Old School Catalog 1924-25, The School of Pharmacy

Valparaiso University
The School of Pharmacy

THIRTY-SECOND ANNUAL ANNOUNCEMENT, 1924-25

ISSUED IN THE MONTHS OF MAY, JUNE, JULY, SEPTEMBER, DECEMBER, MARCH, AND APRIL.

Entered as second-class matter, January 30, 1920, at the Post Office at Valparaiso, Indiana, under the Act of August 24, 1912. Acceptance authorized March 3, 1920, for mailing at the special rate of postage provided for by Section 1103, Act of October 3, 1907.

PUBLISHED BY VALPARAISO UNIVERSITY
VALPARAISO, INDIANA
Valparaiso University is not under the control or patronage of any fraternal order or religious denomination. It is not privately owned but is chartered under the laws of the State of Indiana and operated not for profit by a board of trustees as an educational institution for the general public.
UNIVERSITY CALENDAR

1924

FALL QUARTER

*September 29 and 30, Monday and Tuesday.* Registration for Fall Quarter, Arrearage Examinations. Entrance Examinations.
*October 1, Wednesday.* Instruction begins.
*October 6, Monday.* Founder’s Day.
*November 27, Thursday.* Thanksgiving Day: a holiday.
*December 15-18, Monday-Thursday.* Examinations.
*December 18, Thursday.* Fall Quarter ends.

1924-25

WINTER QUARTER

*December 29 and 30, Monday and Tuesday.* Registration for Winter Quarter.
*December 31, Wednesday.* Instruction begins.
*March 16-19 Monday-Thursday.* Examinations.
*March 19, Thursday.* Winter Quarter ends.

1925

SPRING QUARTER

*March 23 and 24, Monday and Tuesday.* Registration for Spring Quarter.
*March 25, Wednesday.* Instruction begins.
*June 7, Sunday.* Baccalaureate Address.
*June 8-11, Monday-Thursday.* Examinations.
*June 12, Friday.* FIFTY-SECOND ANNUAL COMMENCEMENT. Spring Quarter ends.

1925

SUMMER QUARTER

(Ten weeks, including Saturdays. Full twelve weeks’ credit given.)
*June 15 and 16, Monday and Tuesday.* Registration for Summer Quarter.
*June 17, Wednesday.* Instruction begins.
*July 4, Saturday.* Independence day: a holiday.
*August 17-20, Monday-Thursday.* Examinations.
*August 20, Thursday.* Summer Quarter ends.
The School of Pharmacy of Valparaiso University

SCHOOL YEAR, 1924-25

FACULTY

Horace Martin Evans, B. S., M. D., President of the University
Oliver Perry Kinsey, A. M., President Emeritus
Milo Jesse Bowman, A. B., A. M., LL.B., LL.D., Vice-President of the University
Hugh Cornelius Muldoon, B. S., Ph. G., Dean of the Faculty and Professor of Chemistry
Cyrus L. Cox, Ph. C., B. S., Professor of Pharmacy and Advanced Analytical Chemistry
George C. Schicks, Jr., Ph. C., Professor of Materia Medica and Pharmacognosy
J. Bernard Hershman, B. S., Assistant Professor of Physics.
Mason L. Weems, B. S., A. M., Professor of Botany and Physiology
Edgerton William Agar, B. S., LL.B., J. D., Professor of Business Law
Mervyn G. Humphrey, B. C. S., Professor of Accounting

Russel R. Battershell, B. S., Instructor in Chemistry

Zygmont J. Chlebowski, Assistant in Pharmacy
Armin H. Gaetke, Assistant in Pharmacy
Harrien Greenberg, Assistant in Organic Chemistry
Leon Hall, Assistant in Inorganic Chemistry
Thaddeus A. Krolicki, Assistant in Inorganic Chemistry
William D. MacKay, Assistant in Organic Chemistry
Thorn£ F. Randolph, Assistant in Inorganic Chemistry

Note.—Courses in Mathematics, English, Foreign Languages, etc., are offered by members of the Faculty of Arts and Sciences.
THE UNIVERSITY

Valparaiso University was founded in 1873 by Henry Baker Brown with the design of giving every person an opportunity to obtain a thorough and practical education at the least possible expense. Under the guidance of Mr. Brown, who served as its president until his death in 1917, and of Oliver Perry Kinsey, after 1881 its Vice President, the school became one of the largest institutions of learning in the United States. More than one hundred twenty-five thousand students from all parts of the world have participated in the educational opportunity which it extends.

The organization of the University comprises the College of Arts and Sciences, the School of Education, the School of Music, the Law School, the Engineering School, the Commercial School, the School of Pharmacy, the Pre-Medical School, the University High School, and the University Elementary School. Its equipment includes sixteen buildings, fifteen laboratories, capable of accommodating twelve hundred students daily, general and departmental libraries containing thirty-five thousand bound volumes, workshops for various departments, two large dining halls, and an athletic field.

The University is located at Valparaiso, Indiana, a beautiful residence city forty-four miles southeast of Chicago, in a rich farming country adjacent to the greatest industrial region of the middle west. The city is on the main lines of three railways, the Pennsylvania, the Grank Trunk, and the New York Central and St. Louis, making it easily accessible from all points. It has paved streets, cement walks, sewerage system, gas and electricity, interurban line and an excellent water supply. Chicago, Gary, Hammond, Indiana Harbor, South Bend, and other great industrial cities are within an hour's ride. Opportunities for employment at times when the student is not in residence are ordinarily abundant. Many students earn sufficient during the summer to pay a great part of their expenses for a year. In-
spection trips to the great industries of the Calumet region in Indiana and to Chicago, Detroit, and Indianapolis form a part of the work in the technical courses of instruction.

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. This curriculum will be withdrawn in 1925.

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 another section of this Bulletin.

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, 100 hours are required; for completion of the Ph. C. Course, 147 hours; for completion of the B. S. (Phar.) Course, 192 hours.

PH. G. CURRICULUM

FIRST YEAR

Fall Quarter

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hours per week</th>
<th>Credit-hours</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem. 1 Inorganic Chemistry I</td>
<td>3 Class 3 Lab. 3</td>
<td>4</td>
<td>4.00</td>
</tr>
<tr>
<td>Phar. 30 Botany</td>
<td>3 Class 4 Lab. 4</td>
<td>2.50</td>
<td></td>
</tr>
<tr>
<td>Phar. 12 Pharmaceutical Latin</td>
<td>3</td>
<td>3</td>
<td>......</td>
</tr>
<tr>
<td>Phar. 1 Theoretical Pharmacy I</td>
<td>3</td>
<td>4</td>
<td>4.00</td>
</tr>
<tr>
<td>Semester</td>
<td>Course</td>
<td>Credits</td>
<td>Hours</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Winter Quarter</td>
<td>Chem. 2 Inorganic Chemistry II</td>
<td>3</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 31 Histological Pharmacognosy</td>
<td>2</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>Phys. 1 Physiology</td>
<td>3</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 5 Manufacturing Pharmacy I</td>
<td>3</td>
<td>4.00</td>
</tr>
<tr>
<td>Spring Quarter</td>
<td>Chem. 3 Inorganic Chemistry III</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chem. 14 Qualitative Analysis</td>
<td>2</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Chem. 12 Manufacturing Chemistry</td>
<td>2</td>
<td>7.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 4 Pharmaceutical Mathematics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph. 34 Materia Medica I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total for year</td>
<td>34</td>
<td>37</td>
<td>46</td>
</tr>
<tr>
<td>SECOND YEAR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall Quarter</td>
<td>Chem. 16 Quantitative Analysis</td>
<td>2</td>
<td>7.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 35 Materia Medica II</td>
<td>3</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td>Ph. 6 Manufacturing Pharmacy II</td>
<td>2</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 14 Business Practice</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph. 15 Business Law</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph. 16 Pharmaceutical Jurisprudence</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Winter Quarter</td>
<td>Chem. 4 Organic Chemistry I</td>
<td>3</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 36 Materia Medica III</td>
<td>3</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td>Chem. 19 Drug Assay</td>
<td>2</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 2 Theoretical Pharmacy II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph. 7 Dispensing I</td>
<td>2</td>
<td>5.00</td>
</tr>
<tr>
<td>Spring Quarter</td>
<td>Chem. 5 Organic Chemistry II</td>
<td>3</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Ph. 37 Materia Medica IV</td>
<td>3</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td>Ph. 13 Commercial Pharmacy</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph. 3 Theoretical Pharmacy III</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph. 8 Dispensing II</td>
<td>2</td>
<td>6.00</td>
</tr>
<tr>
<td>Total for year</td>
<td>41</td>
<td>39</td>
<td>54</td>
</tr>
<tr>
<td>Total for Ph. G. Course</td>
<td>75</td>
<td>76</td>
<td>100</td>
</tr>
</tbody>
</table>

**Summary of Hours in Ph. G. Curriculum**

<table>
<thead>
<tr>
<th>Year</th>
<th>Classroom hours</th>
<th>Laboratory</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>408</td>
<td>444</td>
<td>852</td>
</tr>
<tr>
<td>Second Year</td>
<td>492</td>
<td>468</td>
<td>960</td>
</tr>
<tr>
<td>Total for Ph. G.</td>
<td>900</td>
<td>912</td>
<td>1812</td>
</tr>
</tbody>
</table>
## 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

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hours per week</th>
<th>Credit-hours</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chem. 17</strong> Advanced Quantitative Analysis</td>
<td>2</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td><strong>Chem. 18</strong> Water Analysis</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>Phar. 9</strong> Advanced Pharmacy I</td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Bact. 1</strong> Bacteriology</td>
<td></td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td><strong>Engl. 1</strong> English I</td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

#### Winter Quarter

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hours per week</th>
<th>Credit-hours</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chem. 6</strong> Synthetic Organic Chemistry</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td><strong>Chem. 20</strong> Analysis of Foods, I</td>
<td></td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td><strong>Chem. 29</strong> Urinalysis</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>Phar. 10</strong> Advanced Pharmacy II</td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Engl. 2</strong> English II</td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

#### Spring Quarter

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hours per week</th>
<th>Credit-hours</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chem. 28</strong> Electrochemistry</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Chem. 21</strong> Analysis of Foods II</td>
<td></td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td><strong>Phar. 11</strong> Advanced Pharmacy III</td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Phar. 33</strong> Microscopy</td>
<td></td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td><strong>Engl. 3</strong> English III</td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total for year 26 57 47

Total for Ph. C. Course 101 133 147

### 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

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hours per week</th>
<th>Credit-hours</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Com. 21</strong> Business Psychology</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Econ. 1</strong> Political Economy I</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Phys. 1</strong> General Physics I</td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language or Mathematics</td>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
### Winter Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com. 22 Psychology of Salesmanship</td>
<td>3</td>
</tr>
<tr>
<td>Econ. 2 Political Economy II</td>
<td>3</td>
</tr>
<tr>
<td>Phys. 2 General Physics II</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language or Mathematics</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6.00</td>
</tr>
</tbody>
</table>

### Spring Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com. 23 Psychology of Advertising</td>
<td>3</td>
</tr>
<tr>
<td>Phys. 3 General Physics III</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language or Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4.00</td>
</tr>
</tbody>
</table>

Total for year: 42 credits

Total for B. S. (Phar.) Course: 143 credits

---

**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 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. Special attention is given to the needs of students of medicine and pharmacy. Class, 3 hours; laboratory, 4 hours. Prerequisite: Chemistry 4. Stoddard's *Organic Chemistry*. Spring Quarter. *Five 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. Timmons'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 Metallurgical 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. Three 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;
1924-25 Courses of Instruction

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. Class, 3 hours. Prerequisite: Chemistry 14. 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, inoculation, 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, colloidions, 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 courses 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.

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.

**GENERAL INFORMATION**

**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.

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.

STUDIES IN OTHER SCHOOLS

Students registered in one school may, with the consent of their Dean, take a limited amount of work in any other school if, in the judgment of the professor in charge, they are prepared for such work.

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.

EXPENSES

Especial attention is called to the fact that the total cost of tuition, board, furnished room, heat, light, student newspaper, library facilities, and admission to athletic contests is between $10 and $11 per week. In the great majority of institutions the cost of board and room alone is considerably more than this amount.

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 $50 per quarter (12 weeks), payable at the beginning of the quarter. Payment of this fee entitles the student to tuition, the use of the libraries, a subscription to the university student newspaper, and admission to all intercollegiate athletic contests. In case of withdrawal the fee is not refunded but is good for attendance at any later time.

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.

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.

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.

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 $5 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 $54—a rate of $4.50 per week. For the Summer Quarter (10 weeks) the cost is one-sixth less. When paid by the week the price is $5 per week. Private boarding halls give good board at similar rates. The cost of board at restaurants is somewhat higher.

GENERAL EXPENSES.—Matters of personal expenditure vary with the means and habits of the individual. Except for books, these need not be more than at home.

The average expenditure of a student, for all purposes, during a year of 36 weeks is between $500 and $650.

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 been made not 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 extravaganice 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.

For further information pertaining to the School of Pharmacy, address the Dean of the School of Pharmacy, Valparaiso University, Valparaiso, Indiana.
DRUG GARDEN
DEGREES, 1922-23

DEGREE OF PHARMACEUTICAL CHEMIST

Burkholder, Charles R.
Diehl, Nevin E.
Foster, Wilburn E.
Gleich, Clarence P.
McDonald, Hermon
Quong, Louis S.

DEGREE OF GRADUATE IN PHARMACY

Adkins, Ceron
Arnold, Leonard E.
Behn, Elmer A.
Boutari, Elias G.
Burkholder, Charles R.
Collin, Leon
Diehl, Nevin E.
Dluski, John J.
Ellenberg, Jacob
Ellis, Maurice
Foster, Wilburn E.
Handy, Richard F.
Kalejta, Andrew
Kaplovitz, Benjamin P.
Karzen, Harry
Kazlauskas, Jonas G.
Kevorkian, George
Kreines, Abraham
Lulinski, Sylvester E.
McDonald, Hermon
Rogers, John T.
Sierks, Edward J.
Smith, James M.
STUDENTS, 1923-24

FOURTH YEAR

Battershell, Russell R ........................................ Hector, Minn.
Foster, Wilburn E ........................................ Scottville, Ky.
Gleich, Clarence P ........................................ Nokomis, Ill.
McDonald, Hermon ........................................ Hegira, Ky.
Waggoner, Donald ........................................ Dewitt, Iowa

THIRD YEAR

Liph, David R ................................................ New York, N. Y.
Strauss, Anna E ........................................ New York N. Y.
Watson, Ruth ................................................ Norton, Va.

SECOND YEAR

Arres, George R ........................................ Manteno, Ill.
Atlas, Mrs. Herman ........................................ Valparaiso, Ind.
Bezdek, Joseph L ........................................ Chicago, Ill.
Blake, George ........................................ Gardner, Ill.
Boryczko, Joseph L ........................................ Valparaiso, Ind.
Brickley, John R ........................................ Logansport, Ind.
Brickley, Mrs. Thelma ..................................... Logansport, Ind.
Comstock, Lawrence D .................................... Buffalo Lake, Minn.
Deacon, Harold S ........................................ Gary, Ind.
Duffy, Matthias W ........................................ Chicago, Ill.
Ellis, Paul R ........................................ Valparaiso, Ind.
Epstein, Joseph ........................................ Chicago, Ill.
Evangelista, Joseph A ..................................... Chicago, Ill.
Forszt, Anthony A .......................................... Indiana Harbor, Ind.
Gaetke, Armin H ........................................ Mankato, Minn.
Goldenberg, Samuel ....................................... Chicago, Ill.
Gomes, Elmer F ........................................ Springfield, Ill.
Grandgeorge, Vernon H ................................ Somonauk, Ill.
Henrich, Karl J ........................................ Lake Mills, Wis.
Hines, James V ........................................ Old Forge, Pa.
Horwitz, Edward A ....................................... Chicago, Ill.
Hubert, George J ........................................ Gladstone, Mich.
Ivy, Theophilus F ........................................ Waco, Texas
Kilgard, Ross M ........................................ Clear Lake, Minn.
Kinnee, Lloyd B ........................................ Kenosha, Wis.
Kotzan, Charles J ........................................ East Chicago, Ind.
Lidgard, Ralph E ........................................ Bladen, Neb.
<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linovitz, Jacob</td>
<td>New York, N. Y.</td>
</tr>
<tr>
<td>Lunz, Elmer J.</td>
<td>Steger, Ill.</td>
</tr>
<tr>
<td>Martin, Conrad L.</td>
<td>St. Anne, Ill.</td>
</tr>
<tr>
<td>McDermott, Julian L</td>
<td>Cullom, Ill.</td>
</tr>
<tr>
<td>Michael, Denzil P.</td>
<td>Fairview, W. Va.</td>
</tr>
<tr>
<td>Mitnick, Morris</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>Mossman, Earl E.</td>
<td>Searcy, Ark.</td>
</tr>
<tr>
<td>Mossman, Vernon C.</td>
<td>Mt. Vernon, Ind.</td>
</tr>
<tr>
<td>Murphy, David H.</td>
<td>Mt. Greenwood, Ill.</td>
</tr>
<tr>
<td>Parker, John W.</td>
<td>Ora, Ind.</td>
</tr>
<tr>
<td>Perper, Abraham</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>Pigurski, Samuel I</td>
<td>Russia</td>
</tr>
<tr>
<td>Pisano, James J.</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>Rose, Jacob A.</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>Saskotos, Frank J.</td>
<td>Lithuania</td>
</tr>
<tr>
<td>Scholes, Clarence H</td>
<td>Bradford, Ill.</td>
</tr>
<tr>
<td>Singer, Herbert I.</td>
<td>Scranton, Pa.</td>
</tr>
<tr>
<td>Smith, Sara D.</td>
<td>Calgary, Alberta</td>
</tr>
<tr>
<td>Stawicki, Mrs. Flora</td>
<td>Hammond, Ind.</td>
</tr>
<tr>
<td>Stoltz, Ewald W.</td>
<td>Wanatah, Ind.</td>
</tr>
<tr>
<td>Thompson, Bryan M.</td>
<td>Mabel, Minn.</td>
</tr>
<tr>
<td>Tomaso, Salvatore P</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>Tulsy, Anthony A.</td>
<td>Benton Harbor, Mich.</td>
</tr>
<tr>
<td>Waite, Harold F.</td>
<td>Hoxie, Kan.</td>
</tr>
<tr>
<td>Wojahn, Elmer J.</td>
<td>Wanatah, Ind.</td>
</tr>
<tr>
<td>Wolfson, Saul A.</td>
<td>Chicago, Ill.</td>
</tr>
</tbody>
</table>

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battershell, Almeda</td>
<td>Hector, Minn.</td>
</tr>
<tr>
<td>Culbertson, Glen A.</td>
<td>Pauley, Ky.</td>
</tr>
<tr>
<td>Davidson, Benjamin J</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>Fox, Max</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>Gelb, Edward A.</td>
<td>Old Forge, Pa.</td>
</tr>
<tr>
<td>Gerken, Pearl A.</td>
<td>Vandalia, Ill.</td>
</tr>
<tr>
<td>Graheck, Mrs. Katharine</td>
<td>Valparaiso, Ind.</td>
</tr>
<tr>
<td>Jennings, Glen S.</td>
<td>Monaret, Va.</td>
</tr>
<tr>
<td>Kilgard, Ross M.</td>
<td>Clear Lake, Minn.</td>
</tr>
<tr>
<td>MacLean, Angus D.</td>
<td>Winnipeg, Man.</td>
</tr>
<tr>
<td>Miller, Lester D.</td>
<td>Gilman, Ill.</td>
</tr>
<tr>
<td>Ostrowski, Irene J</td>
<td>Hammond, Ind.</td>
</tr>
</tbody>
</table>
School of Pharmacy

1924-25

Roach, Dudley S.......................................................... Richmond, Ky.
Sabel, Alvin S............................................................ Chicago, Ill.
Spangler, Edmund F..................................................... Zanesville, O.
Stokes, Wesley H........................................................ Ashtabula, O.
Thompson, Ethol C....................................................... Cedarville, Ill.
Wolpert, Walter J....................................................... Elizabeth, Ind.
Zelen, John B............................................................. Chicago, Ill.
Zimring, Irving J........................................................ Chicago, Ill.

UNCLASSIFIED

Lechlinski, Martha..................................................... Parsons, Pa.
Michalek, Joseph E..................................................... Minneapolis, Minn.
Sakowsky, Ralph F..................................................... Chicago, Ill.
Simon, Louis J............................................................ Chicago, Ill.
Wieczorek, Miecsyslaw J.............................................. Chicago, Ill.
The Valparaiso University School of Pharmacy is one of the forty-eight members of the American Conference of Pharmaceutical Faculties. The object of this conference is to promote the interests of pharmaceutical education. Through its influence educational requirements for entrance to schools of pharmacy and for graduation therefrom have been advanced from time to time. Several states by law or by ruling of Boards of Pharmacy recognize the standards of the conference.

In order to encourage research in Pharmacy Mr. Samuel W. Fairchild of New York City offers annually a scholarship amounting to $300, awarded by competitive examination. High school graduates who have successfully completed their first year's work in a school of pharmacy which is a member of the American Conference of Pharmaceutical Faculties are permitted to compete. Each school is limited to two candidates.

This School is registered by the New York State Department of Education and by the Boards of Pharmacy of Ohio and other states that maintain a registration bureau. Its diploma is recognized in all states.

Especial attention is directed to the fact that the two-year course in Pharmacy leading to the degree of Graduate in Pharmacy will be withdrawn in September 1925. The entering class of October 1924 is the last class that will be accepted for the two-year course.

This advance in pharmaceutical education is general throughout the United States. All schools of pharmacy which are members of the American Conference of Pharmaceutical Faculties either have already taken this step or will do so at the stated time.
VALPARISO UNIVERSITY
Valparaiso, Indiana

College of Arts and Sciences. Literary and Scientific Curricula—Curricula in Public Speaking and Dramatic Art, 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.


Law School. Three year curriculum—Case method of instruction—Practice work and practice courts a feature—Prepares for the practice of law in all states.

Engineering School. Standard curricula in civil, mechanical, and electrical engineering. Theory combined with practice in field, shop, laboratory, and drafting room.

School of Pharmacy. Two, three, and four year curricula—Trains for the duties of prescriptionists, manufacturing chemists, food and drug inspectors, analysts, and for general industrial chemistry.

Commercial School. Two, three and four year curricula in accounting, business administration, business law, commerce, economics—C. P. A. courses—Electives in the College of Arts and Science—Short business course.

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.

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