

ELEVENTH ANNUAL CATALOGUE

THROOP
POLYTECHNIC
INSTITUTE

PASADENA, CALIFORNIA, 1902-1903

CALENDAR

1902-1903

Quarterly Meeting Board of Trustees....Tuesday, September 9, 1902
Registration.....Monday and Tuesday, September 22 and 23, 1902
Fall Term begins.....Wednesday, September 24, 1902
Thanksgiving Vacation..Thursday and Friday, Nov. 27 and 28, 1902
Quarterly Meeting Board of Trustees.....Tuesday, December 9, 1902
Founder's Day.....Thursday, December 11, 1902
Fall term ends.....Friday, December 19, 1902

CHRISTMAS VACATION

Winter Term begins.....Monday, January 5, 1903
End of the first half-year.....Friday, February 13, 1903
Quarterly Meeting Board of Trustees.....Tuesday, March 10, 1903
W. A. Edwards Prize Debate....Thursday evening, March 26, 1903
Winter Term ends.....Friday, March 27, 1903

SPRING VACATION

Spring Term begins.....Monday, April 6, 1903
Baccalaureate Sunday.....June 7, 1903
Geo. H. Coffin Prize Contest.....Monday evening, June 8, 1903
Graduating Exercises, Grammar School..Tues. morning, June 9, 1903
Alumni Reunion.....Tuesday evening, June 9, 1903
Commencement.....Thursday evening, June 11, 1903
Exhibition Day and End of Term.....Friday, June 12, 1903
Annual Meeting Board of Trustees.....Tuesday, June 16, 1903

Eleventh Annual Catalogue

OF

**THROOP
POLYTECHNIC INSTITUTE**



**PASADENA
CALIFORNIA
1902 & 1903**

APRIL, 1902

Published by the Institute

Founder

HON. AMOS G. THROOP

Born at De Ruyter, New York, July 22, 1811. Died at Pasadena, Cal., March 22, 1894.

Board of Trustees

(Arranged in order of seniority of service.)

(arranged in order of seniority of service.)		Term expires
PERRY M. GREEN.....	Pasadena.....	1904
EVERETT L. CONGER, D. D.....	“	1902
MRS. LOUISE T. W. CONGER.....	“	1902
E. E. SPALDING, A. M.....	“	1905
NORMAN BRIDGE, M. D.....	“	1904
JOHN WADSWORTH.....	“	1904
CHARLES D. DAGGETT.....	“	1903
H. M. HAMILTON.....	“	1903
A. R. METCALFE.....	“	1903
WILLIAM STANTON.....	“	1906
MRS. CLARA B. BAKER BURDETTE..	“	1905
HIRAM W. WADSWORTH, A. B.....	“	1906
JAMES H. MCBRIDE, M. D.....	“	1905
S. HAZARD HALSTED.....	“	1902
JOHN S. CRAVENS, A. B.....	“	1906

Officers of the Board

NORMAN BRIDGE, President C. D. DAGGETT, Vice-President
P. M. GREEN, Treasurer S. HAZARD HALSTED, Auditor
THEODORE COLEMAN, Sec'y and Business Agent
Residence, 472 Benefit Court

Executive Committee of the Board

NORMAN BRIDGE, *Chairman ex-officio* C. D. DAGGETT
P. M. GREEN A. R. METCALFE
H. W. WADSWORTH

FACULTY

1901-1902

(Arranged in groups in order of appointment)

WALTER ALISON EDWARDS, President

Professor of Ancient Languages

A. B. and A. M., Knox College, Galesburg, Ill.; Instructor in Latin and Greek, High School, Peoria, Ill., 1883-6; student, Universities of Berlin and Tübingen, 1886-9; Principal High School, Decatur, Ill., 1889-90; Principal High School, Rockford, Ill., 1891-5; Instructor Latin and Greek, High School, Pasadena, Cal., 1895-6.

356 W. California St.

HERBERT BOARDMAN PERKINS

John Wadsworth Professor of Mathematics and Instructor in Mechanical Drawing

S. B., Massachusetts Institute of Technology, 1874; Professor of Mathematics and Astronomy, Lawrence University, 1878-80 and 1882-6; student, University and Polytechnikum, Munich, Germany, and University of Geneva, Switzerland, 1880-2; student, University of California, 1886-8; Professor of Modern Languages, University of Southern California, 1890-2.

186½ E. Colorado St.

WALLACE KENDALL GAYLORD

Professor of Chemistry; Registrar

S. B., Massachusetts Institute of Technology, 1893; Member American Chemical Society.

184 N. Pasadena Ave.

LUCIEN HOWARD GILMORE

Professor of Physics and Electrical Engineering; Editor of the Catalogue

A. B., Leland Stanford Jr. University, 1894; Acting Assistant, Department of Physics, Stanford University, 1894-5; graduate student, University of Chicago, 1898-9.

33 N. Euclid Ave.

ARTHUR HENRY CHAMBERLAIN

Professor of Education and Principal of Normal School

Graduated Cook County Normal School, 1892; Teacher in the Public Schools of Cook County, Ill., 1892-4; Principal W. Harvey Public Schools, 1893-4; graduated, Normal School, Throop Polytechnic Institute, 1896; diplomas Deutsche Lehrerbildungsanstalt für Knabenhandarbeit, Leipzig, Germany, and Slöjdlärareseminarium, Nääs, Sweden, 1899; Member Deutscher Verein für Knabenhandarbeit; Member National Association of Manual Training Teachers, Great Britain; Member Sloyd Association of Great Britain and Ireland.

337 N. Los Robles Ave.

MRS. JENNIE COLEMAN

Professor of English and History; Librarian

Instructor in Latin and English, High School, Rochester, N. Y., 1867-8; Principal Grammar School, Lakeport, Cal., 1884-6; Member County Board of Education, Lake Co., Cal., 1883-7; Vice-Principal High School, Pasadena, Cal., 1888-96; Holder of California High School Life Diploma; Member of the Board of Education of Pasadena and of the Los Angeles Co. Board of Education.

472 Benefit Court.

BONNIE BUNNELLE

Principal of Grammar School

Student in P. W. Search Normal Training School, Sidney, Ohio, 1888-91; student in Pueblo Industrial School, Pueblo, Colo., 1892-4; Instructor Public School, Pueblo, Colo., 1891-4.

60 S. Los Robles Ave.

JESSE GEORGE CROSS

Principal of Commercial School

A. M., McKendree College, Lebanon, Ill.; Instructor in Jennings Seminary and Aurora Commercial College, 1866-72; founder of the Northwestern Business College, Northwestern College, Naperville, Ill., 1872-76; Instructor Union College of Law, Chicago, Ill., 1876-7; Dean, College of Commerce, Illinois Wesleyan University, Bloomington, Ill., 1878-83; President Central College of Eclectic Shorthand, Chicago, Ill., 1883-95; author of Eclectic Shorthand; Member of the International Association of Shorthand Writers; Honorary Member of the New York Stenographers Association.

Monrovia.

FRANK HOLLAND BALL

Director of Manual Training and Instructor in Forging

Superintendent of Iron Foundry, Crompton Loom Works, Worcester, Mass., 1884-9; Instructor in Foundry Practice, Worcester Polytechnic Institute, 1889-91; student and Instructor in Foundry Practice, Cambridge (Mass.) Manual Training School, 1890-91; Instructor in Woodwork and Mechanical Drawing, Teachers College, New York, 1891-3; Superintendent of Manual Training, Tougaloo University, Tougaloo, Miss., 1893-7; Instructor in Manual Training, Elementary School, University of Chicago, 1897-1900.

575 Summit Ave.

FRANCES STERRETT

Director of Art

Portrait Artist, Springfield, Ohio, 1886-91; student, Chicago Art Institute, 1891-2; graduated Normal Art Department, Pratt Institute, Brooklyn, N. Y., 1894; pupil of M. Injalbert, Sculptor, Académie Colarossi, Paris, France, 1900.

221 N. Euclid Ave.

MRS. GRACE ELLA DUTTON

Director of Domestic Economy

Graduated Pennsylvania State Normal School, 1885; Instructor in Public Schools of Twin Oaks, Pa., 1885-8; graduated Mrs. S. T. Rorer's Philadelphia School of Domestic Science, 1897.

327 W. California St.

ROBERT EDGAR FORD

Instructor in Machine Shop Practice and Pattern Making

B. E. E., Engineering College, University of Minnesota; with D. & D. Electric Manufacturing Co., Minneapolis, Minn., 1895; Consulting Steam and Electrical Engineer, Minneapolis, Minn., 1896-7; graduate student, University of Minnesota, 1900.

44 S. Madison Ave.

PEARL BLANCHE FISHER

Instructor in French and Assistant in Free-Hand Drawing

Student, Mary Institute, St. Louis, Mo.; student in Paris, France, and in Lacaze Institute, Lausanne, Switzerland; graduated Normal School, Throop Polytechnic Institute, 1897.

350 N. Raymond Ave.

GEORGE WALTER BRADEN

Instructor in Physical Culture

Student, High School, Cedar Rapids, Iowa, 1893-6; student of Physical Culture and Heavy Gymnastics, Y. M. C. A. Gymnasium, Cedar Rapids, Iowa, 1892-6; Instructor, Y. M. C. A. Physical Department, 1899—; Member of American Physical Directors.

Cor. Belvidere and Moline.

HARRY DAVIS GAYLORD

Instructor in Wood Carving and Wood Working

Graduated Pasadena High School, 1893; student in Art, Throop Polytechnic Institute, 1894-6; Teacher Private Classes in Carving, 1896-9.

154 W. Walnut St.

WALTER WILLIAM MARTIN

Instructor in Wood Working and Forging

Graduated Rockford High School, Rockford, Ill., 1898; graduated Normal School, Throop Polytechnic Institute, 1900.

1401 Rich St., Los Angeles.

CLARA JUDSON STILLMAN

Instructor in Grammar School Subjects

Graduate of Terry Kindergarten Institute, Bridgeport, Conn., 1878; student Henniker, N. H., Academy, 1878-9; Inspector and Instructor, Public Schools, Arizona, 1881-94; Instructor, Public School, Coronado, California, 1895-9.

310 E. Green St.

PAUL BOEHNCKE

Instructor in German, Spanish and Latin

Student Friedrich Wilhelm Gymnasium, Stettin, Germany, 1878-80; student Omaha High School, 1885-8; student University of Southern California, 1889-90; Architectural Draughtsman and Superintendent of Construction, 1893-7; student Boynton Normal, Los Angeles, 1898; Teacher, Public School, Elizabeth Lake, California, 1898-1900.

154 W. Walnut St.

IDA ISABELLE JONES

Instructor in Grammar School Subjects

Graduated High School, Plymouth, Wis., 1892; graduated Milwaukee State Normal School, 1895; Instructor in Science, Plymouth High School, 1895-9.

307 N. Los Robles Ave.

CLARA SOUTHWICK

Instructor in Grammar School Subjects

Graduated High School, Chicago, 1893; Instructor Public Schools, Chicago, 1893-8; graduated Normal School, Throop Polytechnic Institute, 1899.

319 Henrietta Court.

ENOS J. NORRISH

Instructor in Mathematics

Graduate and Medallist Collegiate Institute, St. Catherine's, Ontario, Canada, 1883; graduated Ottawa Normal School, 1884; Principal Rockwood Public Schools, 1885-86; Teacher High School, Brockville, Ontario, 1887; Teacher St. Catherine's Collegiate Institute, 1888-94; Teacher Santa Ana Grammar and High Schools, 1895-1900; Holder Life High School Diploma, Ontario, Canada.

537 Summit Ave.

CLARA FRANCENA RANDALL

Instructor in Elocution and English

Graduate of Boston University, Boston, Mass.; Instructor in Elocution and English, Leland and Grey Seminary, Townshend, Vt., 1879; Instructor in Elocution, Vermont Female College and Conference Seminary, Montpelier, Vt., 1879-81; Instructor in Elocution and English Literature, High School, Peoria, Ill., 1881-89; Instructor in English Literature, High School, Rockford, Ill., 1889-1901.

The Harvard, Cor. Walnut and Euclid.

AGNES MARY CLAYPOLE

Instructor in Geology and Zoology; Curator

Ph. B., Buchtel College, 1892; M. S., Cornell University, 1894; Ph. D., University of Chicago, 1896; Instructor in Zoology, Wellesley College, 1896-8; Assistant in Histology, Cornell University, 1898-1900.

55 S. Marengo Ave.

EDITH JANE CLAYPOLE

Instructor in Biology and Bacteriology

Ph. B., Buchtel College, 1892; M. S., Cornell University, 1893; graduate student, Massachusetts Institute of Technology, 1894; Instructor in Physiology and Histology, Wellesley College, 1894-5; Acting Professor of Physiology and Histology, Wellesley College, 1896-8; student Wood's Holl Biological Laboratory, 1895 and 1896; Assistant in Physiology, Cornell University, 1899-1901.

55 S. Marengo Ave.

HENRY HERBERT KLAMROTH

Instructor in Singing

B. S. and L. L. B., University of the City of New York, 1888 and 1890; pupil of Carl Prox in Voice Culture, Harmony, etc., 1887-93; Choirmaster All Saints' Protestant Episcopal Church, Pasadena, 1899-.

524 Eldorado St.

ANNIE HOLMES

Acting Instructor in Grammar School Subjects

Student-teacher, National School, Holyhead, Wales, 1885-6; student in Normal Training Department, San Diego Commercial College, 1893-5; student, University of California, 1898-9; Instructor in San Diego Co. Schools, 1895-8 and 1899-1902.

310 E. Green St.

ALICE DUTTON

Assistant in Domestic Economy

Graduated Mrs. S. T. Rorer's School of Domestic Science, 1897; Teacher of Domestic Science, Stimson Industrial School, Los Angeles, 1897-8.

327 W. California St.

EMMA RUSSELL

Assistant in Sloyd

Graduated Academy, Throop Polytechnic Institute, 1897; graduated Normal School, Throop Polytechnic Institute, 1898; student Normal School, Throop Polytechnic Institute, 1901.

Garfield Ave.

*LAURA LOUTHIAN

Assistant in Free-Hand Drawing

Student in Art, Normal School, Throop Polytechnic Institute, 1901.

LOLA HOLTON

Assistant in Commercial Studies

Graduated Ramona High School, 1898; graduated Normal School, Throop Polytechnic Institute, 1900; student Throop Polytechnic Institute, 1901-.

265 Cypress Ave.

BESSIE RICHARDS

Assistant in Free-Hand Drawing

Graduated Academy, Throop Polytechnic Institute, 1900. Student Normal School, Throop Polytechnic Institute, 1901.

Delmar St.

MARY AUGUSTA GOULD

Assistant in Free-Hand Drawing

Graduated Pasadena High School, 1900; student Normal School, Throop Polytechnic Institute, 1900-.

Washington St., N. Pasadena.

*Resigned Nov. 15, 1901.

FACULTY COUNCIL

W. A. EDWARDS, Chairman
BONNIE BUNNELLE
A. H. CHAMBERLAIN

MRS. JENNIE COLEMAN
W. K. GAYLORD
L. H. GILMORE

GENERAL INFORMATION.

HISTORICAL

THROOP POLYTECHNIC INSTITUTE was founded by Hon. Amos G. Throop in 1891, and during the remainder of his life received his consecrated energy and hearty support, and at his death the greater part of the remaining accumulations of his life were bequeathed for its maintenance. Articles of incorporation were filed September 23d; the first Board of Trustees was organized October 2d. The doors of the Institute were opened to students November 2d. It was established to furnish to students of both sexes and of all religious opinions a liberal and practical education, which, while thoroughly Christian, should be absolutely non-sectarian in character. A clause of the charter provides that a majority of the Board of Trustees "shall not belong to any one religious denomination or sect, and the institution shall be maintained and administered as an undenominational and non-sectarian school."

Polytechnic Hall, containing shops and laboratories, was built in 1892; East Hall, containing offices, recitation rooms, laboratories, etc., was built in 1893. In 1900 a commercial school was added in response to a large demand, and in order to accommodate this school and to relieve the crowded condition of other schools it became necessary to add another wing to East Hall. This wing, 41 by 88 feet, and three stories high, was erected at a cost of about \$18,000.

LOCATION

Pasadena is generally acknowledged to be one of the most beautiful residence cities in California. It is situated within ten miles of the city of Los Angeles, at the head of the San Gabriel Valley and at the base of the picturesque San Gabriel Mountains. In beauty and healthfulness, in the culture of its homes, and in its high social and moral tone, Pasadena has no superior on the Pacific coast. It is reached by the Santa Fé, the Salt Lake, the Southern Pacific, and the Los Angeles and Pasadena Electric railways. Students living along these lines are enabled to make the daily trips to and from the Institute in seasonable hours and at reasonable rates.

SCHOOLS

The Institute comprises five Schools: the Grammar School, the Academy, the Commercial School, the Normal School, and the College.

LIBRARIES

The books belonging to the Institute are located with reference to convenience of students, special libraries being placed in the various department rooms. A general assortment is found in the

main library room, in the East Hall. The library also receives regularly several periodicals, selected with special reference to the work of students.

The Pasadena Public Library, to which students have access, is situated near the Institute.

ACCREDITING

The Institute is included in the list of schools accredited by the State University. The Leland Stanford Jr. University accepts the certificates of the Institute and similar privileges are accorded to its graduates by various eastern institutions.

ADMISSION

Applicants for admission to any School of the Institute will be required to furnish satisfactory evidence of good moral character and of honorable dismissal from the schools with which they were last connected. They are also urged to bring such statements from previous teachers concerning studies completed in other schools as will be helpful in determining their classification.

HOURS

The daily exercises begin at 9 o'clock in the morning and continue until 4:10 in the afternoon, with an intermission from 12:10 to 1:15. Chapel exercises occupy the time from 9 to 9:15, and all students are expected to attend regularly.

REPORTS

Reports of the progress of each student are sent to parents every four weeks, and oftener if the work is unsatisfactory.

DISCIPLINE

It is taken for granted that students enter the Institute with serious purposes and that they will cheerfully conform to such regulations as may be made by the Faculty. The moral tone of the school is exceptionally good, and cases requiring severe discipline seldom occur. Any conduct harmful to the moral standing of the school will, after due admonition, render a student liable to dismissal. Parents may at any time be asked to withdraw students from the Institute whose work is unsatisfactory by reason of lack of diligence.

ATHLETICS

Encouragement is given to athletics, and the athletic organizations are under the immediate care of a joint committee of students and Faculty. Membership in these organizations is subject to forfeiture for failure in any regular line of school work.

The athletic grounds include a basket-ball court, two tennis courts, a field for baseball and foot ball and an eight-lap training track.

SOCIETIES

Two literary societies, the Gnome Club and the Sphinx Club, are maintained by the students of the Institute with the cooperation of the Faculty, and are doing good work. They afford an opportunity for training in debating, essay writing, declamation, extempore speaking, parliamentary practice, etc.

A Camera Club, Forestry Club, Mandolin and Guitar Club, and a brass band find also a hearty support among the students of the Institute.

The POLYTECHNIC, a monthly paper devoted to the interests of the Institute, is maintained by the students.

EXHIBITION DAY

The last day of the spring term, including evening, is devoted to an exhibition of the work of the year in the different departments. Articles made in the shops and studios remain in the charge of the various instructors until the close of Exhibition Day, when they may be claimed by their respective owners.

SCHOLARSHIPS

Through the generosity of some of the citizens of Pasadena a number of free scholarships have been founded for the benefit of worthy and needy students. The trustees have, in addition to those who are now enjoying these scholarships, a list of worthy applicants, and any person desirous of extending the influence of the school in this way may obtain full information from the Secretary.

PRIZES

A prize of ten dollars, offered by the President of the Institute, is awarded each year to the winner in a public debate at the end of the winter term, the contestants being chosen by the various literary clubs from among their own members. In 1901 this prize was won by Bert Crane of the Gnome Club.

A first prize of ten dollars and a second prize of five dollars, offered by Mr. Geo. H Coffin, are awarded each year to the first and the second best in a contest in declamation, held in commencement week, the contestants being selected from the students in the Academy. In 1901 the first prize was won by Porter Gould and the second by Ralph Bandini.

FINANCES

TUITION

The tuition fee, the same in all departments, is \$75 a year, payable in advance at the beginning of each term, as follows:

First term.....	\$30
Second term.....	\$30
Third term.....	\$15

Students in attendance less than a school year pay as follows: \$30 per term for each entire term, and a proportionate share of \$30, plus 20 per cent, for the fraction of any term, except that no reduction is made in the tuition of any pupil entering during the first three weeks of a term.

From the tuition payment of any pupil who may be obliged to absent himself after enrollment there is retained 20 per cent above the proportionate share of the term's tuition. No refund is made in the tuition of any pupil suspended or expelled.

Those taking but one period of study per day pay \$12.50 per term; those taking but two periods per day are charged \$25 a term. Full rates are charged for those who take more than two periods per day.

F E E S

Fees are required in the following work, payable at beginning of each term.

Biology.....	\$1 00
Chemistry.....	5 00
Clay Modeling.....	1 25
Cooking, Academy.....	6 00
Cooking, Grammar School.....	3 50
Cooking, Normal.....	6 00
Electrical Engineering.....	1 25
Forging.....	4 00
Free-hand Drawing and Painting, either or both.....	50
Geology.....	1 00
Pattern and Machine Shop.....	2 50
Physics.....	1 00
Sewing and Dressmaking, either or both.....	50
Sloyd, Grammar Grades.....	1 50
Sloyd, Normal.....	3 00
Typewriter, Use of.....	5 00
Wood Shop.....	1 50
Wood Carving, (1st year, 1st term).....	50

In wood carving, drawing, painting, sewing and dressmaking, students will furnish their own materials, and in all other work where extra large or unusually costly articles are desired, the material for the same will be paid for by the student.

Breakage and damage done to buildings, books, furniture, equipment, etc., or any tools lost will be charged to the student responsible for the same.

Term bills are payable strictly in advance, and students must submit the Secretary's receipt for the same to each instructor, whose classes he may seek to enter.

D I P L O M A F E E S

College.....	\$5 00
Normal School.....	1 25
Commercial School.....	1 25
Academy.....	1 25

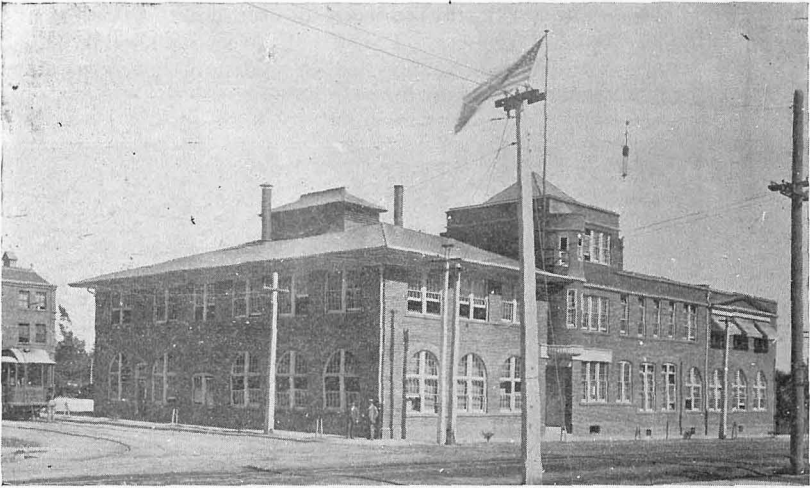
B O A R D

Good board can be obtained at from \$4.50 to \$6 per week. Any change in boarding place must be immediately reported at the office.

At the request of parents the Institute will assume responsibility for the care and oversight of students who board in homes approved by the officers of the Institute.

T E X T - B O O K S

The text-books used in the classes of the Institute may be purchased at the Institute book store on the second floor of East Hall.



POLYTECHNIC HALL

B U I L D I N G S

POLYTECHNIC HALL

Polytechnic Hall is a two-story brick building with a frontage of 148 feet on Fair Oaks avenue and 80 feet on Chestnut street. It contains the rooms described below :

W O O D S H O P

The wood shop, located on the second floor, is provided with twenty benches and turning lathes. The shop is also supplied with a large band saw, a fine jig-saw, a sand-papering machine for polishing surfaces, and a three-arbor circular saw built by the students in the several shops. Each bench has also a set of tools for general use.

Each student is provided with a locker, in which are kept the individual tools used in joinery and turning.

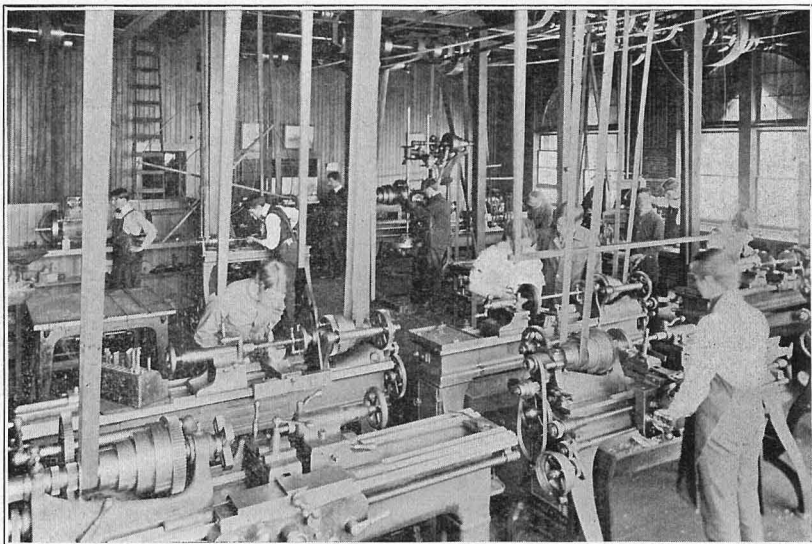
P A T T E R N S H O P

The pattern shop adjoins the wood shop, and has an equipment of lathes, etc., needed in making large and small patterns.

To increase the facilities of the pattern-shop a medium-sized brass furnace and a number of moulding benches are maintained, enabling students to test their patterns by casting in brass or softer metals.

F O R G I N G S H O P

The forging shop, situated on the first floor, is equipped for twenty-three pupils. The furnishings consist of five sets of Buffalo quadruple forges and three single forges, double emery grinders and drills, all operated by power. The anvils are furnished with all necessary tools for individual use and in addition there are sets of special tools for general use and for vise work.



M A C H I N E S H O P

The machine shop is situated in a large room on the first floor and is finely equipped for elementary and advanced machine practice. It is fitted with the following machines of the latest style: planer, shaper, drills, milling machine, emery grinder and a large number of lathes of various sizes. The tool room has a large assortment of general tools.

The power to run the different shops is furnished by a twenty horse-power motor, located in this department.

SLOYD ROOM, GRAMMAR GRADES

The grammar grade pupils have a commodious room, fitted with eighteen benches and the necessary hand tools for woodwork.

SLOYD ROOM, NORMAL SCHOOL

The room used for normal sloyd and manual training work is fitted with all necessary tools and equipment. Models, exercises and drawings of English, Swedish and German courses, and from American schools as well, are supplied for comparative study.

The library of the department includes the best works on psychology, education and manual training subjects.



SEWING ROOM

The sewing and garment-making room is located on the first floor. It is equipped with large tables, six sewing machines, a gas iron-heater and pressing-boards. Along two sides of the room are tables containing drawers for the individual use of students in this department. One portion of the room, cut off by curtains, is used as a retiring room for fitting purposes.

COOKING ROOM

The cooking room is located on the second floor and is supplied with tables upon which are gas stoves. Each table is provided with drawers for the caps, aprons, sleeve-protectors, notebooks, etc., of the two students assigned to work at that table. Other drawers contain cooking utensils, mixing and measuring dishes, stirring-spoons, kitchen knives and forks, etc., while in cupboards beneath is a full assortment of stove and kitchen furnishings. At either

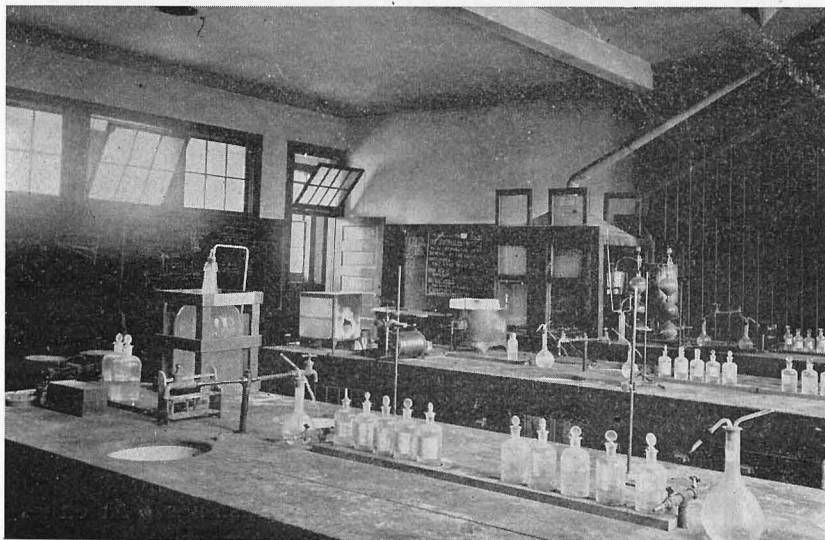
end of the table towels, etc., are hung. A large dust-proof cupboard, containing meal and flour bins, dish closets, etc., a large water-heater, a gas range, a large refrigerator, and cupboards for furnishings are also provided.



COOKING ROOM

MECHANICAL AND ARCHITECTURAL DRAWING ROOM

This is an east room, situated on the second floor, and is well lighted. It is furnished with tables, which have lockers, for each student. The room is also provided with models and casts illustrating the five orders of architecture. A number of valuable imported models for work on machine design are in use.

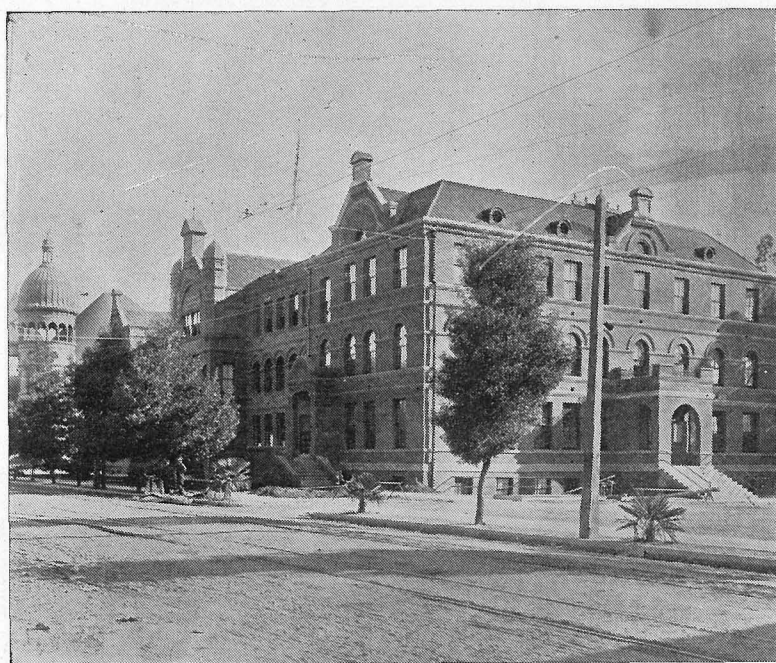


LABORATORY OF GENERAL CHEMISTRY

CHEMICAL LABORATORIES

The laboratory for general chemistry is situated on the second floor and is furnished with the usual desks, hood, etc. The analytical laboratory is on the first floor, and contains commodious desks for ten students, well arranged for convenient work in qualitative and quantitative analysis.

Both laboratories are supplied with a good assortment of apparatus and chemicals, which are loaned to the students without charge, payment being required for the cost of articles not returned in good condition.

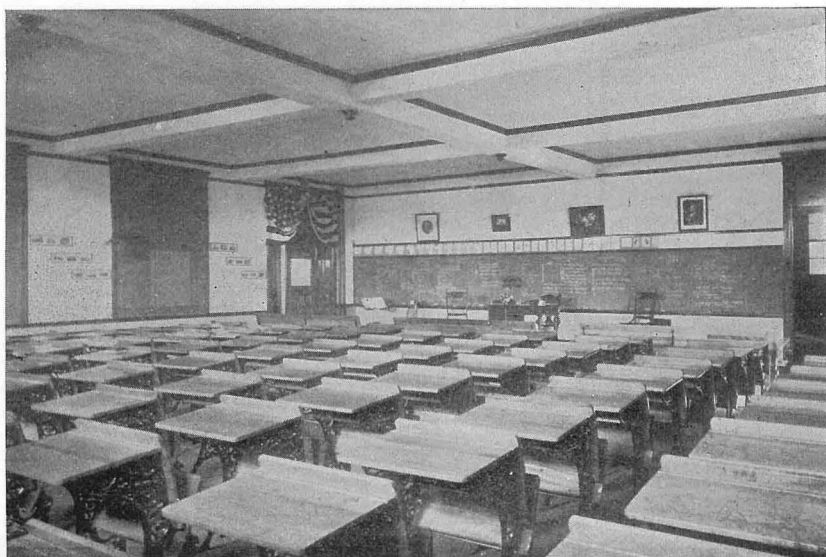


EAST HALL

East Hall is a large three-story brick building on Chestnut street and Raymond avenue. In addition to the rooms described below it contains a reception room, the offices of President and Business Manager, the general library, a large assembly room, various recitation rooms, etc.

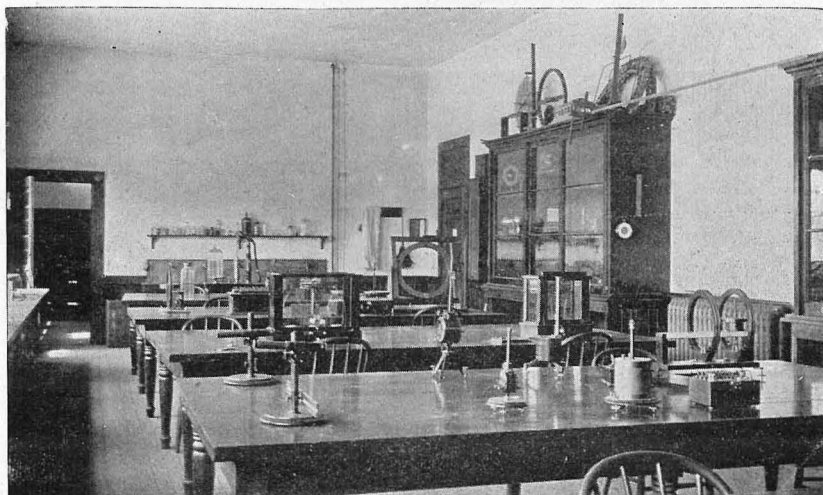
GRAMMAR SCHOOL

The entire lower floor of the addition to East Hall is devoted to the Grammar School. On the south is a large, well lighted assembly hall with a seating capacity of about one hundred; it connects with two recitation rooms on the north and with another on the



GRAMMAR SCHOOL

east. All rooms are seated with desks and fully equipped with all necessary appointments. The pupils of this School are provided with cloak and lunch rooms in the well lighted basement.

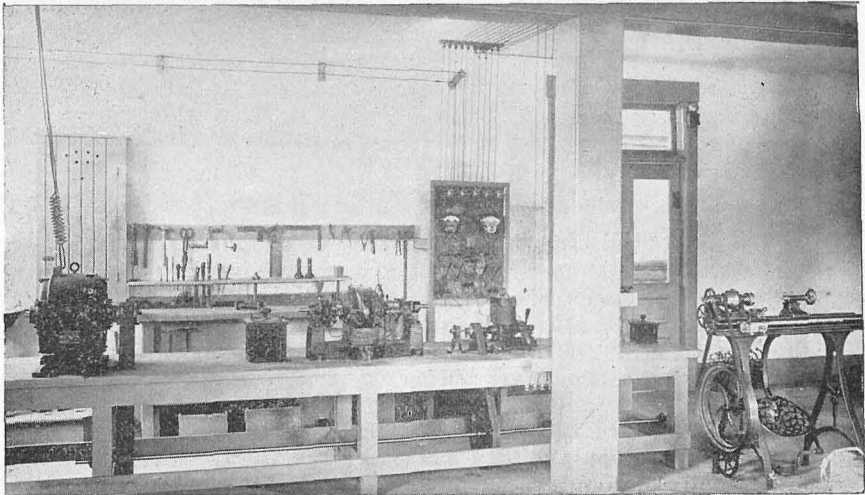


PHYSICAL LABORATORY

PHYSICAL AND ELECTRICAL ENGINEERING LABORATORIES

The Physical Laboratory is a large, well lighted room, fitted with gas and water pipes, electric wires, tables, lockers, cases, etc. This room is used for the elementary work in physics.

The Electrical Engineering Laboratory is a large room with cement floor, heavy piers of brick and cement, work-benches and cases. It is piped for gas and water and is wired for electric light and power. Here are found the facilities for precise work in advanced physics and electricity, in the solid foundations and freedom from outside disturbances.



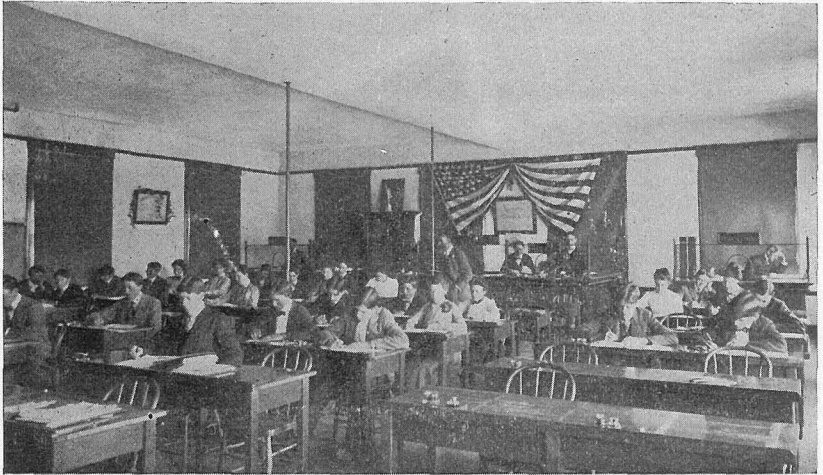
A CORNER OF THE ELECTRICAL ENGINEERING LABORATORY

These laboratories are well supplied with apparatus for physical, electrical and power measurements. Direct and alternating currents of various voltages are available for experimental work. A large dark room for use in photometry adjoins the Electrical Engineering Laboratory.

The Physical Laboratory also contains the library for this department, to which are continually being added the latest works on physics and electrical engineering.

COMMERCIAL SCHOOL

The Commercial School occupies the entire second floor of the new addition to East Hall, and contains all the furnishing, fittings and offices, including a bank, required by the best business and stenographic colleges.



COMMERCIAL ROOM

BIOLOGICAL ROOMS

The Biological Department is on the second floor. Facing the north is the laboratory (50x19) lighted by nine large windows, with tables and lockers for the use of students, an aquarium, book-cases and shelves, with other accommodations necessary for the work of the department in the different fields of natural science. Each table is supplied with its own gas burner.

The laboratory is furnished with seventeen compound Bausch and Lomb microscopes, thirty dissecting microscopes, a microtome, camera lucida, steam and dry sterilizing ovens, an incubator and other appliances required in the higher grades of work.

Adjoining the laboratory is a large class-room, well lighted and fitted with darkening shutters, which render it possible to exhibit objects on a screen either by solar or artificial light.

A small room furnishes accommodations for the collection required for the purposes of class teaching and individual study. Such collection is, of course, distinct both in purpose and nature from that of a museum, and must adjoin the laboratory and class-room.

MUSEUM

The museum occupies a large room on the third floor and contains the collections in mineralogy, geology, botany, zoology and archæology. A large addition has been made during the past year by the purchase of the collection of the late Dr. John Dickinson of Los Angeles. A number of books and specimens have also been placed in the museum by the late Professor E. W. Claypole. For the reception of the above mentioned material the room has been fitted up with a set of cases and drawers, in which the specimens are now arranged for reference.

SOCIETY HALL

The various literary and art clubs of the Institute share in the use of a large hall on the third floor. This hall is attractively furnished.

FREE-HAND DRAWING, PAINTING AND DESIGNING ROOMS

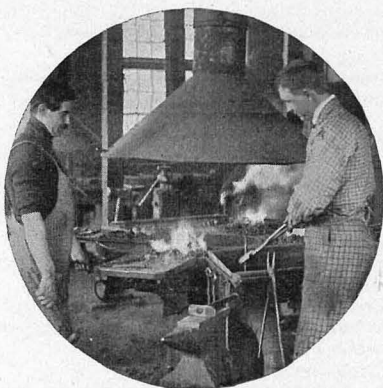
These rooms are fully equipped with all necessary appointments. The equipment is as follows: adjustable desks, which can be transformed into tables or easels, at any angle desired; a large table with water connection adapted for mounting designs and grinding colors; blackboards for class demonstrations of perspective principles; a full line of wooden models, type solids from which first lessons in perspective are given; a case of bric-a-brac and objects of still-life furnishing material for sketches; a complete set of charts used in study of historic ornament and design; plaster casts of historic ornament, natural leaf forms, masks, heads and full-length figures which serve as models in the rendering of light and shade in charcoal drawings.

WOOD CARVING AND CLAY MODELING ROOMS

The departments of Wood Carving and Clay Modeling occupy rooms in the basement of East Hall, fitted with work tables, lockers with tools for students' use and cases for exhibition of work. These rooms are furnished with a good selection of casts and charts, showing the various styles of historic ornament and a complete set of anatomical charts.

GYMNASIUM

A large, well lighted room in the basement is occupied by the classes in physical culture. It is provided with dumb-bells, Indian clubs, horizontal bar and other gymnastic apparatus.



SCHOOLS

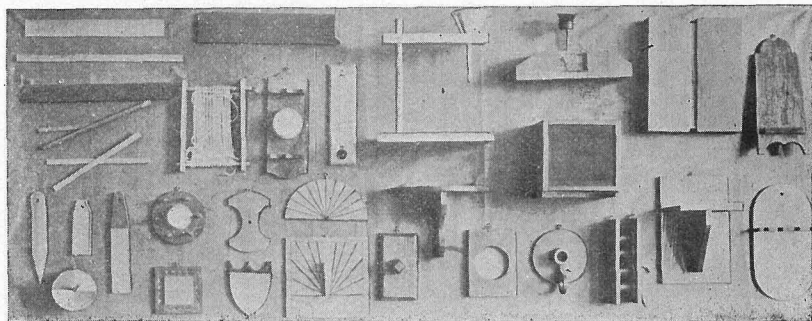
GRAMMAR SCHOOL

REQUIREMENTS FOR ADMISSION

Pupils are admitted to this School who have completed the usual third year of the public school. All pupils not bringing certificates from other schools are required to pass an examination before being classified. The work, as arranged for this School, consists of two lines—the ordinary book work and the manual work.

SCHEDULE OF WORK

4TH GRADE	{ Arithmetic—fundamental operations. English—language lessons from Hyde's Book I, Myths, Miss Harrison's In Story Land, and supplementary readings. History and Geography—elementary work with sand-modeling. Science—elementary work on plants and animals. Free-hand Drawing and Clay Modeling—brush work, ambidextrous drawing on blackboard. Writing—vertical. Manual Work—cardboard construction.
5TH GRADE	{ Arithmetic—review of fundamental operations, factoring, greatest common divisor, least common multiple, simple work in fractions, regular work in Wentworth's Practical Arithmetic. English—language lessons in Hyde's Book II, Frank Carpenter's Geographical Reader, The Song of Hiawatha. History and Geography—Montgomery's The Beginner's American History, Frye's Elements of Geography with sand-modeling. Science—elementary work on plants and animals. Free-hand Drawing and Clay Modeling—brush work, ambidextrous drawing on blackboard. Writing—vertical. Manual Work—cardboard construction, first half year, sloyd and mechanical drawing, second half year.
6TH GRADE	{ Arithmetic—fractions, denominate numbers completed, regular work in Wentworth's Practical Arithmetic. English—language lessons in Hyde's Book II completed, The Song of Hiawatha completed, John Burroughs Birds and Bees, Evangeline, Rice's Speller. History and Geography—Montgomery's The Beginner's American History completed, Frye's Complete Geography with map drawing and modeling. Science—elementary work on plants and animals. Free-hand drawing—outline drawing of objects with pencil, water color. Writing—vertical. Manual work—sloyd and mechanical drawing, sewing.



SLOYD MODELS—GRAMMAR GRADES

- | | |
|-----------|---|
| 7TH GRADE | { Arithmetic—application of percentage and supplementary work, Wentworth's Practical Arithmetic completed.
English—elements of grammar and analysis, regular work in Reed and Kellogg's Higher Lessons in English, Evangeline completed, Charles Dudley Warner's A Hunting of the Deer, Lady of the Lake, Rice's Speller.
Geography—geography completed, with map drawing and modeling.
Elementary Science.
Free-hand drawing.
Writing—vertical.
Manual Work—sloyd and mechanical drawing, cooking, sewing. |
| 8TH GRADE | { Arithmetic—arithmetic reviewed, using the algebraic equation, and introducing elementary geometry, regular work in Walsh's Higher Arithmetic.
English—Reed and Kellogg's Higher Lessons in English completed, Lady of the Lake completed, Six Selections from Sketch Book, Rice's Speller.
History—Fiske's United States History.
Elementary Science.
Free-hand Drawing—perspective and first principles in designing.
Writing—vertical.
Manual Work—sloyd and mechanical drawing, cooking, sewing. |

The course in English includes a thorough drill in writing, spelling and composition.

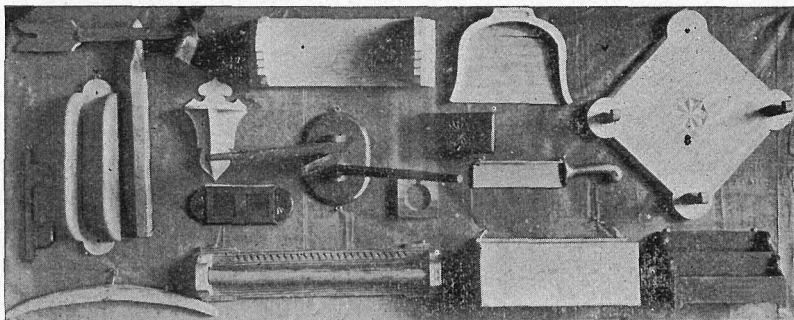
Instruction in French by the conversational method may be elected by pupils in the seventh and eighth grades.

Instruction is given in vocal music, theory and sight-reading.

Systematic work in physical culture is given.

Fourth, fifth and sixth grades will spend forty-five minutes daily in the sloyd room, the seventh and eighth grades, ninety minutes.

Working drawings of all models precede their construction in wood.



SLOYD MODELS—GRAMMAR GRADES

Each student will require the following articles : a drawing-board, a T-square, triangles, set of drawing instruments, thumb-tacks, drawing-paper, pencils and erasers, which need not cost over \$4 and will be useful later in the Academy.

ACADEMY

REQUIREMENTS FOR ADMISSION

All candidates for admission to the Academy will be required to show their ability to compose, spell and punctuate, and to use capital letters correctly.

Students holding a certificate of graduation from a California grammar school, or any other school of equivalent grade, will be admitted without further examination. All other applicants will be subject to examination in arithmetic, grammar, English, geography and United States history.

In arithmetic the examination will be upon the following subjects : fundamental operations, factoring, greatest common divisor, least common multiple, fractions, denominate numbers, applications of percentage, involution, evolution, mensuration, and the metric system ; in grammar and English, upon elements of English grammar and the analysis of the sentence, Lady of the Lake, and Evangeline.

COURSES OF STUDY IN THE ACADEMY

The diploma of graduation is granted upon the completion of one of the following courses:

	CLASSICAL	LITERARY	SCIENTIFIC
FIRST YEAR	English 1 Algebra I Plane Geometry I Latin 1 { Drawing, Free-hand and Mech. Manual Training	English 1 Algebra I Plane Geometry I { German 1, French 1, or Latin 1 { Drawing, Free-hand and Mech. Manual Training	English 1 Algebra I Plane Geometry I { Physiography and Comparative Anatomy { Drawing, Free-hand and Mech. Manual Training
SECOND YEAR	English 2 Algebra II Plane Geometry II Latin 2 { Drawing, Free-hand and Mech. Manual Training	English 2 Algebra II Plane Geometry II { German 2, French 2 or Latin 2 { Drawing, Free-hand and Mech. Manual Training	English 2 Algebra II Plane Geometry II { Zoology and Botany { Drawing, Free-hand and Mech. Manual Training
THIRD YEAR	English 3 History 1 Latin 3 Drawing Manual Training	English 3 History 2 { German 1, or French 1 Drawing Manual Training	English 3 { German 1, or French 1 Chemistry 1 Drawing Manual Training
FOURTH YEAR	History 3 { Zoology and Botany, Chemistry 1, or Physics 1 Latin 4 Drawing Manual Training	History 3 { Zoology and Botany, Chemistry 1, or Physics 1 { German 2 or French 2 Drawing Manual Training	History 3 Mathematics 3 and 6 Physics 1 { German 2 or French 2 Drawing

Arabic and Roman numerals in the above table refer to subjects outlined on pages 24 to 35.

A subject selected may not be dropped after two weeks from the time of choice, and must, thereafter, be pursued until successfully completed. In special cases, for reasons satisfactory to the Faculty Council, this regulation may be set aside.

Work in physical culture is required of all girls.

If Latin, French or German be chosen it must be pursued for not less than two years to receive credits for the work. In the literary course two years of Spanish may be substituted for two years of Latin.

Considerable freedom of choice is allowed in the selection of manual training work indicated in table above. Boys, however, are recommended to select Shop-work 1, 2, 3, 4, 5, 6.

No one is permitted to take more than one manual training course (two periods daily) at a time, except in the case of an advanced student making up back work.

In the first two years free-hand and mechanical drawing are carried along together, the student taking free-hand two periods and mechanical three periods per week for the first half year and mechanical two periods and free-hand three periods per week the second half year, or vice versa. In the last two years the student may elect either free-hand or mechanical, taking the one elected five periods per week throughout the year.

In special cases courses may be arranged substituting book subjects for manual training work. A diploma of graduation certifying that fact will be granted to any student completing such a course.

To a limited extent subjects from the commercial course may be substituted for subjects named above and physical culture for other manual work.

SUBJECTS AND METHODS OF INSTRUCTION IN THE ACADEMY

MATHEMATICS

1. ALGEBRA I. Fundamental operations, simple equations, factors, fractions. Text-book: Hall and Knight's Algebra for Colleges and Schools. Three periods per week throughout the year.

2. ALGEBRA II. Simultaneous equations, involution, evolution, theory of indices, surds, quadratic equations. Text-book as above. Three periods per week throughout the year.

3. HIGHER ALGEBRA. Indeterminate equations of the first degree, inequalities, ratio, proportion, variation, arithmetical, geometrical and harmonical series, permutations and combinations, proof of binomial theorem for any index, logarithmic calculations, convergency and divergency of series, undetermined coefficients, continued fractions, summation of series, theory of equations with solution of cubics and biquadratics having commensurable roots, determinants, Text-book: Hall and Knight's Elementary Algebra, edition 1900, or Algebra for Colleges and Schools. Five periods per week first half year.

4. PLANE GEOMETRY I. Books I and II in Beman and Smith's New Plane and Solid Geometry. Two periods per week throughout the year.

5. PLANE GEOMETRY II. Books III, IV and V of text given above. Two periods per week throughout the year.

6. SOLID GEOMETRY. Course as given in Beman and Smith's New Plane and Solid Geometry. Five periods per week second half year.

ENGLISH

All regular students are required to take instruction in English during three years of the Academic course. Frequent and varied

written exercises are required. Special attention given to spelling, punctuation, paragraphing and the forming of a plain natural style. Much care given to oral reading, especially in English 1 and 2.

The following subjects are made the basis of study. Those marked (a) are to be critically studied. Those marked (b) are for general reading and the student will be expected to gain a knowledge of their subject-matter and the lives of their authors :

1. FIRST YEAR WORK. (a) The Alhambra, Snow Bound, Classic Myths, Cotter's Saturday Night.

(b) Horatius, Priscner of Chillon, Sir Roger de Coverley.

Five periods per week throughout the year.

2. SECOND YEAR WORK. (a) Merchant of Venice, Julius Cæsar, Winter, Deserted Village, Tam O'Shanter, The Ancient Mariner, L'Allegro, Il Penseroso.

(b) Winter Morning Walk, Warren Hastings.

Five periods per week throughout the year.

3. THIRD YEAR WORK. (a) Comus, Lycidas, Milton's Sonnets, The Elegy, Eve of St. Agnes, The Cloud, The Nightingale, The Skylark, Tintern Abbey, Ode on Intimations of Immortality, Ode to Duty, Passing of Arthur, Vision of Sir Launfal.

Speeches: Burke, at Bristol; Webster, in Reply to Hayne; Macaulay, on Reform Bill.

(b) Alexander's Feast, The Rape of the Lock, Laodamia, Transcript from Euripides, Silas Marner, Vicar of Wakefield, The Bard.

Five periods per week throughout the year.

ELOCUTION

1. ELEMENTARY COURSE. The aim of this course is to instruct students how to remedy defective speech, to articulate distinctly, to see, to think, to understand, to feel; to appreciate noble literature; and to express thought and emotion by a natural and responsive use of voice and body.

HISTORY

Four courses in history are offered; courses 3 and 4 are required of all students before graduating.

1. ANCIENT HISTORY. Eastern Nations, Greece and Rome, with special reference to the development of the institutions, and the growth and influence of the arts and literature of each. Text-book: Myers and Allen, with collateral assigned reading. Five periods per week throughout the year.

2. MEDIÆVAL AND MODERN HISTORY. Particular attention paid to institutional growth and social life of the people. Text-book: Myers Mediæval and Modern History, with reading of Emerton's Introduction to the Middle Ages, and Seeböhm's Era of the Protestant Reformation. Five periods per week throughout the year.

3. AMERICAN HISTORY. Special attention to development of the Constitution. Text-book: Montgomery's History of the United States. Five periods per week first two terms.

4. CIVICS. Text-book: John Fiske's Civil Government in the United States. Five periods per week last term.

L A T I N

1. BEGINNING LATIN. Special attention to forms and vocabularies; translation of the exercises from Latin into English and from English into Latin; structure of Latin sentence and comparison with English sentence-structure. Collar and Daniell's First Latin Book. Five periods per week throughout the year.

2. INTRODUCTION TO ROMAN LITERATURE. The readings comprise selections from the *Viri Romæ*, Cornelius Nepos and Cæsar, with a generous amount of sight-reading; critical study of text, with translation into idiomatic English; prose composition; incidental study of history and geography throughout the year. Allen and Greenough's Grammar, Rolfe and Denison's Junior Latin Book. Dodge and Tuttle's Prose Composition. Five periods per week throughout the year.

3. CICERO'S ORATIONS. Textual study, as in Cæsar, sight-reading and composition; historical allusions investigated; the system of Roman government; powers of officers; customs and occupations of the people; geography involved in the text is made an incidental topic of study. Allen and Greenough's New Cicero. Five periods per week throughout the year.

4. VERGIL'S ÆNEID. Structure of the poem, with the theory and practice of scansion; translation into idiomatic English; study of the superstitions and religious rites of antiquity, as well as the myths and legends; minute word study and analysis. Allen and Greenough's text. Five periods per week throughout the year.

G E R M A N

1. FIRST YEAR WORK. Careful attention to correct pronunciation; thorough drill in forms, and in the principles of syntax; practice in translation at sight and hearing and in conversation. Text-books: Joynes-Meissner's German Grammar to syntax; Brandt's German Reader. Five periods per week throughout the year.

2. SECOND YEAR WORK. Exercises throughout the year in conversation, translation and composition. Text-books: Joynes-Meissner's German Grammar finished. Reading of standard German literature. Five periods per week throughout the year.

F R E N C H

1. FIRST YEAR WORK. The grammar and vocabulary, reading French in order to obtain the pronunciation, a study of the verbs,

and frequent dictations. French conversation required in class. Text-books: Whitney's Practical French Grammar. Guerber's Contes et Légendes. La Tâche du Petit, Pierre Mairet. Five periods per week throughout the year.

2. SECOND YEAR WORK. Special study of the syntax and idioms and practice in French conversation. Abbé Constantin, Ludovic Halévy; French Reader, Rollins; La Tulipe Noire, Dumas. Five periods per week throughout the year.

3. THIRD YEAR WORK. Reading, composition and conversation. Text-books: Madame Thérèse, Erckmann-Chatrian; Le Cid, Corneille; La Chute, Victor Hugo; Pecheur d'Islande, Pierre Loti; selected plays of Racine and Moliere. Five periods per week throughout the year.

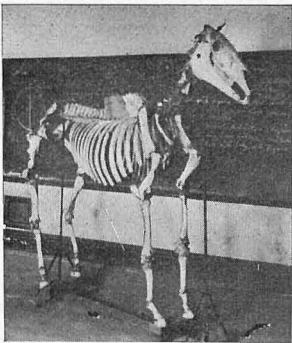
SPANISH

1. FIRST YEAR WORK. Thorough drill in pronunciation and forms by means of much conversation; practice in translation at sight and hearing. Text-books: Garner's Spanish Grammar, Woman's Spanish Readers and Matzke's Spanish Readings. Five periods per week throughout the year.

2. SECOND YEAR WORK. Exercises throughout the year in conversation; translation at hearing; essays; correspondence; reading of standard Spanish; review of forms; syntax. Text-books: Ford's Spanish Composition; Matzke's Spanish Readings and other modern Spanish literature. Five periods per week throughout the year.

NATURAL SCIENCE

1. PHYSIOGRAPHY. This subject occupies one period daily during the first half-year. It includes the relation of the Earth to the other



SKELETON PREPARED BY STUDENTS
IN PHYSIOLOGY

bodies in the solar system, the agents affecting its surface, such as rivers, waves, tides, currents, glaciers, etc. The relation of the animal and plant worlds to their environments is also considered. Five periods per week first half-year.

2. PHYSIOLOGY AND COMPARATIVE ANATOMY. This subject is taken up during the second half of the year. It includes the comparative structure of the vertebrata and their adaptation to their conditions of life, their resemblances and differences in their organs. The bearing of these points on questions of health and sanitation is clearly shown. Text-

book : Physiology, Experimental and Descriptive, Colton. Five periods per week second half year.

3. ZOOLOGY. The purpose of this study is to afford an opportunity of examining the leading types of animal life, chiefly invertebrate, and also of becoming acquainted with some of the common living objects which are met in daily life. Man's relation to the rest of the organic creation, the advantages which he receives and the losses which he suffers from them, also receive attention. Ten periods per week first half year.

4. PHÆNOGAMIC BOTANY. This subject includes the structure and functions of the organs of the phænogamic plants, studied both by the unaided eye and by the microscope. Systematic work is also done in naming and classifying the plants of Southern California. Text-book : The Foundations of Botany, Bergen. Ten periods per week second half year.

CHEMISTRY

1. GENERAL CHEMISTRY. The first half-year's work consists of the study of the non-metallic elements and the essentials of chemical theory. Its principal aim is to develop scientific methods of observation and thought, to which the acquirement of the mere facts of chemistry is considered of secondary importance. To this end experiments are selected which require considerable care in manipulation, and illustrate quantitative relations of substances so far as possible. The time spent in laboratory work is seven periods per week. The experimental work is individual, and careful notes must be daily submitted to the instructor for examination. Accompanying the laboratory work there are one lecture and two recitations per week. The lectures discuss some of the industrial applications of the chemistry of the elements studied in the laboratory. Considerable attention is paid to the solution of problems.

The metals are studied in the second half-year through the medium of qualitative analysis, and lectures are given on the metallurgy and industrial chemistry of the principal elements.

Text-books : Freer's Elements of Chemistry ; Irish's Qualitative Analysis. Preparation required : Algebra I, Plane Geometry I, English I. Students are strongly advised to defer beginning chemistry until the third year of their academy course.

PHYSICS

1. GENERAL PHYSICS. Instruction is given by means of laboratory work with discussion of experiments performed and study of references to text and books in library. Experiments are performed by the student himself. They are not illustrative of some principle already learned, but lead the student to deduce the principles from the phenomena observed. Whenever possible quantitative experi-

ments are employed. Careful notes are required in this and the following courses.

Text-books: Elements of Physics, Crew; Manual of Experimental Physics, Nichols, Smith and Turton. Preparation required: Algebra I and II, Plane Geometry I and II. Ten periods per week throughout the year.

FREE-HAND DRAWING

1. **PERSPECTIVE.** Principles of perspective as applied in the drawing of simple type forms, beginning with cube, sphere, cylinder, etc., followed by objects based on type solids; perspective drawings of wood and iron-shop models. Relative proportion, and the study of values in light and shade are developed in the execution of drawings of still-life, corners of rooms, houses, etc. Two periods per week first half-year and three periods per week second half-year, or vice versa.



STUDENT'S WORK IN DRAWING

2. **DESIGN AND LETTERING.** Systematic drill in the execution of curves and scrolls as applied to ornamental design; original application of scrolls to iron and wood designs. These designs are practical, and are wrought in iron, or carved in wood by the student designer. Lettering, as applied to book covers, posters, menus, etc. Pen and ink rendering of the leading styles of ornament. Two periods per week first half-year and three periods per week second half-year, or vice versa.

3. **CHARCOAL, PEN AND INK.** Drawing in charcoal, groups of still-life and cast; flowers executed in pen and ink and water color; textile designing in color. Five periods per week throughout the year.

4. **CHARCOAL, WATER COLOR, SKETCHING.** Advanced work in charcoal from cast, full-length figure; sketching from life. Five periods per week throughout the year.

Special courses may be planned to meet the needs of advanced students.

MECHANICAL DRAWING

1. **ELEMENTARY GEOMETRIC AND SHOP DRAWING.** Practice sheets of lines and circles; free-hand and geometric lettering; ortho-

graphic projections of simple models ; elementary working drawings of wood-shop models drawn to scale ; tracing and blue-printing ; drawings of supplementary shop exercises. Two periods per week first half-year and three periods per week second half-year, or vice versa.

2. PROJECTION AND PERSPECTIVE. Cavalier and isometric projections ; methods of stretching paper and coloring drawings ; orthographic projection of objects inclined to the plane of projection ; patterns and developments ; intersection of solids ; fundamental principles of perspectives ; application of simple shadows. Two periods per week first half-year and three periods per week second half-year, or vice versa.

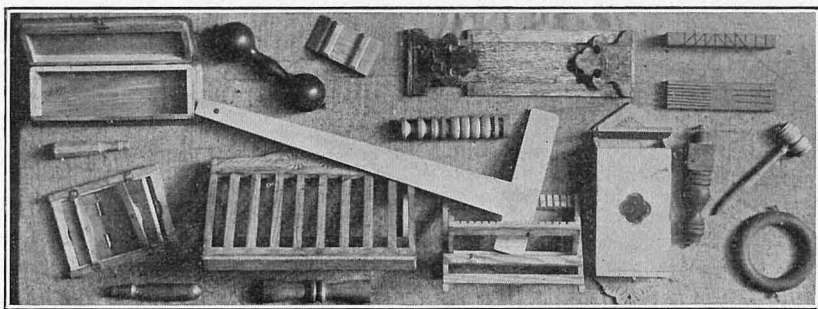
3. ARCHITECTURAL AND MACHINE DRAWING. Complete set of plans of moderate priced cottage, perspective of house and of one room ; projection of shadows ; machine details, bolts, nuts, rivets, monkey wrench, machinist's vise with section details, sketches to be made first ; details of machinery, lathe, drill, shaper, grinder or dynamo. Five periods per week throughout the year.

4. KINEMATICS. Mechanical movements, external and internal epicycloidal and involute gears, spur gears, bevel gears, cams, eccentrics and useful geometric problems in connection therewith. Five periods per week throughout the year.

Special courses may be planned to meet the needs of advanced students.

SHOP - WORK

1. WOOD WORK. This course consists of work in joinery, turning and cabinet-making. Each article is complete and useful in itself and has been designed to secure a gradual growth in the difficulty of construction, and at the same time present practical, useful and æsthetic elements.



TYPICAL EXERCISES IN JOINERY AND TURNING

Near the close of the year each student may make an ornamental piece of work under the direction of the instructor, or he may take advanced work looking to greater skill and practice in cabinet-making.

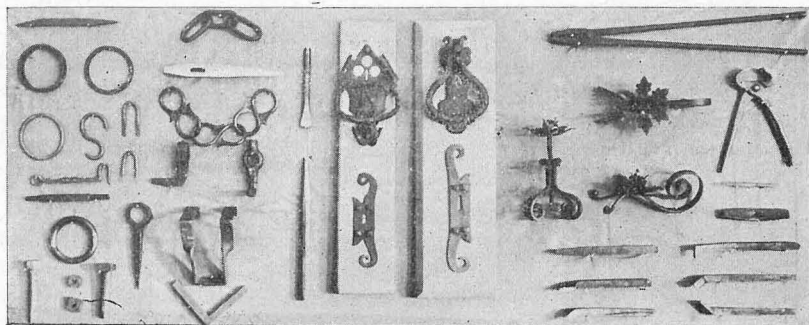
The course in turning consists of progressive exercises involving center, face plate, chuck-work and inside turning. Ten periods per week throughout the year.

For students who have completed the sloyd course, a special course is offered, on the completion of which they will receive full wood-shop credit.

2. FORGING. (a) Forge. Mechanism and care of forge ; preparation of forge for fire ; building and managing fire.

(b) Tools. Instruction in the care and use of tools.

(c) Processes. The processes involved in the year's work are : drawing, bending, upsetting, different kinds of welding, punching,



TYPICAL EXERCISES IN FORGING

drilling, fullering, swaging, cutting cold, chipping, cutting hot, splitting, twisting, filing, brazing, hardening, tempering, and ornamental iron work.

(d) Tempering. Hardening in water and oil, tempering or drawing, temperatures and colors used, and processes in tempering tools for wood and iron work.

(e) Ornamental iron work. Simple pieces of ornamental iron work are brought into the course during the year, preparatory to the more elaborate piece made at the close of the year. Preparation required : Wood Work, Algebra I and Plane Geometry I. Ten periods per week throughout the year.

3. PATTERN-MAKING I. This course comprises a series of exercises embodying the principles governing pattern construction, with lectures and illustration of molding and other foundry practice having direct bearing upon pattern work.

The allowances for draft, shrinkage and casting finish are kept prominently before the student throughout the course, and with each succeeding model additional principles are brought out, comprising split patterns, simple and complex core-work, rib-work, segment-work, filleting, etc. Patterns may be actually tested in the molding sand, as the pattern-shop has, as an adjunct, properly furnished molding benches and brass furnace. Some work in molding is required of every student.

Preparation required: Algebra I and II, Plane Geometry I and II, Forging. Ten periods per week first term.

4. **PATTERN-MAKING II.** A continuation of the work begun in Pattern-making I. See also Machine-shop Practice II. Preparation required: Pattern-making I and Machine-shop practice I. Ten periods per week first term.

5. **MACHINE-SHOP PRACTICE I.** In bench and vise work the student takes up chipping, filing, scraping, polishing, laying out of work, etc.

As a preparation for work on the machines, a careful investigation of each machine is required, to familiarize the student with its construction and various motions, the office of each bolt, nut, handle, gear wheel, etc., being determined, and the general design compared with other machines. The care of machines is considered at this point, and a systematic study is made of the needs of the machine for successful and rapid operation.

Machine work is begun with a series of exercises illustrating the principal processes, as plain turning, facing, thread-cutting, inside boring and threading, turning of tapers, hand tool and chuck-work of all kinds.

At different stages of the course work is given on the shaper, planer, drill-presses and milling machines.

Text-books are not used. Students are expected to provide themselves with calipers and scale.

Preparation required: Pattern-making I. Ten periods per week last two terms.

6. **MACHINE-SHOP PRACTICE II.** This course and Pattern-making II continue the work begun in the previous courses, and embrace exercises illustrating more complicated processes, and a large amount of practical work on actual construction of machines. During each year there are constructed various pieces of machinery, all of the work on which is done by the students.

Preparation required: Pattern-making II. Ten periods per week last two terms.

WOOD CARVING

This work aims to give practical application to the principles gained in drawing and modeling.

1. ELEMENTARY CARVING. Instruction in the care and use of tools; exercises to illustrate the principles of carving; application of these principles in designing and ornamenting furniture, in chip-carving, incising and low relief in historic arts.



STUDENT'S WORK IN WOOD CARVING

Students are required to make the working drawings as well as the designs for the decoration of all work.

Lectures on the general structure of wood, its preparation for use, and the special qualities necessary to render it suitable for carving. Ten periods per week throughout the year.

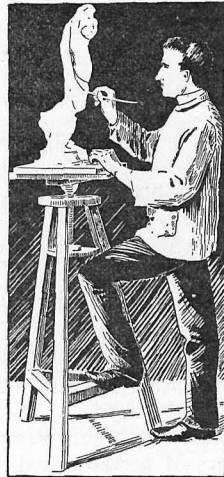
2. ADVANCED CARVING. Low and high relief in historic styles, introducing the additional features of grotesque figures. Ten periods per week throughout the year.

CLAY MODELING

This work is of great value in comprehending the facts of form; as drawing is but the representation of form, the student is made stronger in drawing by coming in contact with the realities of form, viz., length, breadth and thickness.

1. ELEMENTARY MODELING. Modeling of fruits, flowers and sprays of foliage from nature and cast; different styles of historic ornament from cast, and original designs; portrait-relief from cast; mask and head from cast; animals, such as Barye's lions and panthers. Ten periods per week throughout the year.

2. ADVANCED MODELING. Modeling portrait busts from cast; full-length figure from cast; portrait busts from life; lectures on antique and modern sculpture. Ten periods per week throughout the year.

STUDENT MODELING—
DRAWN BY STUDENT

DOMESTIC ECONOMY

1. PLAIN SEWING. (a) The fundamental principles of hand-

sewing, basting, running, hemming, hem-stitching, tucking, felling, sewing on lace, darning, etc.

(b) Machine sewing, plain stitching, hemming, tucking and gathering.

(c) Continuation of plain sewing. Practical experience in shopping by each pupil.

During the year a complete suit of underwear is usually made by each pupil ; also a shirt waist and a cotton dress. Some preliminary study in designing for the dressmaking course will be done. Neatness and accuracy are demanded in all work.

Free-hand Drawing 1 must be taken either previously to this course or in the same year with it. Ten periods per week throughout the year.

2. DRESSMAKING. (a) Taking measures for drafting ; drafting tight-fitting basque with bias darts ; cutting, fitting and finishing waists ; trimming and draping the same ; putting on collars and revers ; drafting, cutting and making sleeves ; cutting gored and circular skirts, lining, interlining and hanging them.

(b) Choice of materials, cost, amount, harmony of colors ; appropriateness of dress to individual ; practical experience in shopping.

(c) Matching stripes, plaids and figured goods ; fitting stout figures.

Preparation required : Plain Sewing. Free-hand Drawing 2 must be taken either previously to Dressmaking or in the same year with it. Ten periods per week throughout the year.

3. COOKING I. (a) The fundamental principles of cookery and practice in the preparation of vegetables, soups, meats, cereals, biscuits, eggs ; cost of materials ; care of kitchen ; serving a simple dinner.

(b) Instruction in the preparation of more complicated dishes ; bread, fish, oysters, poultry, etc. ; setting and serving a table.

(c) Entrees, salads, desserts, pastry, cake and creams ; jellies, canning of fruits and vegetables.

(d) Menus ; marketing ; giving of entire breakfasts, luncheons and dinners.

(e) In connection with cookery, instruction will be given in the classification and composition of foods, the action of water upon starch and albumen ; tea, coffee and alcohol, their food values and effects upon the system ; the yeast plant ; fermentation—lactic, vinous and acetic ; baking powders, soda and cream of tartar.

Other subjects treated will be the development of odors and flavors of foods ; food for the sick ; food adulterations ; the cheapest and most wholesome foods ; physiology of digestion and a general plan of household work.

Special lectures on Chemistry of Cookery and on Bacteriology.

Throughout the year dietaries and nutrition will be kept con-

stantly in mind, the object being as much to study the scientific principles of food as to prepare palatable viands.

Books required : Mrs. Rorer's Cook Book, blank-books for chemistry notes. Ten periods per week throughout the year.

4. **MILLINERY.** The object of this course is to give a thorough training in the principles of millinery. Instruction and practice are given in the making of linings, facings and bows, and the making and trimming of hats in various shapes according to the prevailing modes and styles. Free-hand Drawing 1 must be taken either previously to this course or in the same year with it.

PHYSICAL CULTURE

1. **GENERAL COURSE.** The course in physical culture aids students in maintaining a high standard of vitality, corrects bad postures, develops larger lungs, better control, greater strength. It consists of carefully graded exercises with wands, Indian clubs, and dumbbells, breathing gymnastics, instruction on horizontal and parallel bars, ground tumbling and general athletics. Most of this work is given in the open air.

There are separate classes for girls and for boys, and all girls are required to take the course unless excused for cause. Ample time is allowed for change of costume.

There is throughout the most careful supervision to prevent any possible over-strain.

COMMERCIAL SCHOOL

REQUIREMENTS FOR ADMISSION

Students having passed in the studies of the eighth grade are admitted to the courses of this School, but the commercial student who has graduated in a high school, or even college course of studies, will be greatly advantaged thereby.

COURSE OF STUDY

FIRST YEAR	{	Bookkeeping 1	SECOND YEAR	{	Bookkeeping 2
		Spelling 1			Stenography 2
		English 1			Spanish 2
		Arithmetic 1			Commerce 1
		Penmanship 1			Commercial Law 1
		Spanish 1			Economics 1
		Stenography 1			Typewriting 1
					Arithmetic 2

SUBJECTS AND METHODS OF INSTRUCTION IN THE COMMERCIAL SCHOOL

BOOKKEEPING

1. **GENERAL BOOKKEEPING.** (a) Class and personal instruction in the nature of transactions and accounts, journalising, and recording transactions.

(b) Opening, conducting and closing accounts and books of accounts; use of the Journal, Cash-Book, Sales-Book, Invoice-Book, Ledger, and auxiliary books in retailing and wholesaling.

(c) Conducting business with a cash capital, constructing, passing, filing and disposition of business papers and vouchers.

Text-book : Sadler-Rowe Co's. "Budget System"; in which the student from the beginning is inducted into, and practices the duties of an office accountant. Ten periods per week throughout the year.

2. SPECIAL BOOKKEEPING. (a) Single entry, retailing changed to double entry books and continued in use of customer's ledger.

(b) Commission books, most modern form.

(c) Manufacturing books, voucher system.

(d) Banking, a full set of books, papers and vouchers illustrating a first class national bank, in all its daily routine, with settlements with other banks through the clearing house. During the course the student devotes some time to the practical work of banking before taking up our ideal set of bank books.

(e) Wholesale merchandising illustrated by the books of the great house of Marshall Field & Co., Chicago.

Ten periods per week throughout the year.

STENOGRAPHY

1. AMANUENSIS STENOGRAPHY. (a) Class and private instruction in the principles of shorthand writing.

(b) Writing from dictation, and reading the notes.

(c) Drill for accuracy in writing, in the use of the Shorthand Dictionary and Phrase-Book.

Text-books : Cross's Manual, Practice Exercise Book, Dictionary, Phrase-Book. Five periods per week throughout the year.

2. GENERAL STENOGRAPHY AND COURT REPORTING. (a) Writing from dictation and reading notes.

(b) Special speed drill to acquire the ability to write rapidly and read readily.

(c) Drill in amanuensis work.

(d) Drill in court, and general reporting.

Ten periods per week throughout the year.

TYPEWRITING

1. THEORETICAL AND PRACTICAL TYPEWRITING. (a) Thorough drill in the touch method.

(b) Drill in business and legal forms, manifolding, etc.

(c) Drill in doing the work of the various teachers of the Institute and the incidental work of the school.

Text-book : Barnes. Five periods per week throughout the year.

COMMERCE

1. INTRODUCTION TO THE STUDY OF COMMERCE. Text-book : Clow. Five periods per week during the first term.

COMMERCIAL LAW

1. ELEMENTARY COMMERCIAL LAW. Text-book : Parkinson. Five periods per week during the second term.

ECONOMICS

1. ELEMENTARY ECONOMICS. Text-book : Bullock. Five periods per week during the third term.

ARITHMETIC

1. BUSINESS ARITHMETIC I. (a) Special daily drill for accuracy and speed in the practice of the fundamental rules.

(b) Interest, percentage, commission, discounts, etc.

Text-book : Goodyear and Marshall. Five periods per week throughout the year.

2. BUSINESS ARITHMETIC II. Daily drill on practical problems applying to all features of commercial work. Five periods per week throughout the year.

PENMANSHIP

1. PLAIN PENMANSHIP. (a) Study of the science.

(b) Practice of plain penmanship, from the black-board illustrations and written copies, for ease, uniformity, legibility and speed.

(c) Writing from copies and from dictation, bills, invoices, etc.

Five periods per week throughout the year.

SPELLING

1. GENERAL AND COMMERCIAL TERMS. (a) General spelling and syllabication, both oral and written.

(b) Mercantile, financial, manufacturing, commission, banking, railroading, dry-goods, drugs, hardware and other special terms.

(c) Reading commercial reports and other commercial literature.

Text-book : Sadler-Rowe Co. Five periods per week throughout the year.

ENGLISH

See page 25.

SPANISH

See page 27.

 NORMAL SCHOOL

 REQUIREMENTS FOR ADMISSION

Admission to this School can be gained by persons holding teachers' certificates, by graduates of High and Normal Schools or Colleges, and by others giving satisfactory evidence of attainments necessary to secure a teachers' certificate in this State.

Students properly qualified, may, with the approval of the Faculty, omit certain book subjects, and select such other work as will gain the necessary number of credits for graduation.

COURSES

	MANUAL TRAINING	DOMESTIC ECONOMY	ART
FIRST YEAR	FIRST HALF Psychology Free-hand Drawing 5 Mechanical Drawing 5 Manual Training 1 Physical Culture	Psychology Free-hand Drawing 5 Mechanical Drawing 5 Cooking II Sewing I Physical Culture	Psychology Free-hand Drawing 5 & 6 Mechanical Drawing 5 Clay Modeling 3 Physical Culture
	SECOND HALF Psychology Free-hand Drawing 5 Mechanical Drawing 5 Manual Training 1 Physical Culture	Psychology Free-hand Drawing 5 Cooking II Sewing I Physical Culture	Psychology Free-hand Drawing 5 & 6 Mechanical Drawing 5 Clay Modeling 3 Physical Culture
SECOND YEAR	FIRST HALF Pedagogy Manual Training 2 Clay Modeling 3 Theory and Methods Practice Teaching Physical Culture	Pedagogy Free-hand Drawing Cooking III Sewing II Theory and Methods Practice Teaching Physical Culture	Pedagogy Free-hand Drawing 7 Clay Modeling 4 Theory and Methods Practice Teaching Physical Culture
	SECOND HALF History of Education Manual Training 2 Wood Carving 3 Theory and Methods Physical Culture Thesis	History of Education Free-hand Drawing 5 Cooking III Sewing II Theory and Methods Practice Teaching Physical Culture Thesis	History of Education Free-hand Drawing 8 Clay Modeling 4 Theory and Methods Practice Teaching Physical Culture Thesis

SUBJECTS AND METHODS OF INSTRUCTION IN THE NORMAL SCHOOL

E D U C A T I O N

1. ELEMENTS OF PSYCHOLOGY. Recitations and practical work. James' Psychology used as general text in recitations. The physiological, pathological and experimental phases; problems under association, habit, attention, etc. discussed. Reference books: Central Nervous System, Halleck; Growth of the Brain, Donaldson; Primer of Psychology, Titchener, and other texts.

2. PEDAGOGY. Applications of psychology in teaching; general method in primary, grammar and secondary school work; recitations and discussions with assigned readings. Texts: McMurry's General Method; Talks on Pedagogics, Parker; Manual of Pedagogy, Put-

nam; Essentials of Method, De Garmo; Science in Education, Herbart; Art of Study, Hinsdale.

3. HISTORY OF EDUCATION. Lectures, assigned readings and discussions; Historical Survey of Pre-Christian Education, Laurie; History of Pedagogy, Compayré; Educational Reformers, Quick; History of Education, Seely.

4. THEORY AND METHODS. Methods of teaching and special subjects in the department in which the student is working. Organization, equipment and management of departments and schools, etc. Investigation of schools and methods.

5. PRACTICE TEACHING. Practice is given in teaching pupils of the various primary and grammar grades, under the supervision of the department directors and the principal of the Normal School.

FREE-HAND DRAWING

5. PRINCIPLES OF PERSPECTIVE. Drawings and sketches artistically rendered to illustrate the principles of cylindric, rectangular and oblique perspective; model and blackboard drawing; brush work; charcoal; designing; history of art; lectures on historic ornament, sculpture and painting.



DRAWN BY STUDENT

6. DESIGN AND COMPOSITION. The principles of design and composition as applied to straight and curved line designs; landscape composition; surface patterns; book covers; metal and textile designs.

7. DRAWING IN CHARCOAL. Still-life and cast; head and full length figure from cast; pose drawing, thirty minute sketches from life.

8. WATER-COLOR. Studies of flowers and still-life, also applied design; history of art; lectures on the history of architecture, sculpture, painting and ornament.

MECHANICAL DRAWING

5. GENERAL COURSE. Principles of working drawings, plans, elevations, sections, scales; orthographic and isometric projections; perspective; architectural drawing; domestic architecture: tracing and blue-printing.

DOMESTIC ECONOMY

5. SEWING I. Study of textiles; manufacture of cloth; draping, cutting and fitting; ornament in the home; history of costumes;



SEWING MODELS

models and plans for sewing in the third, fourth, fifth, sixth, seventh and eighth grades of the public schools, with methods of teaching.

6. SEWING II. Designing; combination of colors; models for making of garments.

7. COOKING II. Physiology of digestion; assimilation; biology; bacteriology; chemistry of the human body; composition of foods; cooking and serving of breakfasts, dinners and lunches.



DRAWN BY STUDENT

Text-books: Mrs. Rorer's Cook Book; Cereals, Frederick Sargent; Advanced Physiology, Frank Overton; Food, Church.

8. COOKING III. Study of menus; dietaries; national foods; evolution of the home; home and public hygiene; invalid dietary; catering; fancy cookery; laundry work.

Text-books: Food and Feeding, Sir Henry Thompson; Eating and Drinking, Hoy; Quiz-compend in Chemistry, Leffman.

MANUAL TRAINING

1. ELEMENTARY MANUAL TRAINING.

(a) Manual training for primary schools; paper construction; thin wood processes; wire work; reed and raphia.

(b) Bench work—sloyd; cardboard construction; chip carving for decoration.

2. ADVANCED MANUAL TRAINING.

(a) Advanced shop work; Venetian iron work; joinery.

(b) Cabinet work; designing and making of original models.

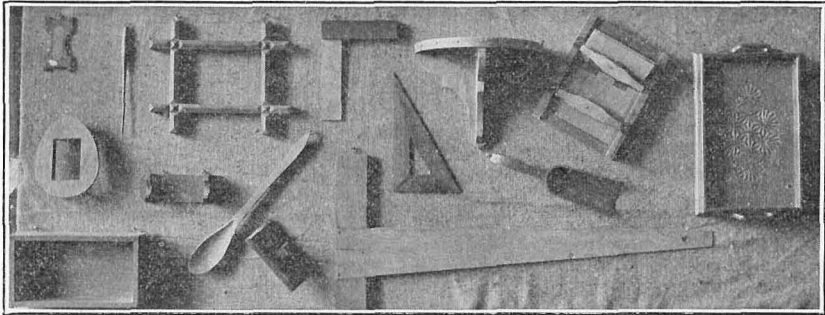
3. SPECIAL COURSE. Special course in joinery and cabinet work, inlaying, turning and forging for men.

WOOD CARVING

3. NORMAL COURSE. Elementary work in exercises and small articles aiming to give a thorough knowledge of the foundation principles and a comprehensive view of the purpose and practice of carving as applied to elementary schools.



DRAWN BY STUDENT



TYPICAL MANUAL TRAINING MODELS—NORMAL SCHOOL

CLAY MODELING

3. NORMAL MODELING I. Modeling of fruits, flowers, etc., from nature and cast; ornament and plant forms; head from cast in relief and in the round.

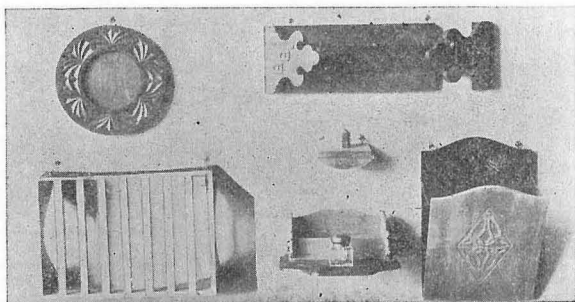
4. NORMAL MODELING II. Modeling full length figure from cast; portrait bust from life.

PHYSICAL CULTURE

2. PHYSIOLOGY OF EXERCISE AND WORK IN GYMNASIUM. Consideration of organs of work, local and general fatigue, breathlessness, muscle stiffness, overwork and its effects, power of resisting

fatigue, effects of different kinds of exercise, office of brain and nervous system in muscle work, etc.

Practical talks will be given to students on class drill in calisthenics, remedial and corrective gymnastics, history of physical training and classified exercises.



ORIGINAL MODELS—NORMAL SCHOOL, MANUAL TRAINING

In addition to theory students will also be given such practice as will enable them to do light work in teaching and the prescription of exercise.

COLLEGE

REQUIREMENTS FOR ADMISSION

The requirements for admission to the college are as follows :

(1) The completion of one of the Academy courses outlined on page 23 ; or (2) the completion of a course in an accredited High School or an approved Preparatory School ; or (3) passing an examination upon English 1, 2 and 3 and Mathematics 1 and 2, and any eleven of the following subjects, as outlined on pages 24 to 35: Physiography, Botany and Zoology, Physics 1, Chemistry 1, Latin 1, Latin 2, Latin 3, Latin 4, German 1, German 2, French 1, French 2, History 1, History 2, History 3, Mathematics 3 and 6. Any applicant offering Latin, French or German must present at least two years of each.

COURSES

The following tables show the work required of students for the degree of B. S. in each department. To the subjects named below must be added elective work to make a total of 32 credits.

Although courses in Mechanical, Civil and Mining Engineering are not outlined below, considerable work is given in these branches

of engineering and their collateral subjects. It is also the purpose of the Institute to extend the work along these lines as demand for it arises.

	CHEMISTRY	ELECTRICAL ENGINEERING	PHYSICS	NATURAL SCIENCE
FIRST YEAR	Chemistry 1 Mathematics 7, 8 English 4 { French 1, or German 1	Physics 2 Mathematics 7, 13 English 4 Drawing—Mech. Shop-work 1	Physics 2 Mathematics 7, 13 English 4 Chemistry 2, 3, 4 Drawing—Mech.	Biology { Physics 1, or Chemistry 1 { French 1, or German 1 English 4
SECOND YEAR	Chemistry 2, 3, 4 Physics 2 Mathematics 9 { French 2, or German 2	Electrical Engineering 1 Mathematics 9 Chemistry 2, 3, 4 Drawing—Mech. Shop-work 2	Physics 3 Mathematics 9 Chemistry 5, 6, 7 Drawing—Mech.	{ Cryptogamic Botany, or Phys- iology of Plants { Adv. Physiology and Anatomy Chemistry 2, 3, 4 { French 2, or German 2
THIRD YEAR	Chemistry 5, 6, 7 Mathematics 10 Mineralogy	Electrical Engineering 3, 4 Mathematics 10 Drawing—Mech. Shop-work 3	Physics 4, 5 Mathematics 10 Drawing—Mech.	{ Comparative Physiology and Morphology { Comparative Anatomy and Histology Mineralogy
FOURTH YEAR	Chemistry 8, 9, 10	Electrical Engineering 4, 5 Mathematics 14	Physics 6, 7 Mathematics 14	{ Geology and Palaeontology Bacteriology

Arabic numerals above refer to the subjects described below, pages 43 to 48.

The Institute reserves the right not to organize classes in any given subject, unless at least eight students elect said subject.

SUBJECTS AND METHODS OF INSTRUCTION IN THE COLLEGE

M A T H E M A T I C S

In all the courses given below, stress will be laid on such parts of mathematics as are of especial help in scientific work.

7. TRIGONOMETRY. The course comprises plane and spherical trigonometry. Problems from text-books proven in the field, also solved by the class. Five periods per week first half-year.

8. SURVEYING. (a) Plane Surveying. Survey with chain alone; with compass and chain; leveling with "Y" level; making profiles of elevations and grades. Adjustment of transit and level. Plotting the field work, also field work done from plottings.

(b) Higher surveying. Trigonometrical surveying. Running railroad preliminary lines; setting slope stakes; plotting cross-sections; calculating cut and fill, running grade lines for irrigating ditches or roads.

(c) Field Engineering. Theory and practice of laying out curves, side-tracks; economic principles of railway location and construction. Henck's and Searle's Field Books are used.

(d) Land Surveying. Plotting field work, using various methods of representing topography, calculation of areas by latitudes and departures, also by use of the planimeter. Henck's and Searle's Field Books are used. Ten periods per week throughout the year.

9. ANALYTIC GEOMETRY. Analytic Geometry of two dimensions, Analytic Geometry of three dimensions. Five periods per week throughout the year.

10. CALCULUS. Differential and Integral Calculus. Five periods per week throughout the year.

11. DIFFERENTIAL EQUATIONS. A course in Differential Equations with especial reference to such applications as occur in Physics and Engineering. Five periods per week throughout the year.

12. ALTERNATING CURRENTS. Mathematical Theory of alternating Currents in Electricity. Five periods per week throughout the year.

13. DESCRIPTIVE GEOMETRY. Five periods per week throughout the year.

14. THEORETICAL AND APPLIED MECHANICS. The work in Statics will contain applications to the science of stresses in bridges and framed structures, and that in Dynamics to the theory of machines for measuring work, the theory of energy in its application to the theory of steam and other heat engines, etc. Five periods per week throughout the year.

ENGLISH

4. DEVELOPMENT OF ENGLISH LITERATURE. Written exercises throughout the course. Stopford A. Brooke's History of English Literature will be made the basis of study, with the reading of the following: Hall's Beowulf, Chaucer's Prologue, Book II Spenser's Faerie Queen, Thayer's Best Elizabethan Plays (Except Duchess of Malfi), Pilgrim's Progress, Milton's Paradise Lost, Books I and II, Sheridan's Rivals. Preparation required: English 3. Five periods per week throughout the year.

LATIN

1, 2, 3 and 4, as outlined on page 26.

GERMAN

1 and 2, as outlined on page 26.

FRENCH

1, 2 and 3, as outlined on pages 26 and 27.

E D U C A T I O N

1, 2 and 3, as outlined on pages 38 and 39.

N A T U R A L S C I E N C E

5. **BIOLOGY.** This subject treats of the essential unity existing between plants and animals. The lower microscopic forms are studied for the purposes of demonstrating the fundamental structures of organized life and its variations.

Preparation required: Elementary Botany and Zoology. Ten periods per week throughout the year.

6. **CRYPTOGAMIC BOTANY.** In this subject the more difficult forms of plant life are taken up; the ferns, mosses, lichens, fungi, etc. These studies prepare for an understanding of the early history of plant life on the globe and the antiquity of the cryptogamic type.

Preparation required: Course 4. Ten periods per week throughout the year.

7. **PHYSIOLOGY OF PLANTS.** The chemistry and physics of plant life and the frame work of plant tissue in which such changes as daily occur in plants take place are the essential topics of this course.

Preparation required: Course 4, Chemistry 1, Physics 1. Ten periods per week throughout the year.

8. **ADVANCED PHYSIOLOGY AND ANATOMY.** The more difficult parts of these subjects are undertaken in laboratory work and experiments. The mechanics of the skeleton, detailed and experimental studies of the circulatory system, its structure and function; the chemistry of digestion and inspiration, the physiology of muscle, represent some of the topics selected, the exact subjects depending largely on the previous preparation of the students.

Preparation required: Course 2, Physics 1, or Chemistry 1. Ten periods per week throughout the year.

9. **COMPARATIVE PHYSIOLOGY AND MORPHOLOGY.** This course is designed to introduce the student to the study of the structure and function of selected animal forms, from the most simple to the most complex. A comprehension of the development of the more specialized from the generalized types is thus gained and an idea of the close kinship of all animal life.

Preparation required: Courses 2, 4, 8. Text-book: Comparative Physiology and Morphology of Animals, Joseph Le Conte. Ten periods per week throughout the year.

10. **COMPARATIVE ANATOMY AND HISTOLOGY.** The study of the tissues or materials forming the animal body, of the variations in gross structure in different animals, of the development of the individual as shown by embryology, forms the subject matter of this course. The making of histological preparations, sections, etc., is an important part of the work.

Preparation required: Courses 2, 5, 8. Ten periods per week throughout the year.

11. MINERALOGY. This course offers a detailed study of the elements of mineral analysis. The first half of the year being devoted to study of the type forms and the second to a more systematic study of the sub-groups of minerals. The work is largely practical, analysis of unknowns receiving an important place.

Text-book : Crosby's Mineralogical Tables. Preparation required : Course 1, Chemistry 1. Five periods per week throughout the year.

12. GEOLOGY. The first half of the year is devoted to the surface features of the earth, especial consideration being given to the great agents of destruction and construction now at work. In the second half a study of the geological succession of rocks and the animal and plant life. Palæontology, is undertaken.

Text-books : Dana's Revised Text-Book of Geology. Preparation required : Courses 1, 3, 4, 11, Chemistry 1, Physics 1, Principles of Mechanical Drawing. Five periods per week throughout the year.

13. BACTERIOLOGY. The elements of Bacteriology are mastered, a study of typical forms, their life histories, disease producing powers or their uses and their peculiarities of growth. The principles of the technique of sterilization, preparation of culture media, staining, etc., form an important part of the work.

Preparation required : Courses 2, 5, 7, 10. Ten periods per week throughout the year.

CHEMISTRY

1. Course outlined on page 28.

2. QUALITATIVE ANALYSIS. Qualitative analysis is reviewed and completed in the second year. The work consists of the analysis of unknowns of fairly complicated nature, including minerals and industrial products. The laboratory work is accompanied by critical study of the processes used. Text-book : A. A. Noyes' Qualitative Chemical Analysis. Students are also advised to procure Prescott and Johnson's Qualitative Analysis. Preparation required : Chemistry 1 and Physics 1. Ten periods per week for twenty-four weeks.

3. INORGANIC PREPARATIONS. Method of preparation and purification of inorganic chemicals, starting with raw materials. Tests for impurities. Discussion of reactions. Preparation required : Chemistry 2. Eight periods per week for twelve weeks.

4. THEORETICAL CHEMISTRY. Important points of the theories of chemistry. Text-book : Remsen's Theoretical Chemistry. Preparation required : Chemistry 2. Two periods per week for eighteen weeks.

5. ORGANIC CHEMISTRY. Recitations on typical members and reactions of the various groups of carbon compounds. Laboratory work upon class reactions. Text-books : Remsen's Organic Chemistry, Noyes and Mulliken's Class Reactions of Organic Compounds. Preparation required : Chemistry 2, 4. Two periods per week throughout the year. Laboratory work eight periods per week for eighteen weeks.

6. **QUANTITATIVE ANALYSIS I.** Typical determinations in gravimetric and volumetric analysis. Discussion of methods and solution of stoichiometrical problems. Text-book: Talbot's Quantitative Analysis. Preparation required: Chemistry 2. Ten periods per week for eighteen weeks.

7. **ASSAYING.** Fire assay for gold, silver and lead. Volumetric assay for copper and silver. Preparation required: Chemistry 6. This course must be accompanied by mineralogy. Ten periods per week for twelve weeks.

8. **QUANTITATIVE ANALYSIS II.** Advanced work, comprising analysis of industrial products, minerals, milk, water, foods, air, etc. Preparation required: Chemistry 6. Twenty periods per week for eighteen weeks.

9. **INDUSTRIAL CHEMISTRY.** Lectures and readings on important chemical industries, inorganic and organic. Two periods per week for eighteen weeks.

10. **HISTORY OF CHEMISTRY,** and reading of French and German chemical literature. Preparation required: German 2, Chemistry 2. Two periods per week for eighteen weeks.

PHYSICS

2. **GENERAL ADVANCED PHYSICS.** This course is intended for those who wish to continue their work in physics or pursue the work in electrical engineering. Recitations are accompanied by laboratory work, consisting of a series of physical measurements intended to supplement Physics 1.

Theory of Physics by Ames, and a Manual of Experiments in Physics by Ames and Bliss are used as texts. Preparation required: Physics 1 and Chemistry 1. Ten periods per week throughout the year.

3. **ELECTRICITY AND MAGNETISM.** Practically the same as Electrical Engineering 1. The laboratory work in it and the following courses in Physics consist largely of quantitative experiments intended to acquaint the student with the use and adjustment of physical instruments, to familiarize him with and enable him to use with skill and precision the different methods of determining physical constants. A study is also made of the sources of error incidental to physical measurements, and the means of eliminating them or correcting for them.

Preparation required: Physics 2, Mathematics 7. Ten periods per week throughout the year.

4. **MECHANICS.**

5. **HEAT.**

6. **SOUND,**

7. **LIGHT.**

} 4, 5, 6, and 7 will not be offered in 1902-03.

ELECTRICAL ENGINEERING

1. ELECTRICAL MEASUREMENTS. Determination of horizontal component of the earth's magnetism and galvanometer constants; measurement of resistance, current, electromotive force and capacity; study of magnetic qualities of iron and characteristic curves of dynamos and motors. Instruction is given by work in the laboratory together with discussion of experimental work and reading references. Text-book : Electrical Measurements, Carhart and Patterson. Preparation required. Physics 2 and Mathematics 7. Ten periods per week throughout the year.

2. POWER MEASUREMENTS. Theory and use of steam engine indicator, cradle dynamometer and Prony brake; efficiency tests of dynamos and motors; photometry. Text-book : A Laboratory Manual of Physics and Applied Electricity, Nichols, Vol. II, Part I. Preparation required: Electrical Engineering 1. Ten periods per week first half year.

3. DYNAMO DESIGN. The derivation and practical application of the formulas used in the design of dynamos and motors. Text-book : Dynamo Electric Machines, Wiener. Preparation required, Electrical Engineering 1. Ten periods per week second half year.

4. ALTERNATING CURRENTS. Study of alternating currents by analytical and graphical methods accompanied by work in the laboratory. Text-books : Alternating Currents, Franklin and Williamson; A Laboratory Manual of Physics and Applied Electricity, Nichols, Vol. II, Part II. Preparation required : Calculus and Electrical Engineering 3. Ten periods per week first two terms.

5. ELECTRICAL TRANSMISSION AND DISTRIBUTION OF POWER. Text-book : Electric Power Transmission, Bell.

In this course the usual methods of instruction are supplemented by visits to the various electrical plants in the vicinity and by talks from men engaged in commercial electrical work.

Preparation required : Electrical Engineering 4. Ten periods per week last term.

TABULAR ARRANGEMENT OF SUBJECTS

A C A D E M Y

M or G in "Credit" column indicates whether the subject earns Manual (M) or General (G) credits.

	KIND OF WORK	PERIODS PER WEEK	NUMBER OF WEEKS	NUMBER OF CREDITS	PREPARATION REQUIRED
Algebra I.....	Rec.	3	36	1.3 G	
Algebra II.....	Rec.	3	36	1.3 G	Algebra I
Higher Algebra.....	Rec.	5	18	1. G	Algebra II
Plane Geometry I.....	Rec.	2	36	1. G	
Plane Geometry II.....	Rec.	2	36	0.7 G	Plane Geometry I
Solid Geometry.....	Rec.	5	18	0.7 G	Plane Geometry II
Trigonometry.....	Rec.	5	18	1. G	Alg. I and Solid Geom.
English 1.....	Rec.	5	36	2. G	
English 2.....	Rec.	5	36	2. G	English 1
English 3.....	Rec.	5	36	2. G	English 2
Elocution.....					
History 1.....	Rec.	5	36	2. G	
History 2.....	Rec.	5	36	2. G	
History 3.....	Rec.	5	24	0.7 G	English 3
History 4.....	Rec.	5	12	1.3 G	History 3
Latin 1.....	Rec.	5	36	2. G	
Latin 2.....	Rec.	5	36	2. G	Latin 1
Latin 3.....	Rec.	5	36	2. G	Latin 2
French 1.....	Rec.	5	36	2. G	
French 2.....	Rec.	5	36	2. G	French 1
French 3.....	Rec.	5	36	2. G	French 2
German 1.....	Rec.	5	36	2. G	
German 2.....	Rec.	5	36	2. G	German 1
Spanish 1.....	Rec.	5	26	2. G	
Spanish 2.....	Rec.	5	26	2. G	Spanish 1
Physiography.....	Rec.	5	18	1. G	
Comp. Anatomy.....	Lab.	5	18	1. G	
Zoology.....	Rec.	10	18	1. G	Physiog. and Com. Anat.
Botany.....	Lab.	10	18	1. G	Physiog. and Com. Anat.
Chemistry 1.....	Rec.	7	36	2. G	Algebra I, II, Geom. I, II, English 2
Physics 1.....	Lab.	7	36	2. G	Algebra I, II, Geom. I, II, English 2
F. H. Drawing 1.....	Draw.	3 or 2 2 or 3	18 18	0.5 M	
F. H. Drawing 2.....	Draw.	3 or 2 2 or 3	18 18	0.5 M	Freehand Drawing 1
F. H. Drawing 3.....	Draw.	5	36	1. M	Freehand Drawing 2
F. H. Drawing 4.....	Draw.	5	36	1. M	Freehand Drawing 3
Mech. Drawing 1.....	Draw.	2 or 3 3 or 2	18 18	0.5 M	
Mech. Drawing 2.....	Draw.	3 or 2 3 or 2	18 18	0.5 M	Mech. Drawing 1
Mech. Drawing 3.....	Draw.	5	36	1. M	Mech. Drawing 2
Mech. Drawing 4.....	Draw.	5	36	1. M	Mech. Drawing 3
Wood Work.....	Shop	10	36	2. M	
Forging.....	Shop	10	36	2. M	Wood Work
Pattern-shop Practice I.....	Shop	10	18	1. M	Forging and Pl Geom II
Pattern-shop Practice II.....	Shop	10	18	1. M	Machine-shop Prac. I
Machine-shop Practice I.....	Shop	10	18	1. M	Pattern shop Prac. I
Machine-shop Practice II.....	Shop	10	18	1. M	Pattern-shop Prac. II
Plain Sewing.....	Shop	10	36	2. M	Freehand Drawing 1
Dressmaking.....	Shop	10	36	2. M	Plain Sew., F. Draw. 2
Millinery.....	Shop	10	36	2. M	Freehand Drawing, 1
Cooking.....	Shop	10	36	2. M	
Clay Modeling 1.....	Shop	10	36	2. M	
Clay Modeling 2.....	Shop	10	36	2. M	Clay Modeling 1
Wood Carving 1.....	Shop	10	36	2. M	
Wood Carving 2.....	Shop	10	36	2. M	Wood Carving 1
Physical Culture.....	Gym.	5	36	1. M	Required of all girls

COMMERCIAL SCHOOL

	KIND OF WORK	PERIODS PER WEEK	NUMBER OF WEEKS	NUMBER OF CREDITS	PREPARATION REQUIRED
Bookkeeping 1.....	Rec. Book.	10	36	2. M	Bookkeeping 1
Bookkeeping 2.....	Rec. Book.	10	36	2. M	
Stenography 1.....	Rec. Dict.	5	36	0.5 M	Stenography 1
Stenography 2.....	Rec. Dict.	10	36	1. M	
Typewriting.....	Type.	5	36	0.5 M	Arithmetic 1
Commerce.....	Rec.	5	12	0.7 G	
Commercial Law.....	Rec.	5	12	0.7 G	
Economics.....	Rec.	5	12	0.7 G	
Arithmetic 1.....	Rec.	5	36	1. G	
Arithmetic 2.....	Rec.	5	36	1. G	
Penmanship.....	Writ.	5	36	1. M	
Spelling.....	Rec.	5	36	1. G	

NORMAL SCHOOL

	KIND OF WORK	PERIODS PER WEEK	NUMBER OF WEEKS	NUMBER OF CREDITS	PREPARATION REQUIRED
Psychology.....	Rec.	5	36	2. G	English 3, History 3 Psychology Pedagogy Psychology
Pedagogy.....	Rec.	5	18	1. G	
History of Education.....	Rec.	5	18	1. G	
Theory and Methods.....	Rec.	5	36	2. G	
Practice Teaching.....	Teach.	5	36	2. G	
Freehand Drawing 5.....	Draw.	10	36	2. M	
Freehand Drawing 6.....	Draw.	10	36	2. M	
Freehand Drawing 7.....	Draw.	15	18	1.5 M	
Freehand Drawing 8.....	Draw.	15	18	1.5 M	
Mechanical Drawing 5.....	Draw.	5	36	1. M	
Cooking II.....	Rec. Cook.	13	36	2.6 M	
Cooking III.....	Rec. Cook.	8	36	1.6 M	
Sewing I.....	Sew.	10	36	2. M	
Sewing II.....	Sew.	10	36	2. M	
Manual Training 1.....	Shop	18	36	3. M	
Manual Training 2.....	Shop	15	36		
Manual Training 3.....	Shop				
Wood Carving 3.....	Shop	10	18	2. M	
Clay Modeling 3.....	Shop	8	36	1.6 M	
Clay Modeling 4.....	Shop	8	36	1.6 M	
Physical Culture 2.....	Rec. Gym.	2	36	0.5 M	

COLLEGE

	KIND OF WORK	PERIODS PER WEEK	NUMBER OF WEEKS	NUMBER OF CREDITS	PREPARATION REQUIRED
Surveying.....	Field	10	36	2. G	Trigonometry
Analytic Geometry.....	Rec.	5	36	2. G	Trigonometry
Calculus.....	Rec.	5	36	2. G	Analytical Geometry
Differential Equations.....	Rec.	5	36	2. G	Calculus
Descriptive Geometry.....	Rec.	5	36	2. G	Solid Geometry
Mechanics.....	Draw.	5	36	2. G	Differential Equations
English 4.....	Rec.	5	36	2. G	English 3
Biology.....	Rec.	10	36	2. G	Natural Science 3, 4
Cryptogamic Botany.....	Lab.	10	36	2. G	Natural Science 4
Physiology of Plants.....	Rec.	10	36	2. G	Nat. Science 4, Chemis- try 1, Physics 1
Advanced Physiology and Anatomy.....	Lab.	10	36	2. G	Nat. Science 2, Physics 1, or Chemistry 1
Comparative Physiology and Morphology.....	Rec.	10	36	2. G	Natural Science 2, 4, 8
Comparative Anatomy and Histology.....	Lab.	10	36	2. G	Natural Science 2, 5, 8
Mineralogy.....	Rec.	5	36	2. G	Nat. Science 1, Chemis- try 1
Geology.....	Lab.	5	36	2. G	Nat. Science 1, 3, 4, 11
Bacteriology.....	Rec.	10	36	2. G	Nat. Science 2, 5, 7, 10
Qualitative Analysis.....	Lab.	8	24	1.3 G	Gen. Chemistry, Phys- ics 1
Inorganic Preparations.....	Rec.	2	12	0.5 G	Qualitative Analysis
Theoretical Chemistry.....	Lab.	8	12	0.2 G	Qualitative Analysis
Organic Chemistry.....	Rec.	6	18	2. G	Theoretical Chemistry
Quantitative Analysis I.....	Lab.	2	36	2. G	
Assaying.....	Rec.	8	18	1. G	Qualitative Analysis
Quantitative Analysis II.....	Lab.	2	12	0.3 G	Quantitative Analysis I
Industrial Chemistry.....	Rec.	20	18	2. G	Quantitative Analysis I
History of Chemistry.....	Read.	2	18	1. G	Qualitative Analysis
Physics 2.....	Rec.	5	18	1. G	Theoretical Chemistry, Organic Chemistry
Electricity and Mag- netism.....	Rec.	1	12	0.2 G	Physics 1, Chemistry 1
Electrical Measurements	Lab.	7	36	2. G	Physics 1, Chemistry 1
Power Measurements.....	Rec.	3	36	2. G	Physics 2, Math. 7
Dynamo Design.....	Lab.	7	36	2. G	Physics 2, Math. 7
Alternating Currents.....	Rec.	3	36	2. G	Physics 2, Math. 7
Trans. and Dist. of Power.....	Lab.	10	18	1. G	Electrical Measurem'ts
	Rec.	10	18	1. G	Electrical Measurem'ts
	Draw.	10	18	1. G	Electrical Measurem'ts
	Lab.	10	24	1.7 G	Mathematics 10, Dyna- mo Design
	Rec.	10	12	0.3 G	Alternating Currents

LIST OF STUDENTS

1901-1902

COLLEGE

Applegate, Fred Dwight.....	Pasadena
Beardslee, James Louis.....	Azusa
Burt, Dodge.....	Pasadena
Daggett, Maud.....	Pasadena
Dyer, Kirk Worrell.....	Pasadena
Gaylord, James Mason.....	Pasadena
Hayes, Edward.....	El Monte
Maxson, Edgar Schuyler.....	Rivera
McCutchan, Henry Chester.....	Azusa
McDonald, Ella Nancrede.....	Pasadena
McManaman, Wilson.....	Monrovia
Nicholson, Maude Louise.....	Pasadena
Paine, William Craig.....	Redlands
Perkins, Edith (B. S.).....	South Pasadena
Perkins, Elinore (B. S.).....	South Pasadena
Shoemaker, Richard Woolsey.....	Pasadena
Sprague, Lucy (A. B.).....	Pasadena
Van Sickle, Foster.....	Pasadena
Wamsley, Frank Cook.....	Glendora
Wood, Helen.....	Glendora
Yerxa, Ernest Lee.....	Pasadena

NORMAL SCHOOL

Bailey, Ada Macomb.....	Los Angeles
Blanchard, Estelle.....	Los Angeles
Chapin, Grace June.....	Pasadena
Colyer, Gertrude.....	Pasadena
Fish, Carrie May.....	Pasadena
Gooch, Mrs. Emma A.....	Cedarville
Gould, Marie Augusta.....	Pasadena
Greening, Susie.....	Los Angeles
Hahn, Ida.....	Pasadena
Hait, Ida Mae.....	South Salem, N. Y.
Holton, Lola.....	Ramona
Howard, Celia Eleanora.....	Pasadena
Keller, Nora Edith.....	Azusa
Pease, Caroline Virginia.....	Pasadena
Richards, Bessie Everett.....	Pasadena
Ross, Donald A.....	Pasadena
Ross, Minnie Elizabeth.....	Pomona
Seegmiller, Frances Caroline.....	Lamanda
Wakeham, Blanche.....	Santa Ana
Wyman, Florence Edna.....	Los Angeles

ACADEMY

Bagnard, Lionel.....	Altadena
Ballou, Edward Allen.....	Pasadena
Bandini, Ralph.....	Pasadena
Barker, Atha.....	Los Angeles
Barker, Karl Herbert.....	Los Angeles
Barnard, Junius Lorraine.....	Pasadena

Barnwell, Reginald Huntington.....	Alhambra
Beecher, Sumner.....	Kingman, Ariz.
Belknap, Fred Roland.....	Pasadena
Bender, Burr William.....	Glendora
Bixby, Edward Hillard.....	Lordsburg
Blankenhorn, George Stevens.....	Pasadena
Blankenhorn, Louis McLaughlin.....	Pasadena
Bodyansky, Alexander.....	Geneva, Switzerland
Boston, Francis Alvan.....	Pasadena
Brackett, Ross Dudley.....	Pasadena
Brackett, William Franklin.....	Pasadena
Braddock, Fred Blackman.....	Pasadena
Brady, Walter Alexander.....	Lemsa, Russia
Brant, Alfred Thomas.....	Los Angeles
Brigden, Dwight T.....	E. Altadena
Campbell, Earl.....	Los Angeles
Canniff, Raymond.....	Pasadena
Cartwright, Duff.....	Alhambra
Caruthers, Bessie.....	Gila Bend, Ariz.
Case, James Ovington.....	Riverside
Chase, Arthur Lo.....	Cleburne, Texas
Chase, Gladys.....	Los Angeles
Cherback, Victor.....	San Bernardino
Clark, Clarence Northcraft.....	Los Angeles
Clark, Harriett.....	Grand Rapids, Mich.
Cline, George Thomas.....	Los Angeles
Crane, Elliott Simeon.....	Pasadena
Cross, Hugh Felix.....	Monrovia
Crowe, Malcolm.....	Los Angeles
Crowley, Frank Langston.....	Newbury Park
Daggett, Ethel Elizabeth.....	Pasadena
Davis, Paul McDonnell.....	Banning
Dean, Wilber Hunting.....	Allegheny City, Pa.
Dickey, Florence Iva.....	Pasadena
Dickinson, Etta.....	Pasadena
Dickinson, William.....	Pasadena
Dodson, Harvey.....	Selma
Doolittle, Harold Lukens.....	Pasadena
Dorsey, James.....	Azusa
Douglass, Benjamin.....	Los Angeles
Douglass, Francis Arcmbard.....	Los Angeles
Drinkwater, Ray Laurence.....	Denver, Colo.
Duff, Hugh.....	Los Angeles
Erickson, John August.....	Garvanza
Fabrick, Fred William.....	Azusa
Ferry, Charles Lucius.....	Sierra Madre
Fordyce, Grace.....	Pasadena
Fussell, Edwin Briggs.....	Pasadena
Gaylord, John Clarence.....	Pasadena
Giddings, Joe.....	Pasadena
Giddings, Lawson Henry.....	Pasadena
Giddings, Levi Warren.....	Pasadena
Gilmour, Guy Burns.....	Whittier
Gilmour, William Earl.....	Whittier
Ginther, Charles Frank.....	Los Angeles
Gosnell, Ira.....	Ventura
Gould, Glen.....	Los Angeles
Gould, Judson Porter.....	Pomona
Greening, Walter.....	Los Angeles
Gregory, Holt Ruthven.....	Los Angeles

Hall, Mary Lou.....	Pasadena
Hampton, Lawrence Charles.....	Prospect Park
Harrington, Hazel Mercy.....	Delavan, Ill.
Haskell, Beulah.....	Pasadena
Haskell, Edward Eben.....	Pasadena
Hatch, Wilson S.....	Los Angeles
Hawley, Josephine.....	South Pasadena
Herrington, Roy Leslie.....	Los Angeles
Heydenreich, Frank Walter.....	Pasadena
Hidden, Herbert.....	Los Angeles
Hill, Roland Varian.....	Pasadena
Holmes, John Dewing.....	Pasadena
Hoose, James Harmon Jr.....	Pasadena
Hornby, Ralph Walter.....	Pasadena
Houghton, Roy James.....	Downey
Hutton, William Bryan.....	Los Angeles
Imbert, Victor S.....	Los Angeles
Jenkins, Franc R.....	Pasadena
Jerauld, Rodman Ernest.....	Pasadena
Johnson, James.....	Los Angeles
Jones, Grace.....	Pasadena
Jonson, William Max.....	Los Angeles
Kerfoot, Winifred Helen.....	North Ontario
Kloeckner, Arthur Loring.....	Pasadena
Lacey, C. Louise.....	Pasadena
Leahy, Richard Armstrong.....	Ontario
Lescher, Royal William.....	Carpinteria
Lewis, Donald Fergus.....	Colegrove
Linde, Eva.....	Los Angeles
Lisk, Anson.....	Pasadena
Lockwood, Jack Alvin.....	Payson, Ariz.
Long, Josephine.....	Tacoma, Wash.
Lowe, Harry Leo.....	Pasadena
Macneil, Adela Robey.....	Pasadena
Magner, Fred.....	San Bernadino
Markham, Gertrude.....	Pasadena
Markwalder, Louis.....	Los Angeles
Marshall, Hugh.....	Monrovia
Mason, Edgar Elwin.....	Los Angeles
Maxwell, Guy Floyd.....	Tropico
McCauley, Alma Louise.....	Pasadena
McCauley, Marie Blanche.....	Pasadena
McDonald, Bert.....	Alhambra
McLean, Jennie Elnora.....	Pasadena
McQuiston, Henry Jr.....	Pasadena
Mendelson, Clarence.....	Capistrano
Milnor, Walter Sears Jr.....	Pasadena
Moss, Roscoe.....	Rivera
Mosteller, Roy William.....	Pasadena
Mueller, Earl Walter.....	Los Angeles
Mullinix, Jessye V.....	Santa Ana
Mumford, Annie Meday.....	Detroit, Mich.
Nance, Willis.....	Los Angeles
Nason, Katharyn Bailey.....	Sioux City, Ia.
Nay, Helen Louise.....	Evanston, Ill.
Needham, Harold Kidwell.....	Glendora
Nevins, Leon Wesley.....	Los Angeles
Niles, Porter Howe.....	Pasadena
Northup, Ailcen.....	Los Angeles
Olsen, Andrew Martin.....	Sierra Madre

Owen, Chauncy Carril.....	Pasadena
Painter, Ethel.....	North Pasadena
Painter, Harry John.....	North Pasadena
Pascoe, Elmer Rose.....	Los Angeles
Patterson, Robert Eugene.....	Burnett
Paul, Albert.....	Pomona
Pearson, Leo Earl.....	San Gabriel
Percy, Albert Emerson.....	Chino
Peterson, Bertram Roderick.....	Ensenada, Mex.
Phelps, Robert William.....	Los Angeles
Philips, Virginia.....	Pasadena
Porter, Hattie Madge.....	Pasadena
Price, Christine.....	Lincoln Park
Price, Jacob Meday.....	Lincoln Park
Reed, Allen.....	Deer Lodge, Mont.
Renaker, Charles Taylor.....	Monrovia
Rice, Hazel Marguerite.....	Sierra Madre
Rice, Meta Cleora.....	Sierra Madre
Rogers, Ruth Verna.....	Randolph, Ohio
Root, Virginia.....	Covina
Ryus, David Denslow Jr.....	Los Angeles
Sandeman, George Faraday.....	Pasadena
Schrock, Charles Irvin.....	Pasadena
Scudder, Ethel Wilton.....	Pasadena
Scudder, Jessie Ingram.....	Pasadena
Semashco, Valentine Stanisla.....	Riga, Russia
Senour, Philip Wetherell.....	Pasadena
Sherman, Henry Lancey.....	Pasadena
Shibley, Marie.....	Pasadena
Shumway, Amos Wight.....	Los Angeles
Sidwell, Chester Clarence.....	Rivera
Smith, Lewis Edward.....	Los Angeles
Smith, Stanley Quay.....	Los Angeles
Snyder, William Albion.....	Pasadena
Squire, Guy Oliver.....	Downey
Squire, Roy Ellis.....	Downey
Stehman, John Miller.....	Pasadena
Stanford, Clark.....	Los Angeles
Stewart, Emery Ross.....	Beaumont
Stooksberry, Dakota Charley.....	Los Angeles
Story, Henry Amos.....	Burbank
Strain, Thomas.....	Placentia
Streeter, Esther Friend.....	Newport
Swordfeger, Geneva Mae.....	Lordsburg
Thomas, Jessie Prudence.....	Pasadena
Thompson, Geo. W. Jr.....	Santa Barbara
Townsend, Susan Olive.....	Los Angeles
Tucker, James.....	Pasadena
Tweedy, James Knox.....	Downey
Twinting, Bertha.....	Pasadena
Underwood, Paul.....	Pasadena
Wakeham, Margaret.....	Santa Ana
Ward, Constance.....	Pasadena
Ward, Nellie.....	Pasadena
Waterhouse, Gerald Condit.....	Pasadena
Waterhouse, Melicent Eda.....	Pasadena
Webster, Mabel.....	Pasadena
Weymouth, Walter Alson.....	Pasadena
White, Charles Joshua.....	Pasadena
White, Max McKeehan.....	Garvalia

Wiley, Silas Moore.....	Chicago, Ill.
Wolfskill, John Christian.....	Los Angeles
Wood, Helen Beulah.....	Pasadena
Wood, Hilda.....	Glendora
Woodbury, Fred Ralls.....	Pasadena
Wotkins, Alfred W.....	Pasadena
Wright, Sidney Augustus.....	Pasadena
Wyckoff, Ralph Fenton.....	South Pasadena

COMMERCIAL SCHOOL

Bartle, Stanley Hamilton.....	Monrovia
Bonner, Ella Louise.....	Pasadena
Bowerman, Clarence.....	Monrovia
Bowman, Minnie B.....	Wooster, Ohio
Carter, Phillip Coburn.....	Sierra Madre
Cole, Karl Jay.....	Pomona
Cross, Ralph Mitchell.....	Monrovia
Denslow, Adelbert.....	Monrovia
Franklin, Guy Reupke.....	Pasadena
Gammon, Harry Elder.....	Pasadena
Henszey, Thomas MacKellar.....	Sierra Madre
Howard, Inga.....	Pasadena
Huddleston, Clarence.....	Pasadena
Kegler, Ella Gorden.....	Schuylerville, N.Y
Lisk, Ouina.....	Pasadena
Miller, Ella L.....	Pasadena
Powers, Alton Frank.....	Cambria, Mich.
Snow, Asa Geib.....	Tustin
Tallant, Nathaniel Weld.....	Astoria, Ore.
Telling, George Palmer.....	Pasadena
Wakeham, William.....	Santa Ana
Worthington, Mrs. Marie.....	Pasadena

GRAMMAR SCHOOL

Aguayo, Leocadio.....	Guaymas, Mex.
Armstrong, Margaret.....	Altadena
Aspinall, John.....	Los Angeles
Baldwin, Eugene Irving.....	Pasadena
Ball, F. Katherine.....	Pasadena
Banbury, William.....	Pasadena
Barker, Huntington.....	Pasadena
Barker, Parrish.....	Pasadena
Barnwell, Edwin Odin.....	Alhambra
Beesemyer, Arthur W.....	Hollywood
Beeson, Veva Odetta.....	Highland Park
Behr, Elsa Harriett.....	Pasadena
Behr, Ernst Edward.....	Pasadena
Benton, Irving Wright.....	Pasadena
Bland, Serena Lois.....	North Pasadena
Brainerd, Edward Rankin.....	Los Angeles
Brown, Anna Thelma.....	Pasadena
Brown, Frederick Walton.....	Evanston, Ill.
Case, Frank Rollin.....	Pasadena
Cawston, Arthur Hamilton.....	South Pasadena
Clapp, Margaret Avicc.....	Los Angeles
Clark, Burt.....	San Jacinto
Coffin, George Holman.....	Pasadena
Colton, George Raymond.....	Los Angeles
Collins, Charles.....	Pasadena
Coman, William Meriam.....	North Pasadena
Comer, Fred.....	Los Angeles

Condit, Marion Jason.....	Avalon
Cook, Ernest Sylvester.....	Edina, Mo.
Cook, Mary Lucille.....	Edina, Mo.
Cross, Margaret Dorothy.....	Monrovia
Culver, Lucille.....	North Pasadena
Curtis, Ernest Waiton.....	Pasadena
Dancaster, Dunstan.....	Los Angeles
Daniels, Donald Potter.....	Pasadena
Deem, Dora.....	Galva, Ill.
Donnatin, George Emmett.....	Los Angeles
Douglass, Margaret Leigh.....	Los Angeles
Emery, Fred Raymond.....	Pasadena
Fernandez, Octavio.....	Aguascalientes, Mex.
Forbes, Alma May.....	Pasadena
Forbes, Cecelia.....	Pasadena
Ford, Henry Morton.....	Pasadena
Frohman, Philip Hubert.....	College Hill, Ohio
Gates, Herbert Frank.....	Chicago, Ill.
Giddings, Blanche Elsie.....	Pasadena
Gonzales, Moses.....	Valle de Santiago, Mex.
Gonzales, Richard.....	Valle de Santiago, Mex.
Gould, Howard Arthur.....	Pasadena
Gould, Leslie.....	Estelline, S. D.
Gowie, Helen Etta.....	Pasadena
Grant, Lillian Hoagland.....	Los Angeles
Gregory, Ernest Shaw.....	Fullerton
Hanks, Fletcher.....	Allegheny City, Pa.
Hayes, Marshall Crane.....	Pasadena
Hayes, Oliver Bliss.....	Pasadena
Henderson, Leona.....	Pasadena
Hertel, Anita Marion.....	Pasadena
Hiney, William Dodson.....	Pasadena
Hodgson, Roy Charles.....	Los Angeles
Houser, Charles Arbutnot.....	Pasadena
Ingvaldsen, Andrew.....	Altadena
Judson, Howard Wilcox.....	Whittier
Kendall, Jennie Henrietta.....	Pasadena
Kennedy, Alfred Harvey.....	Pasadena
Knox, George Harold.....	Los Angeles
La Fetra, Everett Eads.....	Glendora
Macomber, Laurence Osgood.....	Somerville, Mass.
McAulay, William Calvin.....	North Pomona
McAuslan, Arthur Ashley.....	Pasadena
McBride, James Acley.....	Pasadena
Montgomery, Frank.....	Pasadena
Moody, Graham Blair.....	Los Angeles
Moody, Wilbur Ladde.....	Los Angeles
Morse, Grosvenor Abbe.....	Pasadena
Morse, Wellslake Demarest, Jr.....	Pasadena
Norrish, Ernest Springwood.....	Pasadena
Norton, Bessie.....	Pasadena
Otto, Oscar Eugene.....	Fort Worth, Tex.
Packard, Ira Ware.....	Pasadena
Peabody, Dora Mildred.....	Boston, Mass.
Pedley, Lionel.....	Riverside
Pinkham, Robie Lemou.....	Pasadena
Porchas, Aparicio.....	San Javier, Mex.
Porchas, Nicolas.....	San Javier, Mex.
Potts, William George.....	Los Angeles
Price, Ruth.....	Pasadena

Sharp, George Garfield.....	North Pasadena
Smith, Charles Warren.....	Pasadena
Smith, Kate.....	Pasadena
Smith, John Stanley.....	Pasadena
Smith, Joshua Clark.....	Pasadena
Somoza, Luis.....	City of Mexico
Strafford, John Everard	Pasadena
Tantau, George Blake.....	Pasadena
Tetley, Gordon.....	Riverside
Thrall, Walter Isaac.....	Pasadena
Tompkins, De Ronde	St. Paul, Minn.
Townsend, Charles Frederic.....	Los Angeles
Vail, Otis.....	Pasadena
Vance, Marjeane Paine.....	Los Angeles
Vasquez, Francisco.....	Suagin Grande, Mex.
Vedder, Grace.....	Pasadena
Wadleigh, Frank Orville.....	Newbury Park
Wadleigh, Fred Henry.....	Newbury Park
Wadsworth, Katharine.....	Pasadena
Wadsworth, Mary Manter.....	Pasadena
Weaver, Charles Raymond.....	Highland Park
Weeks, Cyrus Foss.....	Alhambra
Winch, Simeon Reed.....	Pasadena
Winsor, Charles Travis.....	Pasadena
Winsor, Samuel Wiley.....	Pasadena
Wotkyns, Margaret Prudentia.....	Pasadena
Wright, Adaline.....	Pasadena

SPECIAL

Andrews, Dora M.....	Northfield, Vt.
Atwood, Minnie Stella.....	Chelsea, Mass.
Bates, Bernice.....	Pasadena
Bland, Florence.....	North Pasadena
Breck, Belle.....	Frankfort, Ky.
Bridge, Mrs. Mae M.....	Pasadena
Buckminster, Lucy M.....	Pasadena
Driscoll, Marjorie C.....	Pasadena
Ealand, Mabel Webb.....	Santa Barbara
Edwards, Mrs. Lena H.....	Pasadena
Evans, Mrs. Mary Camilla	Pasadena
Fisk, Mrs. Maude B.....	Pasadena
Foote, Agnes Mills.....	Pasadena
Geohegan, Helen.....	Pasadena
Guthrie, Mrs. E. A.....	Pasadena
Hahn, Mrs. Benjamin W.	Pasadena
Hampton, Grace.....	Prospect Park
Hancock, G. Allan.....	Los Angeles
Haskins, Grace C.....	Wilmington
Heydenreich, Clara Marguerite.....	Pasadena
Jones, Ida I.....	Pasadena
Judd, Mark Waldo.....	Batavia, N. Y.
Louthian, Laura Almeda.....	Etiwanda
McIntosh, Una Eliza.....	Kamloops, B. C.
Mark, Ethel Inez	Elgin, Ill.
Mattis, Mrs. D. L.....	Pasadena
Murphy, James Henry.....	Pasadena
Parker, Mrs. Force.....	Pasadena
Patterson, Mrs. Theresa Homet.....	Towanda, Pa.
Phillips, Daisy Belle.....	La Crescenta
Pickering, Mary Emily.....	Pasadena

Reynolds, Jessie Llewellyn.....	Pasadena
Smith, Annetta M.....	Pasadena
Stehman, Elizabeth.....	Pasadena
Stehman, Mrs. Elizabeth M.....	Pasadena
Thomas, Bessie Jean.....	Pasadena
Warren, Roy Jerome.....	Rockford, Ill.
Wherry, Edith Margaret.....	Claremont
Wood, William B.....	Minneapolis, Minn.
Wright, Howard.....	Pasadena

SUMMARY

	Male	Female	Total
College	14	7	21
Normal School.....	1	19	20
Academy.....	146	48	194
Commercial School.....	15	7	22
Grammar School.....	84	30	114
Special.....	6	34	40
Totals (no duplicates)	266	145	411

GRADUATES

1895

NORMAL SCHOOL

Daniels, Esther C. (Mrs. Turner).....	Corona
Gower, Hattie F.....	Teacher of Sloyd, Los Angeles
Harris, Caroline E.....	Teacher of Sloyd, Los Angeles
Miller, Charles M.....	Teacher of Manual Training, State Normal, Los Angeles
Sincoe, Benjamin F.....	Teacher of Manual Training, San Francisco

ACADEMY

Allen, Robert S.....	Proprietor Electric Supply and Fixture Co., Pasadena
Carlton, Don W.....	Receiving Teller, First National Bank, Los Angeles
Doty, George F.....	Bank Clerk, Pasadena
Ferguson, Clarence.....	Oil Business, Los Angeles

1896

COLLEGE

Haynes, Diantha M., A. B.....	Teacher in Public Schools, Compton
Doty, George F., A. B.....	Bank Clerk, Pasadena

NORMAL SCHOOL

Beckwith, Kate B.....	Teacher, Tulare
Burkhead, Ada H. (Mrs. Hale Weaver).....	Grand Rapids, Mich.
Chamberlain, Arthur H.....	Prof. of Education, T. P. I., Pasadena
Johnson, Annette.....	Teacher of Sloyd, Los Angeles
Keyes, Mrs. Helen B.....	Hartford, Ct.
Matthews, Amanda.....	Los Angeles
McLaren, Jennie.....	Student, University of California, Berkeley
Riggins, Ara.....	In Missionary School, Kansas

A C A D E M Y

Arnold, Ralph.....Assistant in Geology, Stanford University, Palo Alto
 Conger, Lulu N.....Pasadena
 Gray, Roy W.....With Sunset Telephone and Telegraph Co., Los Angeles
 Menner, Ivy.....Bookkeeper, Pasadena
 Morrison, Margaret L.....Compton
 Snyder, Blanchard M.....Assistant Chemist, Granby Smelter, Grand Forks, B. C.
 Winslow, Edward F.....Train Dispatcher, B. C. R. and N. Ry., Cedar Rapids, Ia.

1897

C O L L E G E

Grinnell, Joseph, A. B.....Teacher, Palo Alto

N O R M A L S C H O O L

Batchelder, Lizzie.....Teacher of Sloyd, Los Angeles
 Blanchard, Ada F.....Teacher of Sloyd, Los Angeles
 Cleveland, Ada C.....
 Cook, Mary A.....Pasadena
 Combs, Sara C.....Teacher, Visalia
 Fisher, Pearl B.....Instructor in French and Drawing, T. P. I., Pasadena
 Holbrook, Lucy M.....Bookkeeper, Worcester, Mass.
 Mellish, Ida M.....Student of Art, Europe
 Smith, Mary M.....Teacher of Drawing, State Normal School, Los Angeles
 Wright, Charles H.....Architect, Boulder, Colo.

A C A D E M Y

Baker, Calvin.....Pasadena
 Baker, Ruth Ellen.....Pasadena
 Barker, James Edmund.....Manager Electrical Co., El Paso, Texas
 Blick, Kate Fay.....Pasadena
 Conger, Lyda Drowne (Mrs. Richard A. Vose).....Clinton, Ia.
 Conger, Ray Everett.....Union Savings Bank, Pasadena
 Farnsworth, John Arthur.....Bookkeeper, Los Angeles
 Jewett, Frank Baldwin...Assistant Instructor in Physics, University of Chicago
 *Johnston, Blanche.....
 McQuilling, William.....Clerk, Pasadena Land and Water Co.
 Polkinhorn, Edwin J.....In business, City of Mexico, Mex.
 Reed, John O.....Sugar Boiler, Beet Sugar Factory, Los Alamitos
 Russell, Emma.....Assistant in Sloyd, T. P. I., Pasadena
 Stimson, Charles W.....Lumber Business, Seattle, Wash.
 Vose, Richard A.....Sec'y Alden Lime Co., Clinton, Ia.

1898

C O L L E G E

Blackman, Roy Beebe, A. B.....Supt. of Schools, Mangaldan, Philippine Islands
 Jewett, Frank Baldwin, A. B.....Asst. Instructor in Physics, University of Chicago

N O R M A L S C H O O L

Elleau, Jeannete Marcelle (Mrs. Harold Simpson).....Los Angeles
 Elleau, Pauline Margaret.....County Recorder's Office, Los Angeles
 Faithful, Claude A.....Teacher of Sloyd, Los Angeles
 Hannah, Lillian.....Ontario
 Hunt, Genie A.....Sloyd and Drawing Teacher, Harvard School, Los Angeles
 Jordan, Mabel (Mrs. Charles F. Denison).....Pasadena
 *Olson, Albert L.....
 Russell, Emma.....Assistant in Sloyd, T. P. I., Pasadena
 Sanders, M. Frances.....Teacher of Sloyd, Los Angeles
 Shields, Mrs. Alice.....Teacher of Sloyd, Los Angeles
 Webber, Marie Bambrick.....Highgrove

*Deceased.

A C A D E M Y

Beery, Mary Ellen.....	South Pasadena
Folsom, Harry G..... Electrical Engineer with C. D. and P. Telegraph Co., Pittsburg, Pa.
Gaylord, Horace Amidon, D. D. S.....	Dentist, Pasadena
Gaylord, James Mason.....	Student, College, T. P. I., Pasadena
Menner, Lottie Ethel.....	Bookkeeper, Pasadena
Monroe, Grace Ellen (Mrs. John O. Reed).....	Los Alamitos
*Olson, Albert L.....	
Poindexter, Charles Lawrence.....	Mining Engineer, Wickemburg, Ariz.
Sterrett, Roger Jordan.....	Student, Stanford University, Palo Alto
Wright, Rachel Edna.....	Pasadena

1899

N O R M A L S C H O O L

Barker, Katherine K.....	Teacher of Domestic Science, Los Angeles
Blanford, May.....	Teacher of Domestic Science, Los Angeles
Burnett, Grace (Mrs. Carl Raleigh).....	Los Angeles
De Yoe, Mrs. Rose J.....	Teacher of Domestic Science, San Francisco
Fordyce, Mabel.....	Pasadena
Haller, Dora.....	Teacher of Sloyd, Los Angeles
Jordan, Mabel (Mrs. Chas. F. Denison).....	Pasadena
Read, Archie L.....	Teacher of Manual Training, San Francisco
Sabin, Jessie MacFarland.....	Pasadena
Southwick, Clara.....	Instructor in Grammar School, T. P. I., Pasadena

A C A D E M Y

Bixby, William F.....	Architectural Draftsman, Los Angeles
Clark, Adeline Orilla.....	Teacher in Normal School, Honolulu, H. I.
Davidson, Leonard.....	Teacher, Philippine Islands
Fordyce, Mabel.....	Pasadena
Raleigh, Carl.....	Los Angeles
Wood, Clifford H.....	Student, Los Angeles Medical College

1900

C O L L E G E

Harris, Irving, A. B.....
.....	Chief Engineer Pasadena Electric Light and Power Co., Pasadena
*Olson, Albert, A. B.....	

N O R M A L S C H O O L

Anderson, Lucy J.....	Teacher of Domestic Science, State Normal, Los Angeles
Brooks, Ada M.....	Teacher of Kindergarten and Sloyd, Pasadena
Davidson, Leonard E.....	Teacher, Philippine Islands
Dobbs, Ella V.....	Teacher of Sloyd, Los Angeles
Gower, Mary L.....	Student, Teachers College, Columbia University, N. Y.
Holton, Lola N.....	Assistant in Commercial Studies, T. P. I., Pasadena
Lyde, Louise.....	
.....	Teacher Domestic Science, University Southern California, Los Angeles
Martin, Walter W.....	Instructor in Woodworking and Forging, Pasadena
Metcalf, Stella.....	Pasadena
Moore, Nellie.....	Student, State Normal School, Los Angeles
Morgan, Mabel V.....	Teacher of Domestic Science, Los Angeles

* Deceased.

SUMMER SCHOOL OF MANUAL TRAINING

The third annual session of the Summer School of Art and Manual Training of Throop Polytechnic Institute will open on July 7, 1902, and close on August 2. The school will be in session five and one-half days each week—from Monday morning until Saturday noon.

The work done will be credited by the Institute for the benefit of those who may hereafter be candidates for a Normal diploma, and will be of such a nature as to meet the needs of all teachers in the public and private schools. Advanced work will be prepared for those who have had experience in any line.

The following courses will be offered :

Free-hand Drawing and Design—Ernest A. Batchelder, former Supervisor of Drawing, Adams, Mass., and Instructor in Theory of Design, Harvard University, Summer School, 1901.

Clay Modeling and Wood Carving—Harry D. Gaylord, T. P. I.

Paper Work, Weaving and Basketry—Ella V. Dobbs, Teacher of Manual Training, Los Angeles City Schools.

Cardboard Construction, Bookbinding, Sloyd and Advanced Joinery—Arthur H. Chamberlain, T. P. I.

Wood Turning, Forging and Smithing—Frank H. Ball, T. P. I.

Elocution—Clara F. Randall, T. P. I.

The announcement of the Summer School giving detailed information as to courses, terms, lodgings, etc., will be sent on application to

ARTHUR H. CHAMBERLAIN,

Director of the Summer School.

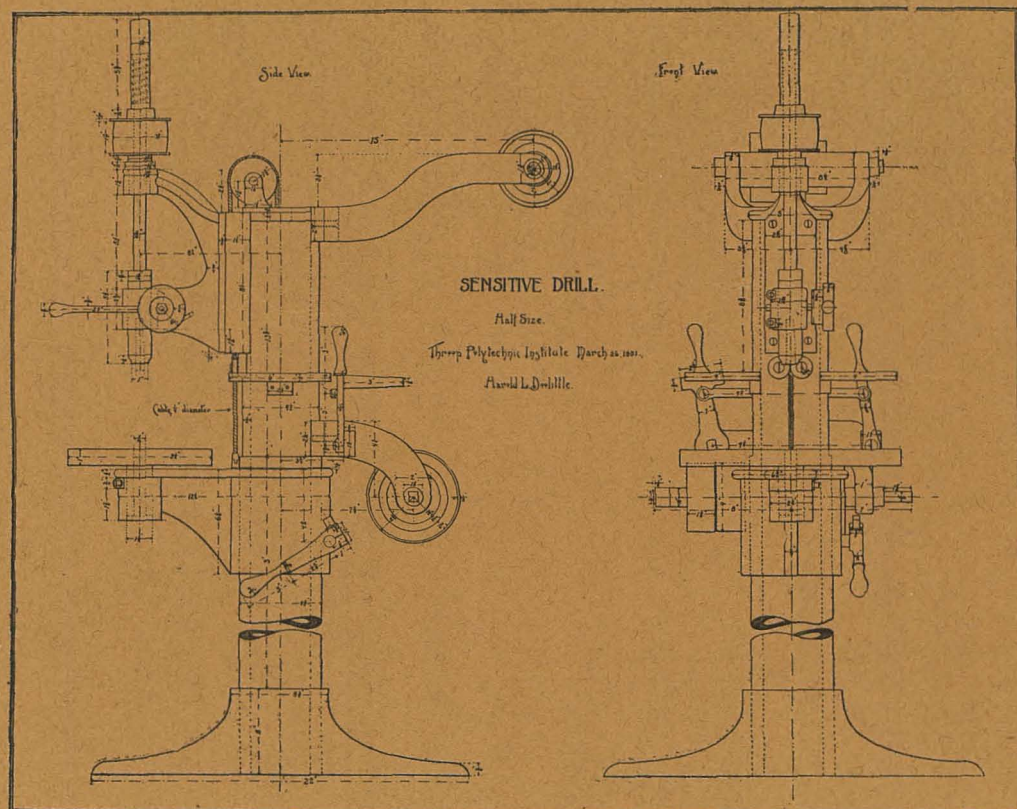
Throop Polytechnic Institute, Pasadena, Cal.

STUDENTS IN SUMMER SCHOOL OF MANUAL TRAINING

1901

Aitken, Earl	Los Angeles
Aitken, Mrs. Helen.....	Los Angeles
Allen, Elsie.....	Pasadena
Barker, Charles E.....	North Platte, Neb.
Baxter, Minnie S.....	Los Angeles
Beckwith, Kate B.....	Tulare
Bentley, Herbert.....	Pasadena
Brooks, Adelia S.....	Pasadena
Brooks, Imelda.....	Pasadena
Burnett, Grace.....	Los Angeles
Chisholm, Mary.....	Pasadena
Clark, Adeline.....	Honolulu, H. I.

Colyer, Gertrude.....	Eldridge
Combs, Sara C.....	Visalia
Compton, Mrs. M. R.....	Pasadena
Carson, Anna.....	Pasadena
Dexter, Yetta F.....	Monrovia
Dobbs, Mrs. Cora.....	Parker, Ariz.
Fisher, Pearl B.....	Pasadena
Gearhart, Edna.....	Pasadena
Gibson, Annette M.....	Los Angeles
Hamilton, Kate.....	Pasadena
Hamilton, Myrtle.....	Pasadena
Howe, Gertrude.....	Oakland
Hurlbut, Amy.....	Pasadena
Johnson, Mrs. Carrie.....	Pasadena
Jenkins, Mary.....	Los Angeles
Kimball, Helen.....	Santa Paula
La Bar, Mrs. E. M.....	Albuquerque, N. M.
Macpherson, Agnes.....	Pasadena
Madden, Mrs. K. L.....	Los Angeles
Markham, Marie.....	Los Angeles
McNair, Martha J.....	Pasadena
Miller, Ada J.....	Los Angeles
Miller, Mrs. C. R.....	Pasadena
Newton, Esther.....	Ontario
Palmer, Mrs. Ella H.....	Azusa
Parsons, Ellen M.....	Los Angeles
Pascoe, Kate.....	Riverside
Patten, Herbert.....	Claremont
Pease, Virginia.....	Pasadena
Pollock, Mrs. Minnie R.....	Ontario
Ranson, Jessie.....	White River, Ariz.
Ranson, Lena.....	Yuma, Ariz.
Reed, D. C.....	Redlands
Riggins, Ara.....	Avalon
Robinson, Mamie.....	Klamath, Ore.
Ross, Minnie E.....	Pomona
Schmidt, Karl.....	Pasadena
Seegmiller, Emily.....	Lamanda
Seegmiller, Frances.....	Lamanda
Slavin, Matthew.....	Pasadena
Stevens, Elizabeth.....	Pasadena
Stroud, Genevieve.....	Pasadena
Swerdfeger, Mary.....	Azusa
Townsend, Belle.....	Pasadena
Turner, Mrs. W. D.....	Pasadena
Walker, Edna.....	Monrovia
Winsor, Ellen J.....	Pasadena
Wood, Margaret.....	Pasadena
Wood, Randolph.....	Pasadena
Wuest, Gladys.....	Alhambra



PRESS OF
LEROY LEONARD
PASADENA, CAL.