THE CALIFORNIA POLYTECHNIC

BULLETIN

A State Institution of Agriculture, Mechanics, Engineering, Printing and Home Making

A SCHOOL THAT IS BUILT ON A HILL CANNOT BE HID

San Luis Obispo, California

1927-1928

THE CALIFORNIA POLYTECHNIC CATALOGUE

Printed at the California Polytechnic Print Shop
1927

THE CALIFORNIA POLYTECHNIC

ADMINISTERED THROUGH

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SCHOOL CALENDAR

1927-1928

1927

Advanced registration of students, Mon., Tues., Wed., Sept. 5-7.
Registration of new students, Thur., Fri., Sat., Sept. 8-10.
Dormitories and Dining Hall open for students, Wed., Sept. 7.
Class work begins Mon., Sept. 12.
Home-Coming Day, Sat., Nov. 5.
Armistice Day, Fri., Nov. 11, Battalion and Band in parade.
Thanksgiving Recess, Wed. noon to Sun. evening, Nov. 23-27.
Christmas Vacation, Dec. 16-Jan. 1.

1928

Class work begins Mon., Jan. 2.
End of First Semester, Fri., Jan. 28.
Beginning Second Semester, Mon., Jan. 30.
Spring Vacation, Mar. 31 to Apr. 8.
Class work begins Mon., Apr. 9.
School Festival, Tues., May 1.
Decoration Day, Wed., May 30. Battalion and Band join in observance.
Alumni Reunion, Thurs., June 7.
Commencement, Thurs., June 7.
School Closes, Fri., June 8.
Agriculture Projects continue through summer.

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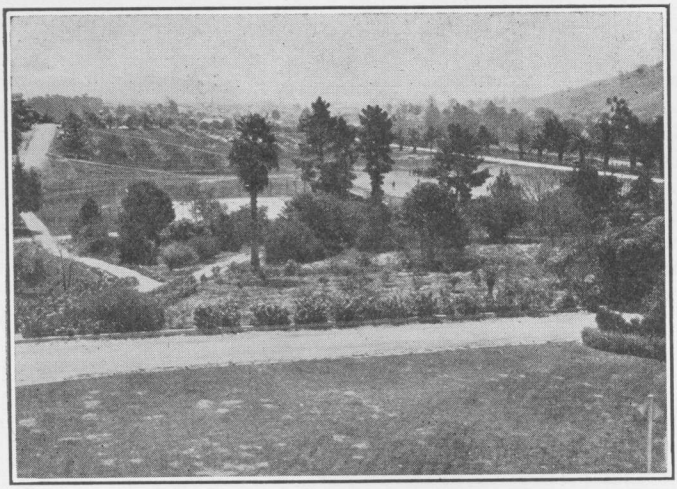
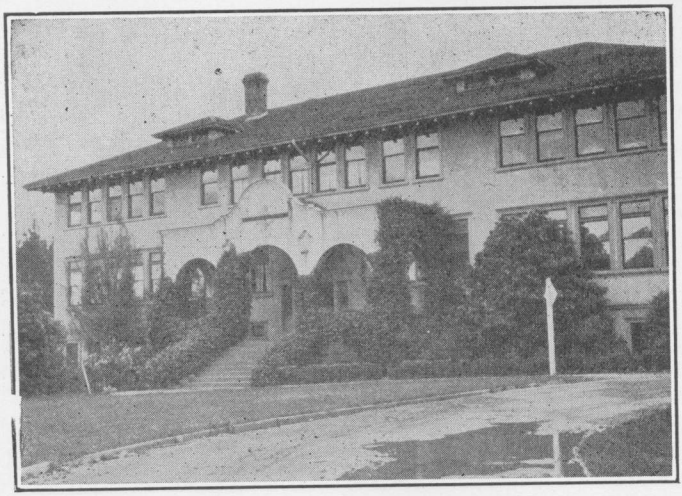


Looking South over Campus to California Boulevard.

The natural beauty of the campus is enhanced by variety of stately trees. Splendid specimens flourish of palm, pine, fir, acacia, eucalyptus and olive.



Home Making Building

LOCATION

The California Polytechnic is delightfully located upon a beautiful tract of land of about a thousand acres half a mile from the city limits of San Luis Obispo, the county seat. Paved highways lead by easy grades over the surrounding hills through passes to the north and south, toward the ocean, 13 miles to the west, and over the rolling hills that form a barrier between the ocean region and the San Joaquin valley. Natural advantages of climate are aided by the hills which halt the drifting fogs and break the occasional winds. There is an even temperature, with a minimum of 40 and a maximum of 90 degrees, affording one of the most uniform and enjoyable climates in California.

GROUNDS

The campus consists of thirty acres of gently undulating land, carefully landscaped and planted to trees and ornamental shrubs. Winding walks and drives traverse the entire campus. California Boulevard, leading from the city limits to the campus, is typical of beautiful California.

BUILDINGS

The Administration Building. This is a three-story structure with an attractive exterior of gray stucco. Here are the administrative offices, office of the President, and class rooms for English, Journalism, Economics, Agriculture, History, Applied Science, Mathematics, and Gas and Steam Engines. The department of Music, Dramatics and Public Speaking uses the east portion of the third floor. The first floor is occupied by the Military department as an armory, and by the department of Agricultural Chemistry.

Science Hall. This building forms one side of a quadrangle with the Administration as a second side. Science Hall is a stucco building the first floor of which is utilized for well equipped laboratories of Chemistry and Physics. The second floor is devoted to the students' Cooperative Store, and the combined Study Hall and Library. The Library is supplied with 5,000 reference books. Here the ambitious student may have ample opportunity for assigned and outside reading in English, History, Agriculture, Mechanics, Science and other subjects. About fifty magazines are regularly subscribed for, especially those dealing with Agriculture. An adequate supply of government and state bulletins is on file. Four sets of encyclopediae are available together with bound copies of various magazines for reference. On the third floor of Science Hall are two well-lighted drafting rooms and a music room.

Home Making Building. Of similar construction and stucco exterior, the Home Making building is primarily appropriated to the use of the women students. On the first floor is a gymnasium with adjoining shower and locker rooms. The second floor contains class rooms, and the third floor sewing and cooking laboratories, a pleasant dining room, and a reception room.

Print Shop. A well lighted, one-story frame building situated on the north edge of the campus. It is equipped with three late model linotype machines, cylinder and job presses, cutting and stapling machines, a battery of hand type cases, and other equipment usually found in a modern printing establishment. In addition to the regular instructional work of the classes in printing, the students print the "Polygram", the student-body paper published bi-weekly; the "Hand Book", published once a year and sponsored by the Poly-Y Club; "El Rodeo", the student annual, and the regular school Catalog.

Boys' Dormitory. In this two story building sixty boys find pleasant rooms. Two boys usually room together, and all are under the direct supervision of Captain Deuel of the Military. In the recreation, or lounging, room are comfortable rocking chairs, an open fire place and a table for playing pool. In this room the boys have their games and weekly business meetings.

The Barracks. Situated on the north side of the campus the Barracks hold accommodations for forty boys. As the name implies, the "Barracks" are unpretentious, and are of frame construction with a comfortable room for every two boys. Here also, the boys are under direct personal supervision at all times.

The President's Residence. Near the Barracks, and in close proximity to the Dormitory, the President's home is easily accessible to the boys. Both President and Mrs. Crandall take intense personal interest in the welfare of the boys, many of whom feel as much at home in the President's house as in their own Dormitory. Adjoining the President's home are the residences of the heads of the departments of Light and Power, and of Agriculture.

Dining Hall. A short distance north of the boys' Dormitory is an attractive, T-shaped building of stucco exterior. This Cafeteria Dining Hall is adequately equipped for boarding all the students.

Electrical Laboratory. In addition to serving as a place for instruction in electrical engineering, the Electrical Laboratory contains plant and generators for supplying light, heat and power for the entire campus. Benches equipped with gas, water, and circuit outlets line the sides of the walls. There instruments are calibrated, small machines inspected, and general tests made. A separate bench is used for battery repair work, lead burning, soldering and splicing. On the main floor is a vertical steam engine to which are belted a D. C. generator and a D. C.-A. C. converter. A horizontal steam unit is used to drive small-capacity generators of various types and makes. A gas unit, a semi-Diesel and a gasoline unit are also used for the same purpose. A large motor generator set is used for supplying D. C. and A. C. current at times when steam is not desired. Banks of transformers furnish voltage and capacities of wide range. A mercury arc rectifier delivers energy for battery charging.

A full line of instruments such as voltmeters, ammeters, wattmeters and watt hour meters, with many duplications, provide a wide range of values. Resistance boxes, coils and lamp banks furnish means for regulating currents of any intensity. Arc lamps, batteries, bells, telegraph instruments, telephone and radio equipment, allow a wide field for experimentation.

The instrument room is furnished with means for quick repair of apparatus as well as making special apparatus, winding of coils, etc. A proposed improvement likely to take place in this department in a very short time includes a $25,000 addition to the building together with equipment to include laboratories, class rooms and a complete miniature sub-station.

Mechanics Laboratory. Instruction in mechanics is given in the same building with the electrical work. Equipment for this consists of two 100-horsepower Sterling boilers, one 75-horsepower steam unit with direct connection to the generator, one 50-horsepower gas engine, four small gas engines, a small fuel engine and the usual gas and oil test equipment and laboratory instruments found in a well equipped laboratory. A 100-horsepower Diesel engine generating unit is contemplated in the near future.

Automobile Shop. This is one of a group of shops east of the academic buildings. The Automobile Shop is of frame construction and houses the work in automobile operation, upkeep and repair. It is equipped with a traveling crane for handling any heavy machinery parts to be repaired. It has stands, jacks, work benches and work platforms of the latest approved types. The cylinder boring machine will do reboring work with such accuracy that finished jobs will vary less than one ten-thousandth of an inch. The oxyacetylene welding equipment includes four torches of the latest type. There is proposed for the immediate future an equipment for electric welding for both D. C. and A. C.

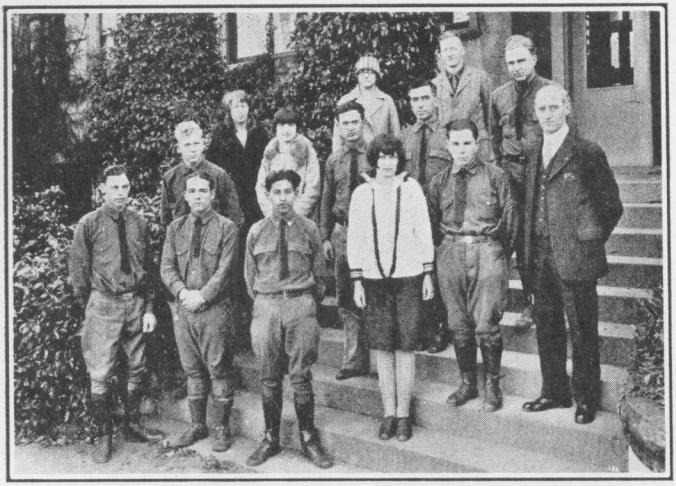
Aeronautics Laboratory. Adjoining the Automobile Shop, and operated in conjunction with it, is the Aeronautics Laboratory. Here the student learns all ground work connected with aviation. Motors are torn down, overhauled and built up according to precise aeronautical specifications. The shop is equipped with seven aircraft motors of representative types including rotary, vertical and vee-type, also propeller balancing stands and test stands. Motors are given actual running tests. Adequate equipment is provided for learning ship design, construction and rigging.

The Forge Shop. Here are located twenty-four individual forges and anvils, a power grinder, power hammer, tire upsetting and tire binding machines, blacksmith shears, drill press and power blower and exhaust fans. All necessary small tools and equipment to go with this heavy machinery are supplied.

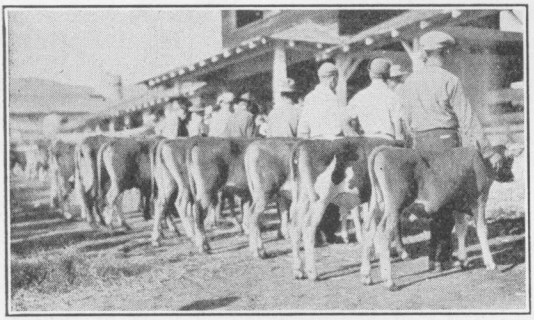
Machine Shop. This has a tool room where accurate check can be kept on all small tools being used. The large machinery includes eighteen lathes, two shapers, two drill presses, vertical mill, milling machine, tool grinder, planer, power hacksaw, and oven-type gas furnace. A recitation room adjoins the shop.

Woodworking Shop. Here is equipment for woodwork instruction for both engineering and agricultural students. The equipment includes individual motor-driven surfacer, jointer, band saw and five turning lathes. There are twenty-one work benches with full equipment of tools for each.

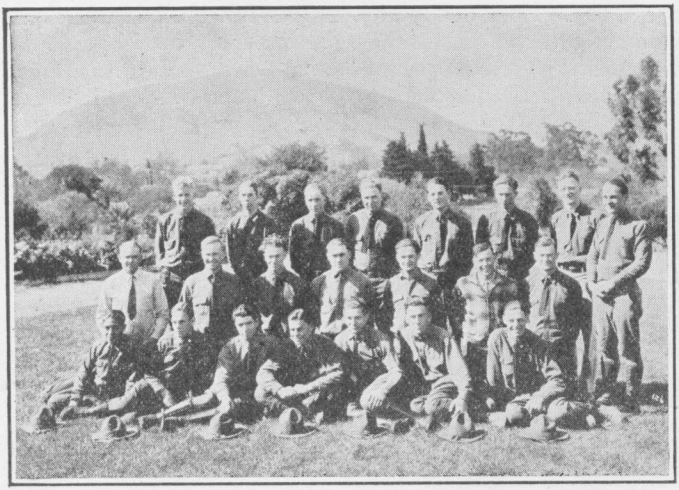
Other Buildings. There are a number of agricultural buildings, including barns, creamery, poultry houses, green houses and shops.



Student Affairs Committee.



Prize-Winning **Jerseys Raised Under Project Method.**



Block "P" Club.

STUDENT GOVERNMENT

The Student Affairs Committee, commonly called the "S. A. C.", has as its primary object the control of all student affairs, To make the body as representative as possible there are selected from among the students as members of the committee the four class presidents, two captains of cadet companies, a representative of the athletic committee, the school yell-leader, the editor-in-chief of the Polygram, together with the presidents of the following four chief student organizations: Junior Farm Center, representing the Agriculture students; the Mechanics Association, representing the boys taking shop work; the Amapola Club, representing the girls, and the Block "P" Club, representing the boys who have won major events in athletics. The faculty is represented by the president, vice-president and four other members, three of whom are advisors of student activities.

This committee decides all policies in regard to athletics, dramatics, operettas, school publications, and any other activities which include the students as a whole. For financing these activities, seven dollars a year is received from each student, five dollars going to athletics, and one each to the "Polygram" and "El Rodeo." In return for his money the student receives free admission to all school athletics on the campus, a bi-weekly copy of the Polygram and a copy of the annual edition of El Rodeo.

A general fund is maintained by the committee to support other student activities.

CLUBS

Amapola Club. A social club for girls. Its chief objective is to unite the girls in close association of friendship.

Band and Orchestra. These two organizations afford splendid opportunities to students who wish to learn how to play instruments and to know something of instrumental music. Although the California Polytechnic does not supply all the instruments, it does furnish sheet music to the student without cost. The present band is composed of thirty pieces, and the orchestra of twenty. The band is conducted as a complete military unit, as a company with full quota of officers. It plays at military drills, at patriotic observances, at school athletics and entertainments.

Block "P" Club. Exclusively for winners of the block letter in major athletics for boys.

Choral Club. A musical organization of both men and women. Membership depends upon ability and is subject to try-outs.

Circle "P" Club. An athletic organization of girls.

Co-operative Store. A store for books and supplies. Operated on the campus by and for students.

Debating Club. For those taking Public Speaking or Debating. The object of the club is to develop latent ability and to acquire self confidence.

Dormitory Club. Organized among the dormitory boys for promoting school spirit and social activities.

Dramatics Club. For those interested in plays, makeup, stage effects and play production. Composed of both men and women.

Galley Slaves. A club of men and women students who receive instruction in type setting and printing.

Glee Club. A girls' club; no restrictions as to membership.

Junior Farm Center. For students of Agriculture. This is an active organization co-operating with the Farm Bureau. The Junior Farm Center members take part in county farm work, contributing occasional articles to the Farm Bureau Monthly, exhibiting poultry and livestock at shows, visiting Farm Center meetings, and giving talks and entertainments.

Mechanics Association. The engineering and mechanics association is for the purpose of acquainting its members with phases of problems likely to be met in every day life after leaving school. Trips are arranged for, to include sugar refineries, oil fields and compressor plants, round houses, etc. The association's social program is varied and interesting.

Poly-Y Club. This is affiliated with the national Hi-Y Association, and is organized for the purpose of creating, maintaining and extending throughout the school and the community high standards of Christian character.

Press Club. Composed of men and women interested in Journalism and magazine work. Membership includes all students on the Polygram and El Rodeo staffs as well as Galley Slaves and the class in Journalism.

STUDENT PUBLICATIONS

El Rodeo. The student annual. It is edited and printed by the students. El Rodeo is well written, profusely illustrated, typifies accurately the spirit and activities of the students, and affords excellent training for staff members.

Polygram. A bi-weekly paper printed in the school print shop by the students. It is newsy and full of interest.

The Hand Book. A compact little book of information for new students. It is presented annually by members of the Poly-Y Club.

Polytechnic Catalogue. Although this annual catalogue is not strictly a student publication, the students of the Print Shop do all the linotyping and printing. From time to time small illustrated folders specially emphasizing certain phases of the school work appear, the printing of which is also done in the school shop by the students.

GENERAL INFORMATION

Entrance Requirements. Students of a wide variety of age and education may be found at the Polytechnic. The past year the ages ranged from thirteen to thirty-five. Most of those who come have had from one to three years of high-school training, abount 17 per cent are high school graduates, a few stragglers have had a little college work. The minimum entrance requirement is grammar school graduation, unless the applicant is at least sixteen years old and able to pass an aptitude test given by the school.

High School Credits. Credits received for work done in high school will be accepted here in so far as they cover subjects corresponding to those required in the course selected at this institution.

Board and Room. As there are no dormitories for girls on the campus it is required that girls whose homes are not in San Luis Obispo must live in homes approved by the president. For boys, however, rooms are provided in the boys' dormitory and the barracks, and in no case are boys whose homes are not in San Luis Obispo allowed to live elsewhere than in the dormitory or barracks unless accomodations in these buildings are exhausted, in which case the boys are referred to approved homes. Applications for room reservations in the dormitory and barracks must be made early and each application accompanied by a deposit of $2.50. Dormitory and barracks' students pay a flat rate for board at the Cafeteria dining hall on the campus.

Self Support. There is opportunity for the student who wishes to "work his way", especially for those students taking Agriculture. However, it is inadvisable for any student to enter school without funds sufficient to cover four or five months' board and room in addition to the initial outlay referred to under the heading *expenses*. Opportunity in Agriculture is afforded under the project method, and is made in each case by personal arrangement between the student and the head of the Department of Agriculture. The new student who wishes to be assigned a project should, if possible, write in advance to the head of the Department of Agriculture, California Polytechnic, for detailed information. Aside from work in Agriculture, there is a limited amount of work to be done in spare time on the campus and in town. Work of this nature includes janitor service, office work, waiting on tables, etc.

EXPENSES

No Tuition. There is no charge for tuition, and no registration fee except the student-body fee of seven dollars. A shop deposit of $5.00, refunded at end of year, is required of all students. The registration deposit and room reservation deposit, referred to under *initial outlay,* are made only by boys rooming in dormitory or barracks, and these deposits are refunded at the end of the school year.

Personal Expenses. Boys rooming in the dormitory or barracks are expected to supply their own sheets, pillow cases, blankets, towels, soap, drapes and rugs. Beds, pillows, mattresses, dressers, tables and chairs are

part of the room equipment and are furnished at no cost to the student. Rooms are assigned in the order in which applications are received. All rooms are outside rooms, confortable and well lighted. The student will need to estimate his personal expenses in the matter of extra clothing, incidentals and laundry. Sheets, pillow cases and towels are laundered by the school free of charge for students rooming at the dormitory or barracks, and there are adequate facilities in the dormitory basement in case the boy wishes to do his own laundry, thus saving the expense of having it done in town.

Initial Outlay for Boys. Boys who room at the dormitory or barracks should be prepared to pay a sum aggregating about $120.00 at time of registration. This initial outlay covers items as follows:

(a)	Military uniform, consisting of hat, shirt, trousers, puttees and shoes	$24.00
(b)	Registration deposit, refunded at the end of school year	30.00
(c)	Board, one month in advance	28.00
(d)	Room rent, one month in advance, the amount varying according to type of room,—but not exceeding	10.00
(e)	Textbooks and school supplies for immediate needs	15.00
(f)	Student-body fee	7.00
(g)	Shop deposit, refunded at end of school year	5.00
(h)	Room reservation deposit, refunded	2.50
	Total initial outlay needed when registering	121.50

Note.—For students taking mechanical drawing or machine work, item (e) will be ten to fifteen dollars higher. Items (b), (c), (d) and (h) do not apply to students living elsewhere than in dormitory or barracks. Under item (a) it is well to have two shirts instead of one, increasing this item four dollars and a half.

Further Expenses. For the remainder of the school year the student will need to pay:

Board, seven months at $28.00	$196.00
Room rent, eight months	80.00
Additional school books and supplies	10.00
Total	286.00
To which is added the initial outlay as listed above	121.50
Making the cost of one year at school	407.50

Expenses for Girls. Girls are required to wear a uniform consisting of white middy with blue detachable collar, black tie, and navy blue box-plaited skirt. The cost of this uniform is $9.50. A required gymnasium suit consists of black bloomers—made by girls of the sewing classes—white middy, black stockings and black tennis shoes. Girls taking Home Making courses are required to wear regulation white aprons made as part of sewing instruction. The regular student-body fee of seven

dollars, and an additional shop deposit of five dollars are required. Board and room for girls in approved homes should not exceed thirty-five dollars a month. Text books and school supplies should not be more than fifteen dollars a year. Personal expenses including clothing, laundry, amusements, class and society dues, etc., vary with each individual.

LOAN FUND FOR PROJECT WORK

In the department of Agriculture students are assigned projects—or farm operations—and are permitted to retain for themselves all the money they are able to earn in this way. These projects include poultry raising, hog raising, gardening, dairying, etc. In case any student desiring to take up one of these projects has not the funds available for the original financing of it, he may depend upon being able to borrow necessary funds from a local bank. This bank carries all such loans approved by the agricultural faculty.

AGRICULTURAL COURSE

Slogan—"Earn while you learn"

The Project Method. Agricultural instruction at the California Polytechnic is intensely practical, yet does not neglect scentific subject matter. As the method of teaching is better adapted for boys not less than sixteen years of age, older boys as a rule find the work more interesting and economically profitable. By means of projects, selected by the boys according to their needs or interests, the boys learn the fundamental principles of poultry raising, hog raising, dairying, etc. About a thousand acres of land are available for project work. It is possible for a boy to be interested in carrying out three or four projects at one time, each project calculated to net worth-while returns in money or, if the student desires, in poultry or livestock. If a boy is interested in poultry raising, the project method will allow him, under the loan-fund plan, to purchase and incubate five hundred or a thousand eggs, brood the baby chicks and feed and care for the young poultry under ideal conditions and expert advice. At the same time, this practical training is coordinated with related class room instruction. If he is interested in livestock, the project method, supplemented by the loan fund, will enable him to select his young stock, feed and fatten it, and finally dispose of it at a profit. If interested in grain, he may lease land on a crop-share basis, prepare the ground, seed it to the desired grain, and finally harvest and thresh the crop, hiring his own crew and arranging all details. From the beginning, the student is taught to budget his needs in the matter of feed, seed, labor, etc. for a period of time, and to carry out his project within the budget specifications. In this way he "learns by doing, and earns as he learns." It is practical dirt farming carried out with attention to scientific and economical ends. In all there are about ten different projects from which the student can make selections. Many of the boys are paying their own way by projects, while others leave school with a satisfactory start in purebred livestock or poultry in addition to a good education.

First Year

	Class	Practice
English I	5	0
Vocational Mathematics	5	0
Study	0	5
Physical education	0	4
Assembly	0	1
Agriculture I—field practice with project records and supervision	5	8
Farm Mechanics—carpentry, concrete, building, harness and rope work	0	8
Carpentry	0	2
Forge	0	2
Total periods per week	15	30

Second Year

	Class	Practice
English II	5	0
Vocational Mathematics II	5	0
Physical education	0	4
Assembly	0	1
Study	0	5
Agriculture II with project, records and supervision	5	8
Farm Mechanics—forge, cold metal, soldering, repair, farm machinery	0	8
Livestock Judging	0	4
Total periods per week	15	30

Third Year

	Class	Practice
English III	5	0
Chemistry or Biology	5	4
Study	0	5
Physical education	0	4
Assembly	0	1
Agriculture III with project, records and supervision	5	8
Farm Mechanics—farm power, stationary engines, electricity	0	8
Economics	5	0
Total periods per week	20	30

Fourth Year

	Class	Practice
U. S. History and civics	5	0
Elective—physics, math. or biology	5	0
Study	0	5
Physical education	0	4
Assembly	0	1
Agriculture IV with project, records and supervision	5	8
Farm Mechanics—auto, tractor and surveying	0	12
Total periods per week	15	30

Agriculture I. This course is a general presentation of agriculture and farm operations. It is the prospective farmer's apprenticeship year. In his classroom and library study he will familiarize himself with the larger and more general principles of good agricultural practices along all lines. In his practice and project work he will be given experience to develop skill in farm operations, handling horses and machinery, care of various farm animals, also care of farm equipment.

Agriuclture II. The course is divided into Animal Husbandry and Horticulture. This enables each student to obtain concrete, authentic information on many phases of farming. It is especially beneficial to the boy taking two or more subjects. It gives him the idea of diversified farming, the proper labor balance in the growing of various crops and the proper labor income.

1. Winter vegetables—preparing seed bed, cultivating, harvesting and marketing.
2. Small fruits—propagation, culture and management.
3. Orchard practices—includes pruning, spraying, budding, grafting, nursery stock.
4. Dairy and beef animals—most common breeds of both on the school farm.
5. Hogs, sheep, horses—good specimens of each class and various breeds.

The school being most ideally situated has for one of its strongest courses the growing of winter vegetables, especially peas.

Agriculture III. The third year copies the plan of the second and carries the student into more advanced agriculture.

1. Feeds and feeding—applied to all livestock.
2. Veterinary science—first aid and treatment of common ailments.
3. Creamery manufacture—practice given in plant on campus, producing some 3,000 pounds daily.
4. Deciduous fruits—advanced work along lines started in Agriculture II on school orchards.
5. Citrus fruits—same general plan as deciduous.
6. Landscape gardening—fine opportunity with green houses, lath house and propagating buildings.
7. Poultry—laying flocks, brooding and incubation, poultry-house construction, sanitation and disease.

Situated as we are at this school with no winter frosts, winter flowers and landscape gardening are attractive courses.

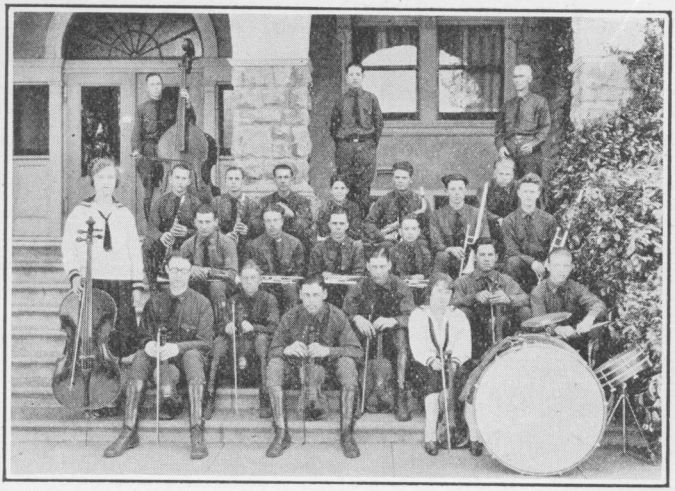
Agriculture IV. The fourth year student's time is spent almost entirely with farm management and farm economics problems. The running of the entire farm is in the hands of the fourth-year students. The student starts as an apprentice, then leases or is a tenant-farmer during his second and third year, and the fourth year he takes the place of a land owner and manager.

Farm Mechanics. The farm mechanic courses which run through the entire four years are complete in every detail. For students in the Special Course or the Four Year Course the many phases of mechanics as applied to the farm will be presented in their logical sequence. The shop and laboratory courses include instruction in carpentry, concrete, harness and rope work, forge, soldering, repair of farm machines, farm power, stationary engines, electricity, auto repair, tractor repair and operation, surveying, etc.

MECHANICS—ENGINEERING COURSES

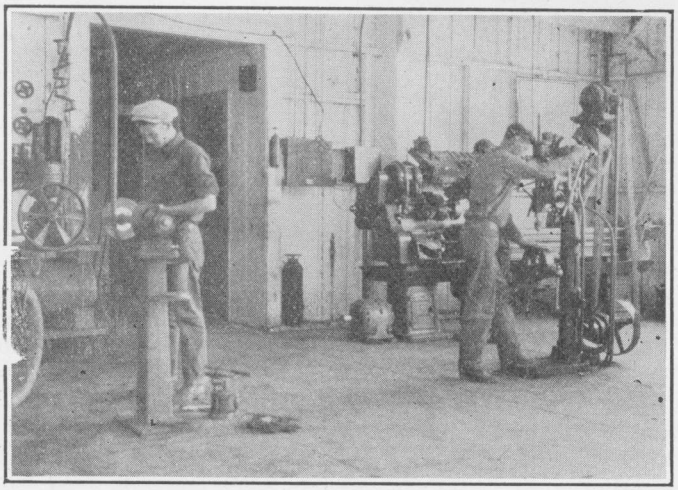
Description. The Mechanics Engineering Department offers a general course and number of specialized courses. It is the purpose of the department to develop that amount of trade skill sufficient to fit the student for the work in which he is to earn a living, and, at the same time, provide him with a foundation which will enable him to rise in his trade as opportunity offers. All courses leading to graduation provide a good education based upon requirements of the State Board of Education for graduation from high school.

The General Course is intended to meet the needs of those students who defer deciding upon the courses in which they wish to specialize. If, however, a student has evidenced aptitude for a particular work, he may be transferred from the general to a special course. The general course is of particular advantage for one who wishes to work into a position as minor executive in an industrial concern in which knowledge of mechanics is essential. The course provides training in at least two shops, a good grounding in science, and both theoretical and practical knowledge of steam and gas engines, electricity, surveying and hydraulics. The general course is as follows:



Orchestra

Agriculture Teaches Why "Pigs is Pigs"



Skill Correlated With Knowledge

GENERAL COURSE IN MECHANICS

First Year

	Class	Practice
English I	5	0
Applied Science	5	0
Algebra or Applied Math.	5	0
Mechanical Drawing I	0	8
Study	0	5
Shop (forge, 1st semester; wood work, 2nd sem.)	0	9
Physical Education	0	4
Assembly	0	1
Glee Club (elective)	0	2
Consultation with counselor	0	1
Total periods per week	15	30

Second Year

	Class	Practice
English II	5	0
Physics	4	4
Geometry or Applied Math.	5	0
Mechanical Drawing II.	0	6
Study	0	5
Machine Shop I	0	8
Physical Education	0	4
Assembly	0	1
Glee Club (elective)	0	2
Consultation with counselor	0	1
Total periods per week	14	31

Third Year

	Class	Practice
Chemistry	4	4
Gas and Steam Engines	3	4
Electric shop V	5	4
Solid Geometry and Trigonomentry	5	0
Mechanical Drawing III	0	4
Study	0	6
Physical Education	0	4
Assembly	0	1
Consultation with couselor	0	1
Total periods per week	17	28

Fourth Year

	Class	Practice
English III	5	0
Advanced Algebra (1st sem.)	5	0
Hydraulics (2nd semester, 3 class and 4 practice pds.)	0	0
U. S. History and Civics	5	0
Surveying	1	4
Shop Sketching and Math.	3	2
Study	0	5
Shop Work, elective (opportunity to specialize)	0	9
Physical Education	0	4
Assembly	0	1
Consultation with counselor	0	1
Total periods per week	19	26

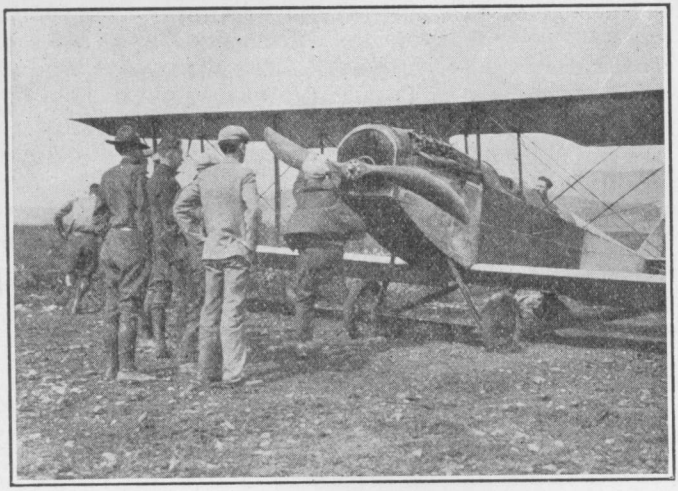
Gas and Steam Engines. An elementary course in the study of the theory and practice connected with gas and steam engines. Among the subjects covered are: types of engines, indicator cards, mechanical and thermal efficiencies, care and trouble finding, and construction and care of boilers.

Elementary Hydraulics. A one semester course in elementary Hydraulics dealing with the properties of water, at rest and in motion. It makes a study of problems, friction loss, pipe sizes, pump efficiencies and cost of pumping.

Surveying. A practical course in elementary surveying includes leveling, profiling, mapping, surveying for and computing area, and leveling for irrigation. The student becomes familiar with the careful handling and adjustment of instruments.

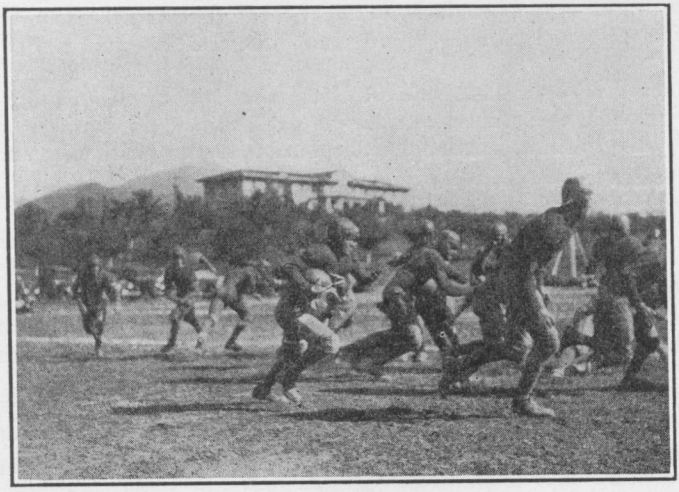
Shop Sketching and Mathematics. This is a study of design problems that will bring out the student's originality in whatever vocation he has chosen. The sketches are made freehand in a readable manner.

Forge Shop. A one year course in forge includes practical work in both iron and steel forging with studies in the properties, manufacture, and heat treatment of both iron and steel. The shop work includes the common operations in forging, such as drawing, bending, welding, tempering, toolmaking and general repair work for farm and shop.



Whirling the Propeller.

Potential Layers. Part of a Project Flock.



Earning the Right to Wear the "P".

Wood Work I. A practical course in bench wood work. The course is so planned that the student will obtain practice in making the common joints used in carpentry and cabinet making. Work is given on the use and care of hand tools. Study of the various kinds of lumber and the uses for which they are particulary adapted is also made.

Wood Work II. This course continues the work given in course I and takes up the use and care of power machines, saw filing, and the use of the steel square. Particular emphasis is laid on the principles of carpentry construction as exemplified in farm buildings and small houses, estimating and bills of materials.

Wood Work III. Elective courses in Carpentry, Cabinet Making, Pattern Making or Wood Turning. The student will be expected to elect one line of wood work and follow it throughout the year. Advanced students will be given practice as shop foremen and foremen of repair gangs, thus giving them practice in handling men as well as the responsibility of production.

Special Courses in Mechanics. These courses are offered to students who wish to specialize as machinists, auto mechanics, electricians or draftsmen. The arrangement of the courses is such that related work is applied directly to shop work, and for convenience the shop work is grouped according to the vocation chosen. Group I is for machinists, Group II for electricians, Group III for auto mechanics, and Group IV for draftsmen. An outline of the courses is as follows:

OUTLINE OF SPECIAL COURSES—MECHANICS

First Year	Class	Practice	Second Year	Class	Practice
All Groups:			All Groups:		
English I	5	0	English II	5	0
Vocational math. I	5	0	Vocational Mathematics II	5	0
Mechanical Drawing I	0	8	Physical education	0	4
Applied science	5	0	Assembly	0	1
Physical education	0	4	Study	0	3
Assembly	0	1	Glee Club (elective)	0	2
Study	0	3	Conference with counselor	0	1
Glee Club (elective)	0	2	And one of following groups:		
Conference with counselor	0	1	Group I—Machinists:		
And one of following groups:			Blue-print reading	0	2
Group I—Machinists:			Machine shop II	0	13
Forge shop 1st sem., machine shop 2nd sem.	0	11	Physics	4	4
Group II—Electricians:			Group II—Electricians:		
Forge shop	0	4	Electric shop II	4	4
Electric shop I	4	4	Electrical Drawing I	0	6
Group III—Auto Mechanics:			Physics	4	4
Forge shop 1st sem., machine shop 2nd sem.	0	11	Study	0	1
Group IV—Draftsmen:			Group III—Auto Mechanics:		
Wood Work 1st sem., forge 2nd sem.	0	11	Auto shop I	5	0
			Machine shop II	0	8
			Auto shop II	0	10
			Group IV—Draftsmen:		
			Physics	4	4
			Mechanical drawing II	0	15
Total periods per week		45	Total periods per week		45

Third Year	Class	Practice
All Groups:		
Physical education	0	4
Assembly	0	1
Study	0	3
Conference with counselor	0	1
And one of following groups:		
Group I—Machinists:		
Chemistry	4	4
Electric shop V	5	4
Machine shop III	0	19
Group II—Electricians:		
Chemistry	4	4
Electric shop III	5	4
Mechanics I	3	4
Machine shop I	0	12
Group III—Auto Mechanics:		
Physics	4	4
Auto shop II	0	15
Auto shop VI	5	0
Machine shop III	0	8
Group IV—Draftsmen:		
Mechanical drawing III.	0	12
Machine shop I	0	8
Electric shop V	5	4
Mechanics I	3	4
Total periods per week	45	

Fourth Year	Class	Practice
All Groups:		
English III	5	0
U. S. History and civics	5	0
Physical education	0	4
Assembly	0	1
Study	0	1
Conference with counselor.	0	1
And one of following groups:		
Group I—Machinists:		
Machine shop IV	0	19
Shop sketching and mathematics	3	2
Elective	0	5
Group II—Electricians:		
Electric shop IV	5	8
Shop sketching and math.	3	2
Elective	0	11
Group III—Auto Mechanics:		
Auto shop IV	0	19
Auto shop V	5	0
Auto shop VII	5	0
Group IV—Draftsmen:		
Mechanical drawing IV	0	16
Machine shop II	0	8
Elective	0	5
Total periods per week	45	

EXPLANATION OF GROUP I—MACHINISTS

Machine Shop I. The student begins with the chipping, care, tempering and grinding of chisels; the filing and study of different kinds of files and the polishing of finished surfaces. Class work is given in blue print reading, and the use of the common small tools. Machine work is begun on the drill press.

Blue Print Reading. A study and analysis of machine shop blue prints. The student is taught to pick out parts of a complicated drawing so that he may make any part of a machine from the prints of the whole. This course is given in connection with the machine shop work.

Machine Shop II. This begins with the simple turning on a lathe. As a student develops skill, the machine work assigned becomes more difficult until he has completed all of the work commonly done on a lathe.

Machine Shop III. A continuation of course II and in addition planer and shaper work is taken up with a study of each machine and the kind of work done on each. The student begins with plain surface finishing and as his skill develops takes up more complicated work.

Machine Shop IV. This course deals largely with operations of milling machines and automatic tool grinders, with practice in general repair work. The student is also given an opportunity to obtain some experience in shop foremanship.

EXPLANATION OF GROUP II—ELECTRICIANS

Electric Shop I. Elementary electricity and magnetism. This course is for beginners and those whose electrical experience has been limited. The course begins with magnetism and takes up the elements of magnetism and electricity.

Electric Shop II. Direct current machinery. This is a continuation of the previous course in which the theory and its application are devoted to different types of generators, motors and switch boards, regulating and control devices, tests and studies of machine characteristics.

Electric Shop III. Alternating current machinery. The theory of generation and distribution of alternating current with a study of A. C. equipment and problems.

Electric Shop IV. A general course in problems and practical work to prepare the student for a particular job including conduit wiring and switchboard work, and repairs to equipment.

Electric Shop V. The work begins with magnetism and simple circuits and goes as far as the induction motor with its controls and protective devices. This course is intended for the student in other vocations who should have a knowlege of electrical equipment to assist him in his vocation. Agricultural students will be accepted in this course if they have had physics.

Electric Shop VI. A course in the electricity of the home, especially arranged for students in home making. Studies and tests are made in the operation costs and the efficiency of different types of household appliances. Instruction is given in methods of interior lighting, decorative effects, interpretation of lighting power bills, proper use of fuses, fire risks and work in first aid.

EXPLANATION OF GROUP III—AUTO MECHANICS

Auto Shop I. Includes class and laboratory work consisting of a complete set of repair jobs to be done on the regular shop machines and equipment. These repair jobs are so arranged as to give the student theory and practice in performing the common repair work met in the average repair shop. The student is advanced to the more difficult jobs as rapidly as he demonstrates his ability to do the work.

Auto Shop II. Continuation of Auto Shop I with the addition of commercial work. The student is allowed to do commercial repair work as soon as he proves himself able to handle the work.

Auto Shop III. Aeroplane Motors. A course in the principles of construction, and practice in overhauling aeroplane motors. For the student who has proved himself above the average in Auto Shop II who wishes to go into aeroplane motor work, and may be taken in place of Auto Shop IV.

Auto Shop IV. Special commercial repair work and experience in cost keeping and shop management. This course is arranged to give the student training in the line of work that he needs the most. All students are given practice in the use of acetylene torch.

Auto Shop V. Special work in garage management. Shop accounting, shop records, shop cards, and general shop planning.

Auto Shop VI. This course considers the application of electricity to the automobile with a study of auto electric equipment, wiring, diagrams, different circuits and ignition systems and includes lectures and practice in locating electric and ignition troubles, and general repair work.

Auto Shop VII. A continuation of Auto Shop VI with more practice in sketching and diagram drawing and related mathematical computations.

Auto Shop VIII. This is a general course intended for students not specializing in auto mechanics. The work is of such a nature that the student will become familiar with the fundamentals of the automobile and be able to make minor repairs on his own car.

EXPLANATION OF GROUP IV—DRAFTING

Mechanical Drawing I. Elementary principles. This is a course for beginners in which the use of drawing instruments is taught by following simple exercises in lines, lettering, circles and curves. A selection of graded exercises brings out the major principles used in all general mchanical drawings.

Mechanical Drawing II. Machine design. A continuation of the above course for students majoring in mechanics and machine shop. It contains more advanced work in geometrical problems, general and detail drawings of machines and cross sections.

Mechanical Drawing III. A continuation of Mechanical Drawing II. For students who wish to become mechanical draftsmen. Special attention is given to see that the student is assigned work in which he most needs practice.

Mechanical Drawing IV. A more advanced course in original design of machines. The problems are assigned to bring out the student's originality. Class work will be given in strength of materials.

Architectural Drawing I. Exercises in conventional symbols and diagrams as applied to simple carpentry work. The design and methods of construction of simple objects with estimates of amounts and costs of materials. This course is intended for students who are majoring in carpentry, agriculture or home making. Open to students who have completed Mechanical Drawing I.

Architectural Drawing II. Farm architecture. This is a continuation of the preceding course. Students of agriculture are given problems in designing of farm buildings; students of home making, design of bungalows and their equipment, changes in the design of existing buildings, interior arrangement, lighting, heating, and sanitary arrangement.

Electrical Drawing I. An elementary course for regular students in electricity who have completed Mechanical Drawing I. This course consists of simple and conventional diagrams supplemented by drawing of circuits used in shop work and class room problems.

Electrical Drawing II. A continuation of Course I. The student is advanced to more difficult problems of designs and switchboard drawing as rapidly as he masters the work.

Electrical Drawing III. Continuation of Course II. The student specializes on some line of electrical drafting or design.

HOME MAKING COURSE

Purpose. The purpose of the Home Making Course is primarily to fit girls for home life. The course is founded in the belief that the making of a home and its proper management entail demands that are all too seldom recognized: demands for general education, for a knowledge of the sciences underlying good housekeeping, for a training in habits of good housewifery and artistic self-expression.

The course also serves as admirable preparatory training for girls who wish to fit themselves for nursing. In fact, the training period is materally shortened for girls who have graduated from this course. It serves, too, as a preparatory course for the university and for teachers' colleges, although in this case a few modifications are recommended.

Throughout the four years of work a consistent effort is made to keep the girls close to natural conditions. They are trained in economy in both the purchase and use of materials, whether for dress, food, furnishings or adornment. They are taught to serve meals on a limited amount of money, to adapt themselves to the needs of families of various types, which may include infants or invalids, and to learn the principles of table service. They are trained in the wise planning and the appropriate furnishings of a house, whether the amount to be expended is large or small. They learn the responsibility of the woman to spend the family income wisely.

First Year

	Class	Practice
English I	5	0
History I	5	0
Household arithmetic	5	0
Hygiene and first aid	3	2
Music	2	2
Sewing I	0	10
Physical education	0	4
Study	0	5
Assembly	0	1
Conference with counselor	0	1
Total periods per week	20	25

Second Year

	Class	Practice
English II	5	0
History II	5	0
Biology	3	4
Study of foods	3	0
Cooking I	0	8
Millinery	0	6
Public Speaking	1	2
Music	0	2
Phisical education	0	4
Study	0	5
Assembly	0	1
Conference with counselor.	0	1
Total periods per week	12	33

Third Year

	Class	Practice
English III	5	0
Household Science	3	2
Elective	5	0
Home-management	3	5
Public speaking	1	2
Drawing and Appld. Arts I.	0	7
Sewing II	0	6
Physical education	0	4
Study	0	5
Assembly	0	1
Conference with counselor	0	1
Total periods per week	12	33

Fourth Year

	Class	Practice
U. S. History and civics	5	0
Applied Arts II	3	7
Dietetics 1st sem.; gardening 2nd sem.	5	(5)
Cooking II	0	7
Home Furnishing	3	4
Physical education	0	4
Study	0	5
Assembly	0	1
Conference with counselor..	0	1
Total periods per week..	16	29

Household Arithmetic. This is a course in arithmetical problems which apply to the work of the housekeeper. It includes practical work in the computation of problems concerned with materials for clothing, hats and food preparation, and the advanced problems arising in the care of a home. Each girl is required to make a personal budget and to study the wise budgeting of a family income. The students are encouraged to become proficient in rapid calculation of the problems that arise in everyday work in the laboratory and in the home.

Hygiene and First Aid. This is an elementary course in the care of the body under normal conditions and its temporary treatment in emergencies.

Millinery. A course in the making, trimming and renovating of hats. The purpose of the course is not to train girls for a trade millinery, but to teach them enough of the art to assist them in making and renovating their own hats.

Study of Foods. This involves the study of foods, their source, composition, cookery, digestion and economic value, and elementary principles of meal planning.

Sewing I. Plain sewing, including the fundamental principles of hand and machine sewing, as involved in the making of undergarments and of simple dresses. Each student is required to make undergarments and three simple dresses and the necessery outfit for kitchen. Instruction is also given in patching and mending. An elementary study of textiles is also made. Estimates of the expense of finished garments are required in all sewing courses.

Sewing II. This is a more advanced course than Sewing I, and includes the making of dresses involving more difficult work, handling of silk and woolen materials and the making of linen accessories for use in the household.

Cooking I. A laboratory course in conjunction with the Study of Foods. It includes practical instruction in the preparation and cooking of cereals, vegetables, milk, cheese, eggs, fish and meat, bread, and serving of very simple meals; a study of ranges, fuels, cleansing agents and kitchen appliances.

Cooking II. The second year of laboratory cooking includes the preservation of fruits and other foods, the making of pastry, cake and desserts, and considerable experience in the planning and serving of meals, including a careful calculation of the cost of the meals.

Household Science. The first semester, includes operation of doorbells, fuses, fire extinguishers, freezers, heating. Household Physics second semester with elementary principles of physics, and ventilating.

Home Management. This work includes a study of systematic housekeeping, buying, household accounts, home laundry, cleaning, water supply, sweeping, dusting, bedmaking.

Home Furnishing. This includes planning the home and its furnishings with reference to convenience and economy, with greatest possible comfort and attractiveness.

Dietetics. This course reviews previous work in foods and cooking, emphasizing food to obtain the greatest possible health at low cost, a special study of diets for children as well as adults.

Drawing and Applied Arts I. This course includes freehand drawing and a study of colors, in their relation to dress and home furnishing.

Applied Arts II. Prerequisite, drawing. A study of color and design applied to costume design, and work in stenciling, and use of leather and metal.

Home Gardening. This is a practical course of one semester which consists of general study of the propagation of plants by cutting, layering, budding, grafting and by seeds. The principles of floriculture and landscape gardening are also studied and practical work is given in the greenhouses, hot beds, and cold frames on the school grounds.

PRINTING COURSE

Need for trained printers. The work in printing is offered as a result of the popular demand for good printers. For those who select printing as a vocation a four-year course is recommended. For an older student who has had the necessary educational background and is quick to learn, the course may be completed in two years. Equipment of the shop is complete. The four-year course embraces a study of elementary and advanced composition, imposition, press and linotype work.

First Year	Periods	Second Year	Periods
English Composition	5	U. S. History	5
Physical Education	4	Physical Education	4
Assembly	1	Assembly	1
Print shop work	34	Print shop	34
Consultation with counselor	1	Consultation with counselor	1
Total periods per week	45	Total periods per week	45

Elementary Composition. This embraces principles of typesetting, proofing composition, correcting proofs, distribution, style, and care of materials.

Advanced Composition. This course includes plain book composition, makeup, title pages, special book features, display composition, advertising composition, job composition and proof reading.

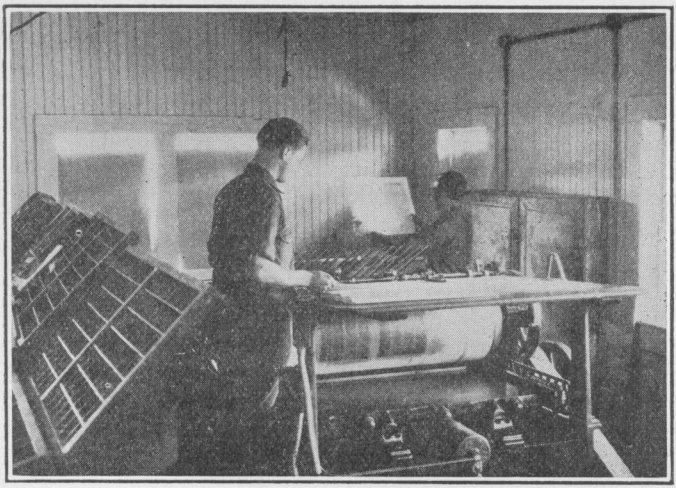
Linotype Composition. This course embraces keyboard practice, mechanical details, care of machines, care of metal, straight matter composition and intricate composition.

Imposition or Stone Work. This embraces the elements of lockup, making proofs and corrections on stone, laying out forms.

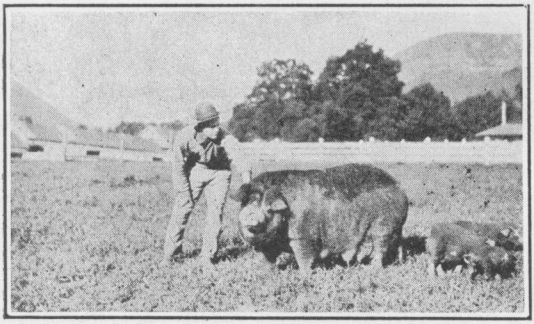
Platen and Cylinder Press Work. This includes oiling and cleaning, feeding blank stock, then live jobs, washing press, press preparation, care of rollers, grades of paper and sizes, paper handling, cutting stock.

THE ACADEMIC DEPARTMENT

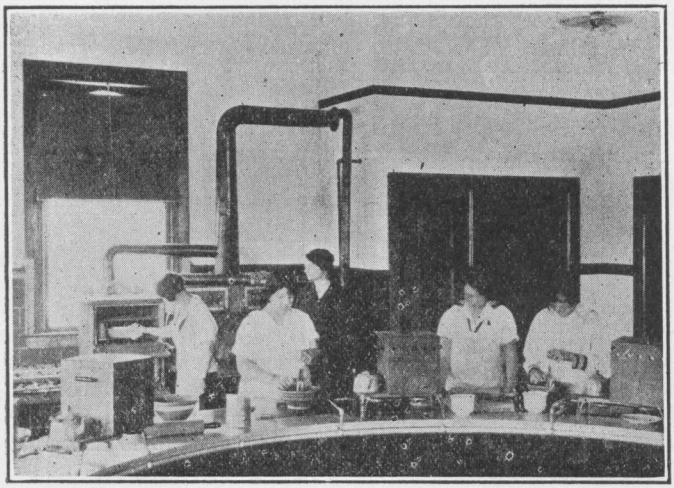
The work of the Academic Department is designed primarily to meet the needs of the students in the vocational courses. Much of the work in these courses is dependent on an adequate foundation in English, mathematics and the arts and sciences. The relation of vocational to academic work is shown in each case under the outline of the course.



Where this Catalogue was Printed.



A Sow and Litter Project.



Calories and Cooking.

In addition to this work the department also offers an Academic Course. This course is given chiefly to meet the needs of students who enter the vocational courses, but who, finding that they possess the desire and aptitude for more advanced study than this school provides, desire to add to their work the few subjects which will properly prepare them for college. A limited number may also be enrolled who are unable to obtain an adequate high school education at their own homes.

No definite course is laid down for the students in this department as their objectives should determine its content. The minimum requirement for graduation is sixteen units including three years of English, a year of laboratory science, and a year of American History and Civics. All courses should be so arranged as to provide for three years of work in at least one academic subject besides English. Students who wish to enter college should take at least twelve units of academic work, which should be so arranged as to provide three years of work in at least two academic subjects besides English. The exact work taken would depend upon the course in which the student wishes to enroll in college. In every year electives may be chosen from the vocational subjects. Physical education is required throughout the course.

The following list indicates the subjects offered. It is not essential that all of them be taken or that they be arranged in the exact order given:

First year—English I, Algebra, History I, Biology, electives.

Second year—English II, Geometry, History II, Spanish I, electives.

Third year—English III, Trigonometry and Solid Geometry, Chemistry, Spanish II, electives.

Fourth year—Algebra II, U. S. History and Civics, Physics, Spanish III, electives.

Among the electives offered are economics, sociology, music, public speaking, mechanical drawing, and subjects chosen from the courses in agriculture, mechanics, engineering, printing, and home making.

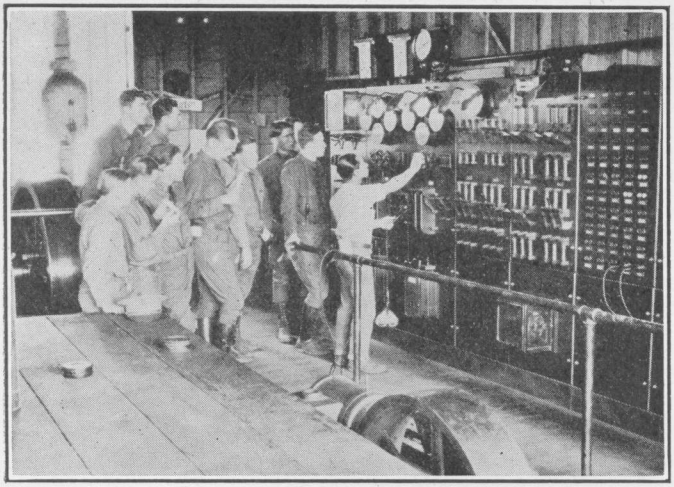
ENGLISH

English I. This course has two divisions, composition and literature. The first emphasizes clearness, conciseness, and accuracy of written and oral expression. The second attempts to arouse an appreciation of good modern literature and to teach the student to express the ideals expressed by the authors in terms of his own experiences.

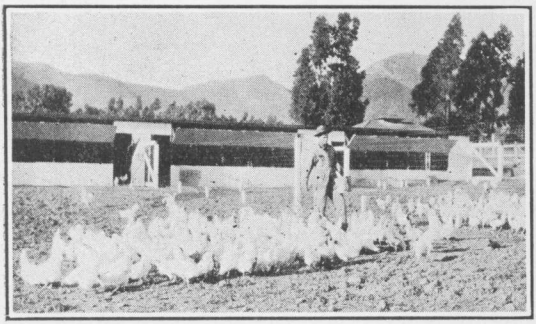
English II. This course is a continuation and extension of the work in English I. Ability to address an audience is further developed by informal debating and reports. The work in literature and composition is correlated with the vocational needs of the students.

English III. The purpose of this course is to prepare the student for college and for the enjoyment of leisure hours. The work is as practical as possible, but is cultural as well as vocational. In composition the organization of material of fifteen hundred words or more is emphasized. The development of the ability to give reports of some length and to take charge of organizations and present propositions in a clear manner constitute the aim in oral English.

English IV. This is a survey course, purporting to familiarize the student with the history of English literature from the beginnings to



A Group in the Electrical Laboratory.



Another Project— Laying Hens.

Floriculture Class at Work.

modern times. Various masterpieces are read rapidly, and a few are studied more intensely that the student may recognize the main characteristics of English literature, and duly appreciate their significance. As in English III, the main emphasis of the course is on the stimulation of a love of good literature rather than upon technical analysis.

Journalism. The purpose of this course is two-fold: first, to teach the student to read newspapers and magazines intelligently; second, to acquaint him with the principles of writing straight news stories, editorials and special features. The course is a practical one, being correlated with the issuing of the school paper, The Polygram.

Each student is assigned a special news "run" which he must cover every week. He is also responsible, or partly responsible, for some department of The Polygram. A system of shifting this departmental work makes it possible for the student to try himself out in various departments of journalistic endeavor, but if he shows special interest or adaptability to some particular phase of the work, he is given the opportunity of doing much of his work in that field.

Enough work in grammar and good usage is given to enable the student to write clear, snappy newspaper English.

Some attention is given to the study of advertising.

The students of this department also take an active part in the editing of "El Rodeo," the school year-book, and help with the make-up of various minor school publications.

MATHEMATICS

The courses in mathematics are designed to develop reasoning power and ability to solve actual problems as they are likely to occur. Emphasis is placed upon vocational needs.

Algebra. Expands one's knowledge of arithmetic, and presents a system of reasoning which simplifies the solution of complicated problems.

Geometry, plane and solid. Deals with the facts of plane and solid figures, squares, triangles, cubes, etc.

Trigonometry. Essential to land measurements and engineering.

Vocational Mathematics, I and II. The first and second sections of a two-year course containing those elements of arithmetic, algebra, geometry and trigonometry essential to vocational work.

HISTORY

History I, Ancient and Medieval. The ancient and medieval world studied in relation to present-day life and institutions.

History II, Modern European. Emphasizing the gradual development of modern conditions.

History III, American History and Civics. A study of the history of the American people, especially with reference to economic, social and civic aspects. It includes a study of present-day conditions and the position of the United States as a world power.

SCIENCE

Biology. A study of the science of living things. It gives a knowledge of plant and animal kingdoms and of the relation of different species to the welfare of man. This course includes a study of metabolism, plant and animal breeding, reproduction, the living cell, evolution and hygiene.

Chemistry. This course contains the fundamentals of a foundation course for later work in the chemistry of industry, chemistry of agriculture and chemistry of the household.

Applied Science. A study of principles of physical science essential to a knowledge of work of the vocational courses. It may be taken as an independent course or as a preparation for more advanced work in physics.

Physics. A study of the mechanics of liquids, gases and solids, together with the laws of electricity, light and sound. It stresses the application of physics to industries, and prepares the student for higher courses in mechanics.

ART

Courses in Art and Applied Art are provided for home-making students and others of special ability.

SPANISH

Three years of Spanish are provided for those who desire it. The course is intended primarily for those who desire to enter the universities, although others who wish to enter vocations which require knowledge of the language are also admitted to the course.

MUSIC

A course in chorus singing is offered to all students who have vocal ability.

PUBLIC SPEAKING

Interpretative speech is recognized as being not only ornamental and cultural, but useful and necessary. Men and women in business and professional occupations are more and more recognizing the need of training for effective speech. It is the aim of this course to develop confident speakers who can convey their ideas or the ideas of others.

DRAMATICS

A course in play making, play production, makeup, stage effects and settings

ECONOMICS AND SOCIOLOGY

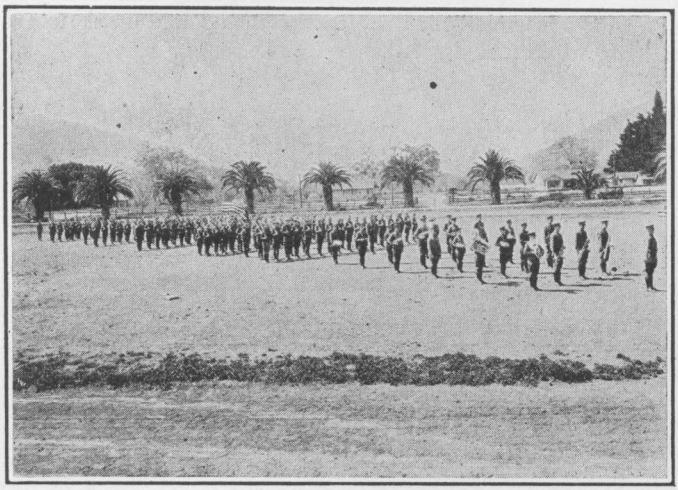
These two courses of half a year each are of special interest and value to advanced students in this institution. They are offered as electives to Juniors, Seniors and graduate students.

JUNIOR COLLEGE DIVISION

Beginning with the fall term, 1927, the California Polytechnic offers not only regular four-year courses previously offered in Agriculture, Printing, Home Making and Engineering-Mechanics, but an additional two years advanced work in these subjects. This additional work of college grade is the result of an increasing number of applications each year from high school graduates seeking admission to the institution. To meet definite demands, California Polytechnic has arranged definite courses. High school graduates seek practical and technical training completed in much shorter time than is required at a university. The interest of these high school graduates is not in prescribed college courses but in a combination of theory and practice which will fit them, with least expenditure of time and money, to fill desirable positions. It is the purpose of California Polytechnic to give strong courses enabling young men to be high class assistants, foremen or superintendents in trades and industries and agriculture.

In offering these courses, California Polytechnic is meeting a real need by rendering a service duplicated by no other institution on the coast.

Attention!



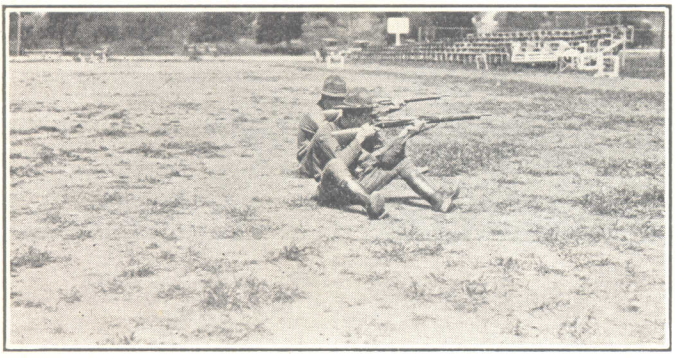
A WORD ABOUT OUR AERONAUTICS COURSE

At the present writing there is under construction in our aeronautics shop a six passenger, dual control monoplane to be equipped with 250 H. P. motor and capable of developing a speed of over 100 miles per hour. This commercial plane is of welded steel tube fuselage, Fokker-type landing gear, and will have a wingspread of 45 feet. Wing construction is of spruce and Haskelite plywood, 7-foot chord.

Our course is designed to give the student thorough training in ground work, involving a comprehensive knowledge of what is necessary to keep an airplane in as nearly perfect condition as possible in order to insure safe and uninterrupted service. To this end the course is divided into two branches:

Motors.—Theory and practice in overhauling motors, scraping and fitting bearings to two and one-half thousandths of an inch clearance, valve timing, magneto work and general "tuning up" of the entire motor. To determine whether the student's work has been properly done, motors are put on test stands and given a thorough trial. Our motor division is equipped with eleven motors of various types including LeRhone, Liberty, Curtiss, Hall-Scott, Union and Aero Marine.

Construction and Care of Planes.—In this branch the student learns to make different parts of the plane, as wing-ribs, fittings, landing gear, etc., and to assemble the different parts and line up the plane as if in preparation for actual flight.



Developing Steadiness of Eye and Hand.

A reasonable amount of military training is a splendid thing for any red-blooded boy. It makes him resourceful and self confident. A boy takes tremendous pride in being an officer and a leader.