

THE DEPARTMENT OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

[EDITOR'S NOTE.—At a time when we have in mind the expansion of the pharmaceutical curriculum any discussion of that subject will be welcomed. A committee of the Pharmacy Faculty of the University of Michigan has been working upon their own curriculum with the idea of making it at the same time more effective and more flexible. The result of that effort is contained in the article by Professor Charles H. Stocking, published in the present issue.

RUFUS A. LYMAN, *Chairman and Conference Editor.*]

THE REVISED CURRICULA OF THE UNIVERSITY OF MICHIGAN COLLEGE OF PHARMACY.

BY CHARLES H. STOCKING.

During more than fifty years of its existence, the College of Pharmacy of the University of Michigan has endeavored to serve all branches of the profession to the greatest possible advantage. Its graduates are to be found holding positions of trust and responsibility in widely divergent fields. Those who have gone out from the three-year, or Pharmaceutical Chemist course, have for the most part entered retail pharmacy. The four-year, or Bachelor of Science course, has contributed its alumni to analytical, manufacturing, teaching, journalistic and other important fields. Both of these courses have in the past been very rigid, offering little opportunity for elective studies. Thus, students who planned to take up one particular line of work after graduation were compelled by the inflexibility of the curriculum to elect practically the same studies as others who might be planning for a lifework of quite a different character. Realizing that this condition existed and believing that it would be advisable to liberalize the curricula for both degrees offered, the faculty began considering the matter more than a year ago.

As a result of frequent informal discussions over an interval of several months, the appointment of a special committee was authorized at a meeting of the faculty of the college in June 1922. This committee was appointed by Acting Dean Edward H. Kraus at the opening of the current college year and was instructed to make a searching study of the problem. The committee consisted of two representatives from Pharmacy, two from the Department of Chemistry and one representative from the Medical School. The personnel of the committee was as follows: Chairman, C. C. Glover, Secretary of the College of Pharmacy and Associate Professor of Pharmacognosy; William J. McGill, Instructor in Pharmacy, Dr. Roy K. McAlpine, Assistant Professor of Analytical Chemistry; Dr. Chester S. Schoepfle, Assistant Professor of Organic Chemistry; and Dr. Herbert W. Emerson, Assistant Professor of Bacteriology and Head of the Pasteur Institute. The Committee presented a preliminary report in January of this year. This report was discussed in great detail and a number of recommendations were made by the faculty for consideration by the committee. At a subsequent faculty meeting held in March the final report of the committee was submitted. After a most careful consideration of the whole matter and following a very thorough study of the proposed revisions of the curricula, the faculty recommended them to the Board of Regents for adoption. On March 29, 1923, the Regents took formal action adopting the new curricula.

Under the new plan the three-year curriculum leading to the degree of Pharmaceutical Chemist is designed primarily for those students who wish to prepare for Retail or Commercial Pharmacy and differs but slightly in its general character from the old one. However, the number of hours required for graduation has been increased from 93 to 94, and includes the addition of a very desirable course in the History of Pharmacy.

The courses of study included in the three-year curriculum with the semester credit hours for these courses are as follows:

FIRST YEAR.

First Semester.		Second Semester.	
General Chemistry	4 hours	General Chemistry	4 hours
English	4 hours	Manufacturing Pharmacy	4 hours
Pharmaceutical Mathematics	4 hours	Hygiene	3 hours
Botany	4 hours	Commercial Pharmacy	2 hours
		Elective Subject	

SECOND YEAR.

First Semester.		Second Semester.	
Crystallographic and Optical Properties of Chemicals	2 hours	Organic Chemistry	4 hours
Qualitative Analysis	5 hours	Organic Chem. Laboratory	2 hours
Principles of Economics I	3 hours	Principles of Economics II	3 hours
Manufacturing Pharmacy	4 hours	Pharmacognosy	5 hours
Elective Subject		Alkaloids and Synthetics	2 hours

THIRD YEAR.

First Semester.		Second Semester.	
Prescription Pharmacy and Dispensing	3 hours	Prescription Pharmacy and Dispensing	3 hours
Pharmaceutical Chemistry	3 hours	Pharmacology	4 hours
Pharmacognosy	2 hours	U. S. P. and N. F. Drug Assaying and Pharmacopœial Testing	2 hours
Quantitative Analysis	5 hours	General Bacteriology	5 hours
History of Pharmacy	1 hour		

The plan of study for the four-year curriculum leading to the degree of Bachelor of Science in Pharmacy has been greatly changed. During the first two years all students will be required to take the same course of study, which includes the basic instruction. For the third and fourth years three distinct curricula are arranged, designed to prepare the students for either (A) General, Analytic, or Manufacturing Pharmacy; (B) for duties of Laboratory or Clinical Technician; or (C) for Pharmaceutical Administration. By this arrangement greater freedom in preparing for specific fields than heretofore is obviously possible. In general a larger number of electives is also permitted. However, in all cases the fundamental courses in Pharmacy, Chemistry, and allied sciences have been retained. The total number of hours required for graduation has been increased in all cases from 124 to 125 hours, and includes a required course in the History of Pharmacy. In the four-year curricula, leading to the degree of Bachelor of Science in Pharmacy, certain basic courses have been selected as required work for all students in the freshman and sophomore years. These courses are as follows:

FIRST YEAR.

First Semester.		Second Semester.	
General Chemistry	4 hours	General Chemistry	4 hours
Pharmaceutical Arithmetic	4 hours	Manufacturing Pharmacy	4 hours
English	4 hours	Mathematics	4 hours
German or French	4 hours	German or French	4 hours

SECOND YEAR.

First Semester.		Second Semester.	
Qualitative Chemistry	5 hours	Quantitative Chemistry	5 hours
Crystallographic and Optical Properties of Chemicals	2 hours	Hygiene	3 hours
Physics I	4 hours	Physics II	4 hours
Manufacturing Pharmacy	4 hours	Botany	4 hours

The Junior and Senior years permit of considerable diversification as to the choice of courses. Students who plan to become General, Analytical or Manufacturing Chemists will elect during their third and fourth years, the following required courses:

JUNIOR YEAR.

First Semester.		Second Semester.	
Organic Chemistry	5 hours	Organic Chemistry	5 hours
Prescription Pharmacy and Dis- pensing	3 hours	General Bacteriology	5 hours
Pharmacognosy Laboratory	4 hours	Pharmacognosy	5 hours
		Drug Assay and Pharmaco- pœial Testing	2 hours

SENIOR YEAR.

First Semester.		Second Semester.	
Food and Drug Analysis	3 hours	Pharmacology	4 hours
Bacteriology Laboratory	3 hours	U. S. P. and N. F.	4 hours
Pharmaceutical Chemistry	3 hours	Physical Chemistry	4 hours
History of Pharmacy	1 hour	Alkaloids and Synthetics	2 hours

In addition to these required courses, sufficient courses must be elected to complete a total of 125 hours. Suggested electives for the above curriculum are:

Food and Drug Chemistry	2-5 hours
Technical Microscopy	2-5 hours
Pharmacy Research	4 hours
Physical Chem. Laboratory	3-8 hours
Modern Physics	2 hours

For the student preparing for the duties of Laboratory or Clinical Technician, the following courses are required:

JUNIOR YEAR.

First Semester.		Second Semester.	
Organic Chemistry	5 hours	Organic Chemistry	5 hours
Prescription Pharmacy and Dis- pensing	3 hours	Physiological Chem. Laboratory	3 hours
Physical Chemistry	3 hours	General Bacteriology	5 hours
		Pharmacognosy	5 hours

SENIOR YEAR.

First Semester.		Second Semester.	
Bacteriology Laboratory	3 hours	Pharmacology	4 hours
Pharmaceutical Chemistry	3 hours	U. S. P. and N. F.	4 hours
Physiological Chemistry	3 hours	Laboratory Diagnosis	3 hours
History of Pharmacy	1 hour		

SUGGESTED ELECTIVE COURSES.

Water Analysis	3 hours
Histology	8 hours
Pathology	3-4 hours
Pathology tec. (summer session)	3 hours
Physical Chemistry	3-5 hours
Advanced Bacteriology	3 hours
Serum Reactions and Pathogenic Protozoa	3 hours

For the student preparing for pharmaceutical administration the following courses are required:

JUNIOR YEAR.

First Semester.		Second Semester.	
Organic Chemistry	5 hours	Organic Chemistry	5 hours
Prescription Pharmacy and Dispensing	3 hours	Prescription Pharmacy and Dispensing	3 hours
Principles of Economics I	3 hours	Principles of Economics II	3 hours
Accounting I	4 hours	Pharmacognosy	5 hours
History of Pharmacy	1 hour	Commercial Pharmacy	2 hours

SENIOR YEAR.

First Semester.		Second Semester.	
Bacteriology Laboratory	3 hours	General Bacteriology	5 hours
Pharmaceutical Chemistry	3 hours	Pharmacology	4 hours
Business Law I	3 hours	Physical Chemistry	4 hours
		U. S. P. and N. F.	4 hours

SUGGESTED ELECTIVE COURSES.

Business Law II	3 hours
Accounting II	4 hours
Money & Banking	3 hours
Corporations	3 hours

The course in Prescription Pharmacy and Dispensing has been extended over two semesters, instead of being given in one semester, and includes not less than 48 hours of service in the dispensing laboratories of the University Health Service and the University Hospital. Other equally important changes have been made.

The Faculty of the College believes that these revised courses of study will permit students to become better prepared for specific fields of endeavor than was possible under the old plan, without, however, making narrow specialists of them. The new plan is to become effective at the beginning of the college year, 1923-24, and will, it is believed, mark a distinct advance in pharmaceutical education.

Complete information concerning the new curricula is to be found in the announcement of the College of Pharmacy.