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Valparaiso University

VALPARAISO UNIVERSITY BULLETIN

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GENERAL CATALOG 1923-24

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Valparaiso, Indiana
1923

VALPARAISO UNIVERSITY

Valparaiso, Indiana

College of Arts and Sciences. Literary and Scientific Curricula—Public Speaking, Home Economics, and Fine Art—All courses open to students in the professional and technical schools of the university.

School of Education. Standard College Curriculum in Education—Twelve, twenty-four, and thirty-six weeks teachers' courses—Courses in Vocational Education and Industrial Arts.

School of Music and Dramatic Art. Curricula in Theory of Music and Applied Music—Departments of Piano, Voice, Violin and Orchestral Instruments—Complete course in Public School Music—Curriculum in Dramatic Art.

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Pre-Medical School. Two year curriculum preparatory to medicine and the medical sciences.

Preparation Schools. Skilful instruction in high school subjects and common branches for students above the ordinary school age.

Technical Schools. Courses in automotive repair, electric motor repair, electric housewiring, elementary agriculture, machinists trades, plumbing and heating, watch repair, and woodworking.

For catalogs, special announcements, or particular information, address the dean of the school or the secretary of the university.

Valparaiso University Bulletin

Catalog

of

Valparaiso University

FIFTY-FIRST YEAR

1923-24

Published by The University
Valparaiso, Indiana
1923

UNIVERSITY CALENDAR

1923
FALL QUARTER

September 29, October 1, Saturday, Monday. Registration for Fall Quarter. Arrearage Examinations. Entrance Examinations.
October 2, Tuesday. Instruction begins.
October 6, Saturday. Founder's Day.
November 29, Thursday. Thanksgiving Day: a holiday.
December 17-20, Monday-Thursday. Examinations.
December 20, Thursday. Fall Quarter ends.

1924
WINTER QUARTER

December 31, January 1, Monday, Tuesday. Registration for Winter Quarter.
January 2, Wednesday. Instruction begins.
March 17-20, Monday-Thursday. Examinations.
March 20, Thursday. Winter Quarter ends.

SPRING QUARTER

March 22, 24, Saturday, Monday. Registration for Spring Quarter.
March 25, Tuesday. Instruction begins.
May 30, Thursday. Memorial Day: afternoon class adjourned.
June 8, Sunday. Baccalaureate Address.
June 9-12, Monday-Thursday. Examinations.
June 13, Friday. FIFTY-FIRST ANNUAL COMMENCEMENT. Spring Quarter ends.

SUMMER QUARTER

(Ten weeks, including Saturdays)

June 14, 16, Saturday, Monday. Registration for Summer Quarter.
June 17, Tuesday. Instruction begins.
July 4, Friday. Independence day: a holiday.
August 17, Sunday. Baccalaureate Address.
August 18-21. Monday-Thursday. Examinations.
August 21, Thursday. Summer Quarter ends.

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DEPARTMENTS OF INSTRUCTION

I. College of Arts and Sciences:
General College Departments:
Courses leading to the degree A. B. or B. S.
Department of Home Economics:
Courses leading to the degree B. S. (H.E.)
Department of Fine Art:
Courses leading to the degree B. F. A.

II. School of Education:
Courses leading to degree A.B. (Ed.)
Accredited courses for Indiana teachers

III. School of Music and Dramatic Art:
Courses in Music leading to the degree Mus. B. or certificates
Course in Dramatic Art leading to certificates

IV. Law School:
Courses leading to the degree LL.B.

V. Engineering School:
Civil Engineering:
Courses leading to the degree B.S. (C.E.)
Electrical and Mechanical Engineering:
Courses covering the first two years

VI. School of Pharmacy:
Courses leading to the degree Ph.G., Ph.C., or B.S. (Phar.)

VII. Commercial School:
Courses leading to the degree B.S. (Com.), B.C.S., or certificates

VIII. Pre-Medical School:
Courses preparatory to Medicine
Courses preparatory to Denistry

IX. Preparation Schools:
University High School:
Courses leading to a Commissioned High School diploma
University Elementary School:
Courses in common branches for mature students

X. Technical Schools:
Courses in automotive repair, electric motor repair, electric housewiring, elementary agriculture, machinist trades, plumbing and heating, watch repair, and woodworking.

HISTORICAL SKETCH OF VALPARAISO UNIVERSITY

VALPARAISO UNIVERSITY was founded September 16, 1873, by Henry Baker Brown, who was President of the institution until his death, September 16, 1917.

President Brown was born October 6, 1847, at Mount Vernon, Ohio. At the age of fifteen he began to teach. From his small salary he saved sufficient to continue his education. After a course at Ohio Wesleyan University, Delaware, Ohio, he entered the National Normal University, at Lebanon, Ohio, where he graduated.

Early in his teaching experience the realization came to President Brown that many young people are prevented from attending institutions of higher learning by the great expense and in many instances the impractical courses of study. It became his purpose to establish a school in which work, not wealth, would be the standard and every person would have an opportunity to obtain a thorough and practical education at the least possible expense. To the fulfillment of this resolve he gave his energy, his means, his talent, and his life.

There was a school building at Valparaiso which had been occupied until 1870 by a Methodist College. Mr. Brown came to Valparaiso in 1873, made arrangements to purchase this property, and in September he opened, in what has since been known to generations of students as "The Old College Building," the Northern Indiana Normal School with three instructors and thirty-five students.

The Northern Indiana Normal School soon began to express the purpose of its founder. Students gathered in increasing number from near and distant states and from foreign countries, and President Brown called about him an able and devoted corps of instructors. The names of W. A. Yohn, Miss Mantie Baldwin (who is still living), M. E. Bogarte, Miss Lillian Chamberlain (Mrs. Bogarte), H. N. Carver, and other teachers of this period are held in grateful recollection by hundreds of men and women who sat under their instruction.

The duties of management were many and the work heavy, but President Brown carried the burden alone until 1881, when Oliver Perry Kinsey joined him and assumed the duties of Vice-President. Mr. Kinsey's learning and zeal for teaching, his practical sagacity, his indefatigable industry, his devotion to the ideals of the founder, are ineradicable factors in the upbuilding of the institution. Together, these two remarkable men, friends and associates in the work of human betterment, made the school one of the largest institutions of learning in the United States. The influence of the men and of the institution which they built has radiated to every state and to every country. More than one hundred twenty-five thousand men and women in all parts of the world have derived some of the elements of their success from the educational opportunity given them at Valparaiso.

Even in its earlier period the institution outgrew the limits of a normal school. Departments of music and fine art existed from the first. Commercial, collegiate, civil engineering, and law departments were soon added. In 1892 the School of Pharmacy was established. In 1900 the name of the institution was changed to Valparaiso College, and after the addition of other departments the institution was incorporated in 1907 as Valparaiso University. In 1920 the University with all its property was transferred to a self-perpetuating board of trustees as a gift to the cause of education. The institution is not operated for profit, but in trust for the people.

For half a century the characteristic principles of the institution have been those laid down by Henry Baker Brown at its beginning,—hard work, low cost to the student, complete democracy, and the combination of cultural education with definite preparation for a vocation. The present management and the entire faculty are united in the support of these principles and the desire to perpetuate them. In this way the University will remain an enduring monument to the men who made it and an instrument of service to humanity.

GENERAL INFORMATION

ORGANIZATION

The University comprises the College of Arts and Sciences, the School of Education, the School of Music and Dramatic Art, the Law School, the Engineering School, the Commercial School, the School of Pharmacy, the Pre-Medical School, the University High School, the University Elementary School, and technical schools for the teaching of trades.*

EQUIPMENT

The University has fifteen buildings,—an auditorium seating two thousand persons and having offices and lecture rooms on the lower floor, seven school buildings, five dormitories, a three-story and basement building occupied by the bookstore and press, and a gymnasium ninety feet by one hundred twenty feet in dimensions. It operates two large dining halls. The athletic field occupies fifteen acres.

The University Library contains 30,000 bound volumes, selected with particular care to accompany the various courses of instruction, and about 10,000 pamphlets. It includes two special collections known as the Carver Collection, which is the gift of the late Harrison N. Carver, Professor of Classical Languages, and the Theological Collection. It has also well organized sections in the Spanish, French, German, Polish, Jewish, and Lithuanian languages. Most of the important magazines and periodicals in English, and twenty-two foreign language newspapers are received. The library is classified by the Dewey decimal classification system. The Schools of Law, Engineering, and Pharmacy have separate libraries, maintained in their respective buildings.

For scientific and technical work there are fifteen laboratories, which are well equipped for their particular work and are capable of accommodating twelve hundred students daily.

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*A separate bulletin has been issued, showing the trade school courses offered.

LOCATION

The University is located at Valparaiso, Indiana, forty-four miles southeast of Chicago. The city is on the main lines of three railways, the Pennsylvania, the Grand Trunk, and the Nickel Plate, making it easily accessible from all points.

Valparaiso is an attractive city of 9,000 population, exclusive of students. Situated on one of the highest points in northwestern Indiana, the city repeatedly has been reported in vital statistics as having the lowest death-rate among Indiana cities. It has paved streets, cement walks, sewerage system, gas and electric light, interurban line, and a water supply declared officially to be among the best in the State. There are three beautiful public school buildings, two large parochial schools, and eight modern church buildings with seating capacities of from 400 to 1,500.

Valparaiso is surrounded by a rich and beautiful farming country, adjacent to the greatest industrial region in the middle West. A chain of small lakes lies close at hand. Lake Michigan and the world-famous Sand Dunes are a few miles farther to the north, and the historic Kankakee forms the southern boundary of the county. Chicago, Gary, Hammond, Indiana Harbor, South Bend, and other great industrial and commercial centers are within an hour's ride. Opportunities for employment in Valparaiso or in near-by cities, at such times as the student is not in residence, are usually abundant. Many students earn sufficient during the Summer to pay a great part of their expenses for a year. Inspection trips to the great industries of the Calumet region in Indiana, and to Chicago and Detroit, form a part of the work in the technical courses of instruction; and the practical experience that is an indispensable feature in many lines is readily obtainable. As a place of study the seat of the University thus combines all the advantages of a small and relatively inexpensive city with many of those of a metropolis.

THE QUARTER SYSTEM

The year in the University is divided into four quarters, which are designated as the Fall, Winter, Spring, and Summer Quarters. For the school year 1923-24, the four Quarters are as follows:

FALL QUARTER, October 1, 1923 to December 20, 1923.

WINTER QUARTER, January 1, 1924, to March 20, 1924.

SPRING QUARTER, March 24, 1924 to June 13, 1924.

SUMMER QUARTER, June 16, 1924, to August 21, 1924.

The University is in session during forty-six weeks of every year. An interval of two school days occurs between quarters. There are few holidays and no vacations in any quarter. Time spent in the University is therefore a period of almost uninterrupted study,—broadly speaking, a day's instruction for every day in residence.

Any three quarters (36 weeks) count as a school year, making it possible to complete a four-year college curriculum (12 quarters) in three calendar years without reducing the time spent in actual residence. Many of the courses of instruction are given during two quarters yearly; others are repeated every quarter. Students may thus enter at the beginning of any quarter without serious inconvenience. Though there is considerable advantage in continuing in residence during at least three consecutive quarters, this is not strictly necessary. A student may leave school for a quarter or more, or a year, then return and take up his studies virtually where he left off. A student may also complete a full year's work in most departments by taking three successive summer quarters. This feature of the quarter system is of particular advantage to teachers and other persons who desire to take a year of collegiate or professional training without relinquishing their positions.

In the Schools of Law and Pharmacy, beginning students may enter only at the opening of the school year in the Fall.

ADMISSION OF STUDENTS

GENERAL STATEMENT

The University admits both men and women to all departments of instruction. It has no facilities for the accommodation of students less than sixteen years old or colored students.

An applicant for admission as a candidate for a degree must, as a general requirement in all divisions of the University, produce evidence by certificate or by examination that he has completed at least fifteen units of high school work. This requirement is ordinarily satisfied by graduation from an approved four-year high school.* In the Law School the applicant must also be at least eighteen years old.

A *unit* is a course of study in a secondary school (high school or academy) comprising at least 120 sixty-minute hours of prepared work, or the equivalent (*e. g.*, 160 forty-five minute class periods, or 180 forty-minute periods). Two hours of laboratory work are regarded as the equivalent of one hour of prepared work. Four units constitute a year's work.

The required 15 units are divided into *prescribed* and *elective* subjects as follows:

GROUP A. PRESCRIBED

English, 3 units.
Algebra, 1 unit.
Plane Geometry, 1 unit.
Science, 1 unit in one science.
Total, 6 units.

*The University High School affords opportunities for students to make good any deficiencies in their preliminary education. Students may enter at the beginning of any quarter, take high school subjects in company with students older than in most high schools, and upon making up their deficiencies may enter college classes at the beginning of the next quarter without loss of time. The University Elementary School offers similar advantages to students who are deficient in common school subjects.

The remainder of the fifteen units must be made up from the following two groups of subjects:

GROUP B

English (fourth year)	1	Solid and Spherical Geometry	½
Latin	2, 3 or 4	Trigonometry	½
Greek	1, 2 or 3	General Science	1
German	2, 3 or 4	Physiology	½
French	2, 3 or 4	General Biology	1
Spanish	2, 3 or 4	Botany	½ or 1
Italian	2 or 3	Zoology	½ or 1
History	1 or 2	Chemistry	1
Civics	1	Physics	1
Economics	1	Physiography	½ or 1
Commercial Geography	1	Geology	½
Business Law	½	Astronomy	½
Arithmetic (after Algebra)	½	Drawing, freehand and mechanical	1
Algebra (advanced)	½		

GROUP C

Commercial and vocational subjects, Art, and Music, not more than a total of 4 units.

SPECIFIC REQUIREMENTS

THE COLLEGE OF ARTS AND SCIENCES.—Group A, 2 units of Foreign Language in one language, and 1 unit of History are prescribed. Total prescribed, 9 units. The remaining 6 units may be chosen from Groups B and C.

THE SCHOOL OF EDUCATION.—Completion of a four year high school course comprising not less than 15 units.

THE LAW SCHOOL.—Group A and 1 unit of History are prescribed. Total prescribed, 7 units. The remaining 8 units may be chosen from Groups B and C.

THE ENGINEERING SCHOOL.—Group A, ½ unit of Algebra (advanced), and ½ unit of Solid Geometry. Total prescribed, 7 units. The remaining 8 units may be chosen from Groups B and C.

THE PRE-MEDICAL SCHOOL.—Group A and 2 units of Foreign Language. Total prescribed, 8 units. The remaining 7 units may be selected from Groups B and C.

OTHER DIVISIONS.—In all the other colleges and schools of the University that admit on a high school preparation, only the subjects of Group A are prescribed. The remaining 9 units may be selected from Groups B and C.

METHODS OF ADMISSION

Applicants may be admitted by certificate, by examination, or by a combination of the two.

ADMISSION BY CERTIFICATE

Graduates from approved high schools and academies may be admitted without examination upon their school records, provided they have completed at least fifteen units as stated above.

An applicant for admission by certificate should request the superintendent or principal of his school to send directly to the Registrar of the University, a certificate showing in detail: (1) the date of applicant's birth as it appears in the school record; (2) the years during which the applicant attended the school; (3) the subjects taken by him; (4) the number of weeks given to each subject; (5) the number of recitations and laboratory exercises per week in each subject; (6) the length in minutes of each recitation and laboratory exercise; (7) the grade made by the applicant in each subject; (8) whether or no the applicant was graduated. For the convenience of applicants, the University supplies blank forms for such statements, which may be obtained upon request. The use of these forms is desirable, but certificates on other forms are accepted.

Applicants will greatly facilitate the routine of entrance by having certificates mailed to the Registrar of the University

four weeks or more in advance of the quarter in which they expect to enter.

Certificates will not be accepted to the extent of fifteen units for non-graduates, except upon the special recommendation of the superintendent or principal.

ADMISSION BY EXAMINATION

Regular entrance examinations are held at the beginning of the Fall Quarter and at the end of the Winter and Spring Quarters, for admission in the ensuing quarter.

High School credit examinations are conducted by the Indiana State Board of Education, as follows: first year subjects, in January and June; second year, March and July; third year, April and August; fourth year, May and October. Pupils who have studied high school subjects in non-accredited high schools, teachers and others who are deficient in their high school training are eligible to take these examinations. Credits are given by the Board in all subjects in which the applicant makes a passing grade, and when an applicant has received 32 credits (16 units) an equivalent high school diploma is issued to him. These credits and diplomas will be accepted for entrance by the University in lieu of its entrance examinations.

ADMISSION BY CERTIFICATE AND EXAMINATION

Students who present by certificate less than fifteen units from an approved school or less than the required units in the prescribed subjects may complete the requirements for admission by examination. Indiana high school credit examinations are accepted for this purpose.

STUDENTS LACKING IN PRESCRIBED UNITS

An applicant *who presents fifteen units for admission* but who lacks any of the subjects prescribed by the school or college to which he seeks admission must complete such subjects in the University within the first four quarters of residence after entering. In case of failure to comply with this

regulation sufficient college courses are counted back to meet the admission requirements and are not counted toward a degree. The College of Arts and Sciences offers introductory courses in Latin, German, French, Spanish, Mathematics, Physics, Chemistry, Botany, Zoology and Physiology for the benefit of high school graduates who do not present prescribed subjects for admission. In most of the schools, these courses count toward a degree. In the Law School and the Engineering School prescribed subjects not presented for admission must be taken as extra work and do not count toward the degree.

ADMISSION AS CONDITIONED STUDENTS

Applicants who present fewer than fifteen units but not fewer than fourteen units, by certificate or by examination, may be registered as conditioned students and may make good their deficiencies by taking the introductory courses offered in the College of Arts and Sciences or courses offered in the University High School, with the privilege of filling out their study program each quarter with college courses. Students who enter under this regulation must remove their conditions in this manner *within the first three quarters of residence after entering;* otherwise, college courses so taken will be counted back in sufficient amount to satisfy the requirements for admission and will not be credited toward a degree.

This regulation does not apply to the Law School or to the School of Pharmacy in which conditioned students are not admitted.

Students who present fewer than fourteen units may enter the University High School and upon making good their deficiencies may enter college classes without loss of time between the completion of their high school work and the beginning of their college work.

ADMISSION WITH ADVANCED STANDING

Students transferring from other institutions to any school of the University are given credit for the satisfactory completion of work similar to that of the school to which they ask admission. A student applying for admission with advanced standing under this regulation must present an official certificate from the institution in which he has done his work showing: (1) the admission requirements satisfied by him in entering such institution; (2) a complete transcript of his college record, comprising the courses pursued, the number of weeks and the hours per week given to each course, his grades of scholarship, and the duration of his attendance; (3) the fact of his honorable dismissal.

Students admitted with advanced standing must attend the University at least one year (three quarters) and must complete satisfactorily at least one year's work in order to receive a degree.

STUDENTS NOT CANDIDATES FOR A DEGREE

Persons who are not candidates for a degree may be admitted as special students to any of the courses of instruction given in the University, provided that they satisfy the appropriate faculty of their fitness to pursue the particular courses which they elect. The several faculties have the right to deprive any such student of his privileges if he abuse or fail to use them. Regular students who have failed may not remain as special students except by vote of the appropriate faculty and the approval of the President.

The University aims, under this regulation, to encourage the attendance of mature and earnest students (ordinarily not less than twenty-one years of age) who for lack of time or money cannot bring up the deficiencies in their preliminary education by pursuing high school work, but who have the desire and the ability to improve themselves by advanced study along special lines.

Students may change from special to regular standing only upon the recommendation of the faculty and the approval of the President. When such change is made, a sufficient number of the courses first taken in the University will be applied to the satisfaction of entrance requirements and cannot be counted toward a degree.

Several schools of the University offer special short curricula not leading to a degree, but for completion of which certificates are granted. Some of these may be taken by competent students who have not completed high school. They are described on later pages of this catalog.

CARE OF STUDENTS

BOARD AND LODGING

The University furnishes rooming and boarding accommodations for a large proportion of the students. There are in addition about twenty dormitories and many boarding places conducted by individuals, several restaurants in the University section of the city and numerous private house-holders who supply board and rooms to students. The University has a list of approved boarding and rooming places, and reserves the right to provide rules under which its students shall board or room in dormitories, chapter houses, and with private families. Men and women who are students of the University do not room in the same house unless they are relatives of the family.

Each of the University rooming halls for men is in charge of a secretary, appointed by the University, who looks after the comfort and interest of the men. Similar provision is made in the larger halls conducted by individuals.

PROVISION FOR WOMEN

Each of the University halls occupied by women is in charge of an experienced matron whose sole duty is the care of the tenants.

The Dean of Women gives attention to the needs of women students and advises with them concerning their welfare. No

woman is permitted to take rooms not approved by the Dean. All social functions attended by women, or by men and women, are under her supervision.

MEDICAL ATTENTION

Cases of sickness among the students are given immediate and careful attention. If necessary the student is taken to the hospital, or a nurse is provided, at a moderate expense to the student. For the care of contagious diseases an isolation hospital is maintained by the University. Parents and guardians are promptly notified of serious cases. No fear need be entertained that a student will be neglected or that his sickness will be kept secret.

RELIGIOUS INFLUENCES

The pastors and members of the eight churches of Valparaiso take a personal interest in the students, welcome their attendance, and endeavor to make them feel at home at all services.

The University Y. M. C. A. maintains Bible and mission study classes, voluntary lecture courses in religious education, men's meetings, and other social and religious activities. It also keeps a directory of available rooms in the city and conducts an employment bureau for all men of the University.

The University Y. W. C. A. is devoted to a similar service for women students. Besides ministering to the religious life, it provides recreation, entertainment and wholesome social relations.

STUDENT ACTIVITIES

GOVERNMENT

Matters pertaining to government and discipline are under the supervision of the President and Faculty. Regulations concerning the conduct of students are not elaborate. The University authorities rely in a large measure upon the good sense of the students. Students are expected to pursue their

work diligently, to attend classes regularly, and to conduct themselves as self-respecting men and women. Those who fall seriously below this standard after admonition are eliminated from attendance.

STUDENT ORGANIZATIONS

In addition to a number of national and local fraternities and sororities, there are numerous social, literary, and scientific organizations. Among these are the Bethany Society, the Catholic Society, the Menorah Society, the Southern Society, the Lithuanian Society, the Student Congress, the Acacia Club, the Commercial Society, the Pharmaceutical Association, the Engineering Society, the Physics Club, the Spanish-American Society, and the Turco-Tatar Association.

STUDENT PUBLICATIONS

"The Torch" is a weekly college newspaper published by the students. Besides being a live and interesting purveyor of college news, it affords students who are interested in newspaper work practical experience in newspaper writing.

"The Record" is an annual publication, written, illustrated and arranged by students elected from the Senior classes of the different schools, and contains a record of the principal events of the University year.

ENTERTAINMENTS

A large number of entertainments, lectures, addresses, plays, concerts, oratorios, *etc.*, are given every year by students, members of the faculty, and men and women of eminence from all parts of the world.

ATHLETICS

The University has departmental and varsity teams in football, basketball, baseball and track. Brown Field comprises fifteen acres and contains a football field, baseball diamond, and tennis courts. The gymnasium offers excellent facilities for basketball and other student events.

REGULATIONS, STUDIES AND GRADES

COURSES OF STUDY

Most of the courses of instruction are completed in one quarter, the larger subjects being divided for convenience into two or more courses. A few courses continue throughout two quarters. These are designated as two-term courses, and credit for the work done during the first quarter is deferred until the course is completed and the examination passed in a later quarter.

THE UNIT OF WORK AND OF CREDIT

The unit of work and of credit is the *term-hour,*—one hour of classroom work requiring two hours of preparation each week for one quarter (twelve weeks). Three laboratory hours, if not requiring outside preparation (otherwise two laboratory hours), are counted as equivalent to one term-hour. The number of hours required for graduation and the number which a student may carry each quarter are prescribed in the regulations of each school.

EXAMINATIONS AND GRADES

Written examinations in each course are held regularly at the end of the quarter in which the course is completed. Examinations, classroom and laboratory work, and attendance are taken into consideration in the evaluation of credits. The quality of a student's work is indicated by letters as follows: A, signifying excellent scholarship, a mark of special distinction; B, good scholarship, a mark of commendation; C, fair scholarship; D, passable scholarship; E, conditioned; F, failed. Permission obtained to withdraw from a class or to change registration is marked W. A student allowed to withdraw because of unsatisfactory work is marked Wf, withdrawn for failure. Unauthorized withdrawals are marked F. A two-quarter course in which the grade is withheld until the

second quarter is marked "deferred." Satisfactory work some part of which is unfinished is marked "incomplete."

A student who is conditioned in a course must make up the work by re-examination or otherwise to the satisfaction of the instructor within the first four quarters of residence thereafter, or the record will be changed to F.

A failure can be made good only by repeating the work in class and passing the regular examination. A student who has received conditions or who has failed in more than one-third of the work of a year may take only such work with the next higher class as the faculty may deem advisable.

DEGREES

The following degrees are conferred by the University:

In the College of Arts and Sciences, the degrees of Bachelor of Arts, A. B., Bachelor of Science, B. S., Bachelor of Science in Home Economics, B. S. (H. E.), and Bachelor of Fine Art, B. F. A.

In the School of Education, the degree of Bachelor of Arts in Education, A. B. (Ed.).

In the School of Music, the degrees of Graduate in Music Mus. G., and Bachelor of Music, Mus. B.

In the Law School, the degree of Bachelor of Laws, LL. B.

In the Engineering School the degree of Bachelor of Science in Civil Engineering, B. S. (C. E.). Recipients of this degree may, upon the fulfillment of prescribed conditions after graduation, receive the further degree of Civil Engineer, C. E.

In the Commercial School, the degrees of Bachelor of Science in Commerce, B. S. (Com.), and Bachelor of Commercial Science, B. C. S.

In the School of Pharmacy, the degrees of Graduate in Pharmacy (Ph. G.), Pharmaceutical Chemist (Ph. C.), and Bachelor of Science in Pharmacy, B. S. (Phar.)

CERTIFICATES

Certificates are given upon the completion of prescribed courses of study in Education, Fine Art, Music, Dramatic Art, Commerce, and in Pre-Medical subjects.

DIPLOMAS

A commissioned high school diploma is granted in the University High School.

EXPENSES

FEES

MATRICULATION FEE.—A fee of $5, payable but once, is required of every student entering the University for the first time. As evidence of membership in the University, the student is given a *matriculation card.* This card should be shown upon payment of tuition fees for subsequent quarters.

TUITION FEE.—The fee for tuition in all schools of the University except in Music is $42 per quarter (12 weeks), payable at the beginning of the quarter, or $160 for the entire year of four quarters (48 weeks), if paid in advance. When a student who has paid for a year withdraws, the quarterly rate for the preceding and current quarters is retained, and the balance is refunded. The fee for the current quarter is in no case refunded.

PRIVATE LESSONS.—Private lessons in Music, in Dramatic Art, and in Public Speaking cost $2 per lesson when taken from a professor, and $1.50 per lesson when taken from an assistant professor.

LABORATORY FEES.—In most laboratory courses students pay a laboratory fee. The fee for each course is stated in connection with the description of the course in this volume, subject to change without notice. These fees pay for all gas, water, chemicals and the use of apparatus. A charge is made in some courses for filters, towels, vials, etc., which become the individual property of the student. A breakage deposit is

required in certain courses, which is returned to the student at the end of the course less individual breakage. A charge of fifty cents is made for each laboratory desk key. This is refunded when the key is returned.

LIBRARY FEE.—The library fee is fifty cents each quarter.

ATHLETIC FEE.—The athletic fee is $2.50 for each quarter except the Summer Quarter. Upon payment of this fee the student receives an *athletic card,* which, when shown with the matriculation card, entitles the student to admission to all intercollegiate contests.

STUDENT PAPER FEE.—A fee of $1 for the support of The Torch is paid at the beginning of each quarter, in return for which the student receives the paper weekly.

EXTRA WORK FEE.—The fee for each term-hour of work elected in excess of the normal amount is $3. In the High School the fee is $8 for each course in excess of five courses.

SPECIAL EXAMINATION FEE.—The fee for each special examination is $5 (in the High School, $8).

GRADUATION FEE.—The general graduation fee, including diploma, is $10.

ROOMS, BOARD, AND GENERAL EXPENSE

ROOMS.—Room rent for women in the University rooming halls is at rates of from $25 to $30 for twelve weeks; for men from $18 to $30 for twelve weeks. A few rooms for men are available at $15. For the Summer Quarter (10 weeks) the cost is about one-sixth less. A charge of $2.25 to $2.75 a week is made when rooms are rented by the week. At the lower rates two students have a single room with closet or wardrobe; at the higher rates, two students have a suite of rooms, consisting of a study room and bedroom with closet or wardrobe. The newer halls have hot and cold water in the rooms, and all the halls have bath rooms, steam heat, and electric light. All rooms, whether single or in suite, are furnished with study-table, chairs, bureau, mirror, bookcase, bed,

mattress, pillows, pillow cases, sheets and blankets. In the larger halls there are laundries where students may do their own laundering at negligible expense.

During the Fall, Winter, and Spring Quarters, an additional charge of about $7.50 per quarter is made for heat.

In addition to the halls maintained by the University there are near the University a number of rooming halls conducted by individuals in which the accommodations and the rates are similar to those of the University halls. Numerous householders supply rooms to students at like rates.

BOARD.—Board for twelve weeks, paid in advance, costs $45 at the University Cafeteria, or $57 at Alturia Hall—a rate of $3.75 or $4.75 per week. For the Summer Quarter (10 weeks) the cost is $37.50 or $47.50, paid at the beginning of the quarter. When paid by the week the price is $4.25 or $5.25 per week, payable in advance. Private boarding halls give good board at similar rates.

GENERAL EXPENSES.—In addition to these charges a student's expenses will include matters of personal expenditure, which vary with the means and habits of the individual. Except for books, these need not be more than at home.

SUMMARY.—An idea of the chief items of expense may be had from the following:

	One Quarter		*Three Quarters*	
	Low	High	Low	High
Tuition	$42	$42	$126	$126
Board	45	57	135	171
Room	18	30	54	90
Total	$105	$129	$315	$387

For four quarters the corresponding totals are $409.50 and $501.50.

The University authorities have given years of thought and well directed effort to the problem of reducing the cost to the student. Low rates have not been made by sacrificing the

quality of instruction or the reasonable comforts of life, but by applying business principles to the cost of living. The large attendance, wholesale buying, a location near favorable markets, and an expert knowledge of the markets have made it possible to reduce cost without diminishing quality. Accommodations are equal to those ordinarily costing much more. Buildings have been planned for service and comfort and not display. Social life is relatively simple and individual extravagance is not encouraged. Lectures and entertainments of a high grade are provided free or at a nominal expense Athletics are encouraged but are not predominant. The tuition fee has been made the lowest possible.

EMPLOYMENT.—There are many opportunities for employment in the University, in business establishments, and in private homes. After the first quarter of residence students who desire employment usually experience little difficulty in finding positions whereby they may defray from one-fourth to one-half of their living expenses.

REMITTANCES.—Payments should be made in money or by draft, postal money order, or express money order. It is requested that students and parents do not use personal checks, as there is always delay and usually expense in collection. Students are advised to bring enough money to pay their expenses for at least one quarter.

ROUTINE OF MATRICULATION AND REGISTRATION

Upon reaching Valparaiso students should come directly to the General Office of the University, which is located temporarily in Music Hall. Here all necessary information will be supplied respecting registration, classes, rooms, and board. Students are advised not to contract for rooms before consulting the General Office. Trunk checks should be retained until rooms have been selected.

THE COLLEGE OF ARTS AND SCIENCES

GENERAL INFORMATION

SCOPE AND AIMS

The College of Arts and Sciences offers courses of instruction in the following subjects: Astronomy, Botany, Chemistry, Drawing, Economics, Education, English, French, Geology, German, Government, History, Household Arts and Sciences, Hygiene, Latin, Mathematics, Painting, Philosophy, Physical Education, Physics, Physiology, Psychology, Public Speaking, Sociology, Spanish, Zoology.

These courses of instruction, from which selection may be made suitable to individual needs, are designed particularly (1) to afford a liberal and cultural education in the arts and sciences, and (2) to provide a broad foundation for training in technical and professional studies.

ADMISSION

The work of the College presupposes the completion of a high school training or its equivalent. An applicant for admission must present, by certificate or by examination, at least fifteen high school units. The particulars of this requirement and of the manner of admission are given in the first section of this catalog.

Students from other colleges may be admitted with advanced standing under the regulation stated in the first section.

THE QUARTER SYSTEM

The College is in session during four quarters each year. A quarter is a term of instruction twelve weeks in length. Any three quarters constitute a school year (thirty-six weeks). Students may enter at the beginning of any quar-

ter. A four year program may be completed in three years of four quarters each or four years of three quarters each. The former plan is recommended for mature students to whom the saving of time is an object.

THE UNIT OF CREDIT

In estimating credits the unit for measuring the amount of work done is the *term-hour,* or *hour.* An hour is one 53-minute period (net) of prepared class work each week for one quarter. Three hours of laboratory work (if self-contained, otherwise two hours of laboratory work) are equivalent to one term-hour.

AMOUNT OF WORK

Full work for a quarter amounts to fifteen or sixteen hours. A student of exceptional preparation and application whose previous record is not lower than an average of B may be permitted to take a maximum of eighteen hours upon obtaining the written consent of the Dean of the College and payment of the extra work fee of $2 for each credit hour in excess of sixteen. Credit for extra work is not given unless permission to take such work has properly been obtained and the grade of the student in the work of the quarter in which the extra work is taken is not lower than an average of B.

ORGANIZATION

The College is organized for purposes of instruction in two divisions. Division I comprises the general college departments, which offer the liberal training of a standard college leading to the degrees of Bachelor of Arts and Bachelor of Science. Division II includes the Departments of Fine Art and Home Economics, the work of which is more specialized and leads to special degree or certificates.

DEPARTMENTS OF INSTRUCTION

DIVISION I

A. FOREIGN LANGUAGES
1. *Latin*
2. *German*
3. *French*
4. *Spanish*

B. ENGLISH
1. *Composition*
2. *Public Speaking*
3. *Old and Middle English*
4. *Literature*

C. HISTORY AND THE SOCIAL SCIENCES
1. *History*
2. *Political Science*
3. *Economics*
4. *Sociology*

D. PSYCHOLOGY, ETHICS AND EDUCATION
1. *Psychology*
2. *Ethics*
3. *Education*

E. MATHEMATICAL SCIENCES
1. *Mathematics*
2. *Astronomy*
3. *Physics*
4. *Chemistry*

F. BIOLOGICAL AND GEOLOGICAL SCIENCES
1. *Botany*
2. *Zoology*
3. *Physiology*
4. *Geology*

G. PHYSICAL EDUCATION
1. *Gymnasium*
2. *Athletics*

DIVISION II

H. FINE ART

J. HOME ECONOMICS

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

FRESHMAN AND SOPHOMORE YEARS

Courses	*Hours*
Freshman English	9
Mathematics	12
Foreign Language	24
A Laboratory Science	15
Public Speaking	6
Restricted electives	
*(From Groups A, B, C, D	12
Free electives	12
Total	90

JUNIOR AND SENIOR YEARS

Courses	*Hours*
Major subject	36
Minor subject	18
Free electives	36
Total	90

TOTAL FOR THE A. B. DEGREE 180

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

FRESHMAN AND SOPHOMORE YEARS

Courses	*Hours*
Freshman English	9
Mathematics	18
Foreign Language	18
A Laboratory Science	20
Public Speaking	3
Restricted Electives	
*(From Groups A, B, C, E, F	12
Free Electives	10
Total	90

JUNIOR AND SENIOR YEARS

Courses	*Hours*
Major subject	36
Minor subject	18
Free electives	36
Total	90

TOTAL FOR THE B.S. DEGREE 180

REGULATIONS

FRESHMAN AND SOPHOMORE WORK

Students should arrange their Freshman and Sophomore work with the approval of the Dean so as to prepare logically

*The groups referred to are those which appear in the table of Departments on the preceding page.

for the major and minor work of their Junior and Senior years. Nine hours in English must be completed in the Freshman year. Other required courses should be taken systematically and in the order prescribed by the head of the department. Elementary courses in two foreign languages cannot be taken in the same quarter, and less than one year in any language will not count on a degree. Not more than two languages, or more than two sciences, can be taken in the Freshman and Sophmore years. An excess of one or two hours in a subject, made necessary by the sequence of courses, may be applied on a major or a minor in that subject or counted as restricted electives.

Restricted electives must be chosen from the groups indicated in the outline. Free electives may be taken in any department of the College or in the Schools of Education, Law, or Commerce upon the approval of the Dean.

JUNIOR AND SENIOR WORK

Major Subject

Each student before the end of his Sophomore year must elect courses from some one general subject to be known as his *Major,* which must comprise at least thirty-six hours. Candidates for the degree of Bachelor of Arts will elect English, History, or Education; candidates for the degree of Bachelor of Science, Mathematics, Physics, or Chemistry. A major may be changed only with the consent of the graduating committee and the heads of the departments concerned. Elementary courses or those open to Freshmen may not be counted as part of a major.

Minor Subject

A *Minor* is equal to one-half a major (eighteen hours), and must be a different subject from the major but should be a related subject. The election of a minor must be made at the time of choosing the major.

Free Electives

Great freedom is given in the choice of free electives. They may be taken in the Schools of Education, Law, or Commerce, as well as in the College of Arts and Sciences. The only limitations are that at least one hundred twenty hours be taken outside the major department, that not more than eighteen hours be elected in any one department in Arts and Sciences, or more than fifteen hours in any one other school of the University.

CLASSIFICATION OF STUDENTS

No student is advanced if he has any arrears prior to the year in which he ranks; nor is he ranked as Sophomore if deficient more than eighteen hours of Freshman work, nor as Junior if deficient more than twelve hours of Sophomore work, nor as Senior if deficient more than six hours of Junior work.

No student will be considered a candidate for graduation if he has any deficiency at the beginning of the third quarter of his Senior year.

SPECIAL CURRICULA

A logical extension of the group system permits students to combine collegiate and professional training and in some instances to obtain two degrees with a saving of one year in time.

Students who have completed nine quarters (135 hours) of work in the College of Arts and Sciences may transfer their registration to the Law School and will receive the degree A. B. upon completing the first year in the Law School and the degree LL. B. upon completing two additional years.

The Departments of Fine Art and Home Economics, while contributing to the work of the general college departments, offer definite curricula leading to special degress or certificates.

COURSES OF INSTRUCTION

A course of instruction is ordinarily completed in one quarter, and the examination is held at the end of the quarter, the larger subjects being divided into two or more courses. The hours at which courses are given are published in a printed schedule of recitations at the beginning of each quarter. The University reserves the right to withdraw any course for which there is an insufficient number of applicants.

LATIN

Courses 1 to 8 may be applied to the removal of conditions and to the satisfaction of units in Foreign Language prescribed for admission by any school or college of the University. For Freshman and Sophomore students they may count toward a degree, if similar or more advanced work has not been presented for admission.

1. **Elementary Latin.**—A beginning course intended for students who enter college without Latin. In addition to the usual work in syntax, vocabulary and elementary prose composition, emphasis is placed on the Latin element in English and the light which the usages of Latin syntax throw upon constructions in English. At the end of this course the student should be prepared to read Caesar and to write simple Latin sentences. Place's *Beginning Latin.* Two-term course: credit not given until the whole course is completed. Fall Quarter (5 hours) and Winter Quarter (5 hours). Credit, *ten hours.*

2. **Caesar I.**—Book I of Caesar's Commentaries. Review of paradigms, systematic study of syntax, and writing of Latin. Open to students who have presented one unit in Latin for admission or taken Latin 1. The *Commentaries* and Bennett's *Latin Prose Composition.* Fall Quarter; Spring Quarter. *Five hours.*

3. **Caesar II.**—Books II, III, IV. Study of syntax and writing of Latin continued. Open to students who have had Latin 2 or the equivalent. Winter Quarter; Summer Quarter. *Five hours.*

In Latin 2 and 3 attention is given to the historical significance of the Commentaries and to the results of Caesar's conquest upon modern civilization. The events of the late war have made Caesar particularly interesting.

4, 5. Cicero I, II.—*Pro Lege Manliana, In Catilinam I, II, III, and Pro Archia.*—Snytax reviewed; special stress laid upon Cicero's rhetoric. Good English is required in the translations and the hope is expressed that Cicero's vigorous style may have a good effect upon that of his students. Open to students who have presented two units in Latin for admission.

Course 4. Fall Quarter; Spring Quarter. *Five hours.*

Course 5. Winter Quarter; Summer Quarter. *Five hours.*

6, 7. Virgil I, II.—*The Aeneid, Books I-II, III-VI.*—Scansion; drill in the reading of Latin poetry; rapid reading of Latin; metrical reading of Latin poetry. Attention is given to the stories of classical mythology and their influence in English literature. Open to students who have presented three units in Latin for admission.

Course 6. Spring Quarter. *Five hours.*

Course 7. Summer Quarter. *Five hours.*

8. Latin Prose Composition.—This course offers a drill in the writing of comparatively easy Latin and is recommended to students who need a review of forms and syntax before beginning to teach Latin or before entering college courses in the following year. Summer Quarters. *Three hours.*

9. Teaching of High School Latin.—This course treats of the methods of teaching High School Latin, the text-books, the aims of the study, supplementary and illustrative materials, etc., lectures, recitations, reports and papers. Summer Quarter. *Two hours.*

Courses 8 and 9 form a good training course for prospective teachers of Latin.

11. Livy.—Book I. This course, with courses 12 and 13 offers Freshmen a drill in translation of comparatively easy prose and poetry. Syntax is not neglected, nor the literary quality of the work read. Fall Quarter. *Five hours.*

Note.—One hour a week in Latin Prose Composition is a part of courses 11, 12, and 13. Bradley-Arnold, *Latin Prose Composition.*

12. Cicero, De Senectute; and Terence, Phormio.—This course introduces the student not only to Roman philosophical thought, but to his first view of Roman wit and humor. The essay on Old Age is treated as real literature and comparisons made with modern literature on the same subject. Besides reading the play of Terence the class is given a short history of the drama in Rome, and

some attention is paid to the metrical structure of the play. Winter Quarter. *Five hours.*

13. Catullus and Martial.—Selections from both of these poets are read and the metrical structure of the poems is studied. Spring Quarter. *Five hours.*

15. Ovid: Metamorphoses.—Selections from the best of the famous stories. This is an easy translation course, especially suitable for summer reading. Summer Quarter. *Three hours.*

16. Virgil: Bucolics and Georgics.—This course and courses 17 and 18 form a Sophomore reading course, designed to give a rather extensive knowledge of the two greatest poets of the Augustan age. The poetry is not only translated but scanned and read metrically. Written translations and papers are required from time to time throughout the year. Fall Quarter. *Three hours.*

17. Horace: Odes and Epodes (selections).—The best of the Odes and Epodes are read; Horace's philosophy of life, the characteristics of the Augustan period, Roman private and public life as pictured in the odes are discussed. Attention is paid to the metrical structure and to the reading of Latin lyric poetry. Winter Quarter. *Three hours.*

18. Horace: Satires and Epistles.—This is really a continuation of course 17 with the same purposes and methods. Spring Quarter. *Three hours.*

GERMAN

Courses 1, 2, and 3 give college credit for students who have not presented similar work for admission. They may also be taken to make up units in prescribed Foreign Language, with college credit; or to satisfy entrance conditions, without college credit. Courses will be given each quarter as required.

1. **Elementary German.**—Easy reading; elementary rules of grammar, drill in conversation. *Five hours.*

2. Elementary German (continued).—Short stories; drill in

conversation; grammar study; easy folk songs are memorized and sung. *Five hours.*

3. Easy Classics.—Short stories, such as *Immensee.* Composition based on the text. *Five hours.*

4. Elementary Composition.—Stress is placed upon German idioms and upon expressions that vary from the English in meaning. *Five hours.*

5. Schiller.—*Wilhelm Tell* and a study of Schiller's life. *Three hours.*

6. Advanced Grammar.—The more difficult constructions, the modals, and the subjunctive mode. *Two hours.*

7. Goethe.—*Hermann und Dorothea* and a study of the life of Goethe. *Three hours.*

8. Conversation.—Discussions on topics of daily life. *Two hours.*

10. Scientific German.—This course is designed for students of Chemistry, Physics, Biology, etc., and will enable them to read intelligently German magazines and works on scientific subjects. *Five hours.*

11. Sudermann.—*Frau Sorge* and essays on the text. *Three hours.*

12. Wildenbruch.—*Das edle Blut* and other prose writings. *Two hours.*

13. German Lyrics and Ballads.—Selections from Goethe, Schiller, Heine, and others, some of which are to be memorized. *Two hours.*

14. Lessing.—*Nathan der Weise.* Biography of the author. Essays on topics based on the text. *Three hours.*

15. Lessing.—*Minna von Barnhelm. Two hours.*

16. Schiller.—*Die Brant von Messina. Two hours.*

17. History of Germany.—An outline up to the Great War. *Five hours.*

18. History of the German Literature.—From its beginning to the eighteenth century. *Three hours.*

19. History of the German Literature (continued).—From the eighteenth century to the present time. *Three hours.*

20. Goethe.—*Faust,* Part I. *Five hours.*

FRENCH

Courses 1, 2, and 3 may be taken as college subjects by students who have not presented similar work for admission; or to make up prescribed units in Foreign Language, with College credit; or to satisfy entrance conditions, without college credit.

1. Elementary French.—The elements of grammar; training in pronunciation by means of practical phonetics; daily oral and written exercises. Aldrich, Foster and Roulé, *Elementary French Grammar* (to lesson 31). Every Quarter. *Five hours.*

2. Elementary French (continued).—Study of grammar and pronunciation continued; the regular verbs and irregular verbs. Prerequisite: French 1. Aldrich, Foster and Roulé, *Elementary French Grammar* (completed). Every Quarter. *Five hours.*

3. Intermediate French.—Review of grammar; classroom conversation and written exercises; themes. Prerequisite: French 2. Fraser and Squair, *French Grammar.* Fall Quarter; Spring Quarter. *Three hours.*

4. Intermediate French (continued).—A reading course. Daily oral and written exercises based on reading; dictations; weekly written themes; class and collateral reading from *La Belle France, Le Plus Jolis Contes de Fées, Petits Contes de France.* Prerequisite: French 2. Fall Quarter; Spring Quarter. *Two hours.*

5. Intermediate French (continued.)—Study of grammar and pronounciation continued; daily classroom conversation and written exercises, themes on original topics. Prerequisite: French 3. Fraser and Squair, *French Grammar,* through irregular verbs. Winter Quarter; Summer Quarter. *Three hours.*

6. Advanced French.—A rapid reading course. Daily written and oral exercises; class and collateral reading from the texts; Aldrich and Foster, a *French Reader;* Halévy, *L'Abbé Constantin;* La Brete, *Mon Oncle et mon Curé.* Winter Quarter; Summer Quarter. *Two hours.*

7. Advanced French.—A rapid reading course. Daily oral exercises, weekly written themes and résumés based on reading from the following texts: *Three French Comedies,* Ginn & Co.; Labiche et Martin, *La Voyage de M. Perichon;* Scribe et Legouvé, *Bataille de Dames.* Fall Quarter; Spring Quarter. *Three hours.*

8. French Composition.—Work based on François' *French Composition* (lessons 1-20). Written and oral exercises. *Two hours.*

9. Bazin and Loti.—*Les Oberles, Le Pecheur d'Islande.* Oral exercises based on class reading. *Three hours.*

10. French Composition.—Work based on François' *French Composition* (lessons 21-40). Written and oral exercises. *Two hours.*

11. Balzac.—*Cinq Scénes de la Comédie Humaine; Eugénie Grandet;* outside reading and reports. *Three hours.*

12. Molière.—Reading and reports on four representative dramas. *Two hours.*

13. Victor Hugo.—Novels: Class reading, *Les Miserables.* Outside reading, *Quatrevingt-Treize. Three hours.*

14. Victor Hugo.—Dramas: *Hernani* and *Ruy Blas.* Themes in French. *Two hours.*

15. Anatole France.—*Le Crime de Sylvestre Bonnard* and *Abeille.* Bi-weekly reports in French upon other works of this author. *Three hours.*

16. Rostand.—*Cyrano de Bergerac* and *La Princesse Lointaine.* Outside reading and class discussions. *Two hours.*

17. Dumas.—*Monte-Cristo, Le Chateau d' If* and *La Tulips Noire.* Outside reading. Written reports in French. *Three hours .*

18. Dumas fils.—*La Question d' Argent.* A critical study of the romantic drama. Weekly reports on outside reading. *Two hours.*

19. Sand.—*La Famille de Germandre* and *La Mare au Diable.* Outside reading of other works of the author; weekly reports in French. *Three hours.*

20. Racine.—*Andromaque, Athalie,* and *Les Plaideurs.* A critical reading of the author. Weekly reports in French. *Two hours.*

21. Rousseau.—Life and works, by Schinz. Special emphasis upon his influence on educational and civic problems. *Three hours.*

22. Corneille.—*Horace, Le Cid,* and *Polyeucte.* Life of Corneille and a study of creation of the classic drama. *Two hours.*

23. Le Sage.—*Gil Blas.* Critical study of the author. Bi-weekly reports in French. *Three hours.*

24. French Prose of the XVII Century.—A study of representative selections from Descartes, Pascal, Rochefoucald, Bossuet, and La Bruyere. *Two hours.*

25. French Verse of the XVI Century.—The masterpieces of Marot, Pierre de Ronsard, and Desportes. *Three hours.*

26. French Short Story Writers.—Selections from Flaubert, Zola, Daudet, and Maupassant, illustrating French naturalism. *Two hours.*

27. Modern French Lyrics.—A study of the leading poems of Beranger, Hugo, Musset, and Gautier. *Three hours.*

SPANISH

Course 1 is offered three times a year; courses 2 to 6, twice a year; other courses once a year.

Special attention is given to pronunciation and the fundamental principles of grammar. The work includes drills and translation, dictation, elementary syntax and orthography, memorizing of short poems and proverbs. After the first three courses, Spanish is used entirely as the medium of instruction.

A department library and Spanish newspapers and magazines are accessible to students.

1. Elementary Spanish.—The elements of grammar; pronunciation and vocabulary; a brief study of all the parts of speech, laying emphasis on the verbs *haber, tener, ser* and *estar,* and their uses. De Vitis' *Grammar,* the first 26 lessons, and the *Berlitz Method,* the first 15 lessons. *Five hours.*

2. Elementary Spanish (continuation of course 1).—Increased use of Spanish in the class room. Dictation. Prerequisite: course 1. *Five hours.*

3. Intermediate Spanish (continuation of course 2).—Dictation and Compositions. DeVitis' *Grammar* completed. *Five hours.*

4. Intermediate Spanish (continued).—Practice in reading and writing commercial letters in Spanish. No text is required. Letters are arranged by the instructor. Dictation and composition; the Berlitz Method completed. *Three hours.*

5. Advanced Spanish.—Reading about 250 pages from two or more of these books: *El Sombrero de Tres Picos, El Capitan Veneno,* by Alarcon; *La Barraca, La Batalla del Marne,* by Vincente Blasco Ibanez. Spanish newspapers, conversation, reports. Practice in writing commercial letters. *Three hours.*

6. Advanced Spanish (continued).—Conversation; Reading of novels of Valera, Palacio Valdes, Isaacs, and other modern authors. Reports. *Three hours.*

7. Conversation.—Books pertaining to commerce between the United States and the Latin-American countries are read. Reports. Open to students who have completed Spanish 5. Fall Quarter. *Three hours.*

8. Spanish Literature of the Nineteenth Century.—Outline of the History of Spanish Literature. The *Siglo de Oro,* with library readings. *Three hours.*

9. Cervantes: Don Quixote.—Reading and reports. *Three hours.*

10. Lecturas Contemporaneas.—Obras escogidas de autores contemporaneos. Reportes y Discussiones. *Three hours.*

ENGLISH

The instruction in English has three objects: First, proficiency in English composition; second, a general knowledge of English literature; third, a more intimate acquaintance with authors whose works illustrate the development of the English language and literature.

The courses offered comprise advanced composition, designed to stimulate original production; public speaking, providing experience in preparing and delivering addresses; literature presenting an outline of the history and development of English and American literature and a study of representative authors. Old and Middle English and metrics are treated sufficiently to meet all ordinary wants of students. Etymology and philology receive sufficient attention to enable a student to understand the formation, growth and development of the English language from its beginning to the present time.

ENGLISH COMPOSITION

1. Freshman English. I.—The purpose of this course is to train college Freshmen to write correctly and clearly about the things they already know, to use books as a means of enlarging knowledge, and to increase the powers of expression. *Three hours.*

2. Freshman English II.—A continuation of course 1. *Three hours.*

3. Freshman English III.—A continuation of course 2. *Three hours.*

4. Composition.—Exposition. Themes and discussions based on contemporary events. *Two hours.*

5. Short Story Writing.—Description and narration. Special attention is given to the writing of short stories. ***Three hours.***

PUBLIC SPEAKING

11. Public Address I.—Studies and practical exercises to develop a true ideal of public speaking, control of feelings, voice and body, and power to think upon the feet. Practice of the fundamental laws of speech is given in story telling and in extemporaneous and impromptu speaking. Every quarter. *Three hours.*

12. Public Address II.—Adapted to the needs of students preparing for the various professions. Presentaton of addresses for occasions, such as after dinner talks, political speeches, nominations, introductions, dedications, eulogies; parliamentary drill in organizing and conducting deliverative bodies: voice exercises and problems from the printed page suited to individual needs. Prerequisite: course 11. Every quarter. *Three hours.*

13. Public Address III. A study of the revelation of the processes of the mind in thinking and feeling. Advanced technical and psychical voice exercises; coordination of mind, voice and body demonstrated in prepared platform addresses. Prerequisite: course 12. Every quarter. *Three hours.*

16. Argumentation.—Written briefs and argument building; the preparation and delivery of original orations. Prerequisite: English 1, 2, 3. Winter Quarter. *Three hours.*

17. Formal Debate.—A study of refutation. Team work in briefs; practice weekly in formal debates. Prerequisite: English 1, 2, 3. Fall Quarter. *Three hours.*

18. Advanced Forensics.—Continuation of course 17. Winter Quarter. *Three hours.*

OLD AND MIDDLE ENGLISH

20. Anglo-Saxon I.—A study of Old English. Translations. Syntax. ***Two hours.***

21. Anglo-Saxon II.—A continuation of course 20. ***Two hours.***

22. Middle English.—Selections read from the *Ancren Riwle,* the *Ormulum* and the *Canterbury Tales.* ***Two hours.***

LITERATURE

30. Introduction to the Study of Literature.—A study of the types of literature, with special attention to appreciation and criticism. *Three hours.*

31. History of English Literature I.—A general survey of the development of the language and literature. Lectures, reading and reports. (During the summer courses 31 and 32 will be given as a single four-hour course.) *Two hours.*

32. History of English Literature II.—A continuation of course 31. *Two hours.*

33. History of American Literature.—A philosophical and historical study of the development and significance of American Literature. *Three hours.*

34. Emerson.—Detailed study of Emerson's prose and poetry. *Two hours.*

35. Shakespeare.—Critical and textual study of four of Shakespeare's plays. Different plays are read in alternate years so that students may repeat the course for additional credit. *Three hours.*

36. Shakespeare.—This course is of the same general character as course 35, but different plays are studied. *Three hours.*

37. Mythology.—Myths of Greece and Rome, together with those of other nations are studied as to interpretation, development, and relation to literature and art. *Two hours.*

38. Chaucer.—A detailed textual study of six or more of the Canterbury Tales. *Three hours.*

39. Milton.—A general consideration of Milton as a whole, with a special study of *Paradise Lost. Three hours.*

40. Carlyle and Ruskin.—A study of representative essays and lectures. *Three hours.*

41. Wordsworth and Tennyson.—A study of representative poems. *Three hours.*

42. History of the Elizabethan Drama.—Lectures, readings, reports and a thesis. *Two hours.*

43. Browning.—Lectures, readings and reports. *Two hours.*

44. Nineteenth Century Literature.—Lectures, required reading, oral or written reports, and a thesis. *Three hours.*

45. Whitman and Recent Verse.—A study of "Leaves of Grass," with some consideration of American poets since 1900. *Two hours.*

46a, 46b, 46c. The Modern Drama.—A study of representative modern dramas. Extensive reading. Reports. Each course, *three hours.*

47. American Poetry.—A general consideration of American poetry as a whole, with the reading and interpretation of representative poems. *Three hours.*

48. Juvenile Literature.—A course in the study and presentation of literature suitable to the grades. Offered to meet the requirements for teachers in the State of Indiana. *Three hours.*

49. American Magazines.—A study of the various types of American magazines with a view to aiding students in a better discrimination in their reading. *Two hours.*

50. The Romantic Movement.—Seminar: reading, reports, discussions. *Two hours.*

51. Old Testament Literature I.—A study of the narrative portions of the Old Testament. *Two hours.*

52. Old Testament Literature II. The prophetic literature of the Bible. *Two hours.*

53. Old Testament Literature III.—The poetry and drama of the Bible. *Two hours.*

HISTORY AND THE SOCIAL SCIENCES

HISTORY

1. English History I.—The origins of the English people and the growth of nationality; the development of institutional, economic, and social life; the Tudor despotism and the Reformation: to 1603. Collateral reading and themes. Fall Quarter; Winter Quarter. *Three hours.*

2. English History II.—Parliamentary struggles under the first two Stuarts; the Revolution and Cromwellian era; the Restoration; the Revolution of 1688 and the growth of the responsible Cabinet system; the industrial revolution of the 18th Century; social, economic and political reforms of the 19th Century; territorial expansion; England's part in the Great War. Collateral reading and themes. Spring Quarter; Summer Quarter. *Three hours.*

3. English Constitutional History.—An intensive study of the constitutional development of Great Britain as exemplified in her Great Charters, Parliamentary growth and party government. Amplifying reports on special topics. Winter or Spring Quarter. *Three hours.*

4. The Period of the Renaissance.—Political and social organization of the various European nation; the rise of mediæval literature, art and science; the origin of modern European nations. Collateral reading and themes. Spring Quarter. *Three hours.*

5, 6. The Period of the Reformation.—A survey of the causes; analysis of the Reformation proper and its peculiar phases in the various European countries; its culmination in the Thirty Years War Themes on special topics.

Course 5. Winter Quarter. *Four hours.*
Course 6. Spring Quarter. *Four hours.*

7. The French Nation.—The origin and rise of the French Monarchy; domestic struggles; wars with England and other European nations during the Middle Ages; religious wars and the rise and overthrow of the despotic regime; the struggle for democracy and institutional expansion during the 18th and 19th Centuries. Collateral reports. Fall Quarter. *Three hours.*

8. Industrial History of the United States.—A survey of the growth of the industrial life of the Colonial period; pioneer life of the earlier United States; the rise of manufacturing and immigration; the conquering of the west; the rise of industrial corporations; internal and foreign commerce; modern machinery in industrial life. Spring Quarter. *Three hours.*

9. The French Revolution.—A study of the causes, including the despotism of Louis XIV and his immediate successors; the violent phases of the war and Terror; the political, economic and social effects on France and Europe. Special reports. Spring Quarter. *Three hours.*

10. The Napoleonic Era, 1794-1815.—A study of the historic environment of Napoleon's rise; the salient features of his war aims and strategy of conquest; his empire, statesmanship, and governmental reforms; causes of his failure; effects on European nations. Spring Quarter. *Two hours.*

11. Europe Since 1815 (advanced course).—A general survey of the development of institutionalism in modern European nations;

the issue of recent democratic revolutions and tendencies; the great inter-European wars and the unification of nations· national enterprises and jealousies during the latter part of the 19th and the first part of the 20th Centuries; a concise survey of the causes of the World War. Themes and reports. Winter Quarter. *Three hours.*

12. History of American Politics.—A survey of the origin, character and development of political organizations. The political parties and their tenets; the issues in relation to the application of party policies in domestic and foreign affairs and the Monroe Doctrine; politics in slavery; the Civil War and Reconstruction; the new conception of the relation between the States and the Nation, and of our relation to world politics in consequence of the World War. Extensive topical study. Summer Quarter. *Three hours.*

13. Slavery and Reconstruction in the United States.—A survey of the origin, character and growth of slavery. Its social, industrial and political influence; the issues between North and South as to the nature of the relation between the States and the Nation; secession and the Civil War; the issues and results of the period of Reconstruction to 1876. Papers and reports. Fall Quarter. *Three hours.*

14, 15. Diplomatic History of the United States.—A brief survey of the elements and subjects of diplomacy, and a study of the leading subjects of our international dealings as a nation. The course is supplemented by lectures and reports. Alternates with the Period of the Reformation. Winter Quarter; Spring Quarter. *Four hours.*

16. South American Countries.—A concise study of the origin and growth of the leading countries of the southern hemisphere, with reference to their political, economic and social life, and their relations with the United States. The course is supplemented by lectures and reports. Spring Quarter; Summer Quarter. *Three hours.*

17. The World War.—A brief study of the salient causes and events of the war, and its results; tracing the responsibility for the war. Summer Quarter. *Three hours.*

18. United States History Review.—A general survey of the larger problems of the Nation's development. Emphasis is placed on the larger institutional phases of the Colonial period; the Revolution and the formation of the Constitution and Government; institutional and territorial expansion; the slave issues, including the war with Mexico and the Civil War; Reconstruction and the era of industrial,

commercial, and intellectual expansion, including the war with Spain, and the era of great international activities in the World War. Summer Quarter. *Five hours.*

19, 20. Primitive Society.—Man's evolution considered as a logical sequence of the activities and environment of his early existence—his primitive life the seed, civilization the fruition of his evolution. The chief features considered are marriage, polygamy, the family, kinship, usages, the sib, the position of woman, property, associations, rank, government, justice. Supplemented by research work and lectures. For Juniors and Seniors only.

Course 19. Winter Quarter. *Three hours.*
Course 20. Spring Quarter. *Three hours.*

21. History of the Monroe Doctrine.—Origin and original purpose of the doctrine; the leading foreign issues in which it became a decisive factor; the changing viewpoint in interpreting it; the present interpretation; the attitude of other nations toward the doctrine and its influence on our international relations; the World League and the doctrine. Reports on special phases. For Juniors and Seniors only. Spring Quarter. *Three hours.*

22. Hebrew History.—A study of the social, political, and religious life of the Hebrew people from Patriarchal times to the fall of Jerusalem and the captivity of the Jews. The course requires a close study of the Old Testament, supplemented by contemporaneous history. Fall Quarter. *Three hours.*

23. Jewish History.—A continuation of the study of the history of the Hebrew people to the conquest of Palestine by the Romans. Prerequisite: Hebrew History. Winter Quarter. *Three hours.*

24. The First Christian Century.—A study of the political, social, and religious forces dominant in Palestine at the beginning of the Christian era and the influence of the early Christian Church upon these forces. A careful study is made of the growth of the Apostolic Church. Spring Quarter. *Three hours.*

POLITICAL SCIENCE

The aim of the following courses is to interpret political principles evolved by thinkers or taught by historic experience, in their applications to the structure and function of

government. The correlation of rights and responsibilities between the individual and the government is emphasized. The student should possess the largest possible knowledge of history as a basis for a fruitful study of these courses.

1. **Our Federal Government.**—The evolution of the principles of the American dual form of government, as embodied in the Federal Constitution; the great constitutional issues that have arisen during our national existence; the scope and limitations of Federal authority as determined by important decisions of the Federal courts, especially in relation to the delimitation of State and Federal authority; the two-fold movement towards greater democratization and greater centralization. Extensive collateral study. Fall Quarter. *Three hours.*

2. **State Government.**—A concise study of the origin, character and functions of state government; relation between local and state authority; National limitations on state functions; citizenship under local and state authority; causes and character of the general movement towards revision of the fundamental laws of the States. Reports on the state government of each student. Winter Quarter. *Three hours.*

3. **Local Governments.**—A study of the structure and functions of the township, county, town and city, and the articulation of the functions of these political units with one another and with the State; reform and efficiency in municipal government; sanitation, recreation, housing, transportation, water supply, industrial conditions, protection of property and life. Individual reports on the various political units. Spring Quarter. *Three hours.*

4. **Government of England.**—A brief survey of the great constitutional landmarks of English government as a basis for a more intensive consideration of the English system of government as applied to national problems; the great reform movements in constitutional, industrial, civic and social life during the 19th and 20th Centuries. Extensive collateral study. Fall Quarter. *Two hours.*

5. **Governments of Continental Europe.**—A concise survey of the governments of France, Switzerland, Holland, Italy, the Scandinavian countries, etc., in a manner similar to course 4. Reports. Winter Quarter; Spring Quarter. *Two hours.*

6. **Local Governments of Europe.**—A concise study of municipal and local rural governments. Type forms only will be studied and these types will be compared with local governments in the United States. Individual reports. Summer Quarter. *Three hours.*

7. Law A: Elements of Law.—The nature, forms and sources of law; the organs of its development; kinds of law books and their use; fundamental conceptions; general survey of law. Fall Quarter. *Three hours.*

8. Law 36: Constitutional Law I.—Scope of legislative, executive and judicial functions; power of judiciary to declare statutes unconstitutional; governmental interrelations of the nation and the states; national powers respecting territories, dependencies, taxation, money and commerce. Wambaugh's *Cases on Constitutional Law.* Open to Seniors. Winter Quarter. *Four hours.*

9. Law 41: Constitutional Law II.—Fundamental rights and limitation of legislative power; limitations on the power of Congress in the first ten amendments; *ex post facto* laws and laws impairing obligations of contracts; privileges and immunities of United States citizenship; the Civil War amendments and their effect upon state power; due process of law and equal protection of the laws in relation to procedure, race discrimination, police power, public callings and taxation. Wambaugh's *Cases on Constitutional Law.* Open to Seniors. Spring Quarter. *Four hours.*

ECONOMICS

The courses offered aim to give students a general acquaintance with the more fundamental principles of Economics. Credits in Economics may be used by students of History to make a major in History and the Social Sciences.

1. Principles of Political Economy I.—Fundamental principles; production and exchange; the money and tariff systems considered from both the historical and the scientific viewpoints. Text, supplemented by lectures. Prerequisite: one year of college work. Fall Quarter. *Three hours.*

2. Principles of Political Economy II (continuation of course 1).—Distribution and consumption. Text, supplemented by lectures. Prerequisite: Economics 1. Winter Quarter. *Three hours.*

3. Money and Banking.—Monetary and banking systems of the United States and other countries; stock exchanges, boards of trade, and clearing houses. Holdsworth's *Money and Banking,* supplemented by lectures. Prerequisite: Economics 2. Spring Quarter. *Three hours.*

Attention is called to the following courses, descriptions of

which may be found in the announcements of the Commercial School and the Law School, respectively, in this volume.

Accounting 1 and 2.
Business Administration 4.
Business Law 1, 2, 3.
Law 21: Carriers and Public Service.
Law 34: Partnership.
Law 39: Bills and Notes.
Law 40: Private Corporations.

SOCIOLOGY

1. General Sociology I.—General introduction and Sociology with special emphasis on causes and conditions affecting the life of society. Fall Quarter. *Four hours.*

2. General Sociology II.—Nature and analysis of society, social evolution and social control. Winter Quarter. *Four hours.*

Courses 1 and 2 constitute a complete general course in sociology. The work is planned to include a study of modern social problems. The following are illustrative types: distribution of wealth, poverty and charity, heredity and eugenics, immigration, origin and development of the family, crime, public opinion, religion, education.

PSYCHOLOGY, ETHICS AND EDUCATION

PSYCHOLOGY

1. Introduction to Psychology.—Nature of psychology; the mind; consciousness; mental attributes; the nervous system; mental activity. Every quarter. *Five hours.*

2. Psychology of Knowing.—Nature of knowing and knowledge; genesis of knowledge; the functioning of knowledge; evolution of knowledge. Every quarter. *Five hours.*

3. Psychology of Feeling.—Nature of feeling; genesis of feeling; fundamental forms of feeling; functioning of feeling; evolution of feeling. Winter Quarter; Summer Quarter. *Three hours.*

4. Psychology of the Will.—Nature of willing, genesis of willing; elements of willing; evolution of willing; functioning of willing. Winter Quarter; Summer Quarter. *Three hours.*

Attention is called to the following courses in the School of Education, descriptions of which may be found in the announcements of that school in this volume.

E5. Child Psychology.
E6. Educational Psychology.
E7. Psychology of School Subjects.

ETHICS

4. Growth of Morality.—Nature of ethics and morality; evolution of morality; moral intuitionism; good; bad; right; wrong; conscience; functioning of morality. Spring Quarter. *Three hours.*

5. Personal and Social Morality.—Health and efficiency; alcohol problem; chastity and marriage; fellowship, loyalty, luxury; truthfulness; culture; self-control; happiness; world-peace; political purity; social alleviation; liberty and law; equality and privilege. Summer Quarter. *Three hours.*

EDUCATION

Students in the College of Arts and Sciences may take their major or minor in Education, or may take courses in Education as free electives, upon obtaining the approval of their Dean and the Dean of the School of Education. Descriptions of the courses offered in the School of Education may be found in the announcements of that school in this volume.

MATHEMATICS

1a. Intermediate Algebra.—Involution; evolution; surds; surd equations; quadratic equations; simultaneous equations involving higher degrees. Open to students who have presented but one unit in algebra for entrance. Every Quarter. *Three hours.*

1b. Solid Geometry.—Open to students who have presented but one unit in geometry for entrance. Every Quarter. *Three hours.*

2. College Algebra I.—Quadratic equations reviewed; equations of quadratic form; simultaneous equations involving quadratics; indeterminate equations; inequalities; ratio; proportion; variation; progressions. Prerequisite: Algebra, 1½ units, or course 1a; plane geometry, 1 unit or course 1b. Every quarter. *Two hours.*

3. Plane Trigonometry.—The use of the tables of the natural trigonometric functions and of the logarithmic functions in the solution of triangles; emphasis given to the derivation of trigonometric formulas and the proof of trigonometric identities. Some attention is given to the application of the subject to navigation. Prerequisite: Math. 2. Every quarter. *Three hours.*

4. Spherical Trigonometry.—The derivation of the formulas used in the solution of spherical triangles and their application to the problems of astronomy and surveying. Prerequisite: Math. 3. Winter Quarter; Spring Quarter; Summer Quarter. *Two hours.*

5. Analytic Geometry I.—This course covers plane analytic geometry to the higher plane curves. Prerequisite: Math. 3. Fall Quarter; Spring Quarter. *Five hours.*

6. Analytic Geometry II.—Complete plane analytic geometry and all of solid. Prerequisite: Math. 5. Winter Quarter; Summer Quarter. *Three hours.*

7. College Algebra II.—Permutations and combinations; probability; binomial theorem; theory of logarithms and the construction of the tables; limiting values and vanishing fractions; exponential and logarithmic formulas; series. Prerequisite: Math. 3. Winter Quarter; Summer Quarter. *Three hours.*

8. Advanced Arithmetic.—The entire subject of arithmetic reviewed in the light of higher mathematics. This course is adapted to teachers of arithmetic and students in the College of Education. Prerequisite: High school algebra and geometry. Fall Quarter; Summer Quarter. *Five hours.*

9. College Algebra.—A combination of Math. 2 and 7. Fall Quarter. *Five hours.*

21. Differential Calculus I.—A first course in the Calculus pursued as far as partial differentiation as presented in standard texts, Granville's *Elements of the Differential and Integral Calculus* is used at present. Prerequisite: Math. 5. Fall Quarter; Spring Quarter. *Five hours.*

22. Differential Calculus II.—Differential Calculus completed. Prerequisite: Math. 21. Winter Quarter; Summer Quarter. *Two hours.*

23. Integral Calculus I.—The fundamental principles of integration; some special methods. Prerequisite: Math. 21. Winter Quarter; Summer Quarter. *Three hours.*

24. Integral Calculus II.—Integral Calculus completed; applications of the subject to the finding of surfaces, lines, volumes, moments, etc. Prerequisite: Math. 23. Fall Quarter; Spring Quarter. *Three hours.*

25. College Algebra III.—Theory of numbers; determinants; complex numbers; theory of equations. Prerequisite: Math. 7. Spring Quarter. *Three hours.*

41. Differential Equations I.—A brief course designed especially for engineering students; treats some of the more frequently occurring types of ordinary differential equations. Prerequisite: Math. 24. Fall Quarter. *Two hours.*

42. Technical Mechanics I.—Designed for engineering students and for those who wish to make a special study of the applications of mathematics to the problems of mechanics. Concurrent with Math. 41. Prerequisite: Math. 24. Fall Quarter. *Five hours.*

43. Technical Mechanics II.—The subject as presented by Maurer or some other author of equal merit is completed. Prerequisite: Math. 42. Winter Quarter. *Three hours.*

44. Mathematics of Investment.—Designed for students in the School of Commerce and for others who wish to make a mathematical study of annuities, insurance, loans, investments, etc. Prerequisite: Math. 3. Spring Quarter. *Five hours.*

61. Differential Equations II.—A more thorough study of ordinary differential equations than Math. 41. This course and the two following are designed for students who are making mathematics their major subject, but are open to all who are prepared for them. Prerequisite: Math. 24. Fall Quarter. *Three hours.*

62. Differential Equations III.—A continuation of Math. 41. Winter Quarter. *Three hours.*

63. Differential Equations IV.—Partial differential equations and their applications. Prerequisite: Math. 62. Spring Quarter. *Two hours.*

ASTRONOMY

The courses in Astronomy are designed to give students a working knowledge of the subject, and to serve as a foundation for more technical courses in Astronomy and

Celestial Mechanics. A major in mathematics may include Astronomy.

71. Astronomy I.—Preliminary definitions; astronomical instruments; correction of astronomical observations; fundamental problems of practical astronomy; the earth as an astronomical body; the orbital motion of the earth. Prerequisite: Phys. 12, 13, 14 and Math. 4. Fall Quarter. *Three hours.*

72. Astronomy II.—The moon; the sun; eclipses; celestial mechanics; planets in general; terrestrial and minor planets. Prerequisite: Astronomy I. Winter Quarter. *Three hours.*

73. Astronomy III.—Major planets; methods of determining the distance of the sun; comets; meteors; shooting stars; stars in general; star systems; nebulae; clusters, etc. Prerequisite: Astronomy II. *Three hours.*

SUGGESTED PROGRAM FOR A MAJOR IN MATHEMATICS

The following outline suggests courses for students who wish to major in mathematics. The minor should be taken in either physics or chemistry. Considerable latitude is given during the Senior year to enable the student to select the courses which he most desires. Only the required number of hours need be chosen.

FRESHMAN YEAR

Fall Quarter		Winter Quarter		Spring Quarter	
Courses	*Hours*	*Courses*	*Hours*	*Courses*	*Hours*
College Algebra I	2	College Algebra II	3	Spherical Trigonometry	2
Solid Geometry	3	Plane Trigonometry	3		

SOPHOMORE YEAR

Advanced Arithmetic	5	Analytical Geometry II	3	College Algebra III	3
Analytical Geometry II	5	Analytical Geometry II	5		

JUNIOR YEAR

Differential Calculus I	5	Differential Calculus II	2	Integral Calculus II	3
		Integral Calculus I	3		

SENIOR YEAR

Differential Equations I - - - 2	Differential Equations III - - - 3	Differential Equations IV - - - 2
Differential Equations II - - - 3	Astronomy II - - 3	Astronomy III - 3
Astronomy I - - 3	Technical Mechanics II - 3	Mathematics of Investment - - 5
Technical Mechanics I - 5		

PHYSICS

1. **General Physics I.**—Mechanics, Fluids, Sound and Heat. A college course designed for non-technical and pre-medical students. Class, 3 hours; laboratory, 3 hours. Prerequisite: One unit of Algebra. Fall Quarter. *Four hours.*

Laboratory fee: $4.00.

2. **General Physics II.**—Light, Electrostatics, Electrokinetics and Direct Current Machinery. Class, 3 hours; laboratory 3 hours. Prerequisite: Physics 1. Winter Quarter. *Four hours.*

Laboratory fee: $4.00.

3. **General Physics III.**—Alternating Currents and Modern Physics. Class, 3 hours; laboratory, 3 hours. Prerequisite: Physics 2. Spring Quarter. *Four hours.*

Laboratory fee: $4.00.

11. **Technical Physics I.**—Mechanics, Molecular Physics, Hydrostatics and Wave Motion. A college course in Physics for technical students or those expecting to major in science. Class, 3 hours; laboratory, 4 hours. Prerequisite: Trigonometry. Fall Quarter. *Five hours.*

Laboratory fee: $4.00.

12. **Technical Physics II.**—Sound, Heat and Electricity; solution of practical problems. Class, 3 hours; laboratory, 4 hours. Prerequisite: Physics 11. Winter Quarter. *Five hours.*

Laboratory fee: $4.00.

13. **Technical Physics III.**—Light; the spectroscope, lenses, color, optical instruments; solution of practical problems. Class, 3 hours; laboratory, 4 hours. Prerequisite: Physics 12. Spring Quarter. *Five hours.*

Laboratory fee: $4.00.

*Note.—Physics 1, 2, and 3 displace courses numbered 5, 6, and 7 prior to the school year 1923-24. Courses formerly numbered 1 and 2 have been discontinued.

15. Methods in High School Physics.—A discussion of the varied purposes of high school physics, with the emphasis on methods of coordination and presentation of subject matter. The construction and use of demonstration apparatus will be studied. Summer Quarter. *Three hours.*

16. Laboratory Methods in High School Physics.—A course designed to give the teacher practice in trying out the experiments which he wishes to use in his own work. He is shown how to apply the apparatus which he may have to the required experiments. Instruction is also given in the construction and care of apparatus. Laboratory 6 hours. Summer Quarter. *Two hours.*

Laboratory fee: $4.00.

21. Electrical Measurements.—An advanced course in the measurements of resistance, capacity, inductance, the magnetic properties of iron, and the calibration of measuring instruments. The theory used in the laboratory is completely covered in lectures. Class, 2 hours; laboratory 9 hours. Prerequisite: Physics 12, Mathematics 23. Spring Quarter. *Five hours.*

Laboratory fee: $6.00.

30. Calorimetry I.—Measurements of the heat values of coal with the Parr oxygen bomb calorimeter, and of gas with the Sargent gas calorimeter. A practical course for technical students. Laboratory, 6 hours. Fall Quarter. *Two hours.*

Laboratory fee: $6.00.

31. Calorimetry II (continuation of Physics 30).—Measurements of the heat value of fuel oils; measurements of viscosity and the flash points of oils. Laboratory, 6 hours. Winter Quarter. *Two hours.*

Laboratory fee: $6.00.

32. Electrical Theory I.—The derivation of equations used in the testing and designing of electrical and magnetic machinery and the application of these to the solution of practical problems. Class 3 hours. Prerequisite: Physics 13 and calculus. Fall Quarter. *Three hours.*

33. D. C. Dynamo and Motor Testing.—A practical course in the operation, testing and repair of direct current machinery. Laboratory 6 hours. Should accompany Electrical Theory I. Fall Quarter. *Two hours.*

Laboratory fee: $4.00.

34. Electrical Theory II.—The continuation of course 32 to alternating current problems. Class 3 hours. Prerequisite: Physics 32. Winter Quarter. *Three hours.*

35. A. C. Dynamo and Motor Testing.—A practical course in the operation, testing and repair of alternating current machinery. Laboratory 6 hours. Should accompany Electrical Theory II. Winter Quarter. *Two hours.*

Laboratory fee: $4.00.

36. Physical Optics.—A descriptive course discussing mainly the construction and use of refraction, dispersion, interference and diffraction apparatus. Class, 3 hours. Prerequisite: Physics 14 and calculus. Spring Quarter. *Three hours.*

37. Experimental Optics.—Advanced laboratory measurements in diffraction, dispersion, interference and polarization. Should accompany Physical Optics. Laboratory, 6 hours. Spring Quarter. *Two hours.*

Laboratory fee. $4.00.

38. Thermodynamics I.—An elementary course covering the laws of thermodynamics, the equations of isothermal and adiabatic conditions of gases and steam, Carnot's cycle and entropy. The solution of many practical problems will be included in the work. Class, 3 hours. Prerequisite: Physics 11 and calculus. Spring Quarter. *Three hours.*

39. Thermodynamics II.—A continuation of the theory of course 38, with practical applications to the design and operation of steam and internal combustion engines, compressors and distillation plants. Summer Quarter. *Three hours.*

41. Theoretical Optics.—A discussion of the modern theories of reflection, refraction, dispersion, absorption and polarization of light. Class, 3 hours. Prerequisite: Physics 36 and differential equations. Fall Quarter. *Three hours.*

42. Technical Mechanics I.—See Department of Mathematics. Fall Quarter. *Five hours.*

43. Technical Mechanics II.—See Department of Mathematics. Winter Quarter. *Three hours.*

45. Experimental Thesis.—An experimental thesis must be prepared for the completion of a major in Physics. The subject will be

chosen with the advice of the professor in charge and an average of six hours per week devoted to its development. Spring Quarter. *Two hours.*

46. Physics Club.—The meetings of this club are devoted to the delivery and discussion of papers on current physical topics of interest. The preparation and delivery of at least six papers during the junior and senior years required of a student majoring in Physics. Three for a minor student. *Two hours* or *one hour.*

SUGGESTED PROGRAM FOR A MAJOR IN PHYSICS AND A MINOR IN CHEMISTRY

FRESHMAN YEAR

Fall Quarter

Courses	*Hours*
Algebra I	2
Inorganic Chemistry I	4
Freshman English I	3
Foreign Language	5

Winter Quarter

Plane Trigonometry	3
Inorganic Chemistry II	4
Freshman English II	3
Foreign Language	5

Spring Quarter

Analytical Geometry	5
Inorganic Chemistry III	2
Freshman English III	3
Foreign Language	5

SOPHOMORE YEAR

Fall Quarter

Courses	*Hours*
Differential Calculus I	5
Technical Physics I	5
Foreign Language	3
Elective	2

Winter Quarter

Integral Calculus I	3
Technical Physics II	5
Foreign Language	3
Elective	4

Spring Quarter

Technical Physics III	5
Electrical Measurements	5
Public Speaking	3
Elective	2

JUNIOR YEAR

Fall Quarter

Electrical Theory I	3
D. C. Dynamo and Motor Testing	2
Qualitative Analysis I	4
Elective	6

Winter Quarter

Electrical Theory II	3
A. C. Dynamo and Motor Testing	2
Qualitative Analysis II	4
Elective	6

Spring Quarter

Thermodynamics	3
Physical Optics	3
Experimental Optics	2
Electrochemistry	3
Elective	5

SENIOR YEAR

Fall Quarter

Technical Mechanics I	5
Quantitative Analysis I	5
Elective	5

Winter Quarter

Technical Mechanics II	3
Calorimetry I	2
Organic Chemistry I	4
Elective	5

Spring Quarter

Theoretical Optics	3
Organic Chemistry II	4
Experimental Thesis	3
Elective	4

Note.—Special adjustment of the individual program is made for students who wish to take advantage of the Summer Quarter to obtain the degree in three years of four quarters each.

CHEMISTRY

1. Inorganic Chemistry I.—A general college course dealing with the theories and laws underlying the science. Class, 3 hours; laboratory 3 hours. Smith's *College Chemistry.* Fall Quarter; Spring Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

2. Inorganic Chemistry II (continuation of course 1).—Treats of the acid-forming elements. Class, 3 hours; laboratory, 3 hours. Smith's *College Chemistry.* Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

3. Inorganic Chemistry III.—This course completes the classroom work in Inorganic Chemistry, and treats of the metals. Class, 2 hours. Smith's *College Chemistry.* Fall Quarter; Spring Quarter. *Two hours.*

4. Organic Chemistry I.—A general course in Organic Chemistry covering the points of physical chemistry essential to the subject and dealing with the aliphatic series. Class, 3 hours; laboratory, 3 hours. Prerequisite: Chemistry 3. Stoddard's *Organic Chemistry.* Winter Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

5. Organic Chemistry II.—The study of the aliphatic series is completed and the remaining time is given to the aromatic series. Class, 3 hours; laboratory, 3 hours. Prerequisite: Chemistry 4. Stoddard's *Organic Chemistry.* Spring Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

6. Synthetic Organic Chemistry.—The preparation and properties of important organic compounds. The purpose of the course is practical training in the manufacture of certain organic chemicals. An excellent library gives the student an opportunity to develop along original lines. Class 1 hour; laboratory, 6 hours. Prerequisite: Chemistry 5. Cohen's *Practical Organic Chemistry.* Winter Quarter. *Four hours.*

Laboratory fee: $7.50.

8. History of Chemistry.—A study of the development of chemical theories from the earliest times to the present day. Considerable time is spent on the biographies of men who have contributed

most to the development of Chemistry during the past century. Class, 3 hours. Prerequisite: Chemistry 5. Moore's *History of Chemistry.* Winter Quarter. *Three hours.*

9. Household Chemistry.—A study of foods, their composition and values. It covers the detection of adulterants and preservatives, and the study of soaps, cleansers and other matters pertaining to the chemistry of the household. Class, 3 hours; laboratory, 3 hours Prerequisite: Qualitative Analysis. Vulte's *Household Chemistry.* Spring Quarter. *Four hours.*

Laboratory fee: $3.50. Deposit: $1.00.

10. Teachers' Chemistry.—A course treating of the best methods of presenting the foundation principles of General Chemistry, especially to high school classes. The best methods of laboratory work also have attention, particularly the location of the laboratory in relation to other rooms, the arrangement of laboratory furniture, the planning and buying of laboratory equipment. The chemistry library is also considered from the standpoint of the best books to buy, how and where to get them, and how to keep in touch with the current books and literature on the subject. A thorough knowledge of the fundamental principles of General and Analytical Chemistry is necessary in order to elect this course. Class, 3 hours. Summer Quarter. *Three hours.*

11. Arithmetical Chemistry.—This is arranged to cover practical chemical problems. It is quite essential for the student who wishes to become proficient in any branch of Chemistry. Prerequisite: Chem. 1. Estabrooke and Baskerville's *Problems in Chemistry.* Spring Quarter. *Three hours.*

14. Qualitative Analysis.—An elementary course in chemical analysis dealing with solutions of common metallic salts, and the determination of positive and negative radicals. Class, 2 hours; laboratory, 6 hours. Prerequisite: Chem. 2. Timmons' *Qualitative Analysis.* Every Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

15. Advanced Qualitative Analysis.—Attention is given to the methods of dry analysis and to the examination of organic compounds. The determination of fifty inorganic unknowns complete the course. Class, 2 hours; laboratory, 6 hours. Morgan's *Qualitative Analysis.* Winter Quarter. *Four hours.*

Laboratory fee: $4.00.

16. Quantitative Analysis.—A course majoring gravimetric and volumetric work. The general processes of gravimetric analysis are studied, and volumetric analyses illustrating the processes of neutralization, precipitation, and oxidation and reduction are carried out. Class, 2 hours; laboratory; 9 hours. Prerequisite: Chem. 14. Mahin's *Quantitative Analysis.* Fall Quarter; Summer Quarter. *Five hours.*

Laboratory fee: $7.00. Deposit: $1.00.

17. Advanced Quantitative Analysis.—Quantitative analysis of iron, steel, slag, cement, limestone, and the common ores. Technique is emphasized. The blowpipe is used to identify the ores analyzed. Class 2 hours; laboratory, 9 hours. Prerequisite: Chem. 16. Fall Quarter. *Five hours.*

Laboratory fee: $6.00.

18. Water Analysis.—A laboratory course devoted to the chemical examination of water. Class, 1 hour; laboratory, 3 hours. Prerequisite: Chem. 16. Mason's *Examination of Water.* Fall Quarter. *Two hours.*

Laboratory fee: $2.50.

19. Drug Assay.—A course devoted to the determination of the relative amounts in which the active or valuable constituents of medicinal substances are present. This course supplements the work of the courses in qualitative and quantitative analysis. Inorganic and organic chemicals, and pharmaceutical preparations are examined. Considerable time is devoted to the detection, identification, and determination of alkaloids. Alkaloidal assays by official processes are performed on preparations of cinchona, nux vomica, belladonna, opium, ipecac, and other important drugs. Class, 2 hours; laboratory, 4 hours. *United States Pharmacopoeia.* Winter Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

20. Analysis of Foods I.—The examination of common foods with a view to detecting substitution and adulteration. General tests and processes of examination applicable to several classes of foods are first studied and later applied in actual practice upon unknown samples. Milk, ice cream, butter, and other dairy products receive especial attention. Students not well advanced in chemistry should not elect this course, as it requires considerable skill in the technique of chemical manipulations. Class, 2 hours; laboratory, 6 hours. Prerequisite: Chemistry 5, 14, 16. Leach's *Food Inspection and Analysis.* Winter Quarter. *Four hours.*

Laboratory fee: $5.00.

21. Analysis of Foods II (continuation of Chemistry 20).—Cereals, vinegars, spices, edible oils and fats, flavoring materials, alcoholic beverages, preservatives, and coloring agents are studied. Use is made of the microscope, refractometer, and polariscope. Class, 2 hours; laboratory, 6 hours. Prerequisite; Chemistry 20. Leach's *Food Inspection and Analysis.* Spring Quarter. *Four hours.*

Laboratory fee: $5.00.

22. Industrial Chemistry I.—The manufacture of the important acids, bases and salts, lime, cement, glass, and other important inorganic materials. Class, 3 hours; laboratory, 4 hours. Prerequisite: Inorganic Chemistry. Thorpe's *Industrial Chemistry.* Spring Quarter. *Four hours.*

Laboratory fee: $7.00.

23. Industrial Chemistry II.—A study of the manufacturing processes and appliances for the production of the important organic chemicals of the market. Explosives, textiles, paper, and other industries are covered. Class, 3 hours; laboratory, 4 hours. Prerequisite: Organic Chemistry. Thorp's *Industrial Chemistry.* Summer Quarter. *Four hours.*

Laboratory fee: $7.00.

24. Metallurgy.—A study of the methods of obtaining iron, copper, lead, zinc, tin, silver, gold, platinum, mercury, aluminum and nickel from their ores. Class, 3 hours. Prerequisite: Advanced Quantitative Analysis. Spring Quarter. *Three hours.*

25. Assay of Ores.—May be taken alone or as a laboratory course accompanying Metallurgy. Assays will be made of gold, silver, copper, and other important ores. Labroatory, 6 hours. Prerequisite: Advanced Quantitative Analysis. Spring Quarter. *Two hours.*

Laboratory fee: $4.00.

26. Alloys.—A consideration of the various alloys and their uses. Brass, Babbitt's metal, solders, typemetal, bronze, will be carefully studied. Laboratory, 4 hours. Prerequisite: Advanced Quantitative Analysis. Fall Quarter. *Two hours.*

Laboratory fee: $4.00.

27. Gas and Fuel Analysis.—Examinations of gases, gas mixture, flue gases, and fuels. Laboratory, 6 hours. Prerequisite: Advanced Quantitative Analysis. Winter Quarter. *Two hours.*

Laboratory fee: $3.50.

28. Electrochemistry.—A course in theoretical and applied Electrochemistry, with emphasis on the technical side of the subject. Class, 3 hours. Prerequisite. Chem. 1, 2 Spring Quarter *Three hours.*

SUGGESTED PROGRAM FOR A MAJOR IN CHEMISTRY AND A MINOR IN PHYSICS

FRESHMAN YEAR

Fall Quarter

Freshman English I	3
Algebra I	2
Foreign Language	5
Inorganic Chemistry I	4

Winter Quarter

Freshman English II	3
Plane Trigonometry	3
Foreign Language	5
Inorganic Chemistry II	4

Spring Quarter

Freshman English III	3
Analytical Geometry	5
Foreign Language	5
Inorganic Chemistry	2

SOPHOMORE YEAR

Fall Quarter

Differential Calculus I	5
Technical Physics I	5
Foreign Language	3
Elective	2

Winter Quarter

Integral Calculus I	3
Technical Physics II	5
Foreign Language	3
Elective	4

Spring Quarter

Public Speaking	3
Qualitative Analysis	4
Arithmetical Chemistry	3
Technical Physics III	5

JUNIOR YEAR

Fall Quarter

Quantitative Analysis	5
Electrical Theory I	3
D. C. Dynamo and Motor Testing	2
Elective	5

Winter Quarter

Organic Chemistry I	4
Electrical Theory II	3
A. C. Dynamo and Motor Testing	2
Advanced Qualitative Analysis	4
Elective	2

Spring Quarter

Organic Chemistry II	4
Industrial Chemistry I	5
Elective	2
Electrical Measurements	5

SENIOR YEAR

Fall Quarter

Calorimetry I	2
Advanced Quantitative Analysis	5
Alloys	2
Elective	6

Winter Quarter

History of Chemistry	3
Experimental Thesis	2
Elective	10

Spring Quarter

Electrochemistry	3
Metallurgy	3
Assay of Ores	2
Elective	7

Note.—Special adjustment of the individual program is made for students who wish to take advantage of the Summer Quarter to obtain the degree in three years of four quarters each.

BIOLOGICAL AND GEOLOGICAL SCIENCES

This department is unusually fortunate in the great variety and exceptional character of the fauna, flora and earth features of the immediate environment. Its situation is on the crest of the great glacial deposit known as the Valparaiso terminal moraine, having a wealth of geological formations, typical mesophytic groups of plants and characteristic animal life. The shores of Lake Michigan and the famous Sand Dunes, with their remarkable association of plants known as the dune flora are only a few miles to the north. The old Chicago lake basin and its numerous small lakes, about which are some of the most extraordinary groups of bog formations in the country, lie between the dune area and the moraine system. The great wash-out basin, noted for its Indian mounds, mastodon remains and extensive hydrophytic plant associations, are a short distance to the south. Field classes thus never fail to find an abundance of instructive and interesting illustrative material.

BOTANY

The varied character of the flora and an excellent system of stone roads enable classes to study almost all the ecological groups of plants under the most favorable conditions of natural environment and with a minimum of inconvenience. Among the many kinds of plants that are found only in the Northern parts of the state (and that grow here) are certain species of pitcher plants. sundews, bladderworts, lady's slippers, scrub pines, ferns, club mosses, horsetails, mosses, fungi and algæ, besides a large number of grasses, sedges and rushes.

1. **Elementary Botany.**—A study of the seed plants and a few representative forms of the lower groups. Special attention is given to the principles of plant life and their economic importance. Intended for students who can give but one term to the subject and for those who wish a general review of botany. Class, 3 hours; laboratory and field, 4 hours. Fall Quarter; Spring Quarter. *Four hours.*

Laboratory fee: $2.50.

2. General Botany I.—The relations of plants to their environment; cell structure and plant anatomy; physiology, reproduction, plant breeding and evolution. Open to all college students who have not had a unit in high school botany. Class, 3 hours, laboratory and field, 4 hours. Fall Quarter, Spring Quarter. *Four hours.*

Laboratory fee: $2.50.

3. **General Botany II.**—The morphology, physiology, and life histories of type forms of the lower groups of plants. Special emphasis is a placed on the evolution of plant structures and reproductive processes. A few of the more important families of the seed plants, plant societies. Class, 3 hours; laboratory and field, 4 hours. Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $2.50.

4. Plant Ecology I.—The relations of roots, stems, and leaves, and their various modifications, to the soil, moisture, light, heat, animal life, *etc.* The morphology and physiology of the vegetative organs are carefully studied in the laboratory; the ecology, in the field. Class, 2 hours; laboratory and field, 6 hours. Prerequisite: General Botany. Winter Quarter; Spring Quarter. *Four hours.*

Laboratory fee: $2.50.

5. Plant Ecology II.—The influence of the enviroment on the reproductive organs and processes of plants; seed dispersal, germination and propagation of plants; saprophytic and symbiotic plants; grafting and budding; galls, tubercules and other malformations of plants. Class, 2 hours; laboratory, 6 hours. Prerequisite: General Botany. Fall Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $2.50.

6. Plant Histology.—The miscroscopic structures of plants, the various methods of fixing, imbedding, section-cutting, staining and mounting of plant tissues. Students are expected to become familiar with the use of the large microtomes, camera lucida, oil immersion lenses, micrometers, and the combinations of stains so as to differentiate the details of cell structure, such as the cytoplasmic membranes, mitotic figures, and the composition of the cell walls. Class, 2 hours; laboratory, 6 hours. Prerequisite: Botany 3 and 4. Winter Quarter. *Four hours.*

Laboratory fee: $3.50.

7. Plant Physiology.—The absorption and transfer of raw material, photosynthesis, assimilation, food accumulation, respiration, transpiration, growth, and movements of plants. Class, 3 hours;

laboratory, 2 hours. Prerequisite: Plant Histology. Spring Quarter. *Four hours.*

Laboratory fee: $2.50.

8. **Plant Genetics and Breeding.**—The theories of organic evolution, cell structure, mitosis, reduction, variation, the laws of heredity, inbreeding, cross breeding, the selection and testing of seeds. Class, 3 hours; laboratory, 2 hours. Prerequisite: Plant Ecology II. Summer Quarter. *Four hours.*

Laboratory fee: $2.50.

9. **Systematic Botany.**—Largely field excursions for the purpose of observing plants in their natural environment and collecting type forms of the various genetic and ecological groups. Class, 2 hours; field, 6 hours. Prerequisite: General Botany. Summer Quarter. *Four hours.*

Laboratory fee: $2.50.

BACTERIOLOGY

1. **Bacteriology.**—The preparation of culture media, the isolation and identification of a number of the non-pathogenic and pathogenic forms of micro-organisms, the bacteriology of water, milk and other foods, sterilization, inoculation, infection, immunity, toxins, antitoxins, *etc.* Class, 2 hours; laboratory, 6 hours. Prerequisite: Botany 1, Physiology 1, or Zoology 1. Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee, $5.00.

PHYSIOLOGY

For the work in Physiology the department has a completely furnished physiological laboratory and a particularly varied and extensive equipment of apparatus, skeletons, museum specimens, charts and manikins. The maximum of time is given to laboratory demonstration and experimentation.

1. **General Physiology.**—An elementary course in anatomy, physiology, and hygiene, designed for students who can devote but one quarter to the subject, and for those who require preparation before taking up more advanced work. Class, 3 hours; laboratory, 3 hours. Open to all students. Every Quarter. *Four hours.*

Laboratory fee: $2.00.

2. Advanced Physiology I.—The chemical composition of the human body; the morphology and physiology of the cell; the origin, structure, and role of the tissues; the osseous, muscular, circulatory, respiratory and digestive systems. Class, 2 hours; laboratory, 6 hours. Prerequisite. General Physiology. Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $2.50.

3. Advanced Physiology II.—Nutrition, excretion, body heat, the brain, spinal cord, cranial nerves, spinal nerves, special and common senses. Dissection of the brain of the sheep, study of gross sections of the human brain and microscopic sections of nerve tissue. Class, 2 hours; laboratory, 6 hours. Prerequisite: General Physiology. Spring Quarter. *Four hours.*

Laboratory fee: $2.50.

4. Hygiene and Sanitation.—A course of lectures, demonstrations and recitations on the proper care and use of the organs of the human body; the location, construction, heating, lighting, and ventilation of houses; the cause and prevention of some of the more common diseases; the disposal of garbage, sewage, and rubbish; the water supply; care of streets and alleys, sanitation of public conveyances, hotels, schools, churches and theaters. Prerequisite: General Physiology. Spring Quarter. *One hour.*

ZOOLOGY

Besides all necessary apparatus and materials for laboratory work, the department has an exceptionally extensive collection of thousands of illustrative examples of all the groups and sub-groups of animals. This collection includes museum-jar specimens, dried tests of echinoderms and crustaceans, mounted insects, prepared skeletons, dissections, taxidermic mounts and shells of various kinds. As these specimens have been gathered from all over the world, it has required years to bring the collection to its present degree of completion. Many models and charts are used in the different courses.

In general, the order given below is that in which the courses should be studied.

1. General Zoology.—A study of the fundamentals of animal biology—life processes, life histories, embryology and evolution of animals—as illustrated by a few selected types. Material has been chosen which seems to be the best compromise between the type course and the course devoted entirely to principles. As this course is complete in itself, it should be valuable to beginners, to teachers desiring to review the whole subject in one quarter, and to students seeking a general knowledge of Zoology and having but one quarter to devote to it. Class, 3 hours; laboratory, 4 hours. Open to all students. Fall Quarter; Winter Quarter; Summer Quarter. *Five hours.*

Laboratory fee: $3.00.

2. Invertebrate Zoology I.—A systematic study of the classification, morphology, physiology and ecology of the invertebrate phyla below the Annelida. Representatives of the principal groups are studied and dissected in the laboratory. Class, 3 hours; laboratory, 3 hours. Fall Quarter. *Four hours.*

Laboratory fee: $3.00.

3. Invertebrate Zoology II.—A study of the Annelida, Mollusca and Arthropoda. Representatives of the principal groups are studied and dissected in the laboratory. Class, 3 hours; laboratory, 3 hours. Prerequisite: course 1 or course 2. Winter Quarter. *Four hours.*

Laboratory fee: $3.50.

4. Vertebrate Zoology.— A study of the comparative anatomy, development, phylogeny and classification of vertebrates. The laboratory work is strictly comparative and consists of the dissection and careful study of the amphioxus, dogfish, necturus, turtle, and cat. Class, 3 hours; laboratory, 7 hours. Prerequisite: at least one quarter of zoology. Spring Quarter. *Six hours.*

Laboratory fee: $5.00.

5. Entomology.—A classification of the Insect Orders. Particular attention is given to the economic relation of insects, how they affect cultivated plants and domestic animals, and their relation as disease carriers in respect to man. The student is required to make a collection of one hundred species of insects, which must represent all the larger orders. Class, 2 hours; laboratory, 6 hours Prerequisite: course 1. Summer Quarter. *Four hours.*

Laboratory fee: $2.50.

6. Genetics and Eugenics.—An elementary study of mitosis, spermatogenesis, oogenesis, reduction, fertilization, segmentation, de-

terminers, variation, biometry, selection, mutation, inheritance of acquired characters, pure lines, segregation and dominance, reversion, blending, determination of sex, inheritance of human traits and improvement of the human race. Reports from recent works on heredity. Lecture and recitation, 3 hours. Prerequisite: course 1. Winter Quarter. *Three hours.*

7. Evolution.—The history of the evolution idea; its factors and proofs; the influence of the evolutionary view-point in all fields of thought. Lecture and recitation, 5 hours. Prerequisite: course 1. Lull's *Organic Evolution.* Spring Quarter. *Five hours.*

8. Economic Zoology.—A study of economically important examples of all the principal groups of animals. Reports on many bulletins and other publications. Lecture and recitation, 3 hours. Open to all students. Spring Quarter. *Three hours.*

9. Embryology.—A general study of the embryology of vertebrates, with special reference to the chick and pig. Two-quarter course. Classroom, 2 hours each quarter; laboratory, 3 hours each quarter. Prerequisite: course 4. Fall and Winter Quarters. Credit for Fall Quarter is deferred until the course is completed. *Six hours.*

Laboratory fee: $3.50 for each quarter.

GEOLOGY

1. Dynamic, Structural and Physiographic Geology.—A consideration of the forces, causes and laws underlying geological phenomena. The destructive and reconstructive processes are studied in aid of a better understanding of the earth's structure as a whole. Text: Chamberlain and Salisbury. *Five hours.*

2. Historical Geology.—A study of the various hypotheses of the earth's origin, giving especial emphasis to the meaning of the geological succession of plants and animals, and the character and distribution of the rocks of each period. Text: Chamberlain and Salisbury. *Five hours.*

3. Economic Geology.—Lectures and recitations on the occurrence of the various rocks and minerals of economic importance; blowpipe analysis; identification by blow-pipe tests and other means of a large number of mineral and rock specimens. Class, 5 hours; laboratory, 5 hours. Ries' *Economic Geology. Seven and one-half hours.*

Laboratory fee: $3.00.

4. Advanced Dynamical and Structural Geology (continuation of Geology 1).—Lectures and recitations; collection and identification by the student of drift boulders of the locality; interpretation of geological maps. Reports upon assigned topics. Hobbs' *Earth's Features. Five hours.*

Laboratory Fee, $3.00.

PHYSICAL EDUCATION

The aim of Physical Education is threefold: *hygienic*—the preservation of organic vigor in order to make possible the most effective mental effort; *educative*—for skill, co-ordination and precision, for personal development, for moral courage and discipline in team play; *recreative*—to relieve periodically the tension induced by concentrated mental application.

COURSES OF INSTRUCTION FOR MEN

1. Gymnasium I.—Floor work; calisthenics; apparatus including the use of dumb-bells, bar-bells, parallel bars, etc.; military drill. Fall Quarter.

2. Gymnasium II.—A continuation of course 1. Winter Quarter.

3. Gymnasium III.—A continuation of course 2. Spring Quarter.

4. Athletics I.—Football. Open to a limited number of students who show particular fitness for the work. Fall Quarter.

5. Athletics II.—Basketball. Winter Quarter.

6. Athletics III.—Baseball. Spring Quarter.

7. Athletics IV.—Track work. Spring Quarter

COURSES OF INSTRUCTION FOR WOMEN

1. Gymnasium I.—Swedish and general gymnastics; apparatus work; military tactics; folk dancing; games. Fall Quarter.

2. Gymnasium II.—A continuation of course 1. Winter Quarter.

3. Gymnasium III.—A continuation of course 2. Spring Quarter.

4. Athletics I.—Hockey. Open to a limited number of students. Fall Quarter.

5. Athletics II.—Basketball. Winter Quarter.

6. Athletics III.—Indoor baseball. Spring Quarter.

7. Athletics IV.—Tennis. Spring Quarter.

8. Normal Course I.—Designed to prepare teachers to carry on the work of physical education in the public schools. Formal gymnastics; apparatus; games; folk dancing; short plays. Fall Quarter.

9. Normal Course II.—A continuation of course 8. Winter Quarter.

10. Normal Course III.—A continuation of course 9. Spring Quarter.

11. Normal Course IV.—A continuation of course 10. Summer Quarter.

12. Aesthetic Dancing.—Designed to develop grace and poise; elementary technique; plastic movements and interpretive rhythm. Every Quarter.

FINE ART

The University offers in this department courses of study in Academic Drawing and Painting. Convenient rooms are equipped for the work. Among the furnishings are casts, still life objects, drawing boards and easels.

ADMISSION

For admission as a candidate for a degree fifteen high school units or the equivalent are required. The particulars of this requirement are stated in the first section of this catalog.

Applicants who cannot comply with the foregoing requirement may be admitted as special students, not candidates for a degree. Special students may take selected courses or the full curriculum, and upon the satisfactory completion of the latter will be granted a Certificate of Proficiency.

Students in other schools of the University may take courses in Fine Art independent of a degree or as free electives.

DEGREE

The curriculum leads to the degree Bachelor of Fine Art.

INSTRUCTION

The work offered proceeds along three lines, as follows:

A. DRAWING
- *Charcoal*
- *Freehand*
- *Sketch from life*

B. PAINTING
- *Realistic*
  - *Water Color: still life and life*
  - *Oil: still life and life*
  - *Pastel*
- *Conventional*
  - *Design*
  - *China Painting*

C. HISTORY AND THEORY
- *History of Art*
- *Theory and Practice*

THE UNIT OF WORK

Each course of instruction extends throughout one quarter (twelve weeks). In evaluating credits the unit for measuring the amount of work done in a course is the *term-hour,* or *hour.* An hour represents work having a credit-value of one hour each week for one quarter. Full work for a quarter is fifteen hours; for a year (thirty-six weeks), forty-five hours; for completion of a four-year curriculum, one hundred eighty hours. By remaining in residence during four quarters yearly, a student may complete a four-year curriculum in three calendar years without reducing the actual period of study.

FINE ART CURRICULUM

FRESHMAN YEAR

Fall Quarter

Courses	*Hours*
Charcoal (1)	2
Freehand Drawing (13)	2
Design and Composition (25)	2
History of Art (55)	2
Freshman English I	3
Elective	4

Winter Quarter

Charcoal (2)	2
Freehand Drawing (14)	2
Design and Composition (26)	2
History of Art (56)	2
Freshman English II	3
Elective	4

Spring Quarter

Charcoal (3)	2
Sketch from Life (15)	2
Design and Composition (27)	2
Color (37)	3
History of Art (57)	2
Freshman English III	3
Elective	2

SOPHOMORE YEAR

Fall Quarter

Courses	*Hours*
Charcoal (4)	2
Sketch from Life (16)	2
Design and Composition (28)	2
Color (38)	3
History of Art (58)	2
Literature	3
Elective	2

Winter Quarter

Charcoal (5)	2
Sketch From Life (17)	2
Design and Composition (29)	2
Color (39)	3
Physiology and Anatomy	4
Elective	2

Spring Quarter

Charcoal (6)	2
Sketch from Life (18)	2
Design and Composition (30)	2
Color (40)	3
Botany	4
Elective	2

JUNIOR YEAR

Fall Quarter

Charcoal (7)	2
Sketch from Life (19)	2
Design and Composition (31)	2
Color (41)	3
History of Art (59)	2
Mechanical Drawing	3
Elective	2

Winter Quarter

Charcoal (8)	2
Sketch from Life (20)	2
Design and Composition (32)	2
Color (42)	3
History of Art (60)	2
Literature	3
Elective	2

Spring Quarter

Charcoal (9)	2
Sketch from Life (21)	2
Design and Composition (33)	2
Color (43)	3
History of Art (61)	2
Literature	3
Elective	2

SENIOR YEAR

Fall Quarter

Charcoal (10)	2
Sketch from Life (22)	2
Design and Composition (34)	2
Color (44)	3
History of Art (62)	2
Elective	4

Winter Quarter

Charcoal (11)	2
Sketch from Life (23)	2
Mythology	2
Design and Composition (35)	2
Color (45)	3
*Special Methods in Art (67)	4

Spring Quarter

Charcoal (12)	2
Sketch from Life (24)	2
Design and Composition (36)	2
Color (46)	3
*Practice Teaching	4
Elective	2

*These subjects are for students expecting to do public school teaching. Such student should also include at least twenty hours of Education in their elective work.

Adjustment of the program is made for students who attend four quarters yearly, thus shortening the time required.

COURSES OF INSTRUCTION

1, 2. Charcoal.—Practice from antique symmetrical objects in outline and general light and shade. *Two hours for each course.*

3, 4. Charcoal.—Practice from familiar groups of objects in outline and general light and shade. *Two hours for each course.*

5. Charcoal.—Parts of face, feet and hands in full light and shade from cast. *Two hours for each course.*

6, 7. Charcoal.—Heads from cast in full light and shade. *Two hours for each course.*

8, 9. Charcoal.—Figures from cast in full light and shade. *Two hourse for each course.*

10, 11, 12. Charcoal.—Life work in outline, light and shade from costumed model. *Two hours for each course.*

13. Freehand Drawing I.—Pencil work from nature studies and objects; perspective drawing; elementary color work and design. *Three hours.*

14. Freehand Drawing II.—Advanced pencil work; problems in angular and parallel perspective; continuation of color and design of course 13. *Two hours.*

15, 16, 17. Sketch from Life.—During third, fourth, and fifth quarters of study, six pencil sketches from life will be made each week. Instruction and criticism, three hours each week. *Two hours for each course.*

18. Sketch from Life.—Outdoor work in Spring and Summer quarters in pencils and color. *Two hours.*

19, 20. Sketch from Life.—Black and white sketches. *Two hours.*

21, 22, 23, 24. Sketch from Life.—Work in water colors, oil or pastel. Natural colors. *Two hours for each course.*

25. Design and Composition I.—Exercises in space and line relations; practice in pencil; finished work in three values. *Two hours.*

26. Design and Composition II.—Study of harmonious color schemes; exercises planned for space and line relation and finished in color. *Two hours.* Prerequisite: course 25.

27, 28. Design and Composition III, IV.—Decorative and Pictorial exercises in color. Prerequisite: courses 25, 26. *Two hours for each course.*

29, 30, 31, 32. Design and Composition V-VIII.—Conventionalization of plants and flowers. Prerequisite: courses 25-28. *Two hours for each course.*

33, 34, 35, 36. Design and Composition IX-XII.—Original designs and illustrations in black and white and in color. *Two hours for each course.*

37, 38, 39, 40. Color Work from Still Life.—Medium water color Prerequisite: courses 3, 4, 13, 14. *Three hours for each course.*

41. Color Work from Still Life.—Continuation of courses 37-40. In 41 oil or pastel may be substituted for water color. *Three hours.*

42, 43, 44. Color Work from Life and Still Life.—Continuation of course 41. *Three hours for each course.*

45, 46. Color Work from Nature.—Any medium. Prerequisite: courses 13 and 14. *Three hours for each course.*

47, 48, 49, 50. China Painting.—The instruction in Ceramic Art covers processes and materials, freehand drawing, color and the practical application of designs to ceramics. *Four hours for each course.*

51, 52, 53, 54. China Painting.—Application of more complicated designs; smalls sets; original designs. *Four hours for each course.*

55, 56, 57, 58. History of Art. I-IV.—Appreciative study of the earliest art of Egypt and the Orient; study of architecture, sculpture and painting among Greeks, Romans, French and people of Northern Europe; early American art. Reports and outside reading required. *Two hours credit for each course.*

59, 60, 61, 62. History of Art. V-VIII.—Study and reports concernings modern sculptors and painters, especially American. *Two hours for each course.*

63. Methods in Public School Art I.—Primary work for first second and third grades. Outline, lesson plans and practice in presentation of lessons. *Three hours.*

64. Methods in Public School Art II.—Intermediate work for fourth, fifth and sixth grades. *Three hours.*

65. Methods in Public School Art III.—Work for seventh and eighth grades or Junior High School. *Three hours.*

66. Methods in Public School Art IV.—Work for the High School including sketch from life, designing, poster making, problems in perspective. *Three hours.*

67. Special Methods in Public School Art.—A course designed especially for students of the Fine Arts Course who desire to teach Public School Art. *Four hours.*

NOTE.—China Painting may be substituted for a part of the work in Design and Composition as applied design, or it may be taken as an elective.

HOME ECONOMICS

The University offers in this department a four-year curriculum in household arts and sciences leading to the degree of *Bachelor of Science in Home Economics.* The work is designed to give students (1) a preparation for service as teachers of Home Economics, Domestic Science, and Household Arts; (2) a college training in scientific and practical methods of home administration.

THE QUARTER SYSTEM

The curriculum may be completed in three years of four quarters each, or four years of three quarters each. Students may enter at the beginning of any quarter.

ADMISSION

Fifteen high school units are required for admission as a candidate for the degree. Students in other departments may take courses in Home Economics as electives. Unclassified students may pursue courses independent of a degree.

INSTRUCTION

The courses in Food Study, Household Administration, and Clothing and Textile are supplemented by prescribed courses in English, Chemistry, Physiology, Psychology, Sociology, Economics, and Foreign Language. In addition the student has a number of electives which may be taken in academic subjects, Public Speaking, Fine Art, Education, or Music.

REQUIRED WORK

Fifteen or sixteen hours constitute full work, designed to occupy the time of the student. One hundred eighty hours are required for the degree.

CURRICULUM*

FRESHMAN YEAR

Fall Quarter

Courses	*Hours*
Inorganic Chemistry I	4
Food Study I	4
Clothing Economics I	4
Freshman English I	3

Winter Quarter

Inorganic Chemistry II	4
Food Study II	4
Clothing Economics II	4
Freshman English II	3

Spring Quarter

Inorganic Chemistry III	2
General Physiology	4
Elementary Dietetics	4
Freshman English III	3
Elective	2

JUNIOR YEAR

Fall Quarter

Food Study and Table Service	4
Dressmaking	4
Psychology I	5
Foreign Language	3

Winter Quarter

Household Management	4
English	3
Psychology II	5
Elective	3

Spring Quarter

Household Chemistry	4
Tea-room Management	2
Textiles	4
Bacteriology	3
Elective	2

SOPHOMORE YEAR

Fall Quarter

Courses	*Hour*
Qualitative Analysis	4
Experimental Food Study	4
Millinery	3
Foreign Language	5

Winter Quarter

Organic Chemistry I	4
Home Nursing	2
Applied Design	1
Public Speaking	3
Foreign Language	5

Spring Quarter

Organic Chemistry II	4
Costume Designing	3
Foreign Language	5
Elective	3

SENIOR YEAR

Fall Quarter

Quantitative Analysis	4
Institutional Cookery	5
Political Economy I	3
Elective	3

Winter Quarter

Advanced Dietetics	4
Tailoring	4
Political Economy	3
Elective	4

Spring Quarter

Methods of Teaching	4
Mechanics of the Household	2
Principles of Teaching	5
Observation and Practice Teaching	4

*A similar succession of studies is offered students who enter at the beginning of any quarter. Adjustment of the program can be made for students who wish to take advantage of the Summer Quarter to obtain the degree in three years of four quarters each.

COURSES OF INSTRUCTION

FOOD STUDY

1. Food Study I.—A study of the production, manufacture and selection of the food material; effect of heat and preparation upon food stuffs; special study of fats, proteins, and carbohydrates. Classroom, 2 hours; laboratory, 6 hours. Fall Quarter; Spring Quarter. *Four hours.*

Laboratory fee: $5.00.

2. Food Study II (continuation of course 1).—An experimental study of various food products and recipes. Laboratory and discussions. Classroom, 2 hours, laboratory, 6 hours. Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $5.00.

3. Elementary Dietetics.—An elementary study of food composition; the function of food in the body; study of diets to supply the needs of typical families in health and disease. Lecture demonstrations. Classroom, 2 hours; laboratory, 6 hours. Spring Quarter. *Four hours.*

Laboratory fee: $5.00.

4. Advanced Food Study and Table Service.—Marketing; economies of food and equipment for preparation of food; dining-room equipment and service. Classroom, 1 hour; laboratory, 8 hours. Prerequisite: courses 1 and 2. Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $5.00.

5. Institutional Cookery and Management.—Specially designed to help in the High School lunch room. Classroom, 1 hour; laboratory, 8 hours. Prerequisite: courses 1 and 2. Fall Quarter. *Five hours.*

6. Experimental Food Study.—A qualitative and quantitative study of recipes, and of the chemical and physical changes produced by heat and combination of materials; the uses of different food materials and cooking apparatus. Prerequisite: courses 1 and 2; Chemistry 1. Classroom, 2 hours; laboratory, 6 hours. Winter Quarter *Four hours.*

Laboratory fee: $5.00.

7. Advanced Dietetics.—Advanced study of the principles of human nutrition in health and disease. Prerequisite: course 6;

Chemistry 1; Physiology 1. Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $5.00.

8. Tea-room Management.—A study of the commercial tea-room, its management and equipment. Lectures; laboratory work in a small tea-room. Special problems in catering. Spring Quarter; Summer Quarter. *Two hours.*

9. Methods of Teaching Home Economics.—A discussion of different types of equipment and of content of courses in Home Economics of various schools. Supplementary reading; lesson plans and method of teaching. Spring Quarter. *Four hours.*

HOUSEHOLD ADMINISTRATION

15. Household Management and Sanitation.—A study of income in relation to household; the selection of food, clothing and shelter; household service. House sanitation in relation to selection of site, construction, and proper heating, ventilating, and plumbing systems; cleaning and household laundering. Winter Quarter. *Four hours.*

17. Home Nursing.—First aid, the care of the sick, bed making bathing. Winter Quarter. *Two hours.*

18. Mechanics of the Household.—A course designed to familiarize students with mechanical appliances and repair of same. Repairs of locks, plumbing, windows, upholstering, etc.; study of woods and wood finishes. Students are required to make articles of furniture. Spring Quarter. *Two hours.*

CLOTHING AND TEXTILES

20. Clothing Economics I.—Study of pattern and construction of garments, involving the various stitches and seams. Classroom, 2 hours; laboratory, 6 hours. Fall Quarter; Winter Quarter; Summer Quarter. *Four hours.*

21. Clothing Economics II (continuation of course 20).—Special reference to renovation and reconstruction of garments. Classroom, 2 hours; laboratory, 6 hours. Winter Quarter; Spring Quarter; Summer Quarter. *Four hours.*

23. Millinery.—Frame and hat making appropriate to the person: making of flowers and bows from silk and ribbon. Classroom, 1 hour; laboratory, 6 hours. Fall Quarter; Spring Quarter. *Three hours.*

24. Applied Design.—Discussion of good line, form, space, coloring, lettering; designs for waists, dresses, hats; decorating and stenciling. Classroom, 1 hour; laboratory, 2 hours. Every quarter. *Two hours.*

26. Dress Making.—Designing on dress forms. Making silk afternoon gown from draped pattern; fancy blouse or remodeled gown. Fall Quarter. *Four hours.*

27. Tailoring.—Making tailored cloth costume. Classroom, 2 hours; laboratory, 6 hours. Winter Quarter. *Four hours.*

28. Textiles.—A study of the historical development of the textile industry, climatic conditions and the manufacture of fabrics; tests; detection of adulterants in fabrics; experiments in dyeing, weaving, basketry. Spring Quarter; Summer Quarter. *Four hours.*

29. Costume Designing.—Historic cotume study; designing costumes for various types of persons and various occasions. Classroom, 1 hour; laboratory 6 hours. Spring Quarter. *Three hours.*

For further information in regard to the College, address the Dean of the College of Arts and Sciences, Valparaiso University, Valparaiso, Indiana.

For information in regard to admission to the Freshman class and for blank forms for admission, address the Registrar of Valparaiso University, Valparaiso, Indiana.

THE SCHOOL OF EDUCATION

GENERAL STATEMENT

The School of Education is designed to make skilful teachers.

The requirement for entrance is the completion of a four-year high school course comprising at least fifteen units.

The School is organized so as to meet the needs of the school systems of the various states so far as possible. The University is included in the official list of Indiana standard normal schools, and as such is accredited for four-year curricula leading to certificates in high school subjects and to the four-year provisional licences for teaching in any high school in the state; for two-year curricula leading to elementary grade teachers' certificates (including Class A, Class B, and three-year certificates) and to the elementary provisional licenses for teaching in the elementary schools in the state; and for two-year curricula leading to special teachers' and supervisors' certificates and their corresponding licenses in Commercial Subjects, Home Economics, Household Arts, Music, Industrial Arts, and Physical Education.

DEGREES AND CERTIFICATES.

The School grants the degree of *Bachelor of Arts in Education.* To secure this degree the student must pursue successfully one hundred eighty hours of work, forty of which must be in professional course and one hundred forty in academic courses. The time required is twelve quarters (144 weeks). The work is distributed as follows: professional work, forty hours; English, fifteen hours; Foreign Language, twenty hours; Science, twenty hours; Mathematics, ten hours; related minors, twenty hours; electives, fifty-five hours. Related minors are selected from the social and biological sciences or professional courses.

The School offers also special curricula for Indiana teachers.

THE UNIT OF WORK

A course of instruction extends throughout one quarter (twelve weeks). In evaluating credits the unit for measuring the amount of work done in a course is the *hour*. An hour is one 53-minute period (net) of prepared classroom work, or two or three such periods of laboratory or field work, each week for one quarter. Fifteen or sixteen hours constitute full work.

STANDARD COLLEGE CURRICULUM

FIRST YEAR

Fall Quarter
Introduction to Education
General Psychology
English
Mathematics

Winter Quarter
Principles of Teaching
Psychology of Knowing
English
Mathematics

Spring Quarter
Special Method
Psychology of Feeling
English
Mathematics

Summer Quarter
Sociology
Psychology of the Will
English
Science

SECOND YEAR

Fall Quarter
English
American History
Elective
Elective

Winter Quarter
Observation and Supervised Teaching
Physiology and Hygiene
Elective
Elective

Spring Quarter
General or Educational Psychology
English
Science
Elective

Summer Quarter
General or Educational Psychology
Foreign Language
Science
Elective

THIRD YEAR

Fall Quarter
Philosophy of Education
Science
Foreign Language
Elective

Winter Quarter
Special Method
Foreign Language
Mathematics
Elective

Spring Quarter
Directed Observation and Supervised Teaching
Foreign Language
Mathematics
Elective

Summer Quarter
Educational Measurement
Mathematics
Elective
Elective

INDIANA CURRICULA AND CERTIFICATES

Subject to the rulings of the Indiana State Training Board the following prescribed courses are offered for Classes A, B and one-year teachers. No election is premitted by the board in these courses. College credit for the work done is recommended by the board.

CURRICULUM FOR A TEACHERS

Courses	*Hours*	*Courses*	*Hours*
Rural Education	4	Drawing	1
Primary Methods	4	Writing	1
Reading	4	Agriculture	1
Arithmetic	4	Physical Education	1
Music	1		

CURRICULUM FOR B TEACHERS

Courses	*Hours*	*Courses*	*Hours*
Rural Education	2	Music	1
Physiology and Hygiene	2	Drawing	1
Language and Composition	4	Writing	1
Geography for 4th and 5th Grades	4	Agriculture	1
U. S. History of 4th, 5th and 6th Grades	4	Physical Education	1

CURRICULUM FOR ONE-YEAR TEACHERS

Courses	*Hours*	*Courses*	*Hours*
Geography for 6th and 7th Grades	4	Agriculture	4
U. S. History for 7th and 8th Grades	4	Music	1
Rural Community Civics	4	Drawing	1
		Writing	1
		Physical Education	1

HOME ECONOMICS CURRICULUM

FIRST YEAR

Fall Quarter

Courses	*Hours*
Inorganic Chemistry I	4
Food Study I	4
Clothing Economics I	4
Freshman English I	3
Unprepared Work	

Winter Quarter

Inorganic Chemistry II	4
Food Study II	4
Clothing Economics	4
Freshman English II	3
Unprepared Work	

Spring Quarter

Inorganic Chemistry III	2
Household Chemistry	4
Freshman English III	3
Elementary Dietetics	4
English Literature	3
Unprepared Work	

SECOND YEAR

Fall Quarter

Courses	*Hours*
Experimental Food Study	4
Food Study and Table Service	4
Introduction to Education	4
Elective	3
Unprepared Work	

Winter Quarter

Household Management	4
Institutional Cooking	5
Psychology I	5
Elective	2
Unprepared Work	

Spring Quarter

Principles of Teaching	4
Observation and Practice Teaching	4
Methods of Teaching H. E.	4
Elective	3
Unprepared Work	

HOUSEHOLD ARTS CURRICULUM

FIRST YEAR

Fall Quarter

Courses	*Hours*
Inorganic Chemistry I	4
Food Study I	4
Clothing Economics I	4
Freshman English I	3
Unprepared Work	

Winter Quarter

Inorganic Chemistry II	4
Food Study II	4
Clothing Economics II	4
Applied Design	1
Freshman English II	3
Unprepared Work	

Spring Quarter

Inorganic Chemistry III	2
Design and Composition	2
Costume Designing	3
Textiles	4
Freshman English III	3
English Literature	2
Unprepared Work	

SECOND YEAR

Fall Quarter

Courses	*Hours*
Millinery	3
Dressmaking	4
Composition and Design	2
Introduction to Education	4
English Literature	2
Unprepared Work	

Winter Quarter

Tailoring	4
House Decoration	4
Psychology I	5
Budget Making	3
Unprepared Work	

Spring Quarter

Principles of Teaching	4
Observation and Practice Teaching	4
Methods of Teaching H. E.	4
Elective	3
Unprepared Work	

NOTE.—For descriptions of courses in Home Economics and Household Arts, see pp. 82-84.

FINE ART CURRICULUM

FIRST YEAR

Fall Quarter

Courses	*Hours*
Charcoal (1)	2
Freehand Drawing I (13)	3
Design and Composition (25)	2
History of Art I (55)	2
Methods of Teaching I (63)	3
Freshman English I	3

Winter Quarter

Charcoal (2)	2
Freehand Drawing II (14)	2
Design and Composition II (26)	2
History of Art I (56)	2
Methods of Teaching II (64)	3
Freshman English II	3
Unprepared Work	

Spring Quarter

Charcoal (3)	2
Color Work (37)	2
History of Art III (57)	2
Design and Composition (27)	2
Methods of Teaching III (65)	3
Decorative Arts	2
Freshman English III	3

SECOND YEAR

Fall Quarter

Courses	*Hours*
Color Work (38)	2
Sketch from Life (15)	2
Methods in Art IV (66)	3
History of Art IV (58)	2
Mythology	2
Introduction to Education	5

Winter Quarter

Charcoal (4)	2
Applied Design	2
Sketch from Life (16)	2
History of Art V (59)	2
English Literature	2
Psychology I	5

Spring Quarter

Charcoal (5)	2
Modeling	3
Principles of Teaching	5
History of Art (60)	2
Observation and Practice Teaching	4

NOTE.—For descriptions of courses in Fine Art, see pp. 77-79.

INDUSTRIAL ARTS CURRICULUM*

FIRST YEAR

Fall Quarter

Courses	*Hours*
Introduction to Education	4
Freshman English I	3
†Shop Work	5
‡Mechanical Drawing	3
Unprepared Work	

Winter Quarter

Psychology I	4
Freshman English II	3
Shop Work	5
Mechanical Drawing	3
Unprepared Work	

Spring Quarter

Principles of Teaching	4
Freshman English III	3
Shop Work	5
Mechanical Drawing	3
Unprepared Work	

SECOND YEAR

Fall Quarter

Courses	*Hours*
Industrial Art Theory	5
English	3
Shop Work	5
Mechanical Drawing	3
Unprepared Work	

Winter Quarter

Organization of Industrial Arts	5
Mechanics (Physics 12)	5
Shop Work	5
Freehand Drawing (Fine Art 13)	3

Spring Quarter

Supervised Teaching	5
General Chemistry	5
Elective	6

*A similar succession of studies is offered to students who enter at the beginning of any quarter, most of the courses being given each quarter. The entire curriculum may be completed in six consecutive quarters. During the Summer Quarter all courses are given as required.

†Shop Work may be elected from the following: (1) Woodworking branches, (2) Electrical Work, (3) Machine Shop, (4) Automobile Shop. Three hours shop work per week are required for one hour credit.

‡Mechanical Drawing will be adapted to the shop work chosen, *e. g.*, architectural for wood shop, machine drawing for machine, *etc.*

COURSES OF INSTRUCTION

PSYCHOLOGY

E1. Introductory to Psychology.—Nature of psychology; the mind; consciousness; mental attributes; the nervous system; mental activity. Every Quarter. *Four hours.*

E2. Psychology of Knowing.—Nature of knowing and knowledge; genesis of knowledge; stages of knowing; the functioning of knowledge; evolution of knowledge. Every Quarter. *Four hours.*

E3. Psychology of Feeling.—Nature of feeling; genesis of feeling; fundamental forms of feeling; functioning of feeling; evolution of feeling. Winter Quarter; Summer Quarter. *Three hours.*

E4. Psychology of the Will.—Nature of willing; genesis of willing; elements of willing; evolution of willing; functioning of willing. Winter Quarter; Summer Quarter. *Three hours.*

E5. Child Psychology.—A scientific study of the psychology of the child; his mental processes; individual differences; native and acquired reactions; evolution of his physical life. Fall Quarter; Summer Quarter. *Four hours.*

E6. Educational Psychology.—Nature of educational psychology; native and acquired responses; play; imitation; social attitudes; speech; sensorimotor learning; perceptional learning; memorizing; thinking; transfer of training. Spring Quarter; Summer Quarter. *Four hours.*

METHODOLOGY

E11. Method in Reading and Number.—Function of reading; function of number; evolution of reading; evolution of number; mentality; devices; error. Fall Quarter; Summer Quarter. *Four hours.*

E12. Method in Grammar and Primary Language.—Nature of grammar and primary language; subject-matter; purpose; basis; mentality; devices; errors. Winter Quarter; Spring Quarter. *Four hours.*

E13. Method in History, Geography and Nature Study.—Nature of history; nature of geography and nature study; the organizing principle, evolution, function and mentality of each; devices and errors. Winter Quarter; Summer Quarter. *Four hours.*

HISTORY OF EDUCATION

E21. Oriental, Classical and Medieval Education.—Educational ideals, schools, school masters; evolution and functioning of such; successes and failures. Fall Quarter. *Four hours.*

E22. Modern Education.—Evolution of school ideals, school systems, schools; school masters. Functioning of modern school; merits and defects. Winter Quarter. *Four hours.*

PHILOSOPHY OF EDUCATION

E25. Educational Aspects.—Biological, physiological and sociological aspects of education; meaning of education; function of education. Spring Quarter. *Four hours.*

E26. Unification of Educational Facts.—Psychological aspect of education; intimation of known facts of education; goal of education; origin, nature and destiny of man. Summer Quarter. *Three hours.*

MISCELLANEOUS COURSES

E31. Introduction to Education.—General view and direct approach to the field of education; its concrete problems; school organization; elements of school; functioning of school. Fall Quarter; Summer Quarter. *Four hours.*

E32. Principles of Teaching.—Principles underlying the teaching process; classroom management; use of standard tests of school results. Fall Quarter; Summer Quarter. *Four hours.*

E33. Directed Observation and Supervised Teaching.—Observation of expert teaching and criticisms; actual teaching supervised by critic teachers in both elementary and high school. Winter Quarter; Spring Quarter. *Four hours.*

E35. American High School Problems.—Purpose of high school; evolution of high school; status of high school; needs of high school; criticisms. Spring Quarter. *Four hours.*

E36. Rural Education.—The rural problem; status of rural schools; administration of rural schools; successes and failures of rural schools; needs of rural schools. Summer Quarter. *Three hours.*

E38. Educational Measurements.—Nature and condition of school measurement; standardized measurements; functioning of standardized scales; virtues; dangers. Summer Quarter. *Four hours.*

E39. General Primary Methods.—This work consists of consideration of various devices for use in the primary schools: games, songs, drills, busy work, paper cutting, paper folding, construction work, etc. Summer Quarter. *Four hours.*

INDUSTRIAL ARTS

Two distinct types of Industrial Arts work are given: for teacher training and for work in the industries.

A., B. Industrial Art.—Two courses, Grades 1 to 3, and 4 to 6.

Color theory; hand work; costuming; designing; construction work; interior decoration; bookbinding; poster work; coping saw work. Summer Quarter, daily.

WOOD WORK

1, 2, 3, 4. Bench Work.—Hand tool processes with graduated drills and simple furniture construction. Every quarter. *Five hours.*

5, 6, 7. Cabinet Making.—Mill work, fitting and finishing frame and case goods. Prerequisite: courses 1, 2. Every quarter. *Five hours.*

8. Wood Turning.—Center work, chuck and face platework Prerequisite: courses 1, 2. Every quarter. *Five hours.*

11, 12, 13. Carpentry.—General frame construction and inside trimming. Prerequisite: courses 1, 2. Every quarter. *Five hours.*

ELECTRICAL WORK

20-25. General electric construction and repairs. *Five hours each.*

MACHINE SHOP

30-35. General machine shop work. *Five hours each.*

AUTOMOBILE SHOP

40-45. Care and repair of the automobile. *Five hours each.*

MECHANICAL DRAWING

50. Elementary Mechanical Drafting.—Lettering, use of instruments, etc. Fall Quarter. *Five hours.*

51, 52, 53. Elements of Machine Drawing.—Cams, gears, screws, and machine construction. Prerequisite: course 50. Every Quarter. *Five hours.*

54, 55, 56. Elements of Architectural Drawing.—House planning and simple building construction. Prerequisite: course 50. Every Quarter. *Five hours.*

THEORY AND ORGANIZATION

61. Theory of Industrial Arts.—A course designed to show the development of the manual and industrial arts movement and the

change in attitude and methods required in teaching. Winter Quarter. *Five Hours.*

62. Organization of Industrial Arts.—The relation of industrial arts shop work to academic work; management plans. Summer Quarter. *Five hours.*

PENMANSHIP

1. Drills.—Practice in movement exercises, position at desk and correct penholding; developing the form of letters by analysis and illustrations on the blackboard; the combining of letters into words, sentences, and page work. Usually completed in one quarter. Every quarter. Not credited toward a degree.

2. Special I.—More advanced work in either the plain or the artistic writing, designed to assist the student to acquire a more free and graceful style of penmanship. Every quarter. Not credited toward a degree.

3. Special II.—A complete course in Old English, German Text and Round Hand. Every quarter. Not credited toward a degree.

For further information respecting the School of Education, address the Dean of the School of Education, Valparaiso University. Valparaiso, Indiana.

For information concerning entrance requirements, address the Registrar of Valparaiso University, Valparaiso, Indiana.

THE SCHOOL OF MUSIC AND DRAMATIC ART

MUSIC

Instruction in Music has been given in the University since its establishment in 1873. It was part of the original plan of the founder of the institution that students should enjoy the best musical advantages at the least possible expense. The realization of this purpose is seen in the growth of the school and the proficiency of its graduates.

EQUIPMENT

Music Hall, a beautiful and substantial building, is devoted exclusively to the purposes of the School. It contains the office of the Secretary of the School, large studios, special rooms for harmony and for small classes, and forty-eight practice rooms, each containing a piano, thus providing each student with a room for private practice several hours each day. Recital Hall, which occupies the entire third floor of the front section of the building, is in size and equipment well adapted for recital and ensemble work. There are sixty pianos in the building.

FACULTY

The courses of instruction are given by experienced teachers who have had the advantage of the best training in this country and Europe. All have been pupils of noted masters and are specialists in their particular work.

PURPOSE

In its various courses the School of Music provides instruction from the beginning of musical study to an advanced stage of artistry. The School aims particularly to give a training, collegiate in its standards and methods, for those who intend to become musicians by profession, either as teachers or executants, and for those who desire to become

cultivated amateur performers. The organization of the School is therefore modeled upon that of the College of Arts and Sciences. The same standard of admission to courses leading to a degree, and virtually the same regulations as to attendance, study, and classification of students, prevail. Students enrolled in the School of Music are permitted to take five hours* of work each quarter in the College of Arts and Sciences, without extra fee.

THE UNIVERSITY YEAR

The year in the School of Music is divided, as in the other schools of the University, into four quarters of twelve weeks each. The School is in session during all four quarters. Any three quarters (thirty-six weeks) count as a conventional school year. As the instruction is mainly individual, students may enter at any time, but are advised to enter at the beginning of a quarter if possible. By remaining in residence during all four quarters, a student may materially shorten the time for completing any of the curricula, without reducing the period of actual study.

THE SUMMER QUARTER

The Summer Quarter offers especial advantages to persons who are engaged in teaching or other work during the other quarters. All of the regular faculty remain and all the regular courses are given, with the addition of special courses. A student may complete a regular year's work in three summer quarters.

DEPARTMENTS OF STUDY

The work of the School is divided into courses of study in the Theory of Music and in Applied Music. The courses in Theory comprise instruction in Harmony, Appreciation, Counterpoint, Composition, *etc.*, as described on subsequent pages. The courses in Applied Music consist of individual

*An hour represents one hour of prepared classroom work, or the equivalent, each week for one quarter (twelve weeks).

private lessons in Voice, Piano, Violin, Viola, Cello, and Orchestral instruments. The courses in Theory are auxiliary to those in Applied Music. Students of Applied Music are required to pursue courses in Theory, the precise amount varying in the different curricula as hereafter stated. Students of Voice or Violin must take Piano as a minor subject.

CURRICULA OF STUDY

In order to extend its facilities to the greatest number of persons who possess musical ability, the School offers the following curricula of study:—

1. A three-year curriculum in either Piano, Voice, Violin, Violoncello, or Orchestral instruments, leading to the degree of *Graduate in Music* (Mus. G.). This curriculum is open only to students not less than sixteen years of age who present for admission at least fifteen high school units (the usual college-entrance requirement, ordinarily satisfied by graduation from a four-year high school)* and who possess a proficiency in Music equivalent to the completion of the Preliminary Year in this School.

2. A four-year curriculum (including that of the Graduate in Music and one year additional) in either Piano, Voice, Violin, Violoncello, or Orchestral instruments, leading to the degree of *Bachelor of Music* (Mus. B.). The requirements for admissions to the Freshman Year of this curriculum are the same as those of the Graduate in Music.

3. A two-year curriculum in Voice, Piano, and subjects pertaining to public school music, leading to the degree of Graduate in Public School Music. The requirements for admission to the First Year of this curriculum are the same as those of the Graduate in Music.

4. A three-year curriculum in either Piano, Voice, Violin, Violoncello, or Orchestral instruments, upon completion of

*The particulars in regard to the high school requirement are stated in the first section of the catalog. They include 3 units in English, 2 in Mathematics, and 1 unit in one science. The remaining 9 units may be selected from subjects ordinarily taught in high schools.

which a *Certificate of Proficiency in the Theory and the Art of Music* is granted. This curriculum is open to students not less than sixteen years of age who do not present fifteen high school units for admission, but whose proficiency in Music is equivalent to the completion of the Preliminary Year in this School.

5. A four-year curriculum in either Piano, Voice, Violin, Violoncello, or Orchestral instruments, upon completion of which an *Honor Certificate in the Theory and the Art of Music* is awarded. The requirement for admission to the Freshman Year of this curriculum is the same as that of the Certificate of Proficiency.

6. A four-year curriculum in either Piano, Voice, Violin, Violoncello, or Orchestral instruments, for completion of which a *Special Certificate* is granted. This curriculum is open to students who wish to specialize as executants or teachers, and who do not present the high school credits necessary for entrance to curricula leading to a degree. Students of especial promise who are less than sixteen years of age may be accepted for this curriculum.

7. A preliminary curriculum in the Theory of Music and in Applied Music, preparatory to any of the foregoing.

Students From Other Schools of the University

Students who are registered in any other school of the University have the privilege of taking work in the School of Music upon payment of the regular charge for private lessons or instruction in theory; and such work, in the case of students from the College of Arts and Sciences and the School of Education, may count as free electives on their degree.

REQUIREMENTS FOR THE DEGREES

Graduate in Music and Bachelor of Music

Admission as a candidate for these degrees presupposes the satisfaction of the general educational requirement and the

completion of the Preliminary Year or its equivalent. On the satisfactory completion of the prescribed theoretical and practical work of the first three years the degree of Graduate in Music is conferred. On the satisfactory completion of the work of the fourth year the degree of Bachelor of Music is conferred.

Graduate in Public School Music

Admission as a candidate for this degree presupposes the satisfaction of the general educational requirement and the completion of the Preliminary Year or its equivalent. On the satisfactory completion of the prescribed curriculum in Voice, Piano, Theory, and Public School Music the degree of Graduate in Public School Music is conferred.

REQUIREMENTS FOR THE CERTIFICATES

Certificate of Proficiency and Honor Certificate

Admission as a candidate for the certificates presupposes the completion of the Preliminary Year or its equivalent. On the satisfactory completion of the prescribed theoretical and practical work of the first three years, the Certificate of Proficiency in the Theory and the Art of Music is granted. Upon the satisfactory completion of the work of the fourth year, the Honor Certificate in the Theory and the Art of Music is awarded.

Special Certificate

Applicants who have completed the work of the Preliminary Year or its equivalent and who desire to specialize as executants or teachers are admitted as candidates for this certificate. Students in this course take the practical work in Piano, Voice, Violin, Violoncello, or Orchestral instruments, and the theoretical work of the Freshman Year. Further theoretical work is optional.

THE UNIT OF CREDIT

In evaluating credits, the unit for measuring the amount of work done is the *term-hour,* or *hour.* In the School of Music, one hour of prepared work in Theory of Music each week for one quarter, or one private lesson each week together with three or four hours of practice daily, constitutes a credit of one hour.*

COURSES OF INSTRUCTION

THEORY OF MUSIC

Preliminary Year

Theory of Music, 1, 2.—Ear training, notation, scales, rhythm, intervals, inversions, definitions of terms, and study of chords. Two hours a week for two quarters. Credit, *four hours.*

Elementary Harmony.—The study of chords, consisting of triads, melody writing, and dictation. Two hours a week for one quarter. *Two hours.*

Freshman Year

Harmony 1, 2, 3.—The study of consonant and dissonant chords; the harmonization of melodies and exercises on figured bases. Two hours a week for three quarters. *Six hours.*

Form Analysis 1, 2.—Easier selections taken from Bach, Haydn, Mozart, Schubert, Mendelssohn, Beethoven, and Grieg. One hour a week for two quarters. *Two hours.*

History of Music 1.—Primitive music, music of the ancient cultured nations, music of the early Christian Church, polyphonic music, the madrigal, the opera, the oratorio, the development of the suite. Two hours a week for one quarter. *Two hours.*

*In voice, a less amount of practice is expected.

Sophomore Year

Harmony 4, 5, 6.—Modulation, passing notes, suspensions and other harmonic tones. Two hours a week for three quarters. *Six hours.*

History of Music 2, 3.—Biographical sketches of famous composers, with descriptions of their principal works. Two hours a week for two quarters. *Four hours.*

Appreciation 1, 2.—Elements of musical form, folk songs, polyphonic music, the dance and its development, the suite, rondo, variation form, minuet, and the sonata. Two hours a week for two quarters. *Four hours.*

Form Analysis 3.—Salon music, Grieg, Chopin, Schumann and the classical composers. One hour a week for one quarter. *One hour.*

Junior Year

Harmony 7, 8, 9.—Advanced work in theory. Foote and Spaulding's *Modern Harmony* will be the text used. Two hours a week for three quarters. *Six hours.*

Counterpoint 1, 2.—Counterpoint in the various species; two, three, and four parts. Two hours a week for two quarters. *Four hours.*

Composition 1, 2.—Exercises in writing sections, phrases, periods, small two and three part primary forms, and large two and three part primary forms. One hour a week for two quarters. *Two hours.*

Senior Year

Composition 3, 4.—The sonata form, rondo and minuet. One hour a week for two quarters. *Two hours.*

Counterpoint 3.—Canons, imitation, double counterpoint, and fugue. Two hours a week for one quarter. *Two hours.*

Orchestration 1, 2.—Arranging for an orchestra and scoring. Two hours a week for two quarters. *Four hours.*

APPLIED MUSIC

PIANO DEPARTMENT

Preliminary Year

Objects of Study.—Position at the Piano; position of the hand; relaxation; strength; independence of the fingers; shifting hand position; passing of the thumb; scale fingering; equalizing the touch; expansion and contraction; accent and rhythm; increased hand position; phrasing; syncopation; accompaniments; sostenuto melody; the damper pedal; the staccato touch; the legato touch; finger and wrist action; memorizing; ear training; musical terms for tempo; dynamics and style; ornamentation; use of the metronome; keyboard harmony.

Technic.—Exercises for two, three and four fingers in stationary position of the hand; dynamic and rhythmic study of the scales; double thirds and sixths in sequence form; chords; broken chords.

Material.—A limited number of etudes and pieces are selected from the works of the following composers: Gurlitt, Beyer, Hummel Oesten, Ehmant, Chittenden, Armand, Horvath, Diabelli, Le Couppey, Spindler, Straebog, Schytte, Enckhausen, Muller, Schubert, Kohler, Wohlfart, Reinecke, Duvenroy, Kuhlau, Clementi Czerny, Schmoll, Berens, Mozart, Handel, Reinhold, Bertini, Concone, and Burgmuller.

Theory.—The theoretical courses of the Preliminary Year.

Summary for Preliminary Year

Piano, 2 private lessons a week, 1 to 3 years.
[Practice, 3 to 4 hours daily.]
Theory of Music, 2 classes a week for two Quarters.
Elementary Harmony, 2 classes a week for one Quarter.
Chorus practice and attendance at all student recitals.
Attendance at Artist's Recitals.
High School or College subjects (optional), 5 hours a week for three Quarters.

Freshman Year

Objects of Study.—Independence of the fingers; equality of the fingers; legato and staccato; rhythmics and dynamics; syncopation; unusual rhythms; velocity; the damper pedal; phrasing; memorizing; varieties of touches.

Technic.—Exercises for two fingers; scales and chords; the chromatic scale; arpeggios; double thirds and sixths in sequence form; octaves; left hand technic; interlocking figuration; leggiero passages and florid designs; arpeggiated chords.

Material.—Hanon's technic. Etudes selected from the works of Bertini, Berens, Vogt, Moscheles, Schmitt, Hasert, Krause, Lemoine, Dohler, Brauer, Le Couppey, Heller, Loeschorn and Czerny. Bach Inventions, Sonatas and pieces by Beethoven, Bach, Schubert, Handel, Chopin, Haydn, Von Weber, Schumann, Tschaikowsky, Godard, Karganoff, Meyer, Dussek, Scharwenka, Hiller, Ravina, Jensen and other standard composers.

Theory.—The courses in the Theory of Music of the Freshman Year.

Summary for Freshman Year

Piano, 2 private lessons a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Harmony, 2 classes a week for three Quarters.
Form Analysis, 1 class a week for two Quarters.
History of Music, 2 classes a week for one Quarter.
Chorus practice, and attendance at all student recitals.
Attendance at Artist's Recitals.
Appearance on program.
College subject (elective), 5 hours a week for three Quarters.

Sophomore Year

Objects of Study.—Finger independence; transpositional forms; extensions, contractions and substitutions; wrist facility and control; memorizing; variety of accentuation; diversity of touch; the turn; extreme expansion of the hand; advanced thumb dexterity; polyphonic playing; arm weight; development of style and expression.

Technic.—Trills and rapid alternations; finger passages with held tones; chords; arpeggios; double thirds; octaves; chromatic passages; trills with held tones; advanced passages selected from pieces and etudes.

Material.—Technic selected from the works of Hanon, Pischna, Tausig, and Philipp. Preludes and fugues of Bach. Etudes selected from the works of Schmitt, Cramer, Hasert, Wilson G. Smith, Czerny, Clementi, Mayer and Kalkbrenner. Sonatas and pieces by Beethoven,

Bach, Chopin, Schubert, Mendelssohn, Tschaikowsky, Mozart, Schumann, Liszt, Godard, Rachmaninoff, MacDowell, Handel, Haydn, Bendel, Grieg, Paderewski, Paradis Scriabine, Cui, Arensky, Brassin, Leschetizky, Schuett, Rubinstein, Dreyschock, Gardiner, Grainger, Reinhold, Stojowski, Raff, Moszkowski and Staub.

Theory.—The courses in the Theory of Music of the Sophomore Year.

Students must be able to play major, minor, and chromatic scales in similar and contrary motion, four notes at 144 m. m.; arpeggios on common chords and chords of the seventh in all positions, four notes at 120 m. m.; octaves, four notes at 80 m. m.

Summary for Sophomore Year

Piano, 2 lessons week for three Quarters.
[Practice 3 to 4 hours daily.]
Harmony, 2 lessons a week for three Quarters.
History of Music, 2 lessons a week for two Quarters.
Form Analysis, 1 lesson a week for one Quarter.
Apreciation, 2 lessons a week for two Quarters.
Chorus practice and attendance at student recitals.
Attendance at Artist's Recitals.
College subjects (elective), 5 hours a week for three Quarters.

Junior Year

Objects.—Polyphonic playing; the lyric style; the brilliant style; the characteristic and the descriptive piano piece; the idealized etude; modern romanticism; tone color in melody and accompaniment; the sostenuto pedal; octaves; arm weight; use of the pedal in dynamics; memorizing.

Material.—Etudes by Liszt, Rubinstein, Chopin, MacDowell, Moszkowski and Kullak, Sonatas and pieces by Beethoven, Chopin, MacDowell, Handel, Brahms, Henselt, Raff, Arensky, Sinding, Debussy, Cyril Scott, Grieg, Saint Saens, Tschaikowsky and Ravel.

Candidates for the degree of Graduate of Music or the Certificate of Proficiency, at the close of this year, must have completed the theoretical courses as prescribed in the Freshman, Sophomore and Junior years. They must be able to play major and minor scales, similar and contrary motion, four notes at 144 m. m. and arpeggios

on the dominant and diminished seventh four notes 120 m. m. They are also required to give a recital.

Summary for Junior Year

Piano, 2 lessons a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Harmony, 2 classes a week for three Quarters.
Counterpoint, 2 classes a week for two Quarters.
Composition, 1 class a week for two Quarters.
Chorus practice, and attendance at student recitals.
Attendance at Artists' Recitals.
APPEARANCE IN RECITAL.
College subjects (elective), 5 hours a week for three Quarters.

SENIOR YEAR

A more extended study of the larger works of the classics, romantic, and modern composers, including the concertos and sonatas.

Candidates for the Bachelor of Music and the Honor Certificate must have completed the theoretical courses as specified in the Freshman, Sophomore, Junior and Senior years, and are required to give a recital.

Summary for Senior Year

Piano, 2 private lessons a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Composition, 1 class a week for two Quarters.
Counterpoint, 2 classes a week for two Quarters.
Orchestration, 2 classes a week for two Quarters.
Chorus practice, and attendance at student recitals.
Attendance at Artists' Recitals.
APPEARANCE IN RECITAL.
College subjects (elective), 5 hours a week for three Quarters.

SPECIAL CERTIFICATE

Candidates for this certificate take the practical work in Piano and the theoretical work of the Freshman Year. They are also required to give a recital.

VOICE DEPARTMENT

Preliminary Year

Objects.—Proper control of the breath; freedom of the throat; freedom of the tone; placement of the tone; resonance; correct pronunciation and enunciation in singing.

Technic.—Vocalises selected from Concone, Sieber, Root and Marchesi.

Material.—Simple songs by standard composers.

Theory.—The theoretical courses of the Preliminary Year.

Summary for Preliminary Year

Voice, 2 private lessons a week, one to two years.
[Practice with instrument, 1 to 3 hours daily.]
Theory of Music, 2 classes a week for two Quarters.
Elementary Harmony, 2 classes a week for one Quarter.
Attendance at all student recitals.
Attendance at Artist's Recitals.
High School or College subjects (optional), 5 hours a week for three Quarters.

Freshman and Sophomore Years

Objects.—Continuation of the work done in the preliminary year with more difficult exercises in scales and arpeggios. Further development of tone coloring and phrasing. The study of one foreign language with the application of these principles to songs.

Technic.—Continuation of vocalises by Concone, Seiber, Root and Marchesi.

Material.—Songs by the standard composers.

Theory.—The courses in the Theory of Music for the Freshman and Sophomore Years.

Summary for Freshman Year

Voice, 2 private lessons a week for three Quarters.
Piano, 1 private lesson a week for three Quarters.
[Practice with instrument 1 to 3 hours daily.]
Harmony, 2 classes a week for three Quarters.
Form Analysis, 1 class a week for two Quarters.
History of Music, 2 classes a week for one Quarter.
Choir and Chorus, and attendance at all student recitals.

Attendance at Artist's Recitals.
English, 5 hours a week for three Quarters.

Summary for Sophomore Year

Voice, 2 private lessons a week for three Quarters.
Piano, 1 private lesson a week for three Quarters.
[Practice with instrument 1 to 3 hours daily.]
Harmony, 2 classes a week for three Quarters.
History of Music, 2 classes a week for two Quarters.
Form Analysis, 1 class a week for one Quarter.
Appreciation, 2 classes a week for two Quarters.
Choir and Chorus, and attendance at all student recitals.
Attendance at Artist's Recitals.
Romance Language, 5 hours a week for three Quarters.

Junior Year

Objects.—Special attention given style and expression.

Technic.—Advanced vocalises by Concone, Marchesi and others.

Material.—Arias from the oratorios and opera. Songs from the best English, French, and Italian song writers.

Candidates for the degree of Graduate in Music and the Certificate of Music must have completed the courses in Theoretical Music of the Freshman, Sophomore, and Junior years. They are also to give a public recital.

Summary for Junior Year

Voice, 2 private lessons a week for three Quarters.
[Practice with instrument, 1 to 3 hours daily.]
Harmony, 2 classes a week for three Quarters.
Counterpoint, 2 classes a week for two Quarters.
Composition, 1 class a week for two Quarters.
Choir and Chorus, and attendance at all student recitals.
Attendance at Artist's Recitals.
Appearance in recital.
College subjects (elective), 5 hours a week for three Quarters.

Senior Year

Further development of interpretation and diction. Advanced study of the oratorio and opera.

Candidates for the degree of Bachelor of Music and the Honor Certificate must have completed the theoretical work of the Freshman, Sophomore, Junior, and Senior years. They must also give a complete recital.

Summary for Senior Year

Voice, 2 private lessons a week for three Quarters.
[Practice with instrument, 1 to 3 hours daily.]
Composition, 1 class a week for two Quarters.
Counterpoint, 2 classes a week for two Quarters.
Orchestration, 2 classes a week for two Quarters.
Choir and Chorus, and attendance at all student recitals.
Attendance at Artist's Recitals.
APPEARANCE IN RECITAL.
College subjects (elective), 5 hours a week for three Quarters.

SPECIAL CERTIFICATE

Candidates for this certificate take the prescribed practical work in Voice and in Piano, and the theoretical work of the Freshman Year. They are also required to give a recital.

VIOLIN DEPARTMENT

PRELIMINARY YEAR

Violin Methods by Sevcik, Herman Schradiech, Hohman, Ries; Technical Exercises by Sevcik, Dancla; Studies by Kayser, Mazas, Dancla, Dont; Solos, with piano accompaniment according to the advancement of the student.

The courses in the Theory of Music of the Preliminary Year.

Summary for the Preliminary Year

Violin, 2 private lessons a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Theory of Music, 2 classes a week for two Quarters.
Elementary Harmony, 2 classes a week for one Quarter.
Attendance at student recitals.
Attendance at Artist's Recitals.
High School or College subjects (optional), 5 hours a week.

Freshman Year

Studies by Kreutzer; Technics by Sevcik and Schradieck; Concertos by Viotti, Kreutzer, Rode, DeBeriot; Solos by David, Leonard, Ries, Beethoven, *etc.*

The courses in the Theory of Music of the Freshman Year.

Summary for the Freshman Year

Violin, 2 private lessons a week for three Quarters.
Piano, 1 private lesson a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Harmony, 2 classes a week for three Quarters.
Form Analysis, 1 class a week for two Quarters.
History of Music, 2 classes a week for one Quarter.
Orchestral practice, and attendance at student recitals.
Attendance at Artist's Recitals.
College subjects (elective), 5 hours a week for three Quarters.

Sophomore Year

Technic by Sevcik in Arpeggio work, *etc.;* Scales in three octaves, double stops, octaves, tenths, *etc.;* Studies by Fiorillo, Rode Dancla and Sauret; Concertos by DeBeriot, David, Spohr, Molique and others; Solos by David, Vieuxtemps, Leonard, Wieniawski, Hubay, Sarosate, *etc.*

The courses in the Theory of Music of the Sophomore Year.

Students in this year are required to give a public recital consisting of a Concerto, two pieces selected from the first year curriculum, and two pieces selected from the second.

Summary for Sophomore Year

Violin, 2 private lessons a week for three Quarters.
Piano, 1 private lesson a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Harmony, 2 classes a week for three Quarters.
History of Music, 2 classes a week for two Quarters.
Appreciation, 2 classes a week for two Quarters.
Form and Analysis, 1 hour a week for one Quarter.
Orchestral practice and attendance at student recitals.
Attendance at Artist's Recitals.
APPEARANCE IN RECITAL.
College subjects (elective), 5 hours a week for three Quarters.

Junior Year

Technics by Sevcik, Schradieck, Sauret; Studies by Gavinies, Vieuxtemps, Wieniawski, Tartini, Ernst, and Paganini; Concertos and solos by Mendelssohn, Bruch, Bach, Spohr, Beethoven, Ernst, Wieniawski Vieuxtemps Molique, Mozart, *etc.*

The courses in Theory of Music of the Junior Year.

Candidates for the degree of Graduate in Music or the Certificate of Proficiency are required to give a public recital, the program consisting of a Sonata, a Concerto, and four concerted pieces from the Graduate list. They must also be able to accompany at sight on the Piano any vocal or instrumental solo of moderate difficulty.

Summary for the Junior Year

Violin, 2 private lessons a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Harmony, 2 classes a week for three Quarters.
Counterpoint, 2 classes a week for two Quarters.
Composition, 1 class a week for two Quarters.
Orchestral practice, and attendance at student recitals.
APPEARANCE IN RECITAL.
College subjects (elective), 5 hours a week for three Quarters.

Senior Year

Continuation of study for finish of style, mastery of interpretation, and tone color, and acquirement of the most advanced ideas of artistic perfection.

In the Theory of Music the courses of the Senior Year are required.

Candidates for the degree of Bachelor of Music or the Honor Certificate are required to give a public recital consisting of a Sonata, a Concerto, and five pieces selected from the Graduate curriculum. They must also be able to accompany at sight on the Piano any song or instrumental solo of moderate difficulty selected by the examiner.

Summary for Senior Year

Violin, 2 private lessons a week for three Quarters.
[Practice, 3 to 4 hours daily.]
Composition, 1 class a week for two Quarters.
Counterpoint, 2 classes a week for two Quarters.
Orchestration, 2 classes a week for two Quarters.
Orchestral practice and attendance at student recitals.
Attendance at Artists' Recitals.
APPEARANCE IN RECITAL.
College subjects (elective), 5 hours a week for three Quarters.

SPECIAL CERTIFICATE

For those who wish to become executants or violin teachers only and who do not present the high school credits necessary to enter for a degree, a Special Certificate curriculum has been arranged. In the practical work the requirements are the same as for the degrees. In the theoretical work the courses of the Freshman Year must be completed.

DIRECTING

A course of twelve weeks, one lesson per week in band and orchestra directing is offered. This course is valuable not only to those specializing in band and orchestra work, or public school music, but also to any musician.

CHAMBER MUSIC CLASSES

(Ensemble Playing)

This embraces the study of Duet-, Trio-, Quartet-, and Quintet-playing, for stringed instruments only, for stringed instruments and Pianoforte, or for stringed and wind instruments with or without Pianoforte accompaniment. These classes are under the direction of the Head of the Violin Department.

DEPARTMENT OF BAND INSTRUMENTS

Band instruments are taught by experienced teachers according to the most modern methods. In teaching cornet, trumpet, and the other brass instruments the non-pressure system is employed. Transposition on all instruments is taught by the cleff system.

Instruction is given on the following instruments: Brasses: Cornet, Trumpet, Horn, Trombone, Baritone, and Basses. Reeds and Wood-Winds: Saxophone, Clarinet, Flute, Piccolo, Oboe and Bassoon. Percussion: Drums, Tympani, Bells, and Xylophones.

PUBLIC SCHOOL MUSIC

A distinct curriculum has been arranged for those who desire to teach music in the public schools. It consists of private lessons in Voice and Piano, and classes in Harmony, History of Music, Notation, Sight Singing and Ear Training, Elementary Methods, High School Methods, Observation work, Conducting and Chorus work.

The work of the first year is accredited for Class A certificates in the State of Indiana; that of the second year, for Class B certificates.

FIRST YEAR

Voice, 12 private lessons a quarter for three Quarters.
Piano, 12 private lessons a quarter for three Quarters.
[Practice, 3 hours daily.]
Harmony, 2 classes a week for three Quarters.
History of Music, 2 classes a week for one Quarter.
Elementary Sight Singing, 2 classes a week for three Quarters.
Elementary Methods, 2 classes a week for three Quarters.
Ear training and dictation, 2 classes a week for three Quarters.
Chorus and choir practice, and attendance at student recitals.
Educational subjects, 5 hours a week for three Quarters.

SECOND YEAR

Voice, 12 private lessons a quarter for three Quarters.
Piano, 12 private lessons a quarter for three Quarters.
[Practice, 3 hours daily.]
Harmony, 2 classes a week for three Quarters.
Appreciation, 2 classes a week for two Quarters.
Advanced Sight Singing, 2 classes a week for three Quarters.
High School Methods, 2 classes a week for two Quarters.
Observation work and supervised teaching, 2 hours a week for two Quarters.
Chorus and choir practice, and attendance at student recitals.
Attendance at Artist's Recitals.
Electives, 5 hours a week for three Quarters.

MUSICAL ACTIVITIES

During each year the student body of the University is afforded opportunity of hearing the finest instrumental and choral works performed by the University Symphony Orchestra, the University Choral Society, and the University Concert Band, whose public appearances have the liberal patronage of the citizens of Valparaiso and other cities.

THE UNIVERSITY SYMPHONY ORCHESTRA.—This organization is composed of from forty to fifty selected players from the School of Music and other schools of the University, and is trained and conducted by George Steinhaus, head of the Violin Department. Concerts are given each quarter presenting symphonies by Haydn, Schubert, Mozart, Beethoven and many standard overtures and other miscellaneous compositions, such as are usually performed only by the largest symphony orchestras. The Orchestra is a school in itself, open to all advanced students of violin, cello and other instruments, and offers opportunities for practical work in orchestra playing. The experience and drill is of the greatest value, and the members become familiar with the standard works and acquire knowledge of practical instrumentation. Weekly rehearsals are held in the Music Recital Hall. Credit is given to members who attend punctually the rehearsals and concert performances.

THE UNIVERSITY CHORAL SOCIETY.—This large and well-trained organization, composed of students, is also one of the features of the University. Representative of its public appearances in the last few years are such works as "Elijah," "The Creation," "Messiah," "The Seasons," "Rose Maiden," "O Lovely Night," *etc.*

THE UNIVERSITY BAND.—The University maintains a concert band of from thirty to forty members. The band gives four public concerts yearly, besides playing in chapel occasionally and playing for all athletic contests and students' parades. Students making a study of any band instrument are

given an excellent opportunity to become acquainted with band music of the highest class. Some of the compositions rendered by the band last year are as follows: *Andante,* from the fifth, and *Allegretto Scherzando,* from the eighth Beethoven symphony; Verdi's *Treviata* and *Nabuchodonosor; Don Quixote* suite by Safranek; and Weber's *Invitation a la Valse.* Students interested in band work who are not in the School of Music are given the privilege of entering the band and keeping up their band work. A credit of two hours is given to members of the band who attend all band rehearsals and activities.

Recitals and Other Musical Events.—Musicales are given fortnightly by the faculty and members of the various classes, and complete recitals by advanced students, at which every student of the School is expected to be present. In addition to student activities, outside talent is engaged from time to time and students are thereby enabled to hear some of the finest artists of the present day.

REGULATIONS

All fees are payable at the time of registration. Arrangements for lessons and payment of fees should be made at the University Office. Students must register and secure entrance cards for each quarter before they begin their lessons, and the card must be presented to the instructor at the first lesson.

No deduction will be made for missed lessons except in case of protracted illness. In such cases lessons will be made up if possible. Lessons missed through slight indisposition of the pupil will not be made up except at the discretion of the teacher.

No student is allowed to appear in public without the permission of his instructor.

All voice students are required to assist in the work of the chapel choir.

EXPENSES

In all regular courses students are required to take the number of private lessons, and the number of class lessons in theory indicated in the summaries set out on the preceding pages, together with three practice hours daily. The fees for these are as follows:

PRIVATE LESSONS.—The fee for individual private half-hour lessons in Piano, Voice, Violin, Viola, or 'Cello (22 or 33 lessons per quarter), is at the rate of $2 per lesson when taken from a professor, or $1.50 per lesson when taken from an assistant professor.

SPECIAL FEES.—These fees are payable only in the quarters when the subjects named are required to be taken as indicated in the summaries on the foregoing pages.

	Term hours per quarter	*Rate per term hour*	*Amount per quarter*
History of Music	2	$3.00	$6.00
Sight Singing	2	3.00	6.00
Ear Training and Dictation	2	3.00	6.00
Methods	2	3.00	6.00
Appreciation	2	3.00	6.00
Harmony	2	6.00	12.00
Orchestration	2	6.00	12.00
Counterpoint	2	6.00	12.00
Form Analysis	1	6.00	6.00
Composition	1	12.00	12.00
High School Methods	2	5.00	10.00
Practice Room and Piano	3	3.00	9.00

ATHLETIC, LIBRARY, AND "TORCH" FEES.—These fees, payable by all students in the University, amount to $4.00 per quarter, except that the athletic fee of $2.50 is not payable in the Summer Quarter.

GRADUATION FEE.—The graduation fee, including diploma or certificate, is $10.00.

DRAMATIC ART

The aim of the courses in Dramatic Art is: (1) To develop in the student a good speaking voice and acquaint him with the fundamental principles of vocal expression; (2) to instruct the student in the principles and practice of interpretative and dramatic reading, personation, acting and various forms of lyceum work; (3) to give scientific and critical training to teachers and producers of plays and operas.

ADMISSION

Fifteen high school units are required for admission as a candidate for a diploma. Students not candidates for a diploma may take any work for which they show themselves qualified.

ORGANIZATION OF COURSES

The work of the department is divided into three groups, as follows:

A. FUNDAMENTALS
B. PLATFORM READING.
C. ACTING.

CURRICULUM

FIRST YEAR

Courses	*Hours*
Fundamentals (1-5) - -	15
Platform Reading (11-14)	10
Acting (21-23) - - - -	9
Private Lessons (41, 42)	2
Recital (51) - - - - -	1
Literature - - - - - -	8
	—
	45

SECOND YEAR

Courses	*Hours*
Platform Reading (16-19)	12
Acting (26-28) - - - -	10
History of Art (F. A. 55-58)	8
Private Lessons (46, 47) -	2
Recital (56) - - - - -	1
Literature - - - - - -	9
History (Hist. 4) - - -	3
	—
	45

DIPLOMA

A Diploma in Dramatic Art is granted upon the completion of the regular two year curriculum.

COURSES OF INSTRUCTION

Many of the courses here described are offered every quarter, others are given once or twice a year. All courses for which there is sufficient request will be offered in the Summer Quarter.

FUNDAMENTALS

1. General Elocution.—The fundamental principles for good reading and speaking. Instruction is given in English phonation and the theory and practice of the vocal elements of expression. A general survey of the different phases of work in the entire field of the speech arts. Practice in the elementary forms of acting, personating, impersonative reading, pure reading; in various types of original public speech; in extempore oratory, and in story telling. Constant attention is given to the mechanics of speech; speech defects, faults in breathing, voice placement and bodily development. *Three hours.*

2. Physical Culture and Voice I.—Mechanics of action. Practice in the fundamental bodily exercises that give poise and grace of movement. Voice building and development of tone color. *Two hours.*

3. Physical Culture and Voice II.—A broader conception of physical exercise. The beginnings of pantomime and bearing; carriage and gesture. More advanced practice in voice production. *Two hours.*

4. Phonetics.—Training of articulatory organs; study of elementary English sounds, accuracy of utterance, analysis of consonant and vowel sounds; correction of common errors; vocal drill; ear training; accent; syllabication; pronounciation. *Five hours.*

5. Criteria of Speech and Action.—A scientific study of the fundamental principles of oral expression including systematic criteria of all forms of speech. Fundamental methods in teaching elocution and reading. A careful study of the theory of pantomine and bearing. *Three hours.*

PLATFORM READING

11. Dramatic Reading I.—The presentation of memorized selections for criticism by the instructor and the class. A study of acting, personating, impersonative reading, and pure reading in their artistic relation to each other. Six or eight selections of specified length and character are presented during the quarter. *Three hours.*

12. Dramatic Reading II (continuation of course 11).—A more advanced study of public reading from the standpoint of artistic entertainment. *Three hours.*

13. Story-telling I.—This course is especially helpful for students preparing for public school teaching or social settlement work. Stories with a view to age and type of audience. Fairy tales; fables; folk tales; animal stories. *Two hours.*

14. Story-telling II (continuation of course 13).—The heroic tale; classic tale; Bible stories; original stories; impromptu stories. Criticism by the instructor. *Two hours.*

16. Interpretation.—A study of English and American literature. both poetry and prose, from the standpoint of vocal interpretation. *Three hours.*

17. Play Reading I.—The study and delivery of a complete cutting from an approved novel or a modern play during the quarter. The material is not presented wholly from memory but is delivered with the assistance of book and desk. More accurate attention is given to suggestion and to the imaginative phases of the work. *Three hours.*

18. Play Reading II.—The study and presentation of a Shakesperean play as a public reading. Technical study of suggestive action. Book and desk are used. *Three hours.*

19. Advanced Dramatic Reading.—The presentation of weekly memorized selections of specified length and character throughout the quarter. These selections are chosen and arranged for a definitely planned program which form the nucleus for the diploma recital program. *Three hours.*

ACTING

21. Acting and Make-up I.—Six students to each class. Students are cast for a playlet and are drilled in the early principles of stage technique. *Three hours.*

22. Acting and Make-up II.—Class of six. More difficult phases of the art of acting in an advanced type of play. *Three hours.*

23. Acting and Make-up III.—Shakesperean scenes are studied from the standpoint of stage technique. Class of six. *Three hours.*

26. Stagecraft.—Theatrical equipment; design; scenery; stage effects; light and shadow; costuming; division of labor in the theatre. *Three hours.*

27. Play Production.—A theoretical and technical study of the staging of plays. Each student near the end of his second year is required to stage a short play. The play is to be not less than twenty-five minutes in length and must be rehearsed at least twice a week for five weeks. *Five hours.*

28. Pageantry.—The technique of handling masses; working out historical and religious pageants. *Two hours.*

LITERATURE

English 35. Shakespeare.—Critical and textual study of four of Shakespeare's plays. Different plays are read in alternate years so that students may repeat the course for additional credit. *Three hours.*

English 36. Shakespeare.—This course is of the same general character as course 35, but different plays are studied. *Three hours.*

English 37. Mythology.—Myths of Greece and Rome, together with those of other nations are studied as to interpretation, development, and relation to literature and art. *Two hours.*

English 41. Wordsworth and Tennyson.—A study of representative poems. *Three hours.*

English 42. History of the Elizabethan Drama.—Lectures, readings, reports and a thesis. *Two hours.*

English 45. Whitman and Recent Verse.—A study of "Leaves of Grass," with some consideration of American poets since 1900. *Two hours.*

English 46a, 46b, 46c. The Modern Drama.—A study of representative modern dramas. Extensive reading. Reports. Each course, *three hours.*

HISTORY

History 4. The Period of the Renaissance.—Political and social organization of the various European nations; the rise of mediæval literature, art and science; the origin of modern European nations. Collateral reading and themes. Spring Quarter. *Three hours.*

HISTORY OF ART

Fine Art 55, 56, 57, 58. History of Art I-IV.—Appreciative study of the Art of Egypt and the Orient; study of architecture,

sculpture and painting among the Greeks, Romans, French and people of North Europe; early American Art. Reports and outside reading. *Two hours for each course.*

PRIVATE LESSONS

In the private lesson courses one hour credit is given for one half-hour lesson per week for twelve weeks.

41. Private Lessons I.—Individual criticism in bodily action and general development. Practice on representative selections. Tone drills. Individual attention to speech defects and mannerisms. Proper management of breath. Placement of tone. The development of a full resonant voice. Given in the first year. Extra tuition fee $24. *One hour.*

42. Private Lessons II.—These lessons are to be taken in the first year as supplementary to Dramatic Reading. Individual criticism and suggestions are given for the selections to be delivered on the first year recital. Extra tuition, $24. *One hour.*

46. Private Lessons III.—Supplementary to Play Reading and Advanced Dramatic Reading. Extra tuition $24. *One hour.*

47. Private Lessons IV.—Supplementary to work for the diploma recital. Extra tuition $24. *One hour.*

RECITALS

Students taking private lessons are given frequent opportunity to appear before audiences, as a series of public recitals are presented each quarter.

51. First Year Recital.—The presentation of a miscellaneous program in the final quarter of the first year. Four hours a week constant practice on the program to be presented is required for eight weeks prior to the recital. *One hour.*

56. Diploma Recital.—The public presentation of an evening's reading of a play or a complete cutting from an approved novel is given in the final quarter of the second year. At least four hours a week practice upon the play or cutting to be given is required for eight weeks prior to the recital. *One hour.*

DRAMATIC PERFORMANCES

One or two plays, complete in every detail, will be presented to the public each quarter.

EXPENSES

The regular tuition fee is $42 per quarter (twelve weeks). In addition the fee for private lessons during two quarters of each year is $24 per quarter.

Further information concerning the School of Music and Dramatic Art may be obtained by addressing the Dean of the School of Music and Dramatic Art, Valparaiso University, Valparaiso, Indiana.

THE LAW SCHOOL

HISTORICAL

The Law School was established in 1879 under the name Northern Indiana Law School. During its early years the relation of the school to the University, though close, was semi-independent. The course of study covered two years of forty weeks each. Text-books were the basis of instruction, and one subject at a time was presented to each of the two classes until completed. Requirements for admission were low, but the faculty and the student body were united in the spirit of hard work. A very large proportion of the graduates became successful practitioners. Many have served as governors, members of supreme courts, and senators and representatives in congress.

In 1907 the school became a part of the University. Under the present management the law building has been remodeled, the library increased, the requirements for admission raised, the case method adopted, and the curriculum extended to three years.

PURPOSE

The Law School stands for thorough and practical instruction, complete utilization of time, and minimum expense. It is strictly a professional school, and aims to train for the practice of law men and women of sufficient maturity and ability to sustain the demands of serious professional study. The instruction is not local in scope, but is designed to give such a training in the principles of law, both substantive and procedural, as will constitute a thorough preparation for the practice of the profession in any state.

EQUIPMENT

The school occupies a separate building, with convenient lecture and library rooms and offices for the instructors. The school library, which is maintained in the building, includes

the reports of the Supreme Court of the United States, other Federal reports, United States Statutes, the reports and statutes of leading states, sets of the Reporter System, sets of all the series of selected cases, with their digests and search books, English reports, the Century and Decennial Digests, United States and state digests, the law encyclopedias, some of the best law magazines, various citators, and a selection of textbooks on law, jurisprudence, and legal history. The library is open daily, except Sundays and Saturday evenings, from 8:30 A. M. to 10:00 P. M. The University Library also is accessible to students of the Law School without additional charge.

THE SCHOOL YEAR

The Law School is in session during the Fall, Winter, and Spring Quarters, but not at present during the Summer Quarter. Each quarter is twelve weeks in length. The arrangement of courses is such that it is necessary for students to enter at the opening of the Fall Quarter unless they have done sufficient work in a law school to proceed with the class.

Registration for the school year 1923-24 will begin on Saturday, September 29, 1923, and the year will close June 13, 1924.

Instruction will commence on Tuesday, October 2.

ADMISSION OF STUDENTS.

Candidates For The Degree of LL. B.

Applicants not less than eighteen years of age are admitted without examination as candidates for the law degree, upon production of official certificates showing in detail the successful completion by them in an approved secondary school (high school or academy) of work amounting to at least fifteen units,—the usual college entrance requirement, ordinarily satisfied by graduation from a four-year high school. Three units in English, one unit in Algebra, one unit in Plane Geometry, one unit in a science, and one unit in History are

prescribed. The remaining eight units may be offered from a list of approved subjects ordinarily taught in high school. Further particulars of this requirement are stated in the first section of the General catalog. Students who present fifteen units but who lack any of the prescribed subjects, may take the introductory courses in such subjects offered in the College of Arts and Sciences, or courses in the University High School, either before or concurrently with their work in law. These courses must be completed before entering the second year in the Law School. Every reasonable facility is extended to students to make good their deficiencies, but failure to comply with this regulation within the time limited causes a student to become classified as a special student not a candidate for a degree. It is recommended that students who are wanting in any of the entrance requirements make up their deficiencies by attending the University High School before entering the law school.

Students Not Candidates For a Degree

In exceptional instances persons over twenty-one years old who cannot meet the foregoing requirements may be admitted as special students, not candidates for a degree, upon producing evidence of such education and experience as, in the opinion of the law faculty, should enable them to pursue with advantage the study of law. Not to exceed ten special students are admitted to any class. A person who desires admission as a special student should apply in writing to the Dean of the Law School, stating his age, education, occupation, and experience, and should give as references the names and addresses of three or more persons acquainted with his age, character, ability, and attainments. Such applicant should not present himself for admission until he has received assurance from the Dean that his application has been considered favorably by the faculty. Special students may take the same work as regular students and are entitled to receive transcripts of their records.

Admission With Advanced Standing in Law

Students who have attended other law schools of high rank after becoming qualified to enter this school are given credit, not exceeding two years in amount, for the satisfactory completion in such schools of work similar to that required in this school. An applicant for admission under this rule should submit to the Dean of the Law School an official transcript of his record in such other law school. In cases of doubt applicants may be required to take examinations in part or all of the subjects for which they ask credit.

Students From Other Schools of the University

Subject to the regulations of the school in which they are registered and of the Law School, students from other schools of the University who have completed four years of high school work or the actual equivalent may elect work in the Law School.

COMBINED ARTS AND LAW CURRICULUM

Students who have completed three years (nine quarters) of work in the College of Arts and Sciences, may transfer their registration to the Law School, and will receive the degree of A. B. upon completing the first year in the Law School and the degree of LL. B. upon completing two additional years in the Law School. By electing the combined course, students may obtain the two degrees in six years; and by attending nine consecutive quarters in the College they may reduce this time to a possible minimum of five calendar years. College students who elect the combined curriculum are expected to conform to the Arts requirement of the Freshman and Sophomore years and to fulfill in their Junior year the equivalent of one-half a major and minor in History and the Social Sciences, English, and Public Speaking. Modifications of this program, in the case of students who offer a well-chosen sequence of studies, may be made with the consent of the Dean of the College and the Dean of the Law School.

REQUIREMENTS FOR THE DEGREE

The degree of *Bachelor of Laws* (LL. B.) is conferred upon regular students, candidates therefor, who have completed three full years (nine quarters) of work as prescribed in the Law School. Higher degrees in law are not conferred.

To receive the degree a student must have obtained credit for a total of 135 hours of work in law. An *hour* is one 53-minute period (net) of prepared classroom work each week for one quarter (twelve weeks). Fifteen or sixteen hours per quarter constitutes full work.

Students admitted with advanced standing in law must have spent at least three quarters in resident study at the Law School and must have completed at least one full year's work in law.

A regular student who has not complied with the requirements for a degree so as to graduate with his class may receive the degree upon making good his deficiencies within two calendar years thereafter.

ADMISSION TO THE BAR—Graduates of the Law School who are residents of Indiana and not less than twenty-one years of age may be admitted upon motion to the Circuit Court of the county, the Supreme Court of the State, and the District Court of the United States for the district of Indiana. Members of the faculty do not move the admission of students who do not graduate.

METHOD OF INSTRUCTION

The method of instruction employed is that commonly known as the case method. Beginning students, however, are first carefully grounded in the elements and fundamental concepts of the law and are given some acquaintance with its history and evolution. Thereafter the instruction consists chiefly in the discussion of legal principles as disclosed in judicial decisions, supplemented by a considerable amount of practice work.

COURSES OF INSTRUCTION

FIRST YEAR

A. Elements of Law.—Nature, sources and forms of law, and the organs of its development; kinds of law books and their uses; fundamental conceptions; general survey of law. Beale's *Cases on Legal Liability* (2d ed.), Chap. I; Woodruff's *Introduction to the Study of Law.* Fall Quarter. *Two hours.*

1. Contracts I.—Requisites of simple contracts; making, duration, and revocation of offers; acceptance; consideration; contracts under seal. Corbin's *Cases on contracts;* Bowman's *Readings and Problems in Contracts.* Fall Quarter. *Five hours.*

2. Torts I.—Trespass to person and to property; negligence; duties of occupiers of premises; duties of makers and of vendors of chattels; contributory and imputed negligence; duties of owners of animals; dangerous use of land. Ames and Smith's *Cases on Torts* (Pound's ed.). Fall Quarter. *Three hours.*

3. Crimes I.—The degrees of crime; the criminal act; attempts; the criminal intent, actual and constructive; modifying circumstances; agents, principals and accessories. Beale's *Cases on Criminal Law* (3d ed.). Fall Quarter. *Three hours.*

4. Principles of Liability.—The nature of an act; the proximate consequences of an act; justification and excuse for an act. Beale's *Cases of Legal Liability* (2d ed.). Two term course. Fall Quarter, 2 hours, and Winter Quarter, 2 hours. *Five hours.*

5. Common Law Actions.—Outline of proceedings in an action; the formulary system; original writs; real actions, droitural and possessory; personal actions. Scott's *Cases on Civil Procedure;* Shipman's *Common Law Pleading* (3d ed.). Fall Quarter. *Two hours.*

6. Contracts II.—Express implied and constructive conditions; repudiation; prevention of performance; impossibility; discharge. Corbin's *Cases on Contracts.* Winter Quarter. *Three hours.*

7. Torts II.—Actions and defenses based on breach of statutory duty; deceit; malicious prosecution and abuse of process; slander, libel, privilege, malice; right of privacy; interference with social and business relations, including disparagement of goods, unfair competition, inducing breach of duty, strikes, boycotts, and combinations. Ames and Smith's *Cases on Torts* (Pound's ed.). Winter Quarter. *Three hours.*

8. **Crimes II.**—Crimes against the person, especially murder and manslaughter; larceny, embezzlement, obtaining goods by false pretenses, receiving stolen goods; burglary and arson; forgery; acts done in pursuance of a common design; conspiracy. Beale's *Cases on Criminal Law* (3d ed.). Winter Quarter. *Three hours.*

9. **Property Ia.**—Possession; the power and the intent to control. Personal Property: modes of acquiring ownership; bailment; lien; pledge; conversion. Warren's *Cases on Property;* Goddard's *Cases on Bailments and Carriers;* Goddard's *Outlines of Bailments and Carriers.* Winter Quarter. *Four hours.*

10. **Civil Procedure.**—The formulary system; original writs; real actions, droitural and possessory; mixed actions; personal actions; venue; process; appearance; parties; pleading; trial; verdict; motions subsequent to trial; judgment; motions after judgment. Scott's *Cases on Civil Procedure;* Shipman's *Common Law Pleading* (3d ed.). Winter Quarter, 1 hour, and Spring Quarter, 5 hours. *Six hours.*

11. **Contracts III.**—Rights of assignees and third party beneficiaries; joint contracts; illegal agreements; the Statute of Frauds. Corbin's *Cases on Contracts.* Spring Quarter. *Three hours.*

12. **Property Ib.**—General introduction to the law of real property: tenure; seisin; estates; conveyances; the statute of uses. Rights in the lands of another: natural rights in respect to land, air, and water; fixtures, emblements, waste; rents, profits, easements, licenses, and covenants running with the land. Warren's *Cases on Property;* Tiffany's *Real Property.* Spring Quarter. *Four hours.*

13. **Damages.**—Functions of court and jury; exemplary, liquidated and nominal damages; direct and consequential damages; avoidable consequences; mental suffering; counsel fees; interest; special rules in certain contract and tort actions. Beale's *Cases on Legal Liability* (2d ed.). Spring Quarter. *Two hours.*

14. **Criminal Procedure.**—Jurisdiction and venue; modes of prosecution; arrest and bail; the indictment, including statement of the crime, particular allegations, and counts; statutory reform of criminal pleading; double jeopardy; arraignment, trial, and verdict; motions for new trial and in arrest of judgment; judgment, sentence, and execution of judgment; writ of error and statutory appeal. Beale's *Cases on Criminal Law* (3d ed.); Beale's *Criminal Pleading and Practice.* Spring Quarter. *Two hours.*

SECOND AND THIRD YEARS

15. Equity I.—Basis of jurisdiction; enforcement *in personam* and *in rem.* Specific performance of contracts: positive contracts; negative contracts; consideration; marketable title; equitable "conversion"; interests and burdens of third persons; equitable servitudes; performance with compensation for variance; the statute of frauds and oral contracts partly performed; plaintiff's default and laches; lack of mutuality; mistake, misrepresentation, and fraud; hardship and unfairness; *bona fide* purchase. Boke's *Cases on Equity.* Fall Quarter. *Four hours.*

16. Carriers and Public Service.—Common carriers of goods and passengers: nature and legal effect of public employment; extraordinary duties and liabilities; limitation of liability by contract; bills of lading; tickets; baggage; connecting carriers; compensation and lien. Inns and warehouses; telegraph and telephone; light and water companies; discrimination; public regulation and control; actions against public service companies. Goddard's *Cases on Bailments and Carriers,* and selected cases; Goddard's *Outlines of Bailments and Carriers.* Fall Quarter. *Four hours.*

17. Briefmaking and Preparation of Cases.—The classes of law books and their uses; how to find the law; the use of statutes and judicial precedents; collating, weighing, and valuing authorities; the trial brief; the brief on appeal. Library practice in finding authorities and preparing briefs. Cooley's *Briefmaking* (3d. ed.). Fall Quarter. *Two hours.*

18. Property IIa. Titles to Real Property.—Conveyances at common law, under the statute of uses, and under modern statutes; signing, sealing, and delivery; description of property; estates created; creation of easements and profits; covenants for title; estoppel by deed; priority, notice, and record; accretion, adverse possession and prescription; abstracts of title; opinions of title. Aigler's *Cases on Titles;* Tiffany's *Real Property;* Warvelle's *Abstracts of Title.* Two term course. Fall Quarter, 5 hours, and Winter Quarter, 4 hours. *Nine hours.*

19. Legal Ethics.—History and organization of legal profession; admission to practice; suspension and disbarment; lawyer's duties to courts; duties to clients; solicitation of business; duties in civil and criminal cases; method of computing fees; contingent fees; pecuniary dealings with clients. Costigan's *Cases on Legal Ethics.* Two term course. Fall Quarter, 1 hour, and Winter Quarter, 1 hour. *Two hours.*

20. Equity II.—Reformation, rescission and cancellation of contracts. Injunctions against torts: waste, trespass, nuisance, disturbance of easements, interference with business relations, infringement of trade rights, libel. Bills of peace, *quia timet,* interpleader, and for an account. Boke's *Cases on Equity.* Winter Quarter. *Four hours.*

21. Equity Pleading.—A brief course accompanying the work in Equity. Includes process; bills; parties; demurrers; disclaimers; pleas; answers; cross-bills; replications; amendments; injunctions; receivers; the Federal Equity Rules. Rush's *Equity Pleading and Practice* (3d ed.). Winter Quarter. *One hour.*

22. Agency.—Principal and agent: nature of the relation; appointment; rights and duties of the parties *inter se;* liability of principal for acts and admissions of agent; parties to writings; undisclosed principal; ratification; termination of agency. Master and servant: liability of master for acts of servant; liability for injuries to servant; Workmen's Compensation Acts. Huffcut's *Cases on Agency* (2d ed.) and selected cases; Huffcut's *Agency.* Winter Quarter. *Five hours.*

23. Moot Court I.—Arguments and briefs. Winter Quarter. *Two hours.*

24. Sales of Personal Property.—Subject-matter of sale; executed and executory sales; representations, conditions and warranties; bills of lading; *jus disponendi,* seller's lien, and right of stoppage *in transitu;* remedies of buyer; the measure of damages; Statute of Frauds. Woodward's *Cases on Sales.* Spring Quarter. *Five hours.*

25. Persons.—Parent and Child: custody, control, and discipline of child; support, earnings, and services; liability of parent for torts to and of child. Infants: contracts, conveyances, and quasi-contractual duties; affirmance and disaffirmance; crimes and torts. Husband and Wife: marriage, divorce, and separation; property rights; rights as against third persons; contracts and conveyances of married women; modern satutory changes. Kales' *Cases on Persons* with Vernier's Supplement. Spring Quarter. *Five hours.*

26. Property IIb. Wills and Administration.—Intestate succession; persons taking by descent; dispositions in contemplation of death; testamentary capacity and intent; the execution, alteration, revocation, and revival of wills; ademption and lapse of legacies; executors and administrators; survival of rights and liabilities; payment of debts, legacies and distributive shares. Costigan's *Cases on Wills, Descent, and Administration.* Spring Quarter. *Five hours.*

30. Property III. Future Interests.—Possibilities of forfeiture and of reverter; escheat; vested remainders and executory interests; contingent remainders; Rule in Shelley's Case; construction of limitations; powers; rule against perpetuities; rule against restricting alienation; illegal conditions and restraints. Kales' *Cases on Future Interests;* Tiffany's *Real Property.* Fall Quarter. *Five hours.*

31. Code Pleading.—Relation to common law pleading and equity pleading; the civil action and special proceedings; the complaint, including cause of action, manner of statement, and prayer for relief; parties; joinder of actions; demurrers to complaint; answers, including general and special denials, new matter, counterclaims and equitable defenses; union of defenses; demurrers to answers; replies and demurrers thereto. Sunderland's *Cases on Code Pleading;* Bowman's *Code Pleading and Practice;* Hepburn's *Historical Development of Code Pleading.* Fall Quarter. *Five hours.*

32. Evidence.—Fundamental concepts; real evidence; circumstantial evidence including reputation; testimonial evidence; qualifications of witnesses; opinion rule; impeachment and corroboration; extra-judicial admissions and confessions; hearsay rule and its exceptions; oath and separation of witnesses; privileged topics; privileged relations; mode of introducing evidence; functions of judge and jury; burden of proof; presumptions; judicial admissions; judicial notice; parol evidence rules. Wigmore's *Cases on Evidence* (2d ed.). Two term course. Fall Quarter, 2 hours, and Winter Quarter, 4 hours. *Six hours.*

33. Bills and Notes.—Formal requisites of bills, notes and checks; acceptance, indorsement, and delivery; obligations of parties; holder in due course; absolute and personal defenses; overdue paper; discharge; presentment, dishonor, protest, and notice; the Negotiable Instruments Law. Bigelow's *Cases on Bills and Notes;* Brannon's *Negotiable Instruments Law* (3d ed.). Fall Quarter. *Four hours.*

34. Partnership.—Nature, formation, purposes, membership; title to partnership property; firm name and good will; partner's liability; rights and duties of partners *inter se;* dissolution and notice; distribution of assets; limited partnerships and joint stock companies. Gilmore's *Cases on Partnership.* Winter Quarter. *Four hours.*

35. Constitutional Law I.—Scope of legislative, executive, and judicial functions; power of judiciary to declare statutes unconstitutional; governmental inter-relations of the nation and the states; national powers respecting dependencies, taxation, money and com-

merce. Wambaugh's *Cases on Constitutional Law.* Winter Quarter. *Four hours.*

36. Trusts.—Nature and elements of a trust; charitable trusts; express, resulting, and constructive trusts; remedies of *cestui;* transfer of trust *res by* trustee or *cestui;* duties and liabilities of trustees; termination of trusts. Scott's *Cases on Trusts.* Spring Quarter. *Five hours.*

37. Trial Practice.—Summons; service and return; appearance, continuance; trial by jury; right to open and close; judgment on the pleadings; demurrer to evidence; dismissal, nonsuit, and directed verdict; arrest of judgment; new trial; trial and finding by the court. Sunderland's *Cases on Trial Practice.* Two term course: Winter Quarter, 2 hours, and Spring Quarter, 2 hours. *Four hours.*

38. Practice Court I.—Legal, equitable and criminal causes instituted and brought to issue. Winter Quarter. *Two hours.*

40. Private Corporations.—Formation and distinguishing features; promotion; issue of stock at a discount; extent of powers; liability for torts and crimes, including offenses under anti-trust acts; *de facto* corporations; *ultra vires* transactions; officers, stockholders, and creditors; reorganization; corporate forms. Warren's *Cases on Corporations* (2d ed.). Spring Quarter. *Five hours.*

41. Constitutional Law II.—Fundamental rights and limitations of legislative power: limitations on the powers of Congress in the first ten amendments; *ex post facto* laws; laws impairing obligations of contracts; privileges and immunities of United States citizenship; effect of the Civil War amendments; due process of law and equal protection of the laws in relation to procedure, race discrimination, police power, public callings, and taxation. Wambaugh's *Cases on Constitutional Law.* Spring Quarter. *Four hours.*

42. Practice Court II.—Causes at issue tried and prosecuted to judgment. Spring Quarter. *Two hours.*

BOOKS

In addition to the books named in the courses of study, a law dictionary is indispensable. Text-books on the various subjects will be found useful. The statutes of the State where the student expects to practice can be used to advantage by second and third year students.

INSTRUCTION IN OTHER DEPARTMENTS

The instruction given in the other schools and departments of the University is open to students in the Law School without additional charge except the usual fees for laboratory courses and private lessons in public speaking, music, *etc.* Those who wish to avail themselves of these privileges may do so upon obtaining the written consent of the Dean. As a rule not more than one subject can be taken in addition to law.

Courses in Public Speaking

Training in public speaking is given in the English Department of the College of Arts and Sciences, which offers a number of courses advantageous to law students. Among these are Public Address, Argumentation, and Formal Debate.

PRE-LEGAL COURSES

The great variety of subjects taught in the different schools of the University and the policy of the institution to meet the needs of every student afford especial advantages to persons who desire to strengthen their general education before undertaking the study of law.

The College of Arts and Sciences offers to high school graduates the usual courses of a standard college. Though not required, prospective law students are urged to take at least two years of college work before entering the Law School. Subjects of general value in the preliminary education of a lawyer are modern European history, English Composition, Literature, Mathematics, Sciences, Languages, and Civil Government. Studies in which training is particularly valuable are English and American history, English and American Constitutional history, Federal, State and Municipal Government, American Politics, Parliamentary Law, Debate and Argumentation, Latin, Sociology, Ethics, and Political Economy.

The Commercial School offers courses in Accounting, Business Organization and Management, Shorthand, and Typewriting, a knowledge of which is in many ways useful in the practice of law.

The University High School is maintained for students above the usual high school age, and is commissioned by the State Department of Public Instruction of Indiana. Students may enter at the beginning of any quarter and take subjects of which they stand in need. Most states require the completion of a high school course or its equivalent as a preliminary to the student of law. The University High School provides a means of complying with these requirements as well as the entrance requirements of the Law School. By writing to the Dean of the Law School, any applicant may obtain information as to the requirements of the state in which he desires to practice.

Further information pertaining to the Law School may be obtained by addressing the Dean of the Law School, Valparaiso University, Valparaiso, Indiana.

THE ENGINEERING SCHOOL

The Engineering School offers work in Civil, Electrical, and Mechanical Engineering. In Civil Engineering the curriculum is arranged to cover three years of four quarters each. The amount of work is the same as in the usual four-year course, but by attending three Summer Quarters, the student completes the course in three calendar years without reducing the actual period of study.

In Electrical and Mechanical Engineering the first two years (six quarters) only are offered, covering the general and fundamental courses preparatory to the more specialized work, which may be completed in other institutions.

REQUIREMENTS FOR ADMISSION

Regular Students

Admission as a regular student presupposes the completion of a high school course or its equivalent. The particulars of this requirement are given in the first section of the General Catalog. In brief, the applicant must present, by certificate or by examination, at least 15 high school units, of which 3 units in English, 1½ units in Algebra, 1½ units in Geometry, 1 unit in one laboratory science are prescribed, and the remaining 8 units may be selected from a list of subjects ordinarily taught in high schools. Students who present 15 units, but who lack any part of the prescribed subjects, may make good their deficiencies after entering the School, but such work does not count toward a degree.

Special Students

Students who do not present units sufficient for regular admission may register as special students. Such students are not eligible to regular standing unless their deficiencies are made up. This may be done in the University High School. Study programs are arranged for each special student individually by the Dean of Engineering so that the student may

fit into the classes with the proper prerequisites. Certificates of work done will be given.

DEGREES

Candidates for graduation who satisfactorily complete the prescribed courses of study in Civil Engineering will receive the degree of *Bachelor of Science in Civil Engineering,* B. S. (C. E.). Holders of this degree from this School who have had after graduation two years of acceptable professional practice, may become candidates for the degree of *Civil Engineer.* Such candidates should keep the Dean of the School informed of their employment and of changes therein and must present to the faculty at least six months before the time for granting the degree, a satisfactory thesis on an approved subject.

ENGINEERING SOCIETY

An engineering society, composed of members of the Engineering School, is in successful operation and affords an excellent medium for closer acquaintance and the stimulation of interest in engineering work. The society is supplied with moving-picture machine and stereopticon and during three terms of the year secures about two lectures a month from various fields of engineering. These lectures alternate with student meetings in which live problems arising in their study and experience are discussed. The society has established an engineering library of about five hundred volumes.

CURRICULUM IN CIVIL ENGINEERING

[*Twelve quarters—Three years of four quarters each.*]

The curriculum in Civil Engineering is arranged so as to enable the student to acquire a thorough knowledge of the theory and practice in the field, laboratory, shop, and drafting room of the exacting duties of the modern engineer. A broad and comprehensive basis in fundamental engineering principles is given in the first part of the course, and their applications

to practical problems are gradually increased as the student is prepared for them. Courses are extended and revised each year to keep in touch with the latest engineering practice.

The proximity of Valparaiso to Chicago and the surrounding industrial district permits the inspection of important structures and industries. Students are required to participate in two general inspection trips and several smaller trips.

FIRST YEAR

Fall Quarter

Courses			*Class*	*Prac.**	*Hours*
Math.	2	College Algebra I	2	..	2
Math.	3	Plane Trigonometry	3	..	3
†P. M.	1	Engineering Drawing I	..	9	3
P. M.	5	Wood Shop I	..	9	3
Chem.	1	Inorganic Chemistry I	3	3	4
Engl.	1	Freshman English I	3	..	3

Winter Quarter

Math.	4	Spherical Trigonometry	2	..	2
Math.	7	College Algebra II	3	..	3
P. M.	2	Engineering Drawing II	..	9	3
P. M.	6	Wood Shop II	..	9	3
Chem.	2	Inorganic Chemistry II	3	3	4
Engl.	2	Freshman English II	3	..	3

Spring Quarter

Math.	5	Analytical Geometry I	5	..	5
P. M.	3	Descriptive Geometry I	3	..	3
Chem.	3	Inorganic Chemistry III	2	..	2
†C. E.	1a	Surveying I	5	9	8

Summer Quarter

Math.	6	Analytical Geometry II	3	..	3
P. M.	4	Descriptive Geometry II	3	..	3
Chem.	14	Qualitative Analysis	2	6	4
C. E.	1b	Surveying II	3	12	7

*Practice includes laboratory and field work.

†Descriptions of courses marked C. E. and P. M. are given on later pages in the announcements of this school. Descriptions of other courses are given in the announcements of the College of Arts and Sciences.

SECOND YEAR

Fall Quarter

Courses		*Class*	*Prac.*	*Hours*
Math. 21	Differential Calculus I	5	..	5
Phys. 11	Technical Physics I	3	4	5
C. E. 2a	Railway Curves	5	..	5
C. E. 2b	Railroad Location and Construction	..	9	3

Winter Quarter

Math. 22	Differential Calculus II	2	..	2
Math. 23	Integral Calculus I	3	..	3
Phys. 12	Technical Physics II	3	4	5
C. E. 3a	Stresses I	5	..	5
C. E. 2c	Railway Economics	3	..	3

Spring Quarter

Math. 24	Integral Calculus II	3	..	3
Math. 41	Differential Equations I	2	..	2
Phys. 13	Technical Physics III	3	4	5
C. E. 3b	Stresses II	5	..	5
Engl. 11	Public Address I	3	..	3

Summer Quarter

C. E. 3c	Stresses III	3	..	3
C. E. 4	Heating and Ventilating	2	..	2
C. E. 5	Heat Engines	3	..	3
Engl. 12	Public Address II	3	..	3
Math. 7	Astronomy	3	..	3
	Bacteriology	2	6	4

THIRD YEAR

Fall Quarter

C. E. 6	Hydraulics	5	..	5
C. E. 7a	Bridge Design I	2	6	4
C. E. 8a	Strength of Materials I	5	-	5
C. E. 10	Roads and Pavements	3	3	4

Winter Quarter

Math. 42	Technical Mechanics I	5	..	5
C. E. 7b	Bridge Design II	..	9	3
C. E. 8b	Strength of Materials II	3	..	3
C. E. 11	Water Supply	3	..	3
C. E. 14a	Reinforced Concrete I	3	..	3

Spring Quarter

Courses		*Class*	*Prac.*	*Hours*
Math. 43	Technical Mechanics II	2	..	2
C. E. 9a	Testing Materials I	..	6	2
C. E. 12	Sewerage	3	3	4
C. E. 13	Masonry Construction	5	..	3
C. E. 14b	Reinforced Concrete II	5	..	5
C. E. 9c	Materials of Construction	2	..	2

Summer Quarter

C. E. 9b	Testing Materials II	..	6	2
C. E. 15	Engineering Problems and Costs	3	..	3
C. E. 16	Seminar	2	..	2
C. E. 7c	Structural Design and Detailing	..	9	3
C. E. 14b	Reinforced Concrete III	3	..	3
	Law in Engineering	5	..	5

CURRICULUM IN MECHANICAL AND ELECTRICAL ENGINEERING

[*Six quarters—Two years of three quarters each.*]

The two-year program of studies which follows has been definitely correlated with the four-year curricula in Mechanical Engineering and Electrical Engineering of standard engineering schools. Courses in mathematics, chemistry, physics, and theory are coupled with practical courses in drawing and shop work, and due emphasis is laid on the application of the theory to actual problems encountered in practice. The fundamental subjects in Electrical Engineering are necessarily like those in Mechanical Engineering, though there are some variations, such as those shown in the following curriculum. The courses here offered give the student a broad introduction and prepare him for the completion of the last two years in another institution. They may be taken in two ordinary scholastic years running from September to June or in six consecutive quarters. Arrangements have been perfected with other institutions whereby credit for two years' work will be allowed.

FIRST YEAR

Fall Quarter

Courses		*Class*	*Lab.*	*Hours*
Math. 2	College Algebra I	2	..	2
Math. 3	Plane Trigonometry	3	..	3
*P. M. 1	Engineering Drawing I	..	9	3
P.M. 5	Wood Shop I	..	9	3
Engl. 1	Freshman English I	3	..	3
	Foreign Language	5	..	5

Winter Quarter

Math. 4	Spherical Trigonometry	2	..	2
Math. 7	College Algebra II	3	..	3
P. M. 2	Engineering Drawing II	..	9	3
P. M. 7	Pattern-making I	..	9	3
Engl. 2	Freshman English II	3	..	3
	Foreign Language	5	..	5

Spring Quarter

Math. 5	Analytical Geometry I	5	..	5
P.M. 3	Descriptive Geometry I	1	6	3
P. M. 8	Pattern-making II	..	9	3
Engl. 3	Freshman, English III	3	..	3
	Foreign Language	5	..	5

SECOND YEAR

Fall Quarter

Math. 21	Differential Calculus I	5	..	5
Chem. 1	Inorganic Chemistry I	3	3	4
P.M. 9	Machine Shop I	..	6	3
Phys. 11	Technical Physics I	3	4	5
Engl. 11	Public Address I	3	..	3

Winter Quarter

Math. 22	Differential Calculus II	2	..	2
Math. 23	Integral Calculus I	3	..	3
Chem. 2	Inorganic Chemistry II	3	3	4
P.M. 10	Machine Shop II	..	6	3
Phys. 12	Technical Physics II	3	4	5
Engl. 12	Public Address II	3	..	3

*Descriptions of courses marked P. M. are given on later pages of the announcements of this school. Other courses are described in the announcements of the College of Arts and Sciences.

Spring Quarter

Courses		*Class*	*Lab.*	*Hours*
Math. 24	Integral Calculus II	3	..	3
Math. 41	Differential Equations I	2	..	2
Chem. 3	Inorganic Chemistry III	2	..	2
Phys. 14	Technical Physics III	3	4	5
Chem. 14	Qualitative Analysis (for E. E.)	2	6	4
P.M. 3	Mechanisms (for M. E.)	2	6	4
Engl. 44	Nineteenth Century Literature	3	..	3

COURSES OF INSTRUCTION

CIVIL ENGINEERING

1a. Surveying I.—Practical work in use of apparatus for measurements of length, area and difference in direction, horizontal and vertical, plotting the results, and making computations. Standard methods of using instruments, taking notes and making maps, profiles and cross-sections. Use of logarithmic and other computation tables. Raymond's *Plane Surveying.* Spring Quarter. *Eight hours.*

Laboratory fee: $2.00. Deposit: $2.00.

1b. Surveying II.—Office and field practice in stadia, plane table, triangulation, city surveying and hydrographical surveying; astronomical theory as applied to surveying in observations for latitude. azimuth, and time. Raymond's *Plane Surveying.* Summer Quarter. *Seven hours.*

Laboratory fee: $3.00. Deposit: $2.00.

2a. Railroad Curves.—Theory of simple, compound and transition curves with sufficient field practice to become familiar with the setting out of curves. Nagle's *Field Manual for Railway Engineers.* Fall Quarter. *Five hours.*

2b. Railway Location and Construction.—A complete survey of a railway including reconnaissance, preliminary, topographical and final survey. The road is completely cross-sectioned. Reconnaissance, preliminary and final maps and estimates are made. Nagle's *Field Manual for Railway Engineers;* Raymond's *Elements of Railway Engineering.* Fall Quarter. *Three hours.*

Laboratory fee: $2.00. Deposit: $2.00.

2c. Railway Maintenance and Economics.—The maintenance of railway track and structures; lectures, recitations, inspection trips, design, study comparison of railway materials, treatment of ties. Eco-

nomics of railway location, revising and improvements; analysis of operating expenses as effected by grades and curves. Raymond's *Elements of Railway Engineering.* Winter Quarter. *Three hours.*

3a. Stresses I.—Analysis of stresses in roof trusses under action of static and moving wheel loads. Johnson, Bryan and Turneaure's *Modern Framed Structures* (Vol. I). Winter Quarter. *Five hours.*

3b. Stresses II—Analysis of stresses in bridge trusses under action of static and moving loads. Spring Quarter. *Five hours.*

3c. Stresses III.—Analysis of stresses in towers, buildings and other structures. Johnson, Bryan and Turneaure's *Modern Framed Structures* (Vol. I). Summer Quarter. *Three hours.*

4. Heating and Ventilating.—Principles governing design of modern heating and ventilating plants. Hoffman's *Heating and Ventilating.* Summer Quarter. *Two hours.*

5. Heat Engines.—Production of steam and application in steam engine; the indicator; the boiler; the steam turbine; details of their appurtenances and applications. Gas, gasoline and oil engines; their theory and methods of operation. Principles of efficiency of heat engines. Direct observation of practical operation of engines. Summer Quarter. *Three hours.*

6. Hydraulics.—Lectures and recitations covering the laws of the motion of fluids; flow of water through orifices, open channels and weirs and the fundamental principles underlying hydraulic development. Slocum's *Elements of Hydraulics.* Fall Quarter. *Five hours.*

7a. Bridge Design I.—Design of plate-girder and pin-connected bridges. Complete detail and shop drawings of one bridge. Johnson, Bryan and Turneaure's *Modern Framed Structures* (Vol. III). Fall Quarter. *Four hours.*

7b. Bridge Design II.—Design of riveted railroad and highway bridges. Design of a roof-truss. Johnson, Bryan and Turneaure's *Modern Framed Structures* (Vol. III). Winter Quarter. *Three hours.*

7c. Structural Design.—Design and detail of various structures. Bishop's *Structural Drafting and the Design of Details.* Summer Quarter. *Three hours.*

8a. Strength of Materials I.—Mechanics of materials, including

stresses and deformation in tension and compression, shearing, torsion, and flexure; also strength of long columns and continuous girders, and the elements of the theory of elasticity. Boyd's *Strength of Materials.* Fall Quarter. *Five hours.*

8b. Strength of Materials II.—Continuation of course 8a. Spring Quarter. *Three hours.*

9a. Cement and Concrete Testing.—Advanced work in testing materials with particular attention to cement and concrete. Hatt and Scofield's *Laboratory Manual.* Spring Quarter: Summer Quarter. *Three hours.*

Laboratory fee: $3.00. Deposit: $2.00.

9b. General Testing Materials.—An experimental study of the effects of tension, compression, torsion and flexure upon steel, wood, stone, plain and reinforced concrete, brick and other building material. The student learns to judge the character and properties of building materials and to vertify theoretical laws. Hatt and Scofield's *Laboratory Manual.* Winter Quarter; Spring Quarter. *Two hours.*

Laboratory fee: $3.00. Deposit: $2.00.

9c. **Materials of Construction.**—Structure and properties of materials used in engineering. Spring Quarter. *Two hours.*

10. **Road and Pavements.**—A road survey is made according to the standard methods of a State Highway Department and the data used to make a plan and design for a road on forms prescribed by the United States Office of Public Roads. The principles of grade, width, curves and drainage are developed and applied and standard methods of computing quantities and cost are used. Harger and Bonney's *Highway Engineers' Handbook.* Agg's *Construction of Roads and Pavements.* Fall Quarter. *Four hours.*

11. Water Supply.—Sources and purity of water supplies; works for supplying and distributing water; design of a water supply from given data; design of small distributing system. Folwell's *Water Supply Engineering.* Winter Quarter. *Three hours.*

12. Sewerage and Sewage Treatment.—The principles of sewerage and drainage including storm water and sewage; methods of sewage treatment; design of a small system for sewerage and storm water drainage, including house connections. Metcalf and Eddy's *Sewerage and Sewage Disposal.* Spring Quarter. *Four hours.*

13. Masonry Construction.—A brief course in masonry construction. Baker's *Masonry Construction.* Spring Quarter. *Three hours.*

14a. Reinforced Concrete I.—A thorough study of reinforced concrete beam and column theory, including character of slab, beam, girder and "T" beam design. Hool's *Reinforced Concrete* (Vol. I). Winter Quarter. *Three hours.*

14b. **Reinforced Concrete II.**— Design and detail of different types of floor and roof construction and foundations. Hool's *Reinforced Concrete* (Vol. II). Spring Quarter. *Five hours.*

14c. **Reinforced Concrete III.**—Design of arches and retaining walls. Hool's *Reinforced Concrete* (Vol. II). Summer Quarter. *Three hours.*

15. Engineering Problems and Costs.—A study of the methods of obtaining data for designs; the details to be covered in designing, drafting, and cost estimation; graphical methods of collecting, recording and comparing data of construction and cost; methods of filing and indexing maps, plans, notes and data. Fish's *Engineering Economics.* Summer Quarter. *Three hours.*

16. Seminar.—Assigned reading and reports on past and current engineering subjects. Discussions of current articles on engineering problems. Summer Quarter. *Two hours.*

Inspection Trips.—An inspection trip will be made to the Chicago District and will cover three days. Railroad yards, interlocking plants, testing laboratories and cement manufacture will be investigated, and various other points of interest will be visited. A separate trip of one day will be made to Gary to visit the United States Steel Corporation and American Bridge Company plants.

PRACTICAL MECHANICS

1. Engineering Drawing I.—Elementary work consisting of lettering, drawing from plates and models. Every quarter. *Three hours.*

2. Engineering Drawing II.—Machine sketching and detail of parts. Every quarter. *Three hours.*

3. Descriptive Geometry I.—Projections and problems in development of irregular surfaces. Spring Quarter. *Three hours.*

4. Descriptive Geometry II.—Shadows, perspective and practical problems involving use of Descriptive Geometry. Summer Quarter. *Three hours.*

5. Wood Shop I.—Elementary hand tool processes in wood and the fundametals of pattern making. Nine hours in shop. Fall Quarter. *Three hours.*

Laboratory fee: $6.00.

6. Wood Shop II.—Simple framing, use of steel square as applied to engineering problems, and elements of concrete form construction. Nine hours in shop. Winter Quarter. *Three hours.*

Laboratory fee: $6.00.

7. Pattern Making I.—The methods of making castings from patterns and the construction of the simpler type of patterns from blue prints. Winter Quarter; Summer Quarter. *Three hours.*

Laboratory fee: $6.00.

Laboratory fee: $6.00.

8. Pattern Making II.—A continuation of course 7. Spring Quarter. *Three hours.*

9. Machine Shop I.—The methods of manufacture and assembly of machined parts, covering all the commoner types of machine tool process. Fall Quarter. *Two hours.*

Laboratory fee: $6.00.

10. Machine Shop II.—Continuation of course 9, including simple die tool and jig work. Winter Quarter. *Three hours.*

Laboratory fee: $6.00.

11. Mechanisms.—Gears, cams, quick return motions, velocity diagrams. Spring Quarter. *Four hours.*

Further information concerning the Engineering School may be obtained by addressing the Dean of the Engineering School Valparaiso University, Valparaiso, Indiana.

THE COMMERCIAL SCHOOL

The Commercial School is the outgrowth of the Northern Indiana Business College, which was founded July 25, 1878. It is the purpose of the School to provide vocational training suited to the needs of students preparing for business and similar lines of work. Modern business has become so complex in its organization and conduct that it is no longer desirable or possible to learn it by the method of apprenticeship. Business in its higher forms is now as much a learned profession as Law, Medicine, or Engineering. It demands of those who would rise from the ranks a scientific and practical education that will develop the capacity for a broad view and a large grasp of modern business problems. In response to this demand the School offers thorough instruction in the following lines:

Auditing	English
Banking	Merchandising
Business Law	Office Management
Business Management	Private Accounting
Business Organization	Public Accounting
Economics	Salesmanship

In addition the School provides considerable practical training by means of the relations maintained by it with some of the world's greatest commercial and industrial organizations located in Chicago and Gary.

THE SCHOOL YEAR

The year in the University is divided into four quarters, each twelve weeks in length. The Commercial School is in session during all four quarters. Any three quarters count as a school year. Beginning students may enter any quarter.

REQUIREMENTS FOR ADMISSION

The applicant must be at least eighteen years of age. Students are classed as (1) *regular,* admitted on examination or

certificates as candidates for a degree, and (2) *special,* not candidates for a degree.

A regular student must furnish satisfactory credentials showing the completion of fifteen units of high school work, of which six units are prescribed and the remaining nine units are elective, as stated more specifically in the first section of the General Catalogue; or he must pass entrance examinations of like scope.*

A special student is one who is admitted without fulfilling the entrance requirements. The privileges extended to special students are designed especially for those who have entered business life before completing a high school course.

THE UNIT OF CREDIT

In evaluating credits the unit for measuring the amount of work done is the *term-hour,* or *hour.* An hour is one hour of class work or three hours of laboratory work each week for one quarter (twelve weeks). Full work for a quarter amounts to seventeen hours; for a school year of thirty-six weeks, fifty-one hours.

DEGREES AND CERTIFICATES

The degree of *Bachelor of Science in Commerce,* B. S. (Com.), is conferred upon regular students who have completed the four-year curriculum leading thereto. The time required is twelve quarters.

The degree of *Bachelor of Commercial Science,* B. C. S., is conferred upon regular students who have completed three years of the four-year curriculum.

A *Certificate of Proficiency* is granted to special students who have fulfilled all the requirements for a degree except the entrance requirements. Credit certificates are issued to students who have completed one or more subjects.

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*The University High School affords opportunities for students to make good any deficiencies in their preliminary education. The courses offered are described in the announcements of that school.

B. S. (COM.) CURRICULUM

FIRST YEAR

Fall Quarter

Courses	*Hours*
Elementary Accounting I	3
Business Psychology	3
History of Commerce	5
Freshman English I	3
College Algebra I	2

Winter Quarter

Elementary Accounting II	3
Salesmanship	3
Geography of Commerce	5
Freshman English II	3
Plane Trigonometry	3

Spring Quarter

Elementary Accounting III	3
Advertising	3
Foreign Trade	5
Freshman English III	3
College Algebra II	3

SECOND YEAR

Fall Quarter

Courses	*Hours*
Intermediate Accounting I	5
Business Law I	5
Marketing	2
Foreign Language or Science	5

Winter Quarter

Intermediate Accounting II	5
Business Law II	5
Credits and Collections	2
Foreign Language or Science	5

Spring Quarter

Cost Accounting	5
Mathematics of Investments	5
Purchasing	2
Foreign Language or Science	5

THIRD YEAR

Fall Quarter

Advanced Accounting I	3
Business Organization	3
Contracts I	3
Political Economy I	3
Public Address I	3

Winter Quarter

Advanced Accounting II	5
Industrial Combinations	3
Contracts II	3
Political Economy II	3
Investments	3

Spring Quarter

C. P. A. Problems	5
Business Finance	3
Income Tax	3
Contracts III	3
Money and Banking	3

FOURTH YEAR

Fall Quarter

Practical Banking	5
General Sociology I	4
Our Federal Government	3
Office Management	3

Winter Quarter

Life Insurance	3
Property Insurance	2
General Sociology II	4
State Government	3
Agency	5

Spring Quarter

Labor Problems	5
Business Statistics	3
Industrial History of U. S.	3
Local Government	3
Sales Correspondence	3

Adjustment of the program can be made for students who wish to shorten the time for completion by attendance during summer quarters.

GENERAL BUSINESS CURRICULUM

FIRST YEAR

Fall Quarter

Courses	*Hours*
Elementary Accounting I	3
Business Psychology	3
History of Commerce	5
Freshman English I	3
Typewriting	1
Penmanship	1

Winter Quarter

Elementary Accounting II	3
Salesmanship	3
Geography of Commerce	5
Freshman English II	3
Typewriting	3

Spring Quarter

Elementary Accounting III	3
Advertising	3
Industrial History of U. S.	3
Freshman English III	3
Typewriting	1
Public Address I	3

SECOND YEAR

Fall Quarter

Courses	*Hours*
Intermediate Accounting I	5
Business Law I	5
Business Organization	3
Political Economy I	3

Winter Quarter

Intermediate Accounting II	5
Business Law II	5
Industrial Combinations	3
Political Economy II	3

Spring Quarter

Cost Accounting	5
Business Finance	3
Income Tax	3
Money and Banking	3
Purchasing	2

SECRETARIAL CURRICULUM

This curriculum is designed to prepare students for first-class secretarial positions. Few vocations are more desirable, and young people should not overlook its advantages. Association with successful business or professional men gives an opportunity for advancement that is not afforded by many other positions. Fifteen units are required for admission.

Fall Quarter

Shorthand 1
Typewriting 1
English 1
Business Psychology

Winter Quarter

Shorthand 2
Typewriting 2
English 2
Salesmanship

Spring Quarter

Shorthand 3
Typewriting 3
English 3
Elementary Accounting I

Summer Quarter

Shorthand 4
Typewriting 4
English 4
Business Law 1

A credit in penmanship is required.

COURSES OF INSTRUCTION

ACCOUNTING

The courses in Accounting have been designed to meet the needs of four classes of students: those who wish to complete only a short business course which will qualify them for a clerical position; those who wish to become teachers of commercial subjects; those who wish to become business executives; and those who wish to become professional accountants. The four-year commercial course is broad enough in scope to meet all the requirements except that of the required practical experience of the various State Boards of Certified Accountants, and students who complete the accounting and correlated courses should find no difficulty in passing state examinations for the degree of *Certified Public Accountant.*

1. **Elementary Accounting I.**—Designed to meet the requirements of beginners and of students with some experience in bookkeeping who desire to become thoroughly familiar with the fundamental principles before taking up more advanced work. Principles are thoroughly explained and illustrated through the medium of a practice set, numerous exercises, and business papers. Every quarter. *Three hours.*

2. **Elementary Accounting II.**—Special consideration is given to problems peculiar to partnership accounting; methods of dealing with depreciation, accruals, and deferred items; consignments; dissolution of partnerships; changing from partnership to corporation. Every quarter. *Three hours.*

3. **Elementary Accounting III.**—A continuation of course 2, introducing accounts peculiar to a corporation; columnar books and controlling accounts; cash journal; manufacturing accounts and statements. Every quarter. *Three hours.*

4. **Intermediate Accounting I.**—A logical continuation and development of the Elementary Accounting courses, intended for students who desire a more thorough knowledge of accounting for general business purposes or for the profession of accountancy. The principal aim is to teach accounting principles, giving the reasons for their existence and showing their application to practical accounting propositions. The course is constructive, and after the class discussions, the student designs his own laboratory set in which burdensome de-

tails have been eliminated. Prerequisite: course 3. Fall Quarter. *Five hours.*

5. Intermediate Accounting II.—A continuation of course 4. In completing the laboratory set the student passes from the single-entry system of books to the double-entry system and keeps records for a sole proprietor, a partnership, a corporation, a manufacturing company, and a holding company. A complete balance sheet audit is studied. Sherwood's *Public Accounting and Auditing* (Vol. I) and Andersen's *Accounting* (Part I). Winter Quarter. *Five hours.*

6. Cost Accounting.—The field and purpose of Cost Accounting; cost components; departmentalization; accounting for materials and labor; departmental burden rates; types of cost systems; by-product costs; special cost accounting problems. Jordan and Harris' *Cost Accounting.* Spring Quarter. *Five hours.*

7. Advanced Accounting I.—Designed primarily for students who intend to become public accountants. An intensive study of accounting principles and the theory of accounts is made. Some topics covered are: General principles of valuation; depreciation; cash and mercantile credits; merchandise stock-in-trade; temporary investments; permanent investments; tangible and wasting assets; intangible assets; current and contingent liabilities; bonds and mortgages; capital stock and its valuation; profits; surplus and reserves; dividends. Kester's *Accounting, Theory and Practice* (Vol. II). Fall Quarter. *Five hours.*

8. Advanced Accounting II.—Continuation of course 7. Sinking funds; problems in connection with the profit and loss summary; liquidation of a corporation; combinations and consolidations; branch house accounting; suspense accounts; numbered accounts; adjustments of fire losses; statistics in business; accounts and reports in bankruptcy proceedings; realization and liquidation accounts; liquidation for a partnership by installments. Special work is given on the consolidated balance sheet and profit and loss summary. Kester's *Accounting, Theory and Practice* (Vol. II) and Finney's *Consolidated Statements.* Winter Quarter. *Five hours.*

9. C. P. A. Problems.—A thorough review of accounting principles, designed for advanced students preparing to take the examination for the degree of Certified Public Accountant. Weekly tests are given. All problems in Appendix "B" of Kester's *Accounting, Theory and Practice* (Vol. III) are solved and selected chapters in this text are studied. Other C. P. A. problems are solved. Spring Quarter. *Five hours.*

10. Federal Income Tax.—Interpretation of income tax law; regulations and court decisions; determination of taxable income for

individuals, corporations, personal service corporations, and affiliated companies; solution of tax problems; making of returns. Spring Quarter. *Three hours.*

11. Practical Banking.—Our monetary system; historical evolution of banking; Federal Reserve System; analysis of actual work of banks of deposit and issue. Laboratory work; accounting for savings banks. Fall Quarter. *Five hours.*

12. Auditing.—Purposes and advantages of an audit; balance sheet audits; detailed audits; investigations; audits of banks, trust companies, stock brokers, insurance companies, foundries, publishing companies, mining companies, chemical works, mills, wholesale stores, department stores, public utility companies, railroad, institutions, and other businesses. Montgomery's *Auditing* (Vol. II). Spring Quarter. *Five hours.*

BUSINESS ADMINISTRATION

21. Business Psychology.—Nature of psychology; operation of the adult mind. Among topics discussed are attention, memory, imagination, reason, instincts, emotion and the will. Emphasis is place upon business ethics and conduct. Fall Quarter. *Three hours.*

22. Psychology of Salesmanship.—General laws of psychology as applied to the problems of sales-management; analysis of the fundamental principle of salesmanship; mental law of sale; ability to understand human nature, to organize, manipulate and control it; "mutual profit" idea. Whitehead's *Principles of Salesmanship.* Winter Quarter *Three hours.*

23. Psychology of Advertising.—A knowledge of advertising has been recognized as advantageous, if not essential, to any general course in business training. It is the purpose of this course to set forth the chief psychological problems involved; the chief human needs and their satisfaction; the motives for buying, and the chief classes of advertisements which appeal to human instincts. Designed especially for advertising managers. Scott's *Psychology of Advertising.* Spring Quarter. *Three hours.*

24. Marketing.—The principles, methods and problems of marketing; the production of the principal materials; marketing farm products; wholesaling of farm products; marketing manufactured products; distributive cooperation; market finance; market risk; market news; competition and prices; costs of marketing. Prerequisite: course 22. Not open to Freshmen. Fall Quarter. *Two hours.*

25. Credits and Collections.—Organization of the credit department basis of credit; credit instruments; the sales department; credit abuses; collections; collected agencies; legal remedies of creditor and legal rights of debtor. Prerequisite: courses 3, 22, and 24. Winter Quarter. *Two hours.*

26. Purchasing.—Principles of purchasing; organizations; information, forms and records; markets and agents. Prerequisite: course 24. Spring Quarter. *Two hours.*

27. Retail Selling.—Organization of the modern store; the salesperson, his character, training and development; mental factors; service; studying the customer; making the sale; store systems; personnel in the store. Summer Quarter. *Three hours.*

31. Business Organization and Management.—Fundamental principles of business organization and management with reference to ownership and operation; forms of organization, individual proprietorship, partnerships, corporations; advantages and disadvantages of each; formation, promotion, and financing of enterprise; charters, by-laws; right and obligations of stockholders, creditors, officers and directors; business combinations and trusts; comparative efficiency of various types of business organization. Fall Quarter. *Three hours.*

32. Industrial Combinations.—A study of the conditions that have resulted in great industrial combinations; advantages and disadvantages growing out of them; government control; trusts, pools, monopolies, holding companies. Winter Quarter. *Three hours.*

33. Investments.—The way in which capital is formed and the way it enters into business; the nature of securities; types of stocks and bonds; valuations of securities; marketing methods. Prerequisite: Math. 44. Winter Quarter. *Three hours.*

34. Business Finance.—Course treats of the corporation and the management of its finances, designed especially for those who desire to become business executives. Topics discussed are: advantages and disadvantages of different types of financial organizations; instruments through which capital is raised; different kinds of stocks and bonds, when they may be issued and how marketed; management of income, and distribution of profits; business combinations; methods in insolvency, receivership and re-organization. Lincoln's *Applied Business Finance.* Spring Quarter. *Three hours.*

35. Business Statistics.—Elementary principles and their applica-

tion in business transaction; practical methods in tabulation and interpretation of statistical material. Spring Quarter. *Three hours.*

36. Office Management.—A course primarily for those preparing to become business executives. Problems of office executives; management; personnel; departments; office appliances; employment; standards and tests for measuring personally efficiency of employes. Fall Quarter. *Three hours.*

37. Business Correspondence.—Intensive training in writing and dictating letters which emphasize sales, adjustments, collections and general business problems; personal touch in sales letters; form letters; follow-up letters. Prerequisite: Freshman English III. Spring Quarter; Summer Quarter. *Three hours.*

38. Life Insurance.—The history and principles of life insurance; insurance contracts; mortality tables; premium rates; reserves; state regulations; modern practical methods of selling life insurance. Winter Quarter. *Three hours.*

39. Property Insurance.—The history and principles of property insurance; fire insurance contracts; organization and methods of companies; rates and hazards; losses and adjustments; modern practical methods of selling fire insurance. Winter Quarter. *Two hours.*

40. Labor Problems.—Present conditions and problems of labor; history, policies, and methods of trade unions; labor legislation. Spring Quarter; Summer Quarter. *Five hours.*

Math. 44. Mathematics of Investment.—Designed for students in the School of Commerce and for others who wish to take a mathematical study of annuities, insurance, loans, investment, etc. Prerequisite Math. 3 or 7. Spring Quarter. *Five hours.*

BUSINESS LAW

51. Business Law I.—General elementary law; contracts; agency; sales and bailments of personal property; bills of exchange, promissory notes, bank checks, bills of lading. Practice work: drafting of contracts, deeds of sale, negotiable paper, receipts, freight bills, bills of lading. Fall Quarter; Winter Quarter; Summer Quarter. *Five hours.*

52. Business Law II.—Partnership; business corporations; insurance; banks and banking; bankruptcy; execution of legal documents. Winter Quarter; Spring Quarter. *Five hours.*

Law 1: Contracts I.—Requisites of simple contracts; making, duration, and revocation of offers; acceptance; consideration; contracts under seal. Prerequisite: courses 51 and 52. Fall Quarter. *Three hours.*

Law 6: Contracts II.—Express, implied and constructive conditions; repudiation; prevention of performance; impossibility; discharge. Prerequisite: Law 1. Winter Quarter. *Three hours.*

Law 7: Property Ia.—Possession; the power and the intent to control. Personal Property: modes of acquiring ownership; bailment; lien; pledge; conversion. Prerequisite: courses 51 and 52. Winter Quarter. *Four hours.*

Law 10: Property Ib.—General introduction to the law of Real Property: tenure, seisin; estates; conveyances; the statute of uses. Rights in the lands of another; natural rights respecting land, air, and water; fixtures, emblements, waste; rents, profits, licenses, covenants running with the land. Prerequisite: Law 7. Spring Quarter. *Four hours.*

Law 11: Contracts III.—Right of assignees and third party beneficiaries; joint contracts; illegality; the State of Frauds. Prerequisite: Law 6. Spring Quarter. *Three hours.*

Law 22: Agency.—Principal and agent; nature of the relation; appointment; right and duties of the parties *inter se;* liability of principal for acts and admissions of agent; parties to writings; undisclosed principal; ratification; termination of agency. Master and servant: liability of master for crimes and torts of servant; liability for injuries to servant; Workman's Compensation Acts. Prerequisite: Law 1. Winter Quarter. *Five hours.*

COMMERCE

61. History of Commerce.—Brief historical survey of commerce and the commercial policy of nations. A comparison of the position and character of present day business with that of earlier time; ancient; mediæval and modern commerce; development of business organizations; industry; machinery; roads, railroads; navigation; communication. Fall Quarter. *Five hours.*

62. Geography of Commerce.—Natural resources, and the factors influencing the production and marketing of them. (a) Industrial:—Survey of agricultural, forest, and mineral resources. Emphasis placed upon industry or product arising from resource, rather than

the resource itself. (b) Commercial:—Law of trade, trade routes of United States and other countries; balance of trade and its relation to industrial development; influence of geographic conditions on the commercial policy of nations. Winter Quarter. *Five hours.*

63. Foreign Trade.—Need of developing our trade; opportunities and fields for foreign trade; character of the traffic; routes, ports, papers, and contracts employed; organization, agencies and policies for promoting foreign and domestic trade, such as tariff and navigation laws. Spring Quarters. *Five hours.*

HISTORY

8. Industrial History of the United States.—A survey of the growth of the industrial life of the Colonial period; pioneer life of the earlier United States; the rise of manufacturing and immigration; the conquering of the west; the rise of industrial corporations, internal and foreign commerce; modern machinery in industrial life. Winter Quarter. *Three hours.*

POLITICAL SCIENCE

1. Our Federal Government.—The evolution of the principles of the American dual form of government, as embodied in the Federal Constitution; the great constitutional issues that have arisen during our national existence; the scope and limitaions of Federal authority as determined by important decisions of the Federal courts, especially in relation to the delimitation of State and Federal authority; the two-fold movement towards greater democratization and greater centralization. Extensive collateral study. Fall Quarter. *Three hours.*

2. State Government.—A concise study of the origin, character and functions of state government; relation between local and state authority; National limitations on state functions; citizenship under local and state authority; causes and character of the general movement towards revision of the fundamental laws of the States. Reports on the state government of each student. Winter Quarter. *Three hours.*

3. Local Governments.—A study of the structure and functions of the township, county, town and city, and the articulation of the functions of these political units with one another and with the State; reform and efficiency in municipal government; sanitation, recreation, housing, transportation, water supply, industrial conditions, protec-

tion of property and life. Individual reports on the various political units. Spring Quarter. *Three hours.*

SOCIOLOGY

1. **General Sociology I.**—General introduction and Sociology with special emphasis on causes and conditions affecting the life of society. Fall Quarter. *Four hours.*

2. **General Sociology II.**—Nature and analysis of society, social evolution and social control. Winter Quarter. *Four hours.*

ECONOMICS

1. **Principles of Political Economy I.**—Fundamental principles; production and exchange; the money and tariff systems considered from both the historical and the scientific viewpoints. Text, supplemented by lectures. Prerequisite: one year of college work. Fall Quarter. *Three hours.*

2. **Principles of Political Economy II** (continuation of course 1).—Distribution and consumption. Text, supplemented by lectures. Prerequisite: Economics 1. Winter Quarter. *Three hours.*

3. **Money and Banking.**—Monetary and banking systems of the United States and other countries; stock exchanges, boards of trade and clearing houses. Holdsworth's *Money and Banking,* supplemented by lectures. Prerequisite: Economics 2. Spring Quarter. *Three hours.*

ENGLISH

1. **Freshman English I**—The aim of this course is to train students in the use of correct and forceful English. Weekly themes. Open to students who present 3 units in English for admission. Every Quarter. *Three hours.*

2. **Freshman English II.**—A continuation of course 1. Every Quarter. *Three hours.*

3. **Freshman English III.**—A continuation of course 2. Every Quarter. *Three hours.*

11. **Public address I.**—Studies and practical exercises to develop a true ideal of public speaking, control of feelings, voice and body, and power to think upon the feet. Practice of the fundamental laws of speech is given in story telling and in extemporaneous and impromptu speaking. Every quarter. *Three hours.*

PENMANSHIP

Modern business demands rapid, legible writing. A credit in penmanship is required of all commercial students. This credit can usually be obtained in a very short time, and should be completed during the first or second quarter.

1. **Drills.**—Practice in movement exercises, position at desk and correct penholding; developing the form of letters by analysis and illustrations on the blackboard; the combining of letters into words, sentences, and page work. Usually completed in one quarter. Every quarter.

2. **Special I.**—More advanced work in either the plain or the artistic writing, designed to assist the student to acquire a more free and graceful style of penmanship. Every quarter.

3. **Special II.**—A complete course in Old English, German Text and Round Hand. Every quarter.

SHORTHAND AND TYPEWRITING

Students are trained in the use of the dictaphone, mimeograph, adding machine, comptometer, and Burroughs calculator while following the work in shorthand and typewriting.

SHORTHAND

1. **Theory.**—A study of the principles of Gregg Shorthand, supplemented by drill work and reading from shorthand plates. Two hours daily. Gregg *Speed Studies;* supplementary work from *Progressive Exercises.* Every quarter.

2. **Theory and Dictation.**—Reading from plates later used as dictation matter at progressive rates; transcript work during last half of quarter. Two hours daily. Gregg *Speed Studies;* Gregg *Speed Practice; Gregg Writer Magazine;* supplementary dictation from Gardner's *Constructive Dictation.* Every quarter.

3. **Advanced Dictation.**—Dictation at the rate of 100 to 175 words per minute and transcription of notes; dictation from editorials, magazine articles, legal forms, court testimony and business literature. Two hours daily. Gregg, *Speed Practice;* Gardner's *Constructive Dictation;* Reigner's *Dictation in Business Literature.* Every quarter.

4. Practice.—Students assigned to do actual office work; classroom practice for attainment of high speed; dictation at the rate of 150 to 200 words per minute; court reporting; advanced phrasing. One hour daily. Gregg, *Advanced Phrase Book* and selected reporting material. Every quarter.

TYPEWRITING

1. Keyboard.—A study of the keyboard and the technique of the touch system; drills on words and sentences; finger exercises. Two hours daily. Text: *Rational Typewriting.* Every quarter.

Laboratory fee: $3.00.

2. Advanced Drills.—Finger exercises continued; exercises in letter writing; conventional forms of letter arrangement; dictation and repetition matter. Two hours daily. Every quarter.

Laboratory fee: $3.00.

3. Speed.—Development of higher speed and study of the fundamentals that combine speed and accuracy; dictation and repetition matter. Two hours daily. Every quarter. Credit, *three hours.*

Laboratory fee: $3.00.

4. Practice.—Students do actual work in offices so that they become experienced typists before leaving school. Speed copies furnished for classroom work. Two hours daily. Every quarter. Credit, *three hours.*

Laboratory fee: $3.00.

Credit not to exceed six hours in typewriting may be applied toward a certificate.

SHORT BUSINESS COURSE

For the benefit of students who desire to qualify for some specific clerical position in as short a time as possible or who are not qualified to enter the Commercial School because of a lack of high school training, the following one-year course is offered. No college credit is given. Credits not to exceed three units may apply toward a high school diploma in the University High School under the regulations of that school.

A certificate is given those who successfully complete the curriculum.

First Quarter

Bookkeeping 1	Letter Writing 1
Business Mathematics 1	Typewriting
	Penmanship

Second Quarter

Bookkeeping 2.	Letter Writing 2
Business Mathematics 2	Elective
	Penmanship

Third Quarter

Bookkeeping 3.	Public Speaking
Business Mathematics 3	Business Law

COURSES OF INSTRUCTION

Bookkeeping

Bookkeeping, 1, 2 and 3.—Consists of laboratory work similar to that outlined in Accounting 1, 2, and 3, taken up from a purely clerical standpoint, and is equivalent to bookkeeping offered in the best Business Colleges. Every quarter. *Five hours.*

English

Business Letter Writing and Spelling 1.—Especially arranged for those who have had no High School Rhetoric or English. It consists of a review of grammar as it pertains to business writing, followed by punctuation and the form and elements of good business letters. Two hours each week are devoted to spelling. Required of all students who have had no high school English. Every quarter as needed. *Five hours.*

Business Letter Writing and Spelling 2.—Proper forms, punctuation, choice of words, actual examination of good business letters, are featured in this course. Two hours a week are given to advanced spelling. Every Quarter. Five hours.

Business Law

Business Law.—A special course in business law is offered for students in this course. Spring Quarter; Summer Quarter. *Five hours.*

Business Mathematics

1. **Commercial Arithmetic I.**—Percentage; commission; aliquot parts; simple interest; negotiable paper; trade and cash discounts; supplementary drills in common and decimal fractions; rapid calculation. Fall Quarter; Winter Quarter.

2. **Commercial Arithmetic II.**—Profit and loss on trading; interest; compound interest; annual interest; present worth; bank dis-

count; partial payments; banks and banking; exchange; insurance; taxes; partnership. Winter Quarter; Spring Quarter.

3. **Commercial Arithmetic III.**—Depreciation; stocks; bonds; bond premium and discount; annuities; sinking fund; financing; graphs; involution; evolution; equation of accounts; savings banks; mensuration; progressions; logarithms. Spring Quarter; Summer Quarter.

For further information in regard to the Commercial School, address the Dean of the Commercial School, Valparaiso University, Valparaiso, Indiana.

THE SCHOOL OF PHARMACY

The School of Pharmacy graduated its first class in 1893. It offers a thorough and practical training in all subjects pertaining to pharmacy, and prepares students for the various duties of prescriptionists, manufacturing chemists, food and drug inspectors, analysts in pharmaceutical lines of research, and for general analytical work in various fields of industrial chemistry.

The stringent laws governing pharmacists in effect in many states, the Federal Pure Food and Drug Act and similar state statutes, and a general public awakening to the need for technical training, have made demands upon pharmacists which can be met only by college trained men. It is the aim and desire of the School of Pharmacy to promote the interests of pharmaceutical education, and to cooperate with other institutions, state boards of pharmacy, and pharmaceutical associations in the various states in maintaining a high standard for the profession.

EQUIPMENT

There are eight separate laboratories in which students of the School do their work. The main chemical laboratory is equipped for two hundred ninety students working at different hours. The special pharmacy laboratory similarly accommodates two hundred fifty students. The dispensing laboratory is furnished with twenty-two regular dispensing cabinets having the appurtenances of the modern type of prescription case. Cabinets extending around the room are filled with the shelf ware of a retail pharmacy. The materia medica room is fitted with individual desks and lockers for pharmacognosy, and contains also display cabinets of chemicals, crude drugs, and pharmaceutical apparatus. A good working library containing the latest publications and

the more important pharmaceutical journals is kept in the building.

The Drug Garden

The serious reduction in the supply of medicinal plants at the outbreak of the World War caused botanists of this country to make earnest study of the culture of important plants for medicinal use. As a small part of this movement the School began its medicinal plant garden. The enterprise received the assistance of the Bureau of Plant Industry of the United States and many important drug plants have been collected and planted. A great variety of conditions in the garden, from full sun to full shade, and many kinds of soil, have made possible a good collection of important plants. The garden has proved to be a valuable supplement to the equipment in pharmacy.

THE FACULTY

The Faculty consists of men of scientific attainment who have had experience in practical pharmacy. This assures those who attend the School that neither the theoretical nor the practical side of the profession will be overlooked.

ADVANTAGES

The School of Pharmacy, being located in a small city, is free from the influences which detract from a close attention to study. Thus more can be accomplished in a given time than is possible when the student's time is divided between school work and outside employment. It is not considered desirable for students to find employment in drug stores for any considerable part of their time while pursuing the work of the School. The practical side of pharmacy is in no way underrated, but it is to the student's best interest to give the greater part of his time to his studies. Living expenses being much lower than in a large city, students may complete a course of study with less actual outlay of money, even without

taking outside employment, than in the larger cities with such employment. There are, however, numerous opportunities for employment in the University or other establishments, whereby students may defray part of their expenses.

Study Trips

An annual inspection trip to manufacturing plants, chemical and pharmaceutical, is arranged for by the faculty, and all students are expected to attend. In this way practical information is acquired regarding the preparation of chemicals and galenicals upon a commercial basis. Itineraries are so arranged that several plants are visited each trip so that maximum benefit is obtained at minimum expense. Each year a visit is planned to the large pharmaceutical laboratories and manufacturing plants of Detroit or Indianapolis. Proximity to Chicago as well as to the great oil refineries, iron and steel producing plants, cement works, *etc.*, offers special inducement to those interested in the industrial applications of chemistry and pharmacy.

The Valparaiso Pharmaceutical Association

This organization has for its object the promotion of social fellowship and the stimulation of professional interest among the students of pharmacy. It is purely a student organization, and any student in the School is eligible for membership. The society meets twice monthly, and the programs are both interesting and instructive. In addition to student programs and lectures by the faculty, the Association is addressed during the year by men of prominence in pharmaceutical circles.

The student library in Science Hall was made possible by this society. A nucleus of one hundred dollars, originally donated from its treasury, has since been added to very materially, both by the Association and by the University, thus establishing a good working library to which the student has convenient access.

Positions

While the School does not attempt to provide positions for its graduates, an employment registry is maintained for the convenience of employers and students and graduates. The demand for registered graduates of the School is always in excess of the supply.

THE QUARTER SYSTEM

The year in the School is divided, as in the other schools of the University, into four quarters, each twelve weeks in length. The regular programs of study occupy the Fall, Winter and Spring Quarters, the Summer Quarter being devoted mainly to review work. New students who are candidates for degrees may enter only at the opening of the Fall Quarter. Special students and those admitted with advanced standing may enter at the beginning of any quarter. At least one quarter must intervene between the close of one year's work and the opening of the next. This rule applies to all courses in the School of Pharmacy.

CURRICULA OF STUDY

The School offers the following curricula:

1. A curriculum comprising two years of three quarters each (72 weeks), and leading to the degree of *Graduate in Pharmacy,* Ph. G.

2. A curriculum comprising three years of three quarters each (108 weeks), and leading to the degree of *Pharmaceutical Chemist,* Ph. C.

3. A curriculum comprising four years of three quarters each (144 weeks), and leading to the degree of *Bachelor of Science in Pharmacy,* B. S. (Phar.).

4. A one-year elective curriculum leading to no degree.

The Graduate in Pharmacy Course is designed to pre-

pare the student for the duties of the retail pharmacist. The curriculum is so arranged that the subjects first pursued prepare the student for all studies to be taken up in succeeding quarters. It is also arranged in conformity to the outline given in the Pharmaceutical Syllabus. In every instance, however, there is offered and required a greater number of hours than is indicated in the outline given by the National Committee. To a limited extent, students may elect branches in other schools of the University, without extra charge except for private lessons in music, public speaking, *etc.*

The Pharmaceutical Chemist Course has been arranged to furnish a more thorough training than is possible in the Ph. G. course of seventy-two weeks. Graduates of this course are well prepared for all kinds of pharmaceutical and general chemical work. They are especially qualified in the different phases of analytical chemistry which will enable them to fill positions in pharmaceutical laboratories, food laboratories, and in various manufacturing establishments.

The Bachelor of Science in Pharmacy Course is designed to add scholastic and additional business training to the work in pharmacy proper and is arranged to include the work of the Ph. C. course. The Ph. C. course gives ample training in chemistry, pharmacy, materia medica and closely allied scientific subjects. To this are added courses which aim to give a broad business foundation and fit the student for a successful career in the higher fields of business effort. The electives may be taken in Education if a teacher's training is sought, or in Zoology, Physics, Foreign Languages, or such other departments as may be desired.

The Elective Course. Students may enter this course at any time and select work for which they are fitted. The course affords opportunity for review to those who have been out of touch with school work for some time. Because of the fact that subjects may be selected with regard to the needs of the individual, it makes a course preparatory to board ex-

aminations. Non-registered pharmacists may avail themselves of this opportunity for reviewing particular subjects in which they feel themselves least qualified. Students enter the regular classes but college credit is not given unless the student has satisfied the requirement for admission.

ADMISSION OF STUDENTS

Men and women are admitted to all classes upon equal terms.

Applicants for admission to the first-year class as candidates for a degree must be at least seventeen years of age, must be of good moral character, and must present certificates of graduation from a recognized high school offering a four years' course, or the equivalent as shown by properly certified credentials. At least fifteen high school units are required, of which three units must be in English, two units in mathematics, one unit in one science. The remaining nine units may be selected from certain subjects ordinarily taught in high schools. Further information regarding admission is given in the first section of the General Catalog.

Students are not admitted as candidates for a degree subject to the removal of entrance conditions.

Though highly desirable it is not essential that students shall have had practical experience in a drug store before taking up the work of the pharmaceutical courses.

Admission With Advanced Standing

Credits are accepted from other schools of pharmacy whose admission requirements and character of work conform to the standards of this School. In order to be eligible to a degree, students admitted with advanced standing must have spent at least one year (three quarters) in residence and must have completed at least one year's work in this School. No allowance is made in the period of study for work not done in a recognized school of pharmacy.

DEGREES

The degree of Graduate in Pharmacy is conferred upon students who satisfactorily complete the seventy-two weeks' curriculum; the degree of Pharmaceutical Chemist, upon students who satisfactorily complete the one hundred eight weeks' curriculum; and the degree of Bachelor of Science in Pharmacy upon students who satisfactorily complete the required one hundred forty-four weeks' curriculum.

EXAMINATIONS

Examinations are given at the end of each quarter upon the subjects covered during that quarter. There are also final examinations in Chemistry, Materia Medica, and Pharmacy. The general regulations pertaining to examinations, grades, and credits are stated in the first section of the General Catalog.

THE UNIT OF CREDIT

In evaluating credits the unit for measuring the amount of work done is the *term-hour,* or *hour.* An hour is one 53-minute period (net) of prepared classroom work each week for one quarter. One hour of credit is given for three hours of laboratory work when outside preparation is not required, or for two hours when such preparation is required. In the School of Pharmacy from fifteen to eighteen hours, thus defined, constitutes full work for a quarter, designed to occupy the entire time of the student. For completion of the Ph. G. course, 98 hours are required; for completion of the Ph. C. Course, 145 hours; for completion of the B. S. (Phar.) Course, 191 hours.

PH. G. CURRICULUM

FIRST YEAR

Fall Quarter

Courses		Hours per week Class	Lab.	*Credit-hours*	Fee
Chem. 1	Inorganic Chemistry I - - - -	3	3	4	4.00
Phar. 30	Botany - - - - - - - - - - -	3	4	4	2.50
Phar. 12	Pharmaceutical Latin - - - -	3	..	3	.....
Phar. 1	Theoretical Pharmacy I - - -	3	3	4	4.00

Winter Quarter

Chem. 2	Inorganic Chemistry II - - -	3	3	4	4.00
Phar. 31	Histological Pharmacognosy -	2	6	4	2.00
Phys. 1	Physiology - - - - - - - -	3	3	4	2.00
Phar. 5	Manufacturing Pharmacy I - -	2	3	3	4.00

Spring Quarter

Chem. 3	Inorganic Chemistry III - -	2	..	2	.....
Chem. 14	Qualitative Analysis - - - -	2	6	4	4.00
Chem. 12	Manufacturing Chemistry - -	2	6	4	7.00
Phar. 4	Pharmaceutical Mathematics -	3	..	3	.....
Phar. 34	Materia Medica I - - - - - -	3	..	3	.....
	Total for year	34	37	46	

SECOND YEAR

Fall Quarter

Chem. 16	Quantitative Analysis - - - -	2	9	5	7.00
Phar. 35	Materia Medica II - - - - -	3	..	3	1.50
Phar. 6	Manufacturing Pharmacy II -	2	6	4	4.00
Phar. 14	Business Practice - - - - -	3	..	3	.....
Phar. 15	Business Law - - - - - - -	2	..	2	.....
Phar. 16	Pharmaceutical Jurisprudence -	1	..	1	.....

Winter Quarter

Chem. 4	Organic Chemistry I - - - -	3	4	4	4.00
Phar. 36	Materia Medica III - - - -	3	..	3	1.50
Chem. 19	Drug Assay - - - - - - - -	2	4	3	4.00
Phar. 2	Theoretical Pharmacy II - - -	3	..	3	.....
Phar. 7	Dispensing I - - - - - - - -	2	6	4	5.00

Spring Quarter

Chem. 5	Organic Chemistry II - - - -	3	4	4	4.00
Phar. 37	Materia Medica IV - - - -	3	..	3	1.50
Phar. 13	Commercial Pharmacy - - -	2	..	2	.....
Phar. 3	Theoretical Pharmacy III - -	5	..	4	.....
Phar. 8	Dispensing II - - - - - - -	2	6	4	6.00
	Total for year	41	39	52	
	Total for Ph. G. Course	75	76	98	

SUMMARY OF HOURS IN PH. G. CURRICULUM

First Year:	Classroom hours, 408	Laboratory, 444	Total, 852
Second Year:	Classroom hours, 492	Laboratory, 468	Total, 960
	Total for Ph. G. 900	912	1812

PH. C. CURRICULUM

For the first two years, this curriculum is identical with the Ph. G. curriculum. The final year is as follows:

THIRD YEAR

Fall Quarter

Courses		Hours per week Class	Lab.	*Credit-hours*	Fee
Chem. 17	Advanced Quantitative Analysis	2	9	5	$6.00
Chem. 18	Water Analysis	1	3	2	2.50
Phar. 9	Advanced Pharmacy I	1	4	3	4.00
Bact. 1	Bacteriology	2	6	4	5.00
Engl. 1	English I	3	..	3	.....

Winter Quarter

Chem. 6	Synthetic Organic Chemistry	1	6	3	7.50
Chem. 20	Analysis of Foods, I	2	6	4	5.00
Chem. 29	Urinalysis	1	3	2	2.00
Phar. 10	Advanced Pharmacy II	1	4	3	4.00
Engl. 2	English II	3	..	3	.....

Spring Quarter

Chem. 28	Electrochemistry	3	..	3	.....
Chem. 21	Analysis of Foods II	2	6	4	5.00
Phar. 11	Advanced Pharmacy III	1	4	3	4.00
Phar. 33	Microscopy	..	6	2	2.00
Engl. 3	English III	3	..	3	.....
		—	—	—	
	Total for year	26	57	47	
	Total for Ph. C. Course	101	133	145	

B. S. (PHAR.) CURRICULUM

For the first three years, this curriculum is identical with the Ph. C. curriculum. To a certain extent the student may elect his program for the final year. The following is suggested:

FOURTH YEAR

Fall Quarter

Courses		Hours per week Class	Lab.	*Credit-hours*	Fee
Com. 21	Business Psychology	3	..	3	.....
Econ. 1	Political Economy I	3	..	3	.....
Phys. 1	General Physics I	3	4	5	$4.00
	Foreign Language or Mathematics	5	..	5	.....

	Winter Quarter				
Com. 22	Psychology of Salesmanship -	3	..	3	.....
Econ. 2	Political Economy II - - - -	3	..	3	.....
Phys. 2	General Physics II - - - - - ..		6	2	6.00
	Foreign Language or Mathematics	5	..	5	.....
	Elective - - - - - - - - -	2	..	2	.....
	Spring Quarter				
Com. 23	Psychology of Advertising - -	3	..	3	.....
Phys. 3	General Physics III - - - -	3	4	5	4.00
	Foreign Language or Mathematics	5	..	5	.....
	Elective - - - - - - - - -	2	..	2	.....
		—	—	—	
	Total for year	40	14	46	
	TOTAL FOR B. S. (PHAR.) COURSE	141	147	191	

THE ELECTIVE CURRICULUM

This course comprises one year of nine months and is made up of courses selected to meet the need of each individual student. This does not imply that the student is to have less than a complete program for each day. He must take as many hours work per day as the regular student of pharmacy.

COURSES OF INSTRUCTION

CHEMISTRY

1. Inorganic Chemistry I.—A college course in Chemistry dealing with the theories and laws underlying the science. Class, 3 hours; laboratory, 3 hours. Smith's *College Chemistry.* Fall Quarter; Spring Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

2. Inorganic Chemistry II.—A continuation of Chemistry 1, treating of the acid forming elements. Class, 3 hours; laboratory, 3 hours. Smith's *College Chemistry.* Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

3. Inorganic Chemistry III.—This course completes the class room work in Inorganic Chemistry, and treats of the metals. Class, 2 hours. Smith's *College Chemistry.* Fall Quarter; Spring Quarter. *Two hours.*

4. Organic Chemistry I.—A general course in Organic Chemistry covering the points of physical chemistry essential to the subject and dealing with the aliphatic series. Class, 3 hours; laboratory, 3 hours. Prerequisite: Chemistry 3. Stoddard's *Organic Chemistry*. Winter Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

5. Organic Chemistry II.—The study of the aliphatic series is completed, and the remaining time is given to the aromatic series. Special attention is given to the needs of students of medicine and pharmacy. Class, 3 hours; laboratory, 3 hours. Prerequisite: Chemistry 4. Stoddard's *Organic Chemistry*. Spring Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

6. Synthetic Organic Chemistry.—The preparation and properties of important organic compounds are taken up in this work. The purpose of the course is practical training in the manufacture of certain organic chemicals. A good library gives the student an opportunity to develop along original lines. Class, 1 hour; laboratory, 6 hours. Prerequisite: Chemistry 5. Cohen's *Practical Organic Chemistry*. Winter Quarter. *Three hours.*

Laboratory fee, $7.50.

12. Manufacturing Chemistry.—A course devoted, primarily, to the needs of pharmacy and premedical students. Special stress is laid upon the inorganic chemicals of Pharmacopoeia. These are discussed from the standpoint of mineral sources, methods of manufacture, physical and chemical properties, identification and uses. The student has access to samples of important salts and is expected to be able to identify these by means of their physical properties. Many of these salts are manufactured in the laboratory work accompanying this course. Class, 2 hours; laboratory, 6 hours. Prerequisite: Chemistry 1, 2. Arny's *Principles of Pharmacy*. Spring Quarter. *Four hours.*

Laboratory fee: $7.00. Deposit: $1.00.

14. Qualitative Analysis.—An elementary course in chemical analysis dealing with solutions of common metallic salts, and the determination of positive and negative radicals. Class, 2 hours; laboratory, 6 hours. Prerequisite: Chemistry, 2. Timmon's *Qualitative Analysis*. Spring quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

16. Quantitative Analysis.—This is a course majoring gravimetric and volumetric work. The general processes of gravimetric analysis are studied, and volumetric analyses illustrating the processes of neutralization, precipitation, and oxidation and reduction are carried out. Class, 2 hours; laboratory, 9 hours. Prerequisite: Chem. 14. Mahin's *Quantitative Analysis.* Fall Quarter; Summer Quarter. *Five hours.*

Laboratory fee, $7.00. Deposit, $1.00.

17. Advanced Quantitative Analysis.—In this course is given the quantitative analysis of iron, steel, slag, cement, limestone, and the common ores. Technique is emphasized. The blowpipe is used to identify the ores analyzed. Class, 2 hours; laboratory, 9 hours. Prerequisite: Quantitative Analysis. White's *Metalurgical Analysis.* Fall Quarter. *Five hours.*

Laboratory fee, $6.00.

18. Water Analysis.—A laboratory course devoted to the chemical examination of water. Class, 1 hour; laboratory, 3 hours. Prerequisite: Quantitative Analysis. Mason's *Examination of Water.* Fall Quarter. *Two hours.*

Laboratory fee, $2.50.

19. Drug Assay.—A course devoted to the determination of the relative amounts in which the active or valuable constituents of medicinal substances are present This course supplements the work of the courses in qualitative and quantitative analysis. Inorganic and organic chemicals, and pharmaceutical preparations are examined. Considerable time is devoted to the detection, identification, and determination of alkaloids. Alkaloidal assays by official processes are performed on preparations of cinchona, nux vomica, belladonna, opium, ipecac, and other important drugs. Class, 2 hours; laboratory, 4 hours. *United States Pharmacopoeia.* Winter Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

20. Analysis of Foods. I.—This course is devoted to the examination of common foods with a view to detecting substitution and adulteration. General tests and processes of examination applicable to several classes of foods are first studied and later applied in actual practice upon unknown samples. Milk, cream, ice cream, butter, and other dairy products receive especial attention. Students not well advanced in chemistry should not elect this course inasmuch as it requires considerable skill in the technique of chemical manipulations. Class, 2 hours;

laboratory, 6 hours. Prerequisite: Chemistry 5, 14, 16. Leach's *Food Inspection and Analysis.* Winter Quarter. *Four hours.*

Laboratory fee: $5.00.

21. Analysis of Foods II (continuation of course 20).—Cereals, vinegars, spices, edible oils and fats, flavoring materials, alcoholic beverages, preservatives and coloring agents are studied. Use is made of the microscope, refractometer, and polariscope. Class, 2 hours; laboratory, 6 hours. Prerequisite: Chemistry 20. Leach's *Food Inspection and Analysis.* Spring Quarter. *Four hours.*

Laboratory fee: $5.00.

28. Electrochemistry.—A course in theoretical and applied electrochemistry, with emphasis on the technical side of the subject. A breakage fee is added to each laboratory fee. This will be returned less individual breakage. Class, 3 hours. Prerequisite: Chemistry 1, 2. Spring Quarter. *Three hours.*

29. Urinalysis.—A course in the chemical analysis of urine devoted to the detection and determination of both normal and abnormal constituents. Consideration is given to the microscopic appearance of the sediments or normal and pathological urines. Classroom, 1 hour; laboratory, 2 hours. Prerequisite: Chemistry 3, 14, 16. Heitzman's *Urinary Analysis.* Winter Quarter. *Two hours.*

Laboratory fee: $2.00.

Note.—Other courses in Chemistry which may be taken as electives are described in the announcements of the College of Arts and Sciences.

PHYSICS

1. General Physics I.—Mechanics, fluids, sound and heat. A college course designed for non-technical and pre-medical students. Class, 3 hours; laboratory, 3 hours. Prerequisite: One unit of algebra. Fall Quarter. *Four hours.*

Laboratory fee: $4.00.

2. General Physics II.—Light, electrostatics, electrokinetics and direct current machinery. Class, 3 hours; laboratory, 3 hours. Prerequisite: Phys. 1. Winter Quarter. *Four hours.*

Laboratory fee: $4.00.

3. General Physics III.—Alternating currents and modern physics. Class, 3 hours; laboratory, 3 hours. Prerequisite: Phys.* 2. Spring Quarter. *Four hours.*

Laboratory fee: $4.00.

Note.—Courses in Physics which may be taken as electives are described in the announcements of the College of Arts and Sciences.

BOTANY

1. Elementary Botany.—A study of the seed plants and representative forms of the lower groups. Special attention is given to the principles of plant life and their economic importance. Class, 3 hours; laboratory and field, 4 hours. Fall Quarter; Spring Quarter. *Four hours.*

Laboratory fee: $2.50.

PHYSIOLOGY

1. General Physiology.—An elementary course in anatomy, physiology and hygiene. Class, 3 hours; laboratory, 2 hours. Winter Quarter. *Four hours.*

Laboratory fee: $2.00.

BACTERIOLOGY

1. Bacteriology.—The preparation of culture media, the isolation and identification of a number of the non-pathogenic and pathogenic forms of micro-organisms, the bacteriology of water, milk and other foods sterilization, innoculation, infection, immunity, toxins, antitoxins, *etc.* Class, 2 hours; laboratory, 6 hours. Prerequisite Botany 1, Physiology 1, or Zoology 1. Fall Quarter; Summer Quarter. *Four hours.*

Laboratory fee, $5.00.

PHARMACY

1. Theoretical Pharmacy I.—A course intended to introduce to the student the subject of Pharmacy. The United States Pharmacopoeia and the National Formulary are thoroughly discussed with regard to history, scope and purpose. The Dispensatories are also considered. Then are taken up in turn the subjects of metrology, specific gravity, heat and its applications to pharmacy, distillation, methods of comminution, solution, crystallization, percolation, maceration and filtration. The various processes are illustrated in the laboratory work which accompanies the course. Class, 3 hours; laboratory, 3 hours. Arny's *Principles of Pharmacy.* Fall Quarter. *Four hours.*

2. Theoretical Pharmacy II.—This course covers the subject of galenical pharmacy. Each of the classes of pharmaceutical preparations, such as waters, solutions, infusions, decoctions, mucilages, mixtures, emulsions, syrups, wines, elixirs, spirits, tinctures, fluid-

extracts, extracts, oleoresins, collodions, oleates, liniments, ointments, plasters, suppositories, and others are taken up in turn. All of the Pharmacopoeial and many of the National Formulary preparations belonging to these classes are considered individually. Class, 3 hours. Arny's *Principles of Pharmacy*. Winter Quarter. *Three hours.*

3. Theoretical Pharmacy III.—A systematic study of the Pharmacopoeia and the National Formulary. Coming during the last term of work, it serves the purpose of a very thorough review not only of pharmacy proper, but of materia medica and pharmaceutical chemistry. Class, 5 hours. *United States Pharmacopoeia* and *National Formulary*. Spring Quarter. *Four hours.*

4. Pharmaceutical Mathematics.—A course which provides a thorough training in the calculations which necessarily accompany many pharmaceutical operations. The student is thoroughly familiarized with all of the systems of weights and measures used in this country. The problems presented also cover the subjects of specific gravity determinations by all of the important methods, conversion of thermometer readings, percentage solutions, alligation, etc. Class, 3 hours. Steven's *Arithmetic of Pharmacy*. Spring Quarter. *Three hours.*

5. Manufacturing Pharmacy I.—This course gives practice in the making of the simpler pharmaceutical preparations which involve no chemical reactions. Medicated waters, solutions, syrups, mucilages, ointments, pills, powders and preparations of other classes are made. Accuracy, care, and neatness are especially emphasized. Class, 2 hours; laboratory, 3 hours. Arny's *Principles of Pharmacy*. Winter Quarter. *Three hours.*

Laboratory fee: $4.00. Deposit: $1.00.

6. Manufacturing Pharmacy II (continuation of course 5).—Galenical preparations are taken up in the following order: Waters, spirits, solutions, mucilages, syrups, elixirs, glycerites, collodions, oleates, infusions, decoctions, tinctures, fluidextracts, mixtures, emulsions, liniments, and powders. From one to eight preparations of each class are made and their difficulties of manufacture, uses, and incompatibilities are discussed. Several alkaloids and resins are purified and volatile oils are distilled. Spirit of nitrous ether is manufactured and assayed by practicable methods. An individual quiz is given each student on each preparation as it is submitted for inspection. United States Pharmacopoeia, National Formulary, United States and National

Dispensatories are used as references. Class, 2 hours; laboratory, 6 hours. Arny's *Principles of Pharmacy.* Fall Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

7. **Dispensing I.**—A course dealing with the manufacture of such preparations as are commonly prepared extemporaneously at the prescription counter. Mixtures, ointments, emulsions, pills, plasters, decoctions, infusions, and preparations of many other types are compounded, packaged, labeled and wrapped with as much care as would be employed if the preparation were to be used. Practice is given in prescription reading, criticism, and compounding. Class, 2 hours; laboratory, 6 hours. Scoville's *Art of Compounding.* Winter Quarter. *Four hours.*

Laboratory fee: $5.00. Deposit: $1.00.

8. **Dispensing II.**—This course continues the work of Dispensing I, the greater portion of the work being practice in the compounding of prescriptions. The conditions under which each student works closely approximate those found in the average prescription pharmacy. The prescriptions compounded are carefully selected with a view of familiarizing the student with incompatibilities and other dispensing difficulties. The relation of the pharmacist to the physician and the public is discussed. Class, 2 hours; laboratory, 6 hours. Scoville's *Art of Compounding.* Spring Quarter. *Four hours.*

Laboratory fee: $6.00. Deposit: $1.00.

9. **Advanced Pharmacy I.**—This course continues the pharmaceutical work of the second year. Certain manufacturing operations requiring special apparatus are carried out. The preparation of some of the more uncommon pharmaceuticals is taken up and a few organic medicinal chemicals are manufactured. The current pharmaceutical journals are reviewed. Class, 1 hour; laboratory, 4 hours. Fall Quarter. *Three hours.*

Laboratory fee: $4.00.

10. **Advanced Pharmacy II.**—A continuation of Advanced Pharmacy I. The manufacturing of pharmaceutical preparations is continued. Cold creams, lotions, tooth preparations and other toilet preparations are made and packaged. Constant reference is made to the pharmaceutical library. Opportunities to do research work along pharmaceutical lines are offered. Class, 1 hour; laboratory, 4 hours. Winter Quarter. *Three hours.*

Laboratory fee: $4.00.

11. **Advanced Pharmacy III.**—This course concludes the work in pharmacy proper. It is devoted mainly to the dispensing difficulties

encountered in the more unusual prescriptions. Technique is emphasized. Class, 1 hour; laboratory, 4 hours. Spring Quarter. *Three hours.*

Laboratory fee: $4.00.

12. Pharmaceutical Latin.—A drill in pharmaceutical and medical terms, prescription reading and writing from the standpoint of the Latin commonly used. Muldoon's *Pharmaceutical Latin.* Fall Quarter. *Three hours.*

COMMERCIAL PHARMACY

13. Commercial Pharmacy.—Lectures on the subjects of clerks, clerkship and relation to employer; establishing a business; buying, selling and advertising methods; collections; manufacturing; relation to laity and to the physician; business and professional ethics. Class, 2 hours. Spring Quarter. *Two hours.*

14. Business Practice.—The student is taught to journalize business transactions, to post same, to close the ledger, and to keep a cash book and a set of books especially recommended for a retail drug store. The forms and methods of commercial correspondence are also taught. Class, 3 hours. Fall Quarter. *Three hours.*

15. Business Law.—The fundamental principles of the law governing business transactions with especial attention given to sales of personal property, negotiable instruments, partnership, corporations, insurance, real property, banking, and bankruptcy. Class, 2 hours. Spencer's *Commercial Law.* Fall Quarter. *Two hours.*

16. Pharmaceutical Jurisprudence.—A series of ten lectures supplementing course 15 and dealing particularly with the law affecting the pharmacist in the conduct of his business. Fall Quarter. *One hour.*

17. Commercial Pen Lettering.—Instruction and practice, with the ordinary commercial pen and special lettering pens. Optional.

PHARMACOGNOSY AND MATERIA MEDICA

32. Histological Pharmacognosy.—This work follows the course in Botany and deals with the microscopical study of drugs. Cells, tissues, hairs, granules, crystals, etc., as they occur in plant parts, in section, powder, and precipitate are studied under the microscope. By comparing samples with standards the student is taught to identify the histological elements as an aid to their identification and to the detection of adulterants. Class, 2 hours; laboratory, 6 hours. Mansfield's *Histology.* Winter Quarter. *Four hours.*

Laboratory fee: $2.00.

33. Microscopy.—A laboratory course devoted to the microscopical examination of powdered foods and drugs. Many crude vegetable drugs purchased by pharmacists are in a comminuted condition, and in this state adulterants are difficult to detect except by microscopical examination. Hence it becomes necessary that the pharmacist who would be assured of the quality of the vegetable drugs used in the manufacture of his preparations, be prepared to use the microscope intelligently. The ninth revision of the Pharmacopoeia devotes considerable space to the description of the appearance of powdered drugs as viewed under the microscope. Greenish, *Foods and Drugs.* Laboratory, 6 hours. Spring Quarter. *Two hours.*

Laboratory fee: $2.00.

34. Materia Medica I.—An introductory course to the study of materia medica. It deals mainly with drugs of inorganic origin. Official names, synonyms, physical and chemical properties, and likely adulterants of important chemicals receive attention. Training is given in identification by considering physical characteristics. The principles of pharmacology are defined and explained. The study of pharmacodynamics, therapy-dynamics, toxicology and posology begun in this course is continued throughout the materia medica courses. Class, 3 hours. Spring Quarter. *Three hours.*

35. Materia Medica II—The study of organic drugs. The vegetable drugs are taken up in the order of their botanical classification, commencing with those derived from the lower forms of plant life. Careful attention is given to methods of collection and preparation for market, commercial varieties, methods of detecting adulterants, active principles and properties of drugs. The school is equipped with a good collection of vegetable drugs, and students are provided with samples for examination and study. Culbreth's *Materia Medica and Pharmacology;* Squibb's *Atlas of Official Drugs.* Class, 3 hours. Fall Quarter. *Three hours.*

Laboratory fee: $1.50.

36. Materia Medica III.—The study of vegetable drugs is continued. Important non-official drugs as well as those that are official receive attention. Considerable time is devoted to microscopic pharmacognosy. The therapeutic properties, toxic effects, symptoms of poisoning, and methods of antidoting actively poisonous drugs are considered. Class, 3 hours. Winter Quarter. *Three hours.*

Laboratory fee: $1.50.

37. Materia Medica IV.—This course completes the study of the vegetable drugs. Drugs of animal origin are then taken up. Physio-

logical assays are demonstrated. The fundamental principles of bacteriology and immunology are considered. Vaccines, serums, and antitoxins are studied. Some of the important synthetic remedies are noted. Class, 3 hours. Spring Quarter. *Three hours.*

Laboratory fee: $1.50.

BUSINESS ADMINISTRATION

Com. 21. Business Psychology.—Nature of Psychology; operation of the adult mind. Among topics discussed are attention, memory, imagination, reason, instincts, emotion, and the will. Emphasis is placed upon business ethics and conduct. Fall Quarter. *Three hours.*

Com. 22. Psychology of Salesmanship.—General laws of psychology as applied to the problems of sales-management; analysis of the fundamental principle of salesmanship; mental law of sale; ability to understand human nature, to organize, manipulate and control it; "mutual profit" idea. Winter Quarter. *Three hours.*

Com. 23. Psychology of Advertising.—A knowledge of advertising has been recognized as advantageous, if not essential, to any general course in business training. It is the purpose of this course to set forth the chief psychological problems involved; the chief human needs and their satisfaction; the motives for buying, and the chief classes of advertisements which appeal to human instincts. Spring Quarter. *Three hours.*

ECONOMICS

1. Principles of Political Economy I.—Fundamental principles: production and exchange; the money and tariff systems considered from both the historical and the scientific viewpoints. Text, supplemented by lectures. Prerequisite: one year of college work. Fall Quarter. *Three hours.*

2. Principles of Political Economy II (continuation of course 1).—Distribution and consumption. Text, supplemented by lectures. Prerequisite: Economics 1. Winter Quarter. *Three hours.*

ENGLISH

1. English I.—The purpose of this course is to train the student to use correct and forceful English, to write clearly about the things he already knows, and to use books as a means of enlarging his knowledge and to increase his powers of expression. Class, 3 hours. Fall Quarter. *Three hours.*

2. English II.—A continuation of course 1. Class, 3 hours. Winter Quarter. *Three hours.*

3. English III.—A continuation of course 2. Class, 3 hours. Spring Quarter. *Three hours.*

MODERN LANGUAGES

The three terms of modern language accepted toward the Bachelor of Science (Pharmacy) degree must be in a single language. The aim of the work is to acquire sufficient information to enable one to read the scientific literature and text-books published in that language. Attention is called to the descriptions of the courses in French, Spanish, and German, given in the announcements of the College of Arts and Sciences.

For further information pertaining to the School of Pharmacy, address the Dean of the School of Pharmacy, Valparaiso University, Valparaiso, Indiana.

THE PRE-MEDICAL SCHOOL

GENERAL STATEMENT

The Pre-Medical School offers a two year curriculum in subjects preparatory to medicine and the medical sciences, which has been planned in compliance with the recommendations of the American Medical Association and is capable of variation to meet the requirements of different medical schools. The design of the courses presented is to lay a foundation in science and language for the study of medicine and to provide such general and classical culture as the practicing physician needs. Students who satisfactorily complete the pre-medical curriculum are admitted generally to the medical schools of the country.

The first year of the pre-medical curriculum meets the demands of dental schools requiring a one-year pre-dental course.

ADMISSION

The requirements for admission to the Pre-Medical School are the graduation from an accredited four-year high school with at least fifteen units, of which three must be in English, two in Foreign Language, one in Science, one in Algebra, and one in Geometry. The particulars of this requirement are stated in the first section of this Catalog.

THE UNIT OF CREDIT

Each course of instruction extends throughout one quarter (twelve weeks). In evaluating credits, the unit for the amount of work done in a course is the *term-hour* or *hour*. An *hour* is one 53-minute period (net) of prepared classroom work, or two or three such periods of supervised laboratory work each week for one quarter. Fifteen or sixteen hours, constitute full work.

A term-hour is equivalent to two-thirds of a semester-hour. Thus, a course of study pursued for three hours a week for

twelve weeks is equivalent to a course pursued two hours a week for eighteen weeks. The standard two-year pre-medical curriculum calls for sixty semester hours, or ninety term hours. It will be observed that the accompanying schedule calls for ninety-six term hours.

SUGGESTED SCHEDULE

FIRST YEAR		SECOND YEAR	
Courses	*Hours*	*Courses*	*Hours*
Fall Quarter		**Fall Quarter**	
Inorganic Chemistry I	4	Qualitative Analysis	4
Invertebrate Zoology I	4	Embryology (begun)	3
Freshman English I	3	General Physics I	4
Modern Foreign Language	5	Modern Foreign Language	5
Winter Quarter		**Winter Quarter**	
Inorganic Chemistry II	4	Organic Chemistry I	4
Invertebrate Zoology II	4	Embryology (completed)	3
Freshman English II	3	General Physics II	4
Modern Foreign Language	5	Modern Foreign Language	5
Spring Quarter		**Spring Quarter**	
Inorganic Chemistry III	2	Organic Chemistry II	4
Vertebrate Zoology	6	Psychology	3
Freshman English III	3	General Physics III	4
Modern Foreign Language	5	Modern Foreign Language	5

Note 1.—Many of the courses mentioned in this schedule are offered during the Summer Quarter also.

Note 2.—The schedule is designed to meet the entrance requirements of medical schools which demand two years of a modern language and one semester of Embryology, but modification may be made so as to fit the requirements of other medical schools.

PLAN OF INSTRUCTION

The work of the Pre-Medical School, while essentially in Arts and Sciences, is distinctly organized. Pre-Medical students meet for the most part in separate classes or sections and in many instances use special texts. All courses in the College of Arts and Sciences are open to election by pre-medical students so far as time permits upon the approval of the Dean.

COURSES OF INSTRUCTION

PHYSICS

Note.—The student may elect courses 1, 2 and 3 or courses 11, 12 and 13.

1. General Physics I.—Mechanics, fluids, sound and heat. A college course designed for non-technical and pre-medical students. Class, 3 hours; laboratory, 3 hours. Prerequisite: One unit of Algebra. Fall Quarter. *Four hours.*

Laboratory fee: $4.00.

2. General Physics II.—Light, electrostatics, electrokinetics and Direct Current Machinery. Class, 3 hours; laboratory, 3 hours. Prerequisite: Physics 1. Winter Quarter. *Four hours.*

Laboratory fee: $4.00.

3. General Physics III.—Alternating currents and modern physics. Class, 3 hours; laboratory, 3 hours. Prerequisite: Physics 2. Spring Quarter. *Four hours.*

Laboratory fee: $4.00.

Note.—Physics 1, 2 and 3 displace courses numbered 5, 6, 7 prior to the school year 1923-24. Courses formerly numbered 1 and 2 have been discontinued.

11. Technical Physics I.—Mechanics, molecular physics, hydrostatics and Wave Motion. A college course in Physics for technical students or those expecting to major in science. Class, 3 hours; laboratory, 4 hours. Prerequisite: Trigonometry. Fall Quarter. *Five hours.*

Laboratory fee: $4.00.

13. Technical Physics III (continuation of course 12).—Light; Heat, and Electricity; solution of practical problems. Class, 3 hours; laboratory, 4 hours. Prerequisite: Physics 11. Winter Quarter. *Five hours.*

Laboratory fee: $4.00.

12. Technical Physics II (continuation of course 11).—Sound, the spectroscope, lenses, color, optical instruments; solution of practical problems. Class, 3 hours; laboratory, 4 hours. Prerequisite: Physics 12. Spring Quarter. *Five hours.*

Laboratory fee: $4.00.

CHEMISTRY.

1. Inorganic Chemistry I.—A college course dealing with the theories and laws underlying the science. Class, 3 hours; laboratory,

3 hours. Smith's *College Chemistry*. Fall Quarter; Spring Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

2. Inorganic Chemistry II.—A continuation of Chemistry 1 treating of the acid-forming elements. Class, 3 hours; laboratory, 3 hours. Smith's *College Chemistry*. Winter Quarter; Summer Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

3. Inorganic Chemistry III.—This course completes the classroom work in Inorganic Chemistry, and treats of the metals. Class, 2 hours. Smith's *College Chemistry*. Fall Quarter; Spring Quarter. *Two hours.*

4. Organic Chemistry I.—A general course in Organic Chemistry covering the points of physical chemistry essential to the subject and dealing with the aliphatic series. Class, 3 hours; laboratory, 4 hours. Prerequisite: Chemistry 3. Stoddard's *Organic Chemistry*. Winter Quarter. *Five hours.*

Laboratory fee: $4.00. Deposit: $1.00.

5. Organic Chemistry II.—The study of the aliphatic series is completed and the remaining time is given to the aromatic series. Class, 3 hours; laboratory, 4 hours. Prerequisite: Chemistry 4. Stoddard's *Organic Chemistry*. Spring Quarter. *Five hours.*

Laboratory fee: $4.00. Deposit: $1.00.

14. Qualitative Analysis.—Emphasis on alkali metals and non-metallic radicals, especially in the presence of organic matter. Class, 2 hours: laboratory, 6 hours. Prerequisite: Chemistry 2. Spring Quarter. *Four hours.*

Laboratory fee: $4.00. Deposit: $1.00.

ZOOLOGY

1. General Zoology.—A study of the fundamentals of animal biology—life processes, life histories, embryology and evolution of animals—as illustrated by a few selected types. Material has been chosen which seems to be the best compromise between the type course and the course devoted entirely to principles. Classroom, 3 hours;

laboratory, 4 hours. Fall Quarter; Winter Quarter; Summer Quarter. *Five hours.*

Laboratory fee: $3.00.

2. Invertebrate Zoology I.—A systematic study of the classification, morphology, physiology and ecology of the invertebrate phyla below the Annelida. Representatives of the principal groups are studied and dissected in the laboratory. Classroom, 3 hours; laboratory, 3 hours. Fall Quarter. *Four hours.*

Laboratory fee: $3.00.

3. Invertebrate Zoology II.—A study of the Annelida, Mollusca and Arthropoda. Representatives of the principal groups are studied and dissected in the laboratory. Classroom, 3 hours; laboratory, 3 hours. Prerequisite: course 1 or course 2. Winter Quarter. *Four hours.*

Laboratory fee: $3.50.

4. Vertebrate Zoology.—A study of the comparative anatomy, development, phylogeny and classification of vertebrates. The laboratory work is strictly comparative and consists of the dissection and careful study of the amphioxus, dogfish, necturus, turtle, and cat. Classroom, 3 hours; laboratory, 7 hours. Prerequisite: at least one quarter of zoology. Spring Quarter. *Six hours.*

Laboratory fee: $5.00.

5. Entomology.—Particular attention is given to the economic relations of insects, how they affect cultivated plants and domestic animals, and their relation to man as disease carriers. Class, 2 hours; laboratory, 6 hours. Prerequisite: course 1. Summer Quarter. *Four hours.*

Laboratory fee: $2.50.

6. Genetics and Eugenics.—An elementary study of the cell from the standpoint of inheritance, the determination of sex, reversion, sex-linked inheritance, the improvement of human traits, mental defectives, etc. Lectures and recitations, 3 hours. Prerequisite: course 1. Winter Quarter. *Three hours.*

9. Embryology.—A general study of the embryology of vertebrates, with special reference to the chick and pig. Two quarter course. Class, 2 hours each quarter; laboratory, 3 hours each quarter. Prerequisite: course 4. Fall and Winter quarters. Credit for Fall Quarter is deferred until the course is completed. *Six hours.*

Laboratory fee: $3.50 for each quarter.

BOTANY

1. Elementary Botany.—A study of the roots, stems, leaves, flowers and fruits of the seed plants, and a few representative forms of the lower groups, with special reference to plants of medical value, and including the elements of botanical terminology and classification. Plants from the pharmacy garden supply much of the material. Classroom, 3 hours; laboratory and field, 3 hours. Spring Quarter. *Four hours.*

Laboratory fee: $2.50.

MATHEMATICS

1a. Algebra.—Open to students who have presented but one unit in algebra for entrance. Involution; evolution; surds; surd equations; quadratic equations; simultaneous equations involving higher degrees. Prerequisite, one unit in Algebra. Every Quarter. *Three hours.*

1b. Solid Geometry.—Open to students who have presented but one unit in geometry for entrance. Prerequisite: one unit in geometry. Every Quarter. *Three hours.*

3. Plane Trigonometry.—The use of the tables of the natural trigonometric functions and of the tables of logarithmic functions in the solution of triangles; emphasis given to the derivation of trigonometric formulas and the trigonometric identities. Some attention-tion is given to the application of the subject to navigation. Prerequisite, Math. 2. Every Quarter. *Three hours.*

5. Analytic Geometry.—This course covers plane analytic geometry to the higher plane curves. Prerequisite: Math. 3. Fall Quarter; Winter Quarter. *Five hours.*

6. Analytic Geometry II.—Completes plane analytic geometry and all of solid. Prerequisite: Math. 5. Winter Quarter; Summer Quarter. *Three hours.*

21. Differential Calculus.—A first course in calculus pursued as far as partial differentiation. Prerequisite: Math. 5. Fall Quarter; Summer Quarter. *Five hours.*

23. Integral Calculus.—The fundamental principles of integration: some special methods. Prerequisite: Math. 21. Winter Quarter; Summer Quarter. *Three hours.*

HISTORY

3. English Constitutional History.—An intensive study of the constitutional development of Great Britain as exemplified in her Great Charters, Parliamentary growth and party government. Winter Quarter; Spring Quarter. *Three hours.*

For other electives in history, see the announcements of the College of Arts and Sciences.

ENGLISH

1. Freshman English I.—The purpose of this course is the training of College Freshmen to write correctly and clearly about the things he already knows; to use books as a means of enlarging his knowledge, and to increase his powers of expression. Fall Quarter. *Three hours.*

2. Freshman English II.—A continuation of Course 1. Winter Quarter. *Three hours.*

3. Freshman English III.—A continuation of Course 2. Spring Quarter. *Three hours.*

4. Composition.—Exposition. Themes and discussions based on contemporary events. *Two hours.*

5. Short Story Writing.—Description and narration. Special attention is given to the writing of short stories. *Three hours.*

6. Argumentation.—Argument building; lectures and criticism by the instructor; written briefs and arguments; conferences; oral presentation of complete arguments. This course is the same as Public Speaking 21. *Three hours.*

FOREIGN LANGUAGES

Descriptions of courses in these subjects may be found in the announcement of The College of Arts and Sciences.

BUSINESS METHODS

1. Business Methods.—The elements of accounting, business law, and general business practice as applicable to the professional man, methods of developing professional clientele, and systems of keeping accounts. Spring Quarter. *Two hours.*

GENERAL COLLEGE COURSES

For descriptions of courses which may be taken as free electives, see the announcement of The College of Arts and Sciences.

For further information concerning the Pre-Medical School, address the Dean of the Pre-Medical School, Valparaiso, University, Valparaiso, Indiana.

THE UNIVERSITY HIGH SCHOOL

PURPOSE

Many young people who have not been situated where they could have high school advantages or who have been unable to complete their high school course find themselves limited in their opportunities for advancement or prevented from entering college by their lack of preliminary education. The University maintains a High School for such persons, and is authorized by the State of Indiana to issue official High School diplomas. It is not the purpose of the University High School to draw students of the ordinary high school age from their local schools. Students less than sixteen years of age are not admitted. Because of the greater age and maturity of students in the High School, most of whom are between eighteen and twenty-seven years of age, the character of the work done more nearly approximates college work than is possible in most secondary schools.

THE QUARTER SYSTEM

The School is in session during four quarters each year. A quarter is a term of instruction twelve weeks in length. Any three quarters constitute a school year (thirty-six weeks).

ADMISSION

Students may enter the University High School at the beginning of any quarter. Credits from accredited high schools and other standard institutions will be accepted. Other credits must be secured by resident work. No diploma will be granted without at least six months of resident work.

REQUIREMENTS FOR COMPLETION

Fifteen units or forty-five credits are required for graduation. A unit is the equivalent of thirty-six weeks' work in a subject, with recitations five times each week and the recitation period fifty-three minutes (net) in length. A credit is one-third of a unit.

Nearly all students take what is known as the Academic Curriculum, which prepares for college. The following is recommended:

1. English, 3 units.
2. Mathematics, 2 units. If preparing for Engineering, 3 units.
3. Foreign Language, 2 units. If preparing for Law, 3 units of Latin are desirable.
4. Science, 2 units. If preparing for Medicine, Dentistry, or Pharmacy, 4 units.
5. History, which may include Civics, 2 units.
6. Elective, sufficient to make a total of 15 units.

ACADEMIC CURRICULUM

For the guidance of students the following curriculum is suggested, in which the subjects are mentioned in the order in which they may be taken most advantageously. Students may enter at the beginning of any quarter and obtain substantially the same succession of studies.

FIRST YEAR

First Quarter	Second Quarter	Third Quarter
Rhetoric I	Classics I	Classics II
Algebra I	Algebra II	Algebra III
Ancient History I	Ancient History II	Ancient History III
Botany I	Botany II	Botany III

SECOND YEAR

First Quarter	Second Quarter	Third Quarter
Rhetoric II	Classics III	Classics IV
Latin I	Latin II	Latin III
Geometry I	Geometry II	Geometry III
Zoology I	Zoology II	Zoology III

THIRD YEAR

First Quarter	Second Quarter	Third Quarter
Rhetoric III	English Literature I	English Literature II
Cæsar I	Cæsar II	Cæsar III
U. S. History I	U. S. History II	Civics
Chemistry I	Chemistry II	Chemistry III

FOURTH YEAR

First Quarter	Second Quarter	Third Quarter
American Literature	Classics V	Classics VI
Physics I	Physics II	Physics III
Elective	Elective	Elective
Elective	Elective	Elective

Electives may be chosen from the following list:

1. Commercial Arithmetic.
2. Bookkeeping, Stenography and Typewriting.
3. Manual Training, Drawing, Music, Cooking, and Sewing.
4. Additional work in English, Mathematics, Foreign Language, Science and History.

COURSES OF INSTRUCTION

In each of the following courses there are five recitations each week throughout one quarter (twelve weeks). In laboratory courses two hours of laboratory work count as the equivalent of one hour of recitation. For each course a credit of one-third unit is given.

ENGLISH

The courses in English follow closely the work outlined by the Indiana State Board of Education. They are arranged in the order in which they should be taken. The first nine courses are required. A fourth year of work may be elected.

FIRST YEAR

Rhetoric I.—The elements of Rhetoric; punctuation, diction, sentence structure, paragraph writing, letter writing. Text: Lewis and Hosic.

Classics I.—Study: (1) Longfellow, *Tales of a Wayside Inn;* (2) Stevenson, *Treasure Island;* (3) Dickens, *Christmas Carol.*

Outside Reading: (1) Irving, *Tales of a Traveller;* Hawthorne,

Tanglewood Tales. (2) Twain, *Tom Sawyer;* Dickens, *Oliver Twist.* (3) Dickens, *Christmas Stories;* Mary Wilkins Freeman, *Christmas Jenny.*

Classics II.—Study: (1) Scott, *Lady of the Lake;* (2) Buroughs, *Birds and Bees;* (3) Homer, *The Odyssey.*

Outside Reading: (1) Scott *Marimon, Quentin Durward* (2) Bryant, *To a Waterfowl;* Warner, *My Summer in a Garden;* Church, *Story of the Iliad;* (3) Cooper, *Last of the Mohicans;* Defoe, *Robinson Crusoe;* Parkman, *The Oregon Trail.*

SECOND YEAR

Rhetoric II (second year).—A study of the principles of composition, the theme as a whole, the outline, prosody, description and narration. Long and short themes required. Text: Lewis and Hosic.

Classics III.—Study. (1) Shakespeare, *As You Like It;* (2) Heydrick, *Types of the Short Story;* (3) Burns, *The Cotter's Saturday Night* and other poems.

Outside Reading: (1) Shakespeare, *Much Ado About Nothing, Romeo and Juliet;* (2) Short Stories by Bret Harte, Mary Wilkins Freeman, Alice Brown, O. Henry or others; Irving, *Sketchbook, The Alhambra;* (3) Eliot, *The Mill on The Floss;* Dickens *Pickwick Papers.*

History of English Literature I.—Historical Survey of English Literature with emphasis on the periods, movements, literatary types, and the biographies and works of the greater writers up to 1700. Collateral readings.

THIRD YEAR

Rhetoric III (third year.)—Note taking, exposition and argument, long and short themes. Text: Lewis and Hosic (and other Rhetorics).

Classics IV.—Study: (1) Dickens, *A Tale of Two Cities;* (2) Tennyson, *Idylls of the King* (selected); Eliot, *Silas Marner.*

Outside Reading: (1) Hugo, *Toilers of the Sea;* Scott, *Guy Mannering.* (2) Tennyson, *Enoch Arden* and *The Princess;* Thackery, *Henry Esmond.* (3) Lytton, *Last Days of Pompeii;* Dickens, *Old Curiosity Shop;* Goldsmith, *Vicar of Wakefield.*

History of English Literature II.—A continuation of the preceding course, extending from 1700 to the present day.

FOURTH YEAR

Classics V.—Study: (1) Hawthorne, *Twice Told Tales.* (2) Scott, *Ivanhoe.* (3) Franklin, *Autobiography.* (4) Lincoln's *Speeches and Addresses.*

Outside Reading: (1) Hawthorne, *Twice Told Tales II;* Old Testament Narratives. (2) Scott, *Woodstock, Talisman.* (3) Keller, *Story of My Life;* Washington, *Up From Slavery.*

Classics VI.—Study: (1) Emerson, *Essay of Self-Reliance, Essay on Compensation.* (2) Shakespeare, *Macbeth.* (3) Milton, *Minor Poems.* (4) Burke, *Speech on Conciliation.*

Outside Reading: (1) Thereau, *Walden;* Holmes, *Autocrat of the Breakfast Table.* (2) Shakespeare, *Richard III;* Kingsley, *Westward Ho!;* Lowell, *The Present Crisis.* (3) Selections: Rienzi's *Address to the Romans,* King Henry's *Address to His Soldiers,* Webster's *Bunker Hill Oration.* (4) Churchill, *Crisis;* Washington, *Farewell Address;* Lowell, *Commemoration Ode.*

History of American Literature.—A brief historical survey, emphasizing periods, literary types, biographies and works of the greatest writers. Collateral readings.

HISTORY

Ancient History I.—Beginning with a study of prehistoric man, the course covers the intervening period of Oriental civilization to the close of the Alexandrian Age. Frequent reports and themes. Current reading.

Ancient History II.—A study of the rise and fall of Rome. Themes and frequent reports. Current reading.

Ancient History III.—Early activities of the German barbarians and the foundation of the European nations. Themes and frequent reports. Current reading.

Medieval History I.—History of Europe from the fifth century to the close of the crusades.

Medieval History II.—A construction of events in European history and a résumé of the political and social developments previous to the eleventh century.

Medieval History III.—History of Europe during the Renaissance and its transitional period to modern times.

Modern European History I.—Conditions in Western Europe and their culmination in a general revolt against despotism.

Modern European History II.—History of contemporary Europe during the Napoleonic Period and the Reconstruction.

Modern European History III.—General survey of the problems of Modern Europe which culminated in the World War.

U. S. History I.—Covers the period from the Discovery of America to the War of 1812. The more salient features emphasized are the discoveries, settlements, formation of the government, and establishment of a stable nation. Frequent reports.

U. S. History II.—Emphasizes the struggle for liberty on the high seas, national expansion, the rise of the slave issues, war with Mexico and the Civil War, Reconstruction, the second period of national expansion, the Spanish war, and the era of great international activities, including our part in the World War. Frequent reports.

Civics.—The aim is to lead the student to a deeper sense of citizenship through a careful study of the functions of our local and national governments. Written reports on each student's local government.

LATIN

Classes in High School Latin are usually organized each quarter and are taken in the following sequence:

Elementary Latin I.

Elementary Latin II.

Elementary Latin III.

Caesar I.—Book I, about thirty-five chapters.

Caesar II.—Book I, completed. Book II.

Caesar III.—Books III and IV.

Classes in High School Cicero and Virgil will be organized as required.

MATHEMATICS

High School Algebra I.—Elementary work to and including factoring.

High School Algebra II.—Fractions, simple and fractional equations, simultaneous equations.

High School Algebra III.—Involution, evoluton, graphs, quadratic equations, simultaneous quadratic equations.

High School Algebra IV.—Theory of exponents, surds, logarithms, progression and proportion. For this course one-half unit of credit is allowed.

Plane Geometry I.—Book I. Exercises.

Plane Geometry II.—Books II and III. Exercises.

Plane Geometry III.—Books IV and V, with original exercises in all the books of Plane Geometry.

Solid and Spherical Geometry.—Books VI to IX, inclusive, with exercises. This being a heavy course one-half unit is allowed.

Commercial Arithmetic I.—Review, with special stress on fractions and decimals.

Commercial Arithmetic II.—Percetage and its applications.

Commercial Arithmetic III.—Advanced course in Business Arithmetic.

PHYSICS

In each of the following courses there will be four hours of recitation and one two-hour period of laboratory work each week for twelve weeks. Accurate notes of the student's experiments are required.

High School Physics I.—A first course in Physics, comprising a study of the fundamental properties of matter, dynamics and mechanics of solids and fluids. Prerequisite: Algebra A. Every quarter.

Laboratory fee: $2.00.

High School Physics II (continuation of course I).—The topics pursued are waves, thermometry, expansion and transfer of heat energy. Prerequisite: Course A. Every quarter.

Laboratory fee: $2.00.

High School Physics III (continuation of course II.)—Selected studies in magnetism, electricity, sound and light. Prerequisite: Course B. Every quarter.

Laboratory fee: $2.00.

CHEMISTRY

In each of the following courses there will be three hours of recitation and two two-hour periods of laboratory work each week. Systematic notes are kept by the student of his individual work.

High School Chemistry I.—An introductory course designed to to give the student an understanding of the fundamental principles in relation to their practical application. Text: Hessler and Smith. This course should be taken the sixth or seventh quarter of High School work. Fall Quarter; Spring Quarter.

Laboratory fee: $3.00.

High School Chemistry II (continuation of course I).—Covers essentially the common metals. Text: Hessler and Smith. Winter Quarter; Summer Quarter.

Laboratory fee: $3.00.

High School Chemistry III.—An elementary course in Synthetic and Analytic Chemistry. Fall Quarter; Spring Quarter.

Laboratory fee: $3.00.

A breakage fee of $1.00 is added to each of the above fees. This is returned less the individual breakage at the close of each quarter.

BOTANY

The courses may be taken in any order of succession.

High School Botany I.—The study of type forms illustrating the morphology, physiology, and evolution of the groups of plants. Special attention is given to the evolution of the plant body, evolution of reproduction, and the various life processes. Classroom, 3 hours; laboratory, 4 hours. Fall Quarter; Spring Quarter.

Laboratory fee: $1.50.

High School Botany II.—The morphology and ecology of seed plants; the study of roots, stems, and leaves; the physiology of photosynthesis, transpiration and growth in higher plants. Classroom, 3 hours; laboratory, 4 hours. Winter Quarter; Summer Quarter.

Laboratory fee: $1.50.

High School Botany III.—A study of flowers, fruits and seeds, including the physiology of reproduction and germination; the identification of some of the more common weeds, trees and cultivated

plants. The latter part of the course consists of the agricultural applications of botany. Classroom, 3 hours; laboratory, 4 hours. Spring Quarter; Summer Quarter.

Laboratory fee: $1.50.

ZOOLOGY

The courses may be taken in any order of succession.

High School Zoology I.—A study of the Arthropoda. The meaning of adaptations, colorations and the various life processes, and an introduction to the study of evolution and heredity are given. Four animals are carefully studied in the laboratory. Classroom, 3 hours; laboratory, 4 hours. Fall Quarter; Summer Quarter.

Laboratory fee: $1.50.

High School Zoology II.—A study of all the important invetebrate phyla except the Arthropoda; also the origin of the Vertebrates and a classification of the animal kingdom. Laboratory work to illustrate. Classroom, 3 hours; laboratory, 4 hours. Prerequisite: course A. Fall Quarter; Winter Quarter.

Laboratory fee: $1.50.

High School Zoology III.—A study of Vertebrates with special attention given to comparative physiology and anatomy. The course includes the laboratory study of animals representing the principal groups. Classroom, 3 hours; laboratory, 4 hours. Winter Quarter; Spring Quarter.

Laboratory fee: $1.50.

COMMERCIAL SUBJECTS, VOCATIONAL SUBJECTS, ART AND MUSIC

Courses in Bookkeeping, Stenography, Typewriting, Manual Training, Cooking, Sewing, Music, Drawing and Painting are open to students of the High School. Credit not to exceed a total of three units may count toward graduation, provided the student offers at least twelve units in academic subjects.

For further information regarding the High School, address the Principal of the University High School, Valparaiso University, Valparaiso, Indiana.

THE UNIVERSITY ELEMENTARY SCHOOL

PURPOSE

An Elementary School is maintained because the University desires to assist all who are seeking an education. Thorough training in a few common branches provides in many cases a means to a higher education or to a success in life that would otherwise be unattainable. This training the Elementary School aims to supply. The School is in charge of skilled and experienced teachers, and as careful attention is given to the instruction as in the other schools of the University.

ADMISSION

The only requirement for admission to beginning classes is that the student be able to read in the common school books. For those who are not prepared to enter classes, private instruction is given until they are fitted to take class work. Students may enter at any time during the forty-eight weeks the School is in session, but are advised to enter at the beginning of a quarter if possible. Students less than sixteen years of age are not received.

FOREIGN STUDENTS

Special attention is given to the teaching of students whose native language is not English. The work is carefully graded, and the latest and best books for the teaching of English are used.

COURSES OF INSTRUCTION

Each course extends throughout one quarter (twelve weeks) with recitations five times a week.

Reading and Spelling.—The most careful attention is given to these subjects, upon which the future progress of the student often depends.

Language Lessons and Grammar.—The language lessons give especial attention to correct forms of expression and the choice of words and their meaning. There are three classes in English Grammar. One commences at the beginning and covers half the text. The second finishes the text. The third covers the entire text in twelve weeks.

Arithmetic.—Four courses in Arithmetic are offered: (1) A course in addition, subtraction, multiplication, division, and their applications. (2) Common fractions, decimal fractions, bills, statements, *etc.* (3) Denominate numbers, practical mensuration, *etc.* (4) Percentage, commercial discount, gain and loss, commission, interest, bank discount.

Geography.—Twenty-four weeks are given to this subject. Special attention is given to the physical features, the industrial and commercial rank, and the political and educational standing of each country.

United States History.—Two courses of twelve weeks each are given to this subject. The first covers the period from the Discovery of America to the close of Washington's administration. In this course special attention is given to the causes and results of the Revolution, and the formation of the Constitution. The second course deals with the period of the presidential administrations. The growth of political parties, industrial and territorial expansion, the Civil War, Reconstruction, and the recent industrial and territorial expansion are the topics especially emphasized.

Civics.—A careful analysis is made of the government and its relation to the citizen, with a view, in part, of providing accurate information upon which an appreciation of citizenship may rest.

Penmanship.—This branch is in charge of a specialist, with the assistance of capable instructors. The work is divided into two classes, drills and special. By taking the drills for one or two quarters, any student may become a competent penman. He may then enter the special if he chooses, and take advanced work either in plain or in artistic writing.

Letter Writing and Punctuation.—The instruction in these subjects includes a study of the correct forms of letters in business correspondence and social usage. Classes are formed at the beginning and the middle of each quarter.

For further information concerning the Elementary School, address the Principal of the University Elementary School, Valparaiso University, Valparaiso, Indiana.

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