are used to indicate the number of credit hours and the number of actual hours spent in class and laboratory work. Thus, for example, the figures "5(3-4)" would mean that the course carries five hours of credit, and requires three hours of class and four hours of laboratory work each week.

AGRICULTURE

Agronomy

Ag 1. Crop Production. III. 5(5-0). Prerequisites: B 1, B 2, B 3, B 4.

A study of the principles of field crop production with special emphasis on cultural practices and botanical characteristics of crops grown in the state.

Ag 2. Soils. II. 6(5-3). Prerequisites: C 1, C 3.

A basic course dealing with the formation, properties, and management of soils with special attention given to soil conditions that affect plant growth and crop yields. The laboratory will include the study of moisture relations and elementary fertility analysis.

Ag 18. Irrigation Practices. III. 3(3-0). Prerequisites: Ag 1, Ag 2.

A study of the systems used in irrigation, water supply, water measurement, methods of irrigation, soils in relation to irrigation, water efficiency, drainage, and the water requirements of different crops.

Animal Husbandry

AH 1. Introductory Animal Husbandry. I. 5(3-4).

Selecting and evaluating beef cattle, dairy cattle, sheep, swine, and horses on a purebred and market basis. Emphasis placed on types, breeds, markets, and market classification.

AH 5. Livestock Judging. I, II. 2(0-4).

Selection and judging of market and breeding classes of livestock.

AH 7. Elements of Dairying. III. 3(2-2).

An introduction to the dairy industry. A brief study of the history and development of the industry and of the composition, proper-

ties, and food value of milk. An introduction to the manufacturing processes for butter, ice cream, cheese, and other dairy products.

AH 9. Principles of Animal Nutrition. III. 5(5-0). Prerequisite: C 11.

Study of the various nutrients; their functions, digestion, and fate in metabolism; balance studies and requirements for maintenance and production.

AH 12. Feeds and Feeding. II. 5(4-2). Prerequisite: AH 1.

Feeds and their use in feeding livestock. Calculation of rations which meet requirements for maintenance, growth, and production.

AH 30. Meats. II. 4(0-8).

A study of meat from the producer's and consumer's standpoint. The slaughter, dressing, cutting, curing, and nutritive value of meats. Trips to packing plants.

Horticulture

H 1. General Horticulture. III. 5(4-2). Prerequisite: 5 credits in Botany.

A general course covering the principles underlying the propagation, improvement, and marketing of horticultural crops.

Practical Agriculture Courses

Ag 01. Field Crop Production. I. 5(5-0).

Ag 02. Cereal Crop Production. II. 5(5-0).

Ag 03. Forage Crop Production. III. 5(5-0).

Ag 04. Soil Management. I. 5(5-0).

Ag 05. Crops Seminar. II. 3(3-0).

AH 01. Types and Breeds of Livestock. II. 3(3-0).

AH 02. Livestock Practicum. III. 5(2-9).

AH 03. Animal Husbandry Seminar. III. 5(5-0).

ES 01. Farm Accounting. I. 3(0-6).

ES 02. Farm Management. III. 4(4-0).

The above courses are listed without description of their content, as the materials presented will vary with the needs of the class membership. These practical agriculture courses give no credit toward a degree, but may be taken in conjunction with courses which do carry such credit.

BIOLOGY

Bacteriology

PB 21. General Bacteriology. III. 3(3-0). Prerequisite: One year of Chemistry.

An elementary study of bacteria with emphasis upon their role in everyday life.

PB 22. General Bacteriology Laboratory. III. 2(0-4).

Elementary techniques and laboratory methods in bacteriology.

Botany

B 1. General Botany. I. 3(3-0).

The structure and functions of higher plants.

Must be accompanied by B 2.

B 2. General Botany Laboratory. I. 2(0-4). Laboratory to accompany B 1.

Credit not given independently from credits for B 1.

B 3. General Botany. II. 3(3-0).

The development of plants from simple to complex forms.

Must be accompanied by B 4.

B 4. General Botany Laboratory. II. 2(0-4). Laboratory to accompany B 3.

Credit not given independently from credits for B 3.

B 13. Introduction to Biological Science. II. 4(3-3).

A lecture-discussion and laboratory course in general biology.

It is the aim of this course to give the student a better understanding of the plant and animal life in his environment. Life functions form the basis of discussion.

B 23. Plant Classification. III. 5(1-8). Forestry sophomores only. Prerequisite: A minimum of 10 credits in General Botany.

Identification and systematic relationship of flowering plants.

Entomology

En 1. Farm and Home Insects. I. 5(3-4). Prerequisite: Z 1 or concurrent registration.

Elementary anatomy and physiology of insects; the life histories, habits, and control recommendations for the more important insect pests.

Physiology

- VP 21. Human Anatomy and Physiology. II. 5(5-0).** Prerequisite: Inorganic Chemistry, or consent of instructor.
A lecture and demonstration course in anatomy and physiology.

Zoology

- Z 5. Invertebrate Zoology. I. 5(3-4).**
Designed for zoology majors, pre-medical, pre-dental, pre-veterinary, and pre-nursing students. Suggested for students majoring in botany or entomology. A study of representative types of invertebrate animals.
- Z 7. Vertebrate Zoology. II. 5(3-4).** Prerequisite: Z 5. Continuation of Z 5. A study of the vertebrate animals. Laboratory work consists of dissection of type specimens.

BUSINESS

- BA 1. Introduction to Business Administration. II. 3(3-0).**
General exploration and orientation covering the area of business.
- BA 2. Money and Banking. III. 3(3-0).** Prerequisite: ES 1 (Economics).
- BA 3. Introduction to Insurance. II. 5(5-0).**
A basic course covering the various fields of insurance. A practical study of various forms of insurance coverage, the policy protections, the protection afforded purchasers, and company organization and regulation.
- BA 4. Introduction to Advertising. III. 5(5-0).**
- BS 1. Typewriting. I. 2(0-6).**
Fundamental course in mastering the technique of typewriting.
- BS 2. Typewriting. II. 2(0-6).** Prerequisite: BS 1 or one year of high-school typing.
Development of speed and accuracy.
- BS 10. Theory of Shorthand. I. 3(3-0).**
Fundamentals of Gregg shorthand.
- BS 11. Theory of Shorthand. II. 3(3-0).** Prerequisites: BS 1 and BS 10.
A continuation of BS 10.

BS 12. Intermediate Shorthand. III. 3(3-0). Prerequisites: BS 1 and BS 11 or its equivalent.

Drill on brief forms and special forms. Dictation from new matter. Dictation of 80 to 100 words per minute required.

BS 13. Advanced Shorthand. I. 3(3-0). Prerequisites: BS 2 and BS 12 or its equivalent.

Advanced dictation. Dictation of 100 to 120 words per minute required.

BS 14. Advanced Shorthand (continued). II. 3(3-0). Prerequisite: BS 13 or its equivalent.

Advanced speed dictation and transcription.

BS 18. Office Practice. III. 3(1-4). Prerequisites: BS 2 and BS 12.

Combination of instruction in the use of office machines and experience in the administrative offices of the college.

BS 19. Secretarial Practice. II. 3(1-4). Prerequisites: BS 2 and BS 12.

Designed to place further emphasis upon speed and accuracy in typing and to stress the transcribing of letters, business forms, and tabulated material.

BS 21. Filing Systems. I. 3(3-0). Prerequisite: BS 2 or its equivalent.

A study of filing systems and practical application of principles.

BS 30. Introduction to Accounting. I. 3(0-6).

A beginning course in accounting which deals primarily with the mechanics of record keeping.

ES 31. Proprietorship and Partnership Accounting. II. 3(0-6). Prerequisite: BS 30.

The principles of accounting which apply to special books and records of corporations.

BS 32. Corporation Accounting. III. 3(0-6). Prerequisite: BS 31.

The principles of accounting which apply to special books and records of corporations.

BS 34. Cost Accounting. I. 3(0-6). Prerequisite: BS 31.

The principles of distributions of overhead, direct materials, and labor, as to unit costs.

ES 35. Advanced Accounting Problems. II. 3(3-0). Prerequisite: 12 hours of accounting.

Deals with advanced accounting problems.

BS 36. Payroll and Social Security Accounting. III. 3(3-0). Prerequisite: BS 30.

CHEMISTRY

C 1. Inorganic Chemistry. I, II. 5(3-6).

A presentation of the basic principles of chemistry and a study of the non-metallic elements. Lectures and laboratory exercises.

C 3. Inorganic Chemistry. II, III. 5(3-6). Prerequisite: C 1.

A continuation of C 1. Includes chemistry of metallic elements. Lectures and laboratory exercises.

C 5. Inorganic Chemistry. III. 5(3-6). Prerequisites: C 1 and C 3.

A continuation of C 3. Recommended for majors in Chemistry, Pharmacy, Pre-Medicine, Pre-Nursing, and Engineering.

C 11. Organic Chemistry. I. 5(3-6). Prerequisites: C 1 and C 3.

An elementary course in the chemistry of carbon compounds. Lectures and laboratory exercises.

C 15. Organic Chemistry. II. 5(3-6). Prerequisite: C 11.

The chemistry of fats, carbohydrates, and proteins. Lectures and laboratory exercises.

C 17. Organic Chemistry. III. 5(3-6). Prerequisite: C 15.

Chief emphasis will be placed on the chemistry of cyclic compounds. Lectures and laboratory exercises.

C 31. Inorganic Qualitative Analysis. I. 5(2-6). Prerequisites: C 1 and C 3.

A discussion of the principles of inorganic analytical separations. Lectures and laboratory exercises.

C 33. Quantitative Analysis. II. 5(3-6). Prerequisite: C 31.

A consideration of the theory and techniques involved in the use of modern analytical instruments in quantitative analysis. Lectures and laboratory exercises.

C 36. Quantitative Analysis. III. 5(2-9). Prerequisites: C 31, C 33.

A continuation of the study of the principles and practices of inorganic quantitative analysis. Lectures and laboratory exercises.

ECONOMICS

(See under "History and Social Science")

EDUCATION

Ed 9. Orientational Psychology. II. 3(3-0).

A course designed to help regain or develop efficient study habits. Note-taking, concentration of thought, reading and study aids, and budgeting of time will be emphasized.

Ed 10. General Psychology. I, II. 4(4-0). Prerequisite to all psychology courses. Sophomore standing required.

Fundamental principles of psychology and their application to life, covering particularly the topics of personality, emotions, intelligence, attention, perception, learning, memory, thinking, and motivation.

Ed 11. General Psychology (continued). II. 4(4-0). Prerequisite: Ed 10.

A continuation of Ed 10.

Ed 15. Methods in Teaching Football. I. 4(4-0).

A theoretical course dealing with the methods of coaching, strategy, tactics, football systems, training and diet, scouting, rules interpretation, equipment in secondary schools.

Ed 16. Methods in Teaching Basketball. II. 4(4-0).

Methods of coaching offense and defense, styles of play, strategy, training and diet, rules interpretation, equipment in secondary schools.

Ed 39. Introduction to Elementary Education. I. 4(4-0).

An introductory course acquainting the student with the essential principles and facts underlying educational activity. The school as a social institution, as a community institution, and as a community or state responsibility, is studied. The evolution of methods as a result of the educative process and the nature of learning, current practices and means of evaluating education are studied in this course.

Ed 40. Introduction to the Teaching of Arithmetic. I. 4(4-0).

Experimental studies in arithmetic methods will be studied and their findings applied to present arithmetic teaching. Special emphasis will be laid on diagnosis and remedial teaching.

Ed 41. Introduction to the Teaching of Social Studies. III. 4(4-0).

The early history of the activity program will be studied, present practices in democratic classrooms will be analyzed, and the method of unit teaching will be studied. Current studies and texts in the field of teaching social studies in the elementary school will be examined and applied.

Ed 42. Introduction to the Teaching of Reading. II. 3(3-0).

A comprehensive study of the experimental studies in reading methods, their results, and their application to pupil needs in read-

ing is made. The course will lay emphasis on diagnosis and remedial teaching.

Ed 43. Teaching Health and Physical Education. I. 3(3-0).

Methods and materials in the teaching of health and physical education. Program planning, recess activities, games, rhythmic activities, philosophy and theory of physical education.

Ed 44. Introduction to the Teaching of English. II. 3(3-0).

A study of the objectives of the teaching of English and language work at the grade-school level and of the best means of attaining those ends. The fields of spelling and handwriting will also be covered.

Ed 45. Philosophy of Education. III. 3(3-0).

An introductory survey of the field of philosophy of education. The biological, psychological, sociological, and historical bases of education are studied. Some time is given to the philosophy underlying modern educational practices.

Ed 46. School Management. I. 5(5-0).

An introduction to the field of techniques and methods of teaching, a study of curriculum building as suggested in the state course of study, a study of objectives of elementary and secondary schools. Practical applications are made of new projects and methods of rural and elementary teaching. Type units of work are written and used in elementary school.

Ed 47. Observation and Methods. II. 5(5-0).

Observation techniques are developed and planned. Visitation to both rural schools and the campus elementary school are made at times during the year to note progress. Observation is especially directed to scientific procedures in reading, arithmetic, and other elementary-school subjects.

Ed 48. Student Teaching. III. 6(4-6).

Sixty hours of classroom teaching in rural grade schools is required of the student. Attention is also directed to scientific methods in the teaching of reading, arithmetic, and other elementary school subjects. Students are directed in their practice teaching by the instructor and by the regular teachers.

Ed 105. Educational Psychology. II. 3(3-0). Prerequisite: Ed 10.

A study of the phases of psychology bearing upon the problems of teaching, with emphasis on growth, intelligence, individual differences, motivation, learning, heredity, and environment. The principles of psychology as applied to education.

ENGINEERING

Civil Engineering

- CE 1. Surveying. I. 4(3-3).** Prerequisite: M 16 or M 11.
Plane surveying methods of measuring distances, angles, and elevations.
- CE 4. Advanced Surveying. III. 3(2-3).** Prerequisite: CE 1.
Geodetic surveying methods. Astronomic observations. Topographic surveys. Hydrographic surveys used in drainage and irrigation. Field practices in these branches.
- CE 11. Engineering Problem Solution. I. 1(0-3).** Prerequisite: M 16.
The theory and use of the slide rule. Formal and computational phases of the solution of problems in engineering.
- CE 15. Theoretical Mechanics (Statics). II. 4(4-0).** Prerequisites: M 36, Ph 25.
Coplanar, non-coplanar, concurrent and non-concurrent force systems. Centroids and moments of inertia.

Electrical Engineering

- EE 1. Principles of Electric and Magnetic Circuits. III. 5(5-0).** Prerequisites: M 37, M 38, Ph 27. (M 38 may be taken concurrently.)
The course covers fundamental principles of electric and magnetic circuits, power and energy, induced and generated voltages.

Mechanical Engineering

- ME 1. Mechanical Drawing. I. 2(0-6).**
Care and use of instruments; lettering; geometrical construction and projection.
- ME 2. Mechanical Drawing. II. 2(0-6).** Prerequisite: ME 1. A continuation of ME 1.
Isometric and other pictorial representations.
- ME 3. Descriptive Geometry. III. 3(1-6).** Prerequisite: ME 2.
The graphical representation of geometrical magnitudes in space.
- ME 5. Machine Drawing. I. 2(0-6).** Prerequisite: ME 2.
The production of detail and assembly drawings of machines.

- ME 15. Mechanism. III. 3(3-0).** Prerequisite: ME 5.
Elements of machinery; motion-transmitting parts such as gears, belts, link work, etc.
- ME 16. Mechanism Laboratory. III. 2(0-6).** Prerequisite: ME 5.
Drawing room practice to accompany ME 15.

Farm Mechanics

- FM 1. Farm Carpentry. I. 2(0-6).**
Rafter cutting and erection, framing, making wood appliances, drawing, care and use of tools, and painting.
- FM 3. Farm Power. II. 3(2-3).**
A theory, demonstration, and maintenance course on motors, engines, and transportation equipment used on the farm.
- FM 5. Farm Blacksmithing. II. 2(0-6).**
Forge work for the farmer, involving construction and repair work in shaping, annealing, hardening, and tempering; acetylene and electric welding.
- FM 12. Farm Machinery. III. 3(1-6).** Prerequisites: FM 3 and FM 5.
Repair, construction, operation, and adjustment of farm machinery.



Fort Lewis meets in strong teams in all sports.

ENGLISH LANGUAGE AND LITERATURE

- E 1. English Composition Review. I. 1(3-0).** Required of students who are not prepared to take E 2.

Drill in basic language skills through a remedial reading approach.

- E 2. English Composition. I. 3(3-0).**

Practice in both written and oral composition. This course is designed to develop correct language habits and to train the student in logical thought and effective expression.

- E 3. English Composition. II. 3(3-0).** Prerequisite: E 2. Continuation of E 2.

This course trains the student in collecting, organizing, and presenting material in larger units of composition.

- E 4. English Composition. III. 3(3-0).** Prerequisite: E 3. Continuation of E 3.

This course continues to emphasize exposition and the use of narration and description in communicating sensory experience.

- E 12. Journalistic Writing: Basic News Writing. I. 3(3-0).**

A study of what news is, with constant practice in news gathering, interviewing, writing effective leads, style-book usage, and the cultivation of accuracy and vivid news style. Copy prepared by students is submitted to the student newspaper.

- E 13. Journalistic Writing: The Copy Desk. II. 3(3-0).** Prerequisite: E 12.

A course in copyreading and editing, designed to give the student practice in judging news values, correcting copy with standard symbols, re-writing, headline writing, and marking copy for the composing room. Essential knowledge of typography, styles of page make-up, and page dumming are included.

- E 16. Journalistic Writing: Reporting. III. 3(3-0).**

The problems of newspaper reporting; drill in the fundamentals of reporting.

- E 22. Vocabulary Building. III. 3(3-0).**

The study of words; designed to stimulate growth and accuracy in vocabulary.

- E 23. Public Speaking. III. 3(3-0).** Prerequisite: E 2.

A course in the fundamentals of public speaking with the emphasis on gaining self-confidence, organizing effective short talks, and insuring audience response.

E 26. Public Discussion. I. 3(3-0). Prerequisite: E 3.

The organizing and conducting of group discussions of various types: the forum, the panel, the symposium, the debate. Emphasis on effective argument and persuasion.

E 47. Modern Literature. I. 2(2-0).

The three periods of modern British and American literature. Their moods, trends, and content are presented. The type most emphasized is the short story.

E 48. Modern Literature: Drama. II. 2(2-0).

A study of the various types of the best modern drama of Britain, Continental Europe, and the United States.

E 49. Modern Literature. III. 2(2-0).

Modern literature studied according to types: drama, poetry, short story, essay, and biography.

E 53. American Literature from the Puritans to Byrant. I. 3(3-0). Prerequisite: E 4.

A study of the development of American literature to the early nineteenth century, with special emphasis on intellectual currents.

E 54. American Literature from Byrant to Whitman. II. 3(3-0). Prerequisite: E 4. Continuation of E 53.

A study of American literature from the early nineteenth century to the close of the Civil War.

E 55. American Literature from Whitman to the Present. III. 3(3-0). Prerequisite: E 4. Continuation of E 54.

A study of American literature from the Civil War to the present.

E 68. Children's Literature. II. 3(3-0).

A survey of literature for the elementary schools; study of principles governing the choice of literature as well as the opportunity of making and presenting type units in the teaching of literature, the graphic arts, and music.

E 69. Children's Literature. III. 3(3-0). A continuation of E 68.

ENTOMOLOGY

(See under "Biology")

FORESTRY

F 3. Principles of Conservation. II. 2(2-0).

Open to all students of the college. A survey of the forest, range, wildlife, and other natural resources; policies and programs adopted for their protection and use. Basic and non-renewable resources are accented during this quarter.

F 4. Principles of Conservation. III. 2(2-0).

Continuation of F 3, with accent upon biological resources.

F 34. Basic Mapping. I. 3(0-8).

Fundamentals of forest mapping, use of staff compass, Abney hand level, and other specialized equipment.

GEOGRAPHY

(See under "History and Social Science")

GEOLOGY

G 1. Physical Geology. II. 5(4-3). Prerequisite: C 1, C 3.

A study of the earth, the materials which make up the earth, its structure, surface features, and the geological processes involved. One Saturday field trip is required.

G 2. Historical Geology. III. 5(4-3). Prerequisite: G 1.

A history of the development of the earth and its features from its origin to the present, and the accompanying evolutionary changes as revealed in the fossil record. One Saturday field trip is required.

GOVERNMENT

(See under "History and Social Science")

HISTORY AND SOCIAL SCIENCE

ES 1. Economics. II. 5(5-0). Prerequisite: Sophomore standing.

A survey course, introducing the student to the principles of economics as a science, and examining the main outlines of the present-day economic order.

ES 35. Geography. I. 5(5-0).

A survey course, dealing generally with man's geographical environment and its effects on human activities.

ES 43. Introduction to Government. I. 3(3-0).

An introduction to the study of political science, with particular consideration of the nature and problems of democratic government.

ES 44. American Government: National, State, and Local. II. 3(3-0).

A survey course, dealing with the forms, principles, and practices of government in the United States.

ES 50. Sociology. III. 5(5-0).

A survey course, introducing the student to the principles of sociology as a science, and the major characteristics and processes of human society.

ES 80. American History: The Old World Period (1492-1815). I. 3(3-0).

ES 81. American History: The New World Period (1815-1898). II. 3(3-0).

ES 82. American History: The One World Period (1898-). III. 3(3-0).

A sequence of courses surveying the origin and development of the United States from the discovery of America to the present day, and the role of the United States as an American nation and as a world power.

ES 83. English History. Summer. 4(4-0).

A rapid survey course, covering the social, economic, and political development of England and the British empire, from the earliest times to the present day.

ES 86. World History (I). I. 4(4-0).

ES 87. World History (II). II. 4(4-0).

ES 88. World History (III). III. 4(4-0).

A sequence of courses tracing the story of civilization from the most ancient times to the present day. Balanced attention is given to political, social, economic, and cultural developments.

ES 90. Current World Problems. III. 3(3-0).

A survey of the current world scene, with interpretation of the news in the light of history and the social sciences.

HOME ECONOMICS

FN 1. Survey of Nutrition. III. 2(1-2).

How to choose an adequate diet. How to plan and serve appetizing and nutritious meals. Designed for men and women from all departments.

FN 27. Elementary Food Preparation. I, II. 3(1-4).

How to cook. Designed for men and women from all departments.

FN 30. Food Selection and Preparation. II. 5(2-6). Prerequisite: C 11. Primarily for Home Economics majors.

Principles and techniques of preparation of customary food products. Recognition of standard products. Factors influencing the selection and purchase of food.

FN 31. Food Selection and Preparation. III. 3(1-4). Prerequisite: FN 30.

Continuation of FN 30. Primarily for Home Economics majors. Experience in preparation of more varied types of food products.

HE 01. Orientation. I. 1(1-0).

Purposes of the home economics curricula in a land-grant college in educating for homemaking and for entering jobs in home economics and allied services. Opportunities and responsibilities of home economists. Required of entering freshman. Transfer students may register if they have not already had a similar course.

HE 1. Color and Design. I. 3(1-4).

Color as found in light rays and pigments. Principles of balance, rhythm, and harmony applied to original designs. Art appreciation.

HE 3. Advanced Design. II. 2(0-4). Prerequisite: HE 1. Continuation of HE 1.

Emphasis on original designs for special purposes.

HE 80. Elementary Textiles and Clothing Selection. II. 5(5-0). Prerequisite: HE 1, or consent of instructor.

Application of art and economic principles to the selection of textiles and clothing.

HE 83. Principles of Clothing Construction. III. 5(0-10). Prerequisite: HE 80, or consent of instructor.

Fundamental construction processes applied to the making of clothing becoming to the individual. Study and use of commercial patterns.

HORTICULTURE

(See under "Agriculture")

MATHEMATICS

M 1. Basic Mathematics. I, III. 5(5-0).

Elementary algebra and elementary statistics.

M 2. Slide Rule. II. 1(1-0).

M 10. Algebra. I. 5(5-0).

Review of elementary algebra, linear and quadratic equations, linear and quadratic systems, functions and their graphs, logarithms, variation, binomial theorem, progressions.

M 11. Trigonometry. III. 3(3-0).

The standard college course in this subject.

M 15. Freshman Engineering Mathematics. I. 5(5-0). Prerequisites: 1.5 units of high-school algebra and 1 unit of plane geometry.

Comprehensive review of elementary algebra, logarithms, the trigonometric functions and their properties, solutions of right and oblique triangles, the fundamental relations, functions and their graphs, linear equations and systems, variations.

M 15a. Advanced High-School Algebra. I. 0(3-0).

For removal of entrance deficiencies.

M 16. Freshman Engineering Mathematics. II. 5(5-0). Prerequisite: M 15; 0.5 units of solid geometry. Quadratic equations, inequalities, quadratic systems, progressions, binomial theorem, trigonometric analysis, inverse functions, polar coordinates, the locus of an equation.

M 16a. Solid Geometry. II. 0(2-0).

For removal of entrance deficiencies.

M 17. Freshman Engineering Mathematics. III. 5(5-0). Prerequisite: M 16.

Complex numbers, the straight line, the circle, the conic sections, tangents, equation of a locus, equations of a line in space, the plane, quadric surfaces.

M 36. Engineering Mathematics (Calculus). I. 4(4-0). Prerequisite: M 17.

With M 37 and M 38, comprises the standard college course in calculus.

M 37. Engineering Mathematics (Calculus). II. 4(4-0). Prerequisite: M 36.

M 38. Engineering Mathematics (Calculus). III. 4(4-0). Prerequisite: M 37.

MODERN LANGUAGES

Students having high-school credit for two years of a foreign language may not take the first year of the same language in college for credit.

¹L 21. First-Year Spanish. I. 5(5-0).

A course in grammar, prose composition, reading, and conversation.

¹L 22. First-Year Spanish. II. 5(5-0). Prerequisite: L 21.

Further study of Spanish grammar with emphasis on reading, composition, and conversation.

¹L 23. First-Year Spanish. III. 5(5-0). Prerequisite: L 22.

Further study of Spanish grammar with emphasis on reading, composition, and conversation.

²L 40. First-Year German. I. 5(5-0).

A course in grammar, pronunciation, and reading.

²L 41. First-Year German. II. 5(5-0). Prerequisite: L 40.

A continuation of the study of grammar, pronunciation, and reading.

²L 42. First-Year German. III. 5(5-0). Prerequisite: L 41.

A continuation of the study of grammar, pronunciation, and reading.

¹Offered alternate years, beginning 1950-51.

²Offered alternate years, beginning 1949-50.

MUSIC

Courses Mu 3 to Mu 11 include sight singing, ear training, harmony, and keyboard harmony.

Mu 3. Fundamental Theory. I. 5(5-0).

Development of melodic and rhythmic feeling through reading and dictation. Drill in the rudiments of music. Scales, intervals, triads, chord connections. Harmonization of melodies, basses, and original works. Simple keyboard harmony. Work in cadence forms.

Mu 4. Fundamental Theory. II. 5(5-0). Prerequisite: Mu 3.

A continuation of Mu 3.

Mu 5. Fundamental Theory. III. 5(5-0). Prerequisite: Mu 4.

Melodic and simple diatonic dictation. Inversions of the dominant seventh chord. Secondary seventh chords. Dominant ninth chords. Diatonic modulation. Assigned melodies and basses; original composition; keyboard harmony.

Mu 9. Advanced Theory. I. 5(5-0). Prerequisite: Mu 5.

Ear training and dictation. Choral-style simple chromatic melodies. Chromatic harmony used as embellishment of, and a substitute for, diatonic harmony. Continued work in original composition and keyboard harmony.

Mu 10. Advanced Theory. II. 5(5-0). Prerequisite: Mu 9.

A continuation of Mu 9.

Further development of the chromatic element. The augmented sixth chords. Chromatic modulations; keyboard harmony.

Mu 11. Advanced Theory. III. 5(5-0). Prerequisite: Mu 10.

Emphasis on original composition for voice and instrument; accompaniment writing. Contrapuntal devices.

Mu 15. History of Music. I. 3(3-0).

Study of sources of our music. Beginnings of scale, notation, harmony, etc. Early schools of composition, culminating in Palestrina, Bach, and Handel.

Mu 16. History of Music. II. 3(3-0).

Evolution of the modern sonata traced through Haydn, Mozart, and Beethoven. Rise of Romanticism and the music of the romantic composers: Schubert, Mendelssohn, Schumann, Chopin, Liszt, and others.

Mu 17. History of Music. III. 3(3-0).

The opera from Gluck to Wagner. Effect of Wagner's theories on music to present day. Brahms and "the cause of absolute music." Nationalistic composers, including Tchaikowsky, Dvorak, Sibelius, and Grieg. French Impressionism: Franck, Debussy, Ravel, and others.

Mu 52. Stringed Instrument Class. II. 3(3-0).

Instruction in the playing of stringed instruments, with instruments in the hands of students. Emphasis placed on the problems of public-school music class instruction.

Mu 77. Appreciation of Music. I. 3(3-0).

A non-technical course in the appreciation and enjoyment of music.

Chorus, Orchestra, Band. I, II, III. 1(0-2).

Credit may be earned by participation in the organized musical groups.

Piano—Freshman and Sophomore Years.

I, II, III. 2 hours credit each quarter. One half-hour lesson a week.

I, II, III. 1 hours credit each quarter. For piano majors. Two half-hour lessons a week and one one-hour class lesson a week.

PHYSICAL EDUCATION**Courses for Men**

All men students are required to take the equivalent of six quarters of Physical Education. Individual exercise programs are arranged as test results indicate are needed, or on medical recommendation. Practice with varsity or freshman athletic teams may be substituted for the required work in physical education if departmental approval is secured.

Each student must furnish his own outfit, consisting of shirt, pants, supporter, socks, and shoes.

PE 1. Physical Education. I. 0.5(0-2).

Apparatus, track, games, remedial or restricted as indicated by classification tests.

PE 2. Physical Education. II. 0.5(0-2). Continuation of PE 1.**PE 3. Physical Education. III. 0.5(0-2).** Continuation of PE 2.

Emphasis on skills in sports and post-school activities.

PE 4. Physical Education. I. 0.5(0-2).

A variety of activities taught for physiological and recreational values.

PE 5. Physical Education. II. 0.5(0-2). Continuation of PE 4, with some selection on the part of the student.**PE 6. Physical Education. III. 0.5(0-2).** Continuation of PE 5, with some selection on the part of the student.**PE 10. Theory and Practice of Tennis. I. 2(2-0).**

A study of the fundamentals of the sport that are applicable to secondary schools.

PE 12. Training Room Methods. III. 3(3-0).

First aid and preventive measures, taping, bandaging, massage and manipulation, diet, conditioning athletes.

PE 17. Officiating and Management of Sports. III. 3(3-0).

A study of the rules of games and contests in relation to officiating and management in secondary schools.

PE 21. Physical Education Laboratory. I. 2(0-5).

For Physical Education majors and minors only.

Instruction and practice in the fundamental skills of athletic activities.

PE 22. Physical Education Laboratory. II. 2(0-5).

Continuation of PE 21.

- PE 23. Physical Education Laboratory. III. 2(0-5).**
Continuation of PE 22.
- PE 24. Physical Education Laboratory. I. 2(0-5).**
A practical course in the body mechanics of big-muscle activities. Applied to sports in season.
- PE 25. Physical Education Laboratory. II. 2(0-5).**
Continuation of PE 24.
- PE 26. Physical Education Laboratory. III. 2(0-5).**
Continuation of PE 25.
- PE 35. Personal Hygiene. II. 3(3-0).**
A study of the factors of healthful living, such as heredity, anatomical factors, personal habits, physical fitness.
- PE 36. Community Health. III. 3(3-0).**
A study of water supply, food and milk sanitation, ventilation, sewage disposal, lighting, housing, and health agencies.
- PE 43. Adult Recreational Activities. III. 3(3-0).**
A study of a selected group of carry-over activities for individual and community recreation.
- PE 50. Methods of Baseball. I. 2(2-0).**
A study of the fundamentals, including batting, fielding, conditioning and training, and methods of teaching baseball.
- PE 80. Theory and Technique of Games and Recreation. III. 2(2-0).**
A study of games and playground activities, general program and party organization, extra-curricular activities; methods and material sources, reading assignments.

Courses for Women

Each student is required to take six quarters of Physical Education during her college course.

In cases where the findings of the physical examination indicate it would be unwise for a student to participate in the normal program of required physical activities, an adjusted program of suitable activities will be substituted.

- PE 61. First-Year Physical Education. I. 0.5(0-2).**
Hockey, tennis, archery, golf and recreational sports.
- PE 62. First-Year Physical Education. II. 0.5(0-2).**
Volleyball, basketball, modern and folk dancing, archery, tennis, golf, and physical fitness exercises.

- PE 63. First-Year Physical Education. III. 0.5(0-2).**
Basketball, baseball, modern and folk dancing, archery, tennis, golf, and physical fitness exercises.
- PE 64. Second-Year Physical Education. I. 0.5(0-2).** Prerequisite:
PE 61 to PE 63 inclusive.
- PE 65. Second-Year Physical Education. II. 0.5(0-2).** Prerequisite:
PE 61 to PE 63 inclusive.
- PE 66. Second-Year Physical Education. III. 0.5(0-2).** Prerequisite:
PE 61 to PE 63 inclusive.

PHYSICS

- Ph 1. Introduction to Physical Science. I. 4(4-0).**
Introduces the student to physical science in such a way as to acquaint him with some of the general concepts in the fields of astronomy, physics, meteorology, and geology. An attempt is made to help the student learn to appreciate the nature of the universe in which he lives.
- Ph 15. General Physics. II. 5(3-4).** For Veterinary Medicine, Physical Education, Forestry, and Home Economics students.
A one-quarter course covering the principles of mechanics of solids and liquids, heat, magnetism and electricity, sound and light, together with practical applications.
- Ph 25. General Physics. I. 5(3-4).** Prerequisite: M 15 and M 16.
For students in Engineering.
A course covering the fundamental principles of mechanics forming the basis for studies in applied science.
- Ph 26. General Physics. II. 5(3-4).** Prerequisite: Ph 25. For students in Engineering.
A course covering the fundamental principles of sound and light.
- Ph 27. General Physics. III. 5(3-4).** Prerequisite: Ph 26. For students in Engineering. A continuation of Ph 26.
A course covering the fundamentals of magnetism, electricity, and modern physics.

PHYSIOLOGY

(See under "Biology")

POLITICAL SCIENCE

(See under "History and Social Science")

PSYCHOLOGY

(See under "Education")

SOCIOLOGY

(See under "History and Social Science")

ZOOLOGY

(See under "Biology")

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time of registration.*
