BULLETIN

OF THE

California Polytechnic
School (A State School for Vocational Training)

Agriculture
Mechanics
Printing

San Luis Obispo, California

1923 - 1924

Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized August 9, 1918.

Entered at the Post Office at San Luis Obispo as second-class matter

PRINTED AT
CALIFORNIA POLYTECHNIC SCHOOL
PRINT SHOP
1923
ASSEMBLY CONCURRENT RESOLUTION NO. 21

Relating to investigation by the Legislature of the California Polytechnic School

WHEREAS, In the educational system of any state provision should be made for technical and agricultural training as well as for training in the professions; and

WHEREAS, The work of the California Polytechnic School giving instruction in technical and agricultural subjects affords an opportunity for training along such lines; and

WHEREAS, The California Polytechnic School performs a much needed and necessary function in the educational system of this state; and,

WHEREAS, There exists serious doubt as to the advisability of doing away with such school or preventing the proper advancement of the same; now, therefore, be it

Resolved by the assembly, the senate concurring, That the speaker of the assembly shall appoint three members and the president of the senate shall appoint three members who shall investigate the present status of the California Polytechnic School at San Luis Obispo, inquire into the needs of the institution mentioned, study the development of such school and the present and possible uses of the property belonging to such school and report their findings in full to the governor and the superintendent of public instruction not later than September 1, 1924, together with their recommendation as to such modifications and improvements as will in the judgment of the committee cause the school to contribute most effectively to the educational service of the State of California; the committee shall likewise cause said report and recommendation to be submitted to each house of the legislature within five days after it shall assemble in its forty-sixth regular session; and be it further

Resolved, That the committee shall have power to employ such clerical assistants as may be necessary and to appoint a chairman and a secretary from its own members and that the expenses incurred in such investigation not exceeding the sum of five hundred dollars shall be paid equally out of the contingent funds of the senate and the assembly.

FOREWORD

The Governor's reduced appropriation for the next biennium has made it necessary to eliminate all work for girls. It has been necessary, also, to change the requirements for admission. Only boys who have had a year of high school work, including English, algebra and general science may register. This "Bulletin" is a curtailed edition of the regular school catalog. It is intended to give enough information to enable the reader to decide whether or not the California Polytechnic School can give either him, or some one in whom he is interested, the vocational training he needs for the vocation he best fits.

What the State University is to the boy who wants professional training, the California Polytechnic School is to the boy who wants vocational training in

Agriculture : Mechanics : Printing

The California Polytechnic School is a state school for vocational training. It is located a distance of about one mile from the center of the city of San Luis Obispo.

The Motto Taxi Service provides transportation with a schedule suitable for students, with a special rate of 15 cents for a single trip, 25 cents for the round-trip, and $5 for a fifty-trip ticket.
INTRODUCTION

One of the most successful executives in the United States today, who was promoted to his present exalted position step by step from office boy, gives the following advice to those who want to succeed in any vocation:

"Do everything you are told—and do it with all your heart and strength—willingly, cheerfully and enthusiastically—and then look around for more to do.

"Don't measure your work by hours, but by what it is possible for you to accomplish from the time you enter in the morning—and be early rather than late—until the place closes in the evening; and don't quit the moment the place officially closes if there is work still to be done.

"Read and study and think along the lines of your business. Learn what it is all about, what service it contributes to making the world go round more comfortably and efficiently. Cultivate the habit of looking ahead, of acquiring as much foresight as possible. Have imagination and vision."

That advice means: Build Character. Building character is a vital part of the vocational training given at the California Polytechnic School.

To that end the progress of each student is measured by the following rating scale:

CALIFORNIA POLYTECHNIC SCHOOL
SAN LUIS OBISPO

Student Rating Scale

To Parent or Guardian: The rating in qualities indicated below represents the combined judgment of all the student's instructors:

Student's Name ..................................... Date............................
Course ................................................................. Year.................
Vocation ............................................................ Counselor ............... 

<table>
<thead>
<tr>
<th>Qualities</th>
<th>Ratings in Qualities</th>
<th>Subjects</th>
<th>Periods</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Effort</td>
</tr>
<tr>
<td>1. Success in doing things thoroughly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Success in doing things within reasonable time.</td>
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<td></td>
</tr>
<tr>
<td>3. Success in organizing work and in overcoming difficulties</td>
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<td></td>
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<tr>
<td>4. Success in daily behavior</td>
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<tr>
<td>5. Leadership</td>
<td></td>
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</tr>
<tr>
<td>6. Vocational fitness</td>
<td></td>
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</tbody>
</table>

(President's Signature).............................................

(Parent's or Guardian's Signature)..................................
To the Parent or Guardian:
The ratings DECIDEDLY SATISFACTORY, SATISFACTORY, PASSABLE, UNSATISFACTORY, and DECIDEDLY UNSATISFACTORY are used to convey the following meanings:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECIDEDLY SATISFACTORY</td>
<td>means 1 or 90 to 100 per cent</td>
</tr>
<tr>
<td>SATISFACTORY</td>
<td>means 2 or 80 to 90 per cent</td>
</tr>
<tr>
<td>PASSABLE</td>
<td>means 3 or 70 to 80 per cent</td>
</tr>
<tr>
<td>UNSATISFACTORY</td>
<td>means 4 or 60 to 70 per cent</td>
</tr>
<tr>
<td>DECIDEDLY UNSATISFACTORY</td>
<td>means 5 or below 60 per cent</td>
</tr>
</tbody>
</table>

EFFORT:

DECIDEDLY SATISFACTORY
The student is rated Decidedly Satisfactory when his daily effort indicates that he is constantly up to his maximum capacity.

SATISFACTORY
The student is rated Satisfactory when his daily effort is not up to his maximum capacity but is still decidedly creditable.

PASSABLE
The student is rated Passable when his daily effort may be characterized as ordinary or mediocre.

UNSATISFACTORY
The student is rated Unsatisfactory when his daily effort, while not even ordinary or mediocre, is still evident.

DECIDEDLY UNSATISFACTORY
The student is rated Decidedly Unsatisfactory when his daily effort is negligible.

ACCOMPLISHMENT:

DECIDEDLY SATISFACTORY
The student is rated Decidedly Satisfactory when his work is complete, of outstanding character, and accomplished with a minimum expenditure of time and energy.

SATISFACTORY
The student is rated Satisfactory when his work is complete and of praiseworthy character.

PASSABLE
The student is rated Passable when his work may be characterized as ordinary or mediocre.

UNSATISFACTORY
The student is rated Unsatisfactory when his work is not even ordinary or mediocre but still has appreciable value.

DECIDEDLY UNSATISFACTORY
The student is rated Decidedly Unsatisfactory when the character of his work is such as to indicate that the course is beyond his capacity.

INSTRUCTOR'S RATING GUIDE

RATINGS IN CHARACTER QUALITIES—

SUCCESS IN DOING THINGS THOROUGHLY

1. Decidedly Satisfactory—
   Having a painstaking attitude toward work; displaying a feeling that any task leads to problems beyond those of the immediate task in hand; having the habit of completely finishing every task and carefully observing all details.

2. Satisfactory—
   Doing work in a manner that wins approval and commendation; careful of detail.

3. Passable—
   Doing work that may be characterized as ordinary or mediocre.

4. Unsatisfactory—
   Negligent in the performance of work; careless in attention to detail.

5. Decidedly Unsatisfactory—
   Doing work of poor quality, of a haphazard nature, slovenly in regard to detail.

SUCCESS IN DOING THINGS WITHIN REASONABLE TIME

1. Decidedly Satisfactory—
   Having an attitude of constant and sustained attention towards work; having habits of disregarding accidental distractions, of punctuality, of carry-
ing on work up to the last moment of a period or work interval, of doing the
best work possible with the least expenditure of time.

2. Satisfactory—
   Working with creditable but not maximum speed without sacrificing atten-
   tion to detail.

3. Passable—
   Working with only ordinary speed; sacrificing quality of work when
   attempting a higher speed.

4. Unsatisfactory—
   Inclined to work slowly or to waste time. Any speed attained is at the
   expense of the quality of the work.

5. Decidedly Unsatisfactory—
   Habituilly wasting time; performing a given piece of work at a very
   slow rate of speed.

SUCCESS IN ORGANIZING WORK AND OVERCOMING DIFFICULTIES

1. Decidedly Satisfactory—
   Showing habitual self-possession; having the ability to use effective sub-
   stitution methods; to devise ways and means of overcoming difficulties, of
   meeting obstacles and surmounting them.

2. Satisfactory—
   Having the habit of making quickly any adjustment to new situations and
   of planning work independently; having the ability to overcome difficulties,
   but not in so marked a degree as is manifest in the student rated Decidedly
   Satisfactory.

3. Passable—
   Meeting successfully every-day problems, but lacking self-possession and
   poise when the problem to be solved departs from the commonplace; having
   the ability to overcome only ordinary handicaps.

4. Unsatisfactory—
   Lacking the ability to cope successfully even with ordinary handicaps;
   lacking the ability to go ahead with work without directions.

5. Decidedly Unsatisfactory—
   Lacking in a striking manner many of the qualities which contribute
   towards the overcoming of difficulties; having a strong tendency to go about a
   task in the wrong way; working aimlessly and without a plan.

SUCCESS IN SOCIAL CONTACTS—DAILY BEHAVIOR

1. Decidedly Satisfactory—
   Being thoroughly honest and reliable; being mindful of the rights, claims
   and feelings of others; having due regard not only for the property rights of
   others but for their unwritten or undesignated rights, as the observance of the
   rights of precedence, such as position when standing in line, the occupation of
   a certain chair; being observant of customs of etiquette which are designed to
   protect the feelings of others.

2. Satisfactory—
   Trustworthy, reliable, possessing the habits of punctuality and truthfulness.

3. Passable—
   Readily agreeing to co-operate, endorsing but having little or no ability to
   initiate right group action.

4. Unsatisfactory—
   Lacking strongly marked characteristics in contacts with others; not vitally
   interested in others; not concerned with doing the right things; inclined to drift.

5. Decidedly Unsatisfactory—
   Unreliable; having an unwholesome influence; lacking a keen sense of
   responsibility; erratic and unstable.

LEadership

1. Decidedly Satisfactory—
   Inspiring confidence among the other students, habitually consulted by them
   before action is agreed upon, leading them naturally and wisely.
2. Satisfactory—
Possessing most of the qualities of the capable and forceful leader but not
to so high a degree; asserting himself with wholesome influence when not
challenged too vigorously.

3. Passable—
Advocating right action and generally endorsing conduct that is suitable
and appropriate.

4. Unsatisfactory—
Having a tendency to be combative, antagonistic, unfriendly; possessing a
negative or harmful influence.

5. Decidedly Unsatisfactory—
Lacking those qualities of character which lead others to trust him in
opinion, judgment and conduct; careless of his own actions, usually paying
little regard to what is right and fitting.

Requirements for Admission. Any boy, fifteen years of age or over,
who has had one year of high school work and has made passing grades in
English, algebra and general science, will be admitted. Students who have
had two, three or four years of high school work will receive credit for all
related work taken in high school which is included in the courses offered
in this school.

Elimination. No student is permitted to remain in school whose work is
unsatisfactory for two successive progress reports. These cover a period of
twelve weeks.

No student will be eliminated, however, until it is definitely decided that
he can not pursue successfully any of the courses offered by the school.

In every instance mental tests will be given the student before a definite
recommendation is made.

Estimated Cost. It is estimated that it will cost from $350 to $400 per
school year to attend the California Polytechnic School. This estimate
includes room, board and laundry at the dormitory. This amount is not
required to be paid in advance. Monthly installments of about $40 can
be made. A deposit of $30 is required of each student at the time of regis-
tration. This deposit is retained in the office until the end of the school year
or until such time as the student leaves, when it is returned to him or
credited to his account. About $75 is needed at the beginning of the term.

There is no tuition.

Dormitory Facilities. There is a boys’ dormitory on the campus which
accommodates a limited number of boys. Because of the limited number to
be accommodated, reservations must be made in advance. A deposit of $2.50
is necessary to insure reservation.

The price for room and board is approximately $30 to $40 a month.
Occupants are required to furnish linen and the bedding needed. Linen
and towels are laundered without extra charge.

An additional deposit of $2.50 is required of each student residing in the
dormitory, to cover breakage.

Dining Hall. The school maintains a cafeteria dining-hall on the
campus, which serves both faculty and students. It is a large, cheerful, sun-
shiny room, conveniently located to dormitory and class rooms. A compe-
tent chef is in charge.
AGRICULTURAL DEPARTMENT

The Farm

With a farm of 936 acres, 450 of which are tillable and the remainder in good rolling land and mountain pasture, the California Polytechnic School can offer a wide diversity of farming and ranching operations.

The character of the soil varies from a rich sandy loam to clay adobe, the skillful operation of which brings into practice many of the scientific principles of proper farming. The crops raised include oats, barley, wheat, rye, corn, alfalfa and grain hay; root crops, such as stock beets, turnips and carrots. On the school farm are orchards of pears, apples, peaches, prunes, almonds and olives; vineyards of many varieties of grapes, and in addition widely diversified vegetable gardens for school consumption. The farm is fully equipped with all modern machinery, including three types of farm tractors. The farm proper is subdivided into many units which offer training in the various fields.

GENERAL COURSE

General farming is one of the most profitable of the various vocations connected with agriculture.

To be a successful general farmer a man should understand the raising of cattle and poultry, and possibly of sheep, horses and swine. He should know at least the elements of dairying, should understand the cultivation of the soil, fertilization, crop rotation and drainage, fruit raising and gardening, be familiar with farm machinery, gas engines, electric motors and be able to do any simple repair job incidental to ordinary ranch work. To furnish the student such knowledge and such ability is the purpose of the general course in agriculture. It prepares, also, for advanced study those who may wish to go further in their work. The first two years of the course offer a complete elementary training in the principles of agriculture, and may be taken as a short course by those unable to go further, or as an introductory course by those who desire to specialize in some one type of agriculture.

This course is intended to meet the demands of the boy who intends to become a general farmer or a farm or ranch manager. With certain modifications which will be made to allow of more specialization, it will train a boy to become a cattle raiser, a dairymen, a fruit grower, a nurseryman, a florist, a vineyardist or to qualify for work with the many co-operative marketing organizations in California, with the various commercial concerns dealing with products used by agriculturists or with state or local supervisory work in agriculture.
One year of high school work is a prerequisite to entrance. In it the student must have received passing grades in English, algebra and general science.

The following is the outline of the course:

**First Year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Practice</th>
<th>Second semester</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometry</td>
<td>5 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English II</td>
<td>5 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal Husbandry I</td>
<td>3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agronomy and Field Crops</td>
<td>3 4</td>
<td></td>
<td></td>
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<tr>
<td>Forge</td>
<td>0 8</td>
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<tr>
<td>Study</td>
<td>0 6</td>
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<tr>
<td>Glee Club</td>
<td>0 2</td>
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<tr>
<td>Physical Education</td>
<td>0 4</td>
<td></td>
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<tr>
<td>Assembly</td>
<td>0 1</td>
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**Second Year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Practice</th>
<th>Second semester</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany</td>
<td>3 4</td>
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<td></td>
</tr>
<tr>
<td>Horticulture</td>
<td>2 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td>2 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Agriculture and Field Practice</td>
<td>1 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Arithmetic</td>
<td>5 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpentry</td>
<td>0 6</td>
<td></td>
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</tr>
<tr>
<td>Glee Club</td>
<td>0 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>0 5</td>
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</tr>
<tr>
<td>Physical Education</td>
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<tr>
<td>Assembly</td>
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</table>

**Third Year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Practice</th>
<th>Second semester</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General History</td>
<td>5 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horticulture II</td>
<td>2 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal Husbandry II</td>
<td>3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Machinery</td>
<td>1 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanitation and Barn Construction</td>
<td>2 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>0 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td>0 4</td>
<td></td>
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<tr>
<td>Assembly</td>
<td>0 1</td>
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</tbody>
</table>

In the second semester diseases of farm animals is substituted for sanitation and barn construction.

**Fourth Year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Practice</th>
<th>Second semester</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>American History and Civics...</td>
<td>5 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surveying</td>
<td>1 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soils and Fertilizers</td>
<td>2 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy II or Market Gardening</td>
<td>2 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal Husbandry III</td>
<td>3 3</td>
<td></td>
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</tr>
<tr>
<td>Gas Engines &amp; Electric Motors</td>
<td>1 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>0 4</td>
<td></td>
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</tr>
<tr>
<td>Personal and Public Health</td>
<td>5 0</td>
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<tr>
<td>(Nine weeks course)</td>
<td></td>
<td>(Nine weeks course)</td>
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<tr>
<td>Correct English Usage</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td>0 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assembly</td>
<td>0 1</td>
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</tbody>
</table>

| (8) |
A description of the vocational subjects follows:

Animal Husbandry I. This is an elementary course on cattle, horses, sheep and swine. It covers the origin of breeds, the study of breed types and market classes and the care of live stock.

Agronomy I and Field Crops. This course deals with soil formation, classification of soils, the relation of air and water to plant life, the importance of bacteria in soil formation, soil fertility and soil fertilizers, dry farming and irrigation, cereal and forage crops and seed testing. The course includes practical work in the field.

Horticulture I concerns itself with the elementary principles of plant life and growth. It makes a study of the principles and methods of plant propagation. Class work is accompanied by work in the propagation house, lath houses, cold frames, hotbeds and in the garden and field. It also deals in an elementary way with the principles of fruit-growing.

Poultry I. This is an elementary course on the poultry industry, including a study of breeds and types, culling, feeding, housing, diseases, management and marketing.

General Agriculture and Field Practice. This course includes all the seasonal work performed on the farm and the actual handling of stock and equipment. The students learn the principles and methods of drainage and irrigation; they undertake farm and stock projects of all natures, and make excursions to neighboring farms, dairies and stock ranches of some special agriculture interest.

Farm Arithmetic. The work in farm arithmetic is correlated with actual operations on the farm. Some of the operations studied will be the measurement of silos, the calibration of seed-drills, practice in the application of tables of weights and measures, problems involved in the mixing of feeds, fertilizers and sprays; the laying out of orchards, the computation of the contents of haystacks; problems of irrigation; the keeping of simple farm accounts.

Dairy I. This is a study of the composition of dairy products, the care and handling of milk, the Babcock tests, the construction and operation of cream separators, the making and marketing of butter and cheese.

Horticulture II is a study of orchard management. It includes the preparation of the soil for a young orchard, the care of nursery stock before planting, the laying out of orchard lands according to the square, triangular, hexagonal and quincunx systems; practice in planting, pruning, thinning, spraying; a study of sprays, their mixing and their adaptation to the various fungus diseases and insect pests which attack orchard trees; irrigation by furrow and check system; selection and use of cover crops; the harvesting and marketing of orchard products. It includes also the study of horticulture statutes pertaining to standardization, packing, inspections, quarantine and the duties of the horticultural commissioner.
Animal Husbandry II is a course in live stock judging and herd management. It includes a more detailed study of breed and breeding, a study of pedigrees, the choice of the stock farm, fitting cattle for the show ring, and marketing.

Diseases of Farm Animals includes the anatomy and physiology of farm animals; diseases and their treatment, and vermin extermination.

Soils and Fertilizer. This is a study of the principal soil types and of the various modifications which may be produced by fertilization. It includes a study of tillage and its effect on the texture, aeration, moisture and plant-food content of the soil; different systems of farming, as summer fallowing and dry farming; the principles of irrigation and crop rotation. It considers the chemistry of the soil; its plant-food constituents, alkali and other harmful materials, commercial fertilizers, the use of stable manures and green manure crops, the depletion, conservation and renewal of soil fertility.

Dairy II. This course includes the construction and care of creameries and their appliances, methods of sampling and grading cream, pasteurization, starter making, refrigeration, dairy bacteriology and creamery accounting.

Market Gardening considers the principles of vegetable and market gardening, a study of vegetable crops, market conditions, irrigation, weed control and insect and plant diseases.

Animal Husbandry III is a course on feeds and feeding. It involves a consideration of the classes of food nutriments, the functions of each in the animal body; digestion, absorption and assimilation; the extent and nature of the demands for maintenance, growing fattening, milk and work; principles in selection of rations; feed stuffs, feeding standards and compounding rations.

Agricultural Chemistry. A course in inorganic chemistry is prerequisite to this course. It makes a study of the principles of chemistry as applicable to the science of modern agriculture. It includes the chemistry of plant and animal life; an analysis of fertilizers, feeds, dairy products, irrigation waters and other substances of practical value to the farmer.

Farm Management and Accounts. This course considers the main factors having a bearing upon successful farming, such as acreage, capital, handling of labor, proper equipment, marketing, etc. Various systems of cost accounting are considered, and calculations on actual farm operations are carried on.

Landscape Gardening. A short history of landscape gardening, landscape designing, the location of the farmhouse and the laying out of the immediate grounds are considered in this course. It also furnishes project work in beautifying of grounds.

Sanitation and Barn Construction. This course is intended to acquaint
the student with the principles of sanitation as applied to farm life. It will include work on drainage, the proper disposal of waste and sewage, the wise planning of farm buildings and the principles involved in the proper construction of barns and outbuildings so that they may best conform to the laws of fitness, economy and sanitation.

MECHANICS DEPARTMENT

General Course in Mechanics

Purpose of Course. The purpose of the General Course in Mechanics is to give the students a practical education in the principles of mechanics and their application. It provides a good general education based upon the requirements of the State Board of Education for graduation from California high schools.

It provides "try-outs" in the carpentry, the forge, the machine, the electrical and automobile shops, the student specializing in that one for which he manifests the greatest aptitude.

It gives a good grounding in physics and chemistry and provides a thorough training in mechanics. It offers not only theoretical but also practical experience in gas and steam engines, strength of materials, electricity, surveying and hydraulics, all of the latter subjects being of college grade.

The graduates of this school have a better knowledge of the principles of engineering-mechanics than have high school graduates, and they have also more practical training in shop work than has the ordinary university graduate.

For whom intended. This course is intended to meet the needs:

First—Of a student who is planning to become a foreman in some shop.

Second—Of a student who wishes to work into a position as minor executive in an industrial concern in which a knowledge of mechanics is essential.

The following is the outline of the course:
One year of high school work is a prerequisite to entrance. In it the student must have received passing grades in English, algebra and general science.

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Class</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometry</td>
<td>5</td>
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</tr>
<tr>
<td>English II</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Drafting</td>
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<td>8</td>
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<tr>
<td>Glee Club or Shop</td>
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<td>2</td>
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<tr>
<td>Physical Education</td>
<td>0</td>
<td>4</td>
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<tr>
<td>Assembly</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Shop Work</td>
<td>0</td>
<td>5</td>
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<tr>
<td>Study</td>
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**Second Year**

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<thead>
<tr>
<th>Course</th>
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<th>Practice</th>
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<tr>
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<tr>
<td>Solid Geometry and Trigonometry</td>
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<tr>
<td>Drafting</td>
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<td>6</td>
</tr>
<tr>
<td>Glee Club or Shop</td>
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<td>2</td>
</tr>
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<td>Physical Education</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Assembly</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Study</td>
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<tr>
<td>Shop Work</td>
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**Third Year**

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<th>Class</th>
<th>Practice</th>
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<tr>
<td>Chemistry</td>
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<tr>
<td>Advanced Algebra</td>
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</tr>
<tr>
<td>General History</td>
<td>5</td>
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<tr>
<td>Drafting and Electric Shop</td>
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<td>Assembly</td>
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<tr>
<td>Study</td>
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<tr>
<td>Shop Work</td>
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**Fourth Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Class</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>American History and Civics, Surveying or Advanced Shop</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Shop Sketching and Related Mathematics and English</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Personal and Public Health</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Correct Usage in English</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Physical Education</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Assembly</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Study</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Additional Shop Work</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

**Mechanics I.** This course is an elementary study of steam engines, gas engines and strength of materials, consisting of recitations and laboratory work. The study of steam engines covers the fundamental units, steam tables, different types of engines, valves and valve gear, boilers, auxiliary apparatus, and fuels. The study of gas engines includes the fundamental units, cycles of operation, cooling systems, ignition systems, carburetors, fuels, modern types of internal combustion engines and auxiliaries. Strength of materials deals with the properties and strength of various materials, such as timber, steel, stone and concrete, and simple structures, such as beams, columns and trusses. All classroom work is supplemented by work in the laboratory.

**Hydraulics or Mechanics III.** This is an elementary course in hydraulics, including class room and laboratory work. A study is made of the
fundamental units; hydrostatics; the flow of water in orifices, pipes, conduits and rivers; measurements of water, hydraulic motors and pumps.

Drafting I. First year. In this course general instruction is given in the use of instruments, plates in freehand lettering, solution of problems in geometrical construction, oblique, orthographic and axonometric projection, the development of patterns for tinsmith work and plates demonstrating the general rules for dimensioning.

A textbook will be issued.

Drafting II includes general instruction in mechanical perspective, shades and shadows. The students begin then to follow their chosen lines and the following lessons are followed by elementary work in architectural, electrical or machine design.

Drafting III considers the application of mathematics in calculating and determining the necessary sizes of machine parts; working drawings of machine parts, tracings and blue printing; advanced architectural design and electrical drawings.

Shop Sketching and Related Mathematics and English. This course considers the freehand sketching of machine parts, with dimensions and the necessary notation, involving various conventionalities and methods employed by the draftsman. All drawings are made in the third angle of projection, and all lettering is of the orthographic type. The application of mathematics to shop problems involving the simple machine, gear trains, pulleys, belting, levers, volumes, gear calculations, etc., are also considered. The student is given training in the value and use of handbooks. He is also trained to write clear reports on technical subjects.

Shop Work. A general try-out course in forge shop, carpentry shop, machine shop, electric shop and auto shop will be given to all students of this course. The particular shop or shops in which a student specializes will depend on his aptitude for the respective subjects.

THE PRINT SHOP

The California Polytechnic School is now offering a course in printing. This course is introduced because of the demand all over the country for well-trained printers.

A knowledge of mechanics is of great value to the printer and in many places indispensable to his success. A good general education is also valuable.

For the boy who enters the California Polytechnic School at the age of fifteen or sixteen years, with this vocation in view, a four-year course is recommended. An older student, who has the necessary educational background, who is good in spelling, who has the necessary qualifications in temperament and character, should be able to complete the course in two years.
The work is not adapted to one who is sluggish in thought or movement. The printer should be quick in thought, quick in action and observant of details.

Compensation is good and the demand for work is steady. The foundation, or two-year course, is the one recommended by the United Typotheta of America.

The equipment provided for the course includes eight Mergenthaler linotype machines, representing all the different models, and all of the necessary auxiliary equipment required for the two-year foundation course.

One year of high school work including work of passing grade in English, algebra or commercial arithmetic, and general science, is required for admission to this course.

First Year

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>English II</td>
<td>5</td>
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<tr>
<td>Trade Arithmetic</td>
<td>5</td>
</tr>
<tr>
<td>Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>Assembly</td>
<td>1</td>
</tr>
<tr>
<td>Print Shop Work</td>
<td>30</td>
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</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>General History</td>
<td>5</td>
</tr>
<tr>
<td>Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>Assembly</td>
<td>1</td>
</tr>
<tr>
<td>Personal and Public Health (9 weeks)</td>
<td>5</td>
</tr>
<tr>
<td>Correct Usage in English (9 weeks)</td>
<td>5</td>
</tr>
<tr>
<td>Print Shop Work</td>
<td>30</td>
</tr>
</tbody>
</table>

(related)

English II. This course has two divisions, composition and literature, each being assigned definite days in the week for class work and each being given its own rating. In composition the writing of straightforward reports of various kinds is developed through correlation with shop work and the school paper. Clearness, conciseness and accuracy of statement, such as the mechanic or rancher may need are emphasized. Ability to address the
audience is developed by informal debating and reports. The work in literature aims to broaden the ideas of the student as to the ideals of men in the past and present and to give him a standard by which he can judge literature after leaving school.

**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 yet is more cultural than vocational. In composition the organization of material into papers of 1500 words or more is emphasized. The development of the ability to give reports of some length, and the development of the ability to take charge of organizations and to present propositions in a clear manner, constitute the aim in oral English. Literature is studied from the point of view of literary appreciation, technique of the author and the application of the expressed by the author to present-day experiences.

**Special English.** This course attempts to aid the instructors by promoting the improvement of the written and oral work done in their classes and to aid the students in the practical application of the principles of English composition. The subject matter of the assignments is either directly related to each student’s work in other classes or is in the nature of drill work in the correction of common errors. Standing in the course is based largely on the actual use of the principles on which there has been drill.

**Mathematics.** The courses in mathematics are designed to develop the reasoning power of the student and to strengthen his ability to solve actual problems as they will occur in his work. The courses fall under the usual heads of algebra, geometry and trigonometry.

Algebra expands the student’s knowledge of the facts that are connected with plane figures—triangles, squares, circles, etc.; and with solids—cubes, spheres, etc.

Trigonometry deals with the relationships of angles and distances, and is essential to work connected with land measurements and engineering.

**Botany.** A general course in practical botany with instruction in class, laboratory and field. The extensive flora of the school grounds offers a very interesting and profitable field for botanical study.

**Chemistry.** This course covers the fundamentals of the science of chemistry. It is a foundation course for later work in the chemistry of the industries, the chemistry of agriculture and the chemistry of the household.

**Physics.** This course emphasizes strongly the mechanics of liquids, gases and solids and gives considerable attention to electricity, light and sound. It places considerable stress on the application of the principles of physics to the various industries and at the same time prepares the student for the higher courses in mechanics.
Ancient and Medieval History. This is a study of the ancient and medieval world. The relation of the past to present-day life and institutions is emphasized.

Modern History. considers the study of the modern world, with emphasis on the development of modern institutions and modern world conditions.

American History of the history of the American people, particularly in its civic and social aspects. A study is made of present-day conditions and the position of the United States as a world power.

Personal and Public Health.

Elementary Accounts.

Correct Usage in English.

Oral English.

These are nine weeks courses of five periods a week each. The subject matter is indicated by the names.

Drafting. This subject may be taken by students in agriculture who are specializing in some line in which it is needed, and by college preparatory students. In the case of either of these classes the course will not differ greatly from that described under the mechanics course.

STUDENT AFFAIRS

Student Affairs. The Student Affairs Committee has charge of a number of activities which contribute a very important element toward the student life. These consist of publications, debate, athletics, dramatics, an orchestra and the management of a cooperative store which handles student supplies. The publications issued include a biweekly paper, the Polygram, and an annual publication, the Journal. For all of these activities there are faculty advisors who see that the energies of the students are wisely directed.

For Boys: The work in physical education for boys consists of two divisions: military drill and organized play. The physical exercise, the discipline, the habits of promptness and reliability inculcated by military drill, all are of great assistance in any occupation. The course gives the student an improved carriage, a better physique, a greater self-respect and an increased regard for the rights of others.

Organized Play. This course is organized in the belief that out-of-door play, involving as it does the use of large muscle activities, is the most beneficial form of exercise. It develops, as the ordinary work in athletics fails to develop, the bodies of those boys who most greatly need it. The period devoted to this subject trains all the boys in the elements of the standard games. The Decathlon events are used as a part of this training. Inter-squad, inter-group and inter-class competition is fostered in all standard seasonal sports.