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燕京大學
YENCHING UNIVERSITY
BULLETIN

College of Natural Sciences
1931-1932

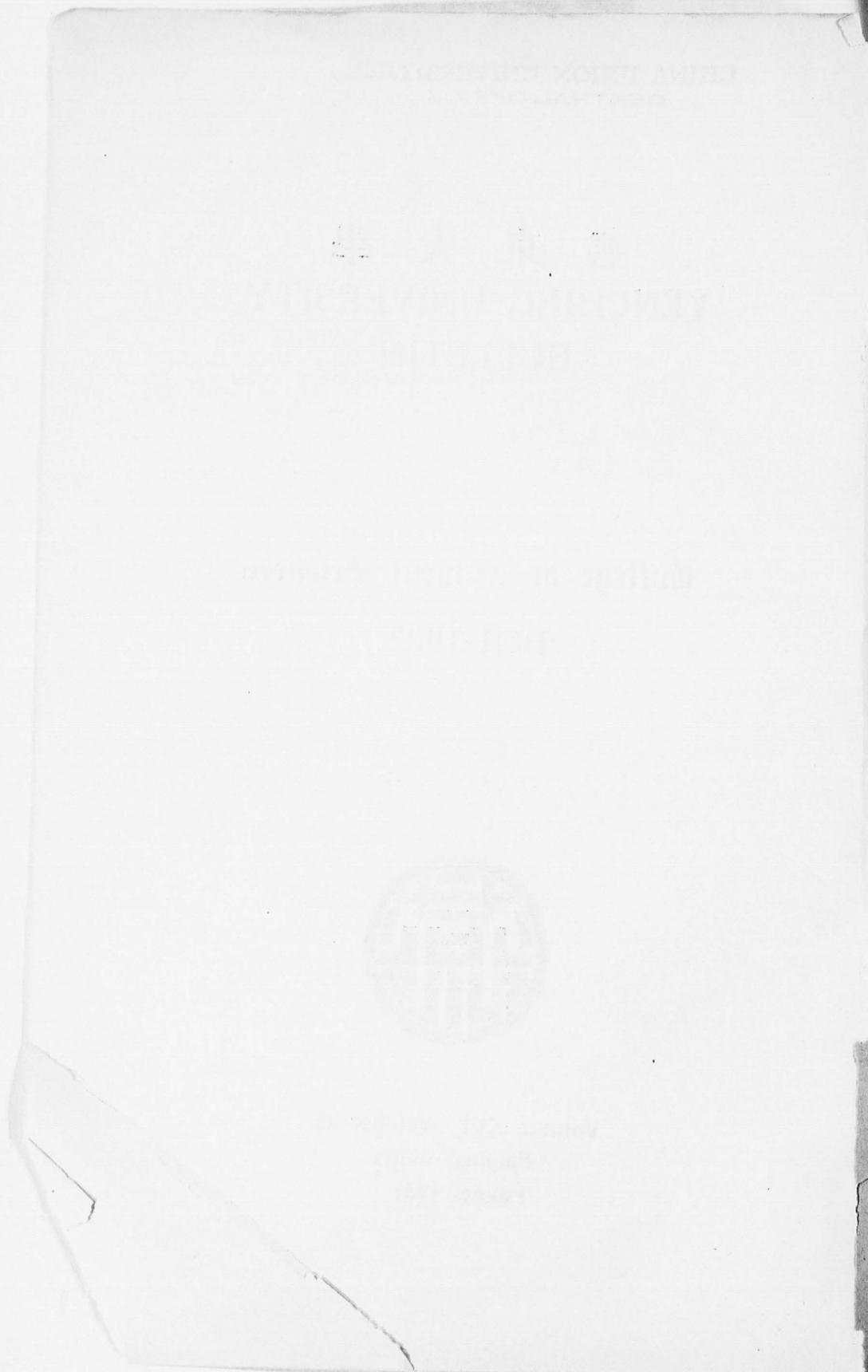
College of Natural Sciences



Volume XVI—Number 25
Peiping, China
June, 1931

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燕京大學
YENCHING UNIVERSITY
BULLETIN

College of Natural Sciences
1931-1932



Volume XVI—Number 25
Peiping, China
June, 1931

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YENCHING UNIVERSITY
BULLETIN

College of Arts and Letters
College of Natural Sciences
College of Public Affairs



Yenching University
Beiping, China
1927-1949

YENCHING UNIVERSITY BULLETINS

The regular bulletins of the University are issued at stated times during the year. Other special bulletins are issued from time to time as the need arises. All applications for bulletins should be made to the Registrar or the Dean's office of the College or School concerned.

Yenching University

- General Catalogue (in Chinese) 50 cents
- Graduate Division 15 cents
- School of Religion Free
- College of Arts and Letters 15 cents
- College of Natural Sciences 15 cents
- College of Public Affairs 15 cents

Undergraduate College

- Bulletin of Entrance Information (in Chinese) Free

Short Courses

- Bulletin of General Information (in Chinese) Free

Yenching University

- Directory of Faculty and Students 15 cents

Special Departmental bulletins will be supplied by the Registrar and the departments concerned upon receipt of postage.

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YENCHING UNIVERSITY

Academic Calendar

1931-1932

Fall Semester

Fall semester begins	Sept. 1 (Tues.)
Dormitories open to students.....	Sept. 1 (Tues.)
Freshman week	Sept. 2 (Wed.)-Sept. 9 (Wed.)
Exemption examinations	Sept. 3 (Thurs.)
Faculty presessional conference	Sept. 4 (Fri.)-Sept. 5 (Sat.)
Registration	Sept. 7 (Mon.)-Sept. 9 (Wed.)
Classwork begins	Sept. 10 (Thurs.)
Late registration with fine	Sept. 10 (Thurs.)-Sept. 23 (Wed.)
Change of courses without fine	Sept. 10 (Thurs.)-Sept. 16 (Wed.)
Last day for taking make-up examinations	Sept. 16 (Wed.)
Change of courses with fine.....	Sept. 17 (Thurs.)-Sept. 23 (Wed.)
National holiday	Oct. 10 (Sat.)
Senior thesis topic due.....	Oct. 12 (Mon.)
Freshman mid-semester examinations....	Nov. 9 (Mon.) Nov. 14 (Sat.)
Sun Yat Sen's birthday anniversary holi- day	Nov. 12 (Thurs.)
Senior thesis outline due	Dec. 7 (Mon.)
University Anniversary holiday	Dec. 25 (Fri.)
Founding of the Republic of China anniversary holiday	Jan. 1 (Fri.)
New Year holiday	Jan. 1 (Fri.)-Jan. 3 (Sun.)
Fall semester examinations	Jan. 7 (Thurs.)-Jan. 16 (Sat.)
Winter recess.....	Jan. 18 (Mon.)-Jan. 31 (Sun.)

Spring Semester

Spring semester begins.....	Feb. 1 (Mon.)
Registration	Feb. 1 (Mon.)-Feb. 2 (Tues.)
Classwork begins.....	Feb. 3 (Wed.)
Late registration with fine.....	Feb. 3 (Wed.)-Feb. 16 (Tues.)
Change of courses without fine.....	Feb. 3 (Wed.)-Feb. 9 (Tues.)
Last day for taking make-up examinations	Feb. 9 (Tues.)
Change of courses with fine.....	Feb. 10 (Wed.)-Feb. 16 (Tues.)
Sun Yat Sen's memorial day holiday....	Mar. 12 (Sat.)
Leaders of Revolution memorial day holiday	Mar. 29 (Tues.)
Master's thesis due to major departments	Mar. 31 (Thurs.)
Spring recess.....	Apr. 1 (Fri.)-Apr. 7 (Thurs.)
University Anniversary and Alumni Home- coming day holiday	Apr. 30 (Sat.)
Senior thesis due to major department....	May 2 (Mon.)
National Government Inauguration day holiday.....	May 5 (Thurs.)
Master's thesis due to graduate committee	May 16 (Mon.)
Senior thesis due to dean of college.....	May 16 (Mon.)
Spring semester examinations.....	June 9 (Thurs.)-June 18 (Sat.)
Baccalaureate.....	June 19 (Sun.)
Class Day.....	June 20 (Mon.)
Commencement.....	June 21 (Tues.)

UNIVERSITY OFFICERS OF ADMINISTRATION

Wu Lei-ch'uan, Hanlin Academy ..	<i>Chancellor</i>
J. Leighton Stuart, D. D.	<i>President</i>
Lucius C. Porter L. H. D.	<i>Chairman of the Committee for the Graduate Division</i>
Ch'en Yuan	<i>Director of the Research School of Chinese Studies</i>
Chao Tsu-ch'en, M.A., B.D., D. Litt	<i>Dean of the School of Religion</i>
Chou Hsüeh-chang, H., Ph. D.	<i>Dean of the College of Arts and Letters</i>
Stanley D. Wilson, Ph. D... ..	<i>Dean of the College of Natural Sciences</i>
Shuhsi Hsü, Ph. D.	<i>Dean of the College of Applied Social Sciences</i>
Miss Ruth L. Stahl, B. Mus.	<i>Dean of the College for Women</i>

Wu Lei-ch'uan, Hanlin Academy ..	<i>Chairman of the Committee on Student Welfare</i>
Ts'ai I-o, S., B.A... .. .	<i>Comptroller and Treasurer</i>
Mei Yi-pao, Ph. D.	<i>Registrar</i>
Miss Mary Cookingham, B.A.	<i>Associate Treasurer</i>
Tien Hung-tu, B.A.	<i>Librarian</i>
Basil L. L. Learmonth, M.D.	<i>Medical Officer</i>
Clara Nutting, M.D.	<i>Medical Officer, College for Women</i>

THE COLLEGE OF NATURAL SCIENCES

THE FACULTY

Stanley D. Wilson, Ph. D...	.. ..	Dean of the College and Professor of Chemistry.
Ch'en Tsai-hsin, Ph. D.	.. ..	Professor and Chairman of the Department of Mathematics.
Walter W. Davis, M. S.	.. ..	Professor of Geography and Chairman of the Department of Geography and Geology.
Lew T'ing-fang, T., Ph. D...	.. ..	Professor of Psychology.
George B. Barbour, Ph. D...	.. ..	Professor of Geology.
Earl O. Wilson, M.S.	.. ..	Professor and Chairman of the Department of Chemistry.
Miss Emma L. Konantz, M.A.	.. ..	Professor of Mathematics
Miss Alice M. Boring, Ph. D.	.. ..	Professor of Biology.
Hsieh Yü-ming, Ph. D.	.. ..	Professor and Chairman of the Department of Physics.
Wu Chen-fu F., Ph. D.	.. ..	Professor of Biology.
Luh Chih-wei, Ph. D. ...	.. ..	Professor and Chairman of the Department of Psychology.
William H. Adolph, Ph. D...	.. ..	Professor of Chemistry.

Yang Chin-ch'ing, M.S.	.. ..	Assistant Professor of Physics.
Miss Ethel M. Hancock, B. Sc.	.. ..	Assistant Professor of Mathematics
Li Ju-ch'i, Ph. D...	.. ..	Assistant Professor and Chairman of the Department of Biology.
Randolph C. Sailer, Ph. D.	.. ..	Assistant Professor of Psychology.

Note: With the exception of the dean the list is arranged in the order of seniority according to rank.

*Liu Ju-ch'iang, M.A...	.. ..	Assistant Professor of Biology.
William Band, M. Sc. ...	.. ..	Assistant Professor of Physics.

Miss Ch'en I, C., M.A..	.. ..	Lecturer and Chairman of the Department of Home Economics.
Chang Yin-t'ang, M. Sc.	.. ..	Lecturer in Geography.
Miss Mohling Ma, Ph. D.	.. ..	Lecturer in Biology.
Miss Roberta White, Ph. D.	.. ..	Lecturer in Psychology.
Chin Jung-lu, M. S.	.. ..	Lecturer in Mathematics (part time)
Shen Shou-ch'üan, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Ch'ang Teh-jen, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Hsü Tien-ssu, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.

Wang Tsan-ch'ing, B.A.	.. ..	Instructor in Chemistry.
Ts'ao Ching-p'an, B.A.	.. ..	Instructor in Chemistry.
Chang Ch'uan, P., B.S.	.. ..	Instructor in Chemistry.
*Ts'ai Liu-sheng, M.S...	.. ..	Instructor in Chemistry.
Meng Chao-ying, M.S...	.. ..	Instructor in Physics.
Chen Shih-ti, M.S...	.. ..	Instructor in Biology
Miss Feng Yun-hao, Ph. D...	.. ..	Instructor in Chemistry
		Instructor in Home Economics.

Chang Wen-te, B.S.	.. ..	Assistant in Chemistry.
Hsia Yün. M.A.	.. ..	Assistant in Psychology.
Kao Hsüeh-tsung, B.S.	.. ..	Assistant in Chemistry.
Hsieh Wei-chieh, B.S...	.. ..	Assistant in Chemistry.
Ho Wei-fah, B.S...	.. ..	Assistant in Chemistry.
Miss Chang Wen-yü, B.S.	.. ..	Assistant in Physics.
Hsiao Chih-chien, B.S.	.. ..	Assistant in Chemistry.
Ho Tsung-yi, B.S.	.. ..	Assistant in Mathematics.
Mao Ying tou, B.S.	.. ..	Assistant in Biology.
Tan Chia-chen, B.S.	.. ..	Assistant in Biology.
Hsu Y.K. ...	.. ..	Assistant in Physics
Miss Chen Shen-chao, M.S.	.. ..	Research Fellow in Chemistry

* Absent on leave, 1931-32.

EXECUTIVE COMMITTEE OF THE COLLEGE

S. D. Wilson, Ph. D. *Dean.*
 Li Ju-chi, Ph. D. *Biology.*
 Earl O. Wilson, S.M. *Chemistry.*
 Walter W. Davis, M.S. *Geography and Geology.*
 Miss Chen I, M.A. *Home Economics.*
 Chen Tsai-hsin, Ph. D. *Mathematics*
 Hsieh Yü-ming, Ph. D. *Physics.*
 Luh Chih-wei, Ph. D. *Psychology.*

ADVISORS

Miss Alice M. Boring, Ph. D. *Pre-medical and Pre-nursing.*
 William H. Adolph Ph. D. *Course for Training Science Teachers.*
 Earl O. Wilson, S.M. *Leather Short Course*
 D. K. Yang, M S. *Freshmen Men*
 Miss Augusta Wagner, Ph, D. *Freshmen Women*

COLLEGE OF NATURAL SCIENCES

ACADEMIC REGULATIONS.

1. *Entrance.* Students graduating from government or registered private Senior Middle Schools or other schools of similar standing may be admitted into the College by successfully passing the Entrance Examinations.
2. *Major Departments.* A regular student in this College must elect one of the following Departments as his or her Major Department: Biology, Chemistry, Geography and Geology, Home Economics, Mathematics, Physics or Psychology.
3. *Graduation.* A regular student on fulfilling the prescribed curriculum of one of the Major Departments in this College and passing all examinations will receive the diploma of Bachelor of Science.
4. *Required Courses.* The College offers the following types of required courses.

A. *General Requirements.* A regular Freshman student must fulfill the following requirements during the First-Year. Under special conditions some of these requirements may be made up in the second year.

Subject	Year Credits
Chinese.	4 Credits
English.	8 Credits
Natural Sciences.	16 Credits

This requirement may be fulfilled by electing courses from any two of the following: Biology, Chemistry, Geography, Geology, Mathematics, Physics, Psychology 5-6.

Mathematics. 4 Credits

A student who takes 8 credits in Mathematics as one of the Natural Sciences will be excused from this requirement.

Social Science 4 Credits

Total Credits for the First Year 36 Credits

A woman student must take one credit in Hygiene in the second semester of the first year, making a total of 37 credits for the year.

Physical Training

All First Year students are required to take two hours of Physical Training per week throughout the year. This is in addition to the 136 or 137 credits required for graduation. Women students are required to take two hours of Physical Training per week for each of the second and third years of their course. This also is in addition to the 137 credits required for graduation.

Military Training

All able bodied men students are required to take Military Training equivalent to six credits during the second and third years of their college course. This is in addition to the 136 credits required for graduation.

Party Principles

All students are required to take work in Party Principles equivalent to two credits before graduation. This is also in addition to the 136 or 137 credits required for graduation.

B. Department Requirements.

- (1) A regular student in this College must at the beginning of the Second Year elect one of the Departments as his or her Major Department. If for special reasons the student is unable to do so at the stated time, he or she must secure permission of the Dean to defer the decision to a later date.
- (2) In addition to the general requirements prescribed for the First Year, a regular student in this College must fulfill the following requirements for graduation besides other requirements that are prescribed by the Major Department:

<u>Courses</u>	<u>Total Credits</u>
In Major Department.....	32-68 credits
In correlated subjects.....	16-24 credits
The nature of the correlated subjects is determined by each Major Department.	

5. Credits and Grade Ratio.

- A. A regular student in the College must take 136 credits and have a general grade ratio of 1.00 or more in order to graduate.
- B. A regular student in the First and Second Year Classes should take 18 credits each semester and a regular student in the Third and Fourth Year Classes should take 16 credits each semester. A woman student taking one credit in Hygiene in the second semester of the First Year may take a total of 19 credits in that semester.
- C. A regular student should not take less than 12 credits in any semester.
- D. If a student during any year has a general grade ratio of less than .80 for the work of that year, the student will be dropped from the College.
- E. If a student during any two successive years has a general grade ratio of less than 1.00 for the work of each year, that student will be dropped from the College.
- F. The grade of any student who has not paid his breakage fees is to be sent to the Registrar as Incomplete and will therefore automatically become F unless the bill is paid before the time of the make-up examinations.
- 6. Short Courses. Different types of Short Courses may be given by the College. A student who completes the prescribed work in a short course and who passes all examinations will receive the certificate for that Short Course. No college credit will be given to students in these short courses except in cases where the students have passed regular entrance examination to the University, previous to taking the work in the short course, and then only credit for such courses as are of regular college grade may be granted towards graduation from the University.

0400

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DEPARTMENT OF BIOLOGY

Li, Ju-ch' i, Ph. D. *Assistant Professor and Chairman*
 Miss Boring, Alice M., Ph.D. *Professor*
 Wu, Chenfu F., Ph.D. *Professor*
 *Liu, Ju-ch'iang, M.S. *Assistant Professor*
 Miss Ma, R. Moh-ling, Ph.D. *Lecturer*
 Ch'en, Shih-ti, M.S. *Instructor*
 Mao, Ying-tou, B.S. *Assistant*
 Tan, Chia-Cheng, B.S. *Assistant*

The functions of the Department are (1) to provide the necessary courses which are fundamental to the curricula in Pre-medicine, Pre-nursing, Leather Tanning and Home Economics and other professional and technical work in Biology, (2) to provide a sequence of courses which will fulfill the requirements for graduation prescribed in the Academic Regulations of the College of Natural Science, (3) to train students for teaching General Science and Biology, (4) to prepare students for research work in Biology, and (5) to offer opportunities to graduates for carrying on research work in Biology.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation:

(1) Chinese 4 credits
 English 16 credits
 Chemistry 8 credits
 Mathematics 4 credits
 Social Sciences (Psy., Educ., Econ., or
 Soc.) 8 credits
 Major 40 credits

Of the 40 credits of major the following courses are required:

* Absent on leave, 1931-32.

Biology 1-2 8 credits
 Biology 51, 52 8 credits
 Biology 53, 54 8 credits
 Biology 101, 102 6 credits
 Biology 103, 104 4 credits
 Biology 199, 200 4 credits
 Biology 153, 154 2 credits
 Correlated subjects (Physics, chemistry,
 Geology or Experimental Psychology) 16 credits
 Electives 40 credits
 Total 136 credits

- (2) In Biology 199 and 200 the student must satisfactorily complete a thesis on a biological problem under the supervision of a Professor in this Department.
- (3) The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

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Major Curriculum In Biology

FIRST SEMESTER		SECOND SEMESTER	
	<i>Credits</i>		<i>Credits</i>
<i>First Year</i>			
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Nat. Sc. (Biol. I)	4	Nat. Sc. (Biol. 2)	4
Nat. Sc. (Chem. 3)	4	Nat. Sc. (Chem. 4)	4
Mathematics 1	2	Mathematics 2	2
Social Science (Psy., Educ., Econ., Soc.)	2	Social Science (Psy., Educ., Econ., Soc.)	2
		Hygiene (for women)	1
	<u>18</u>		<u>18 or 19</u>
<i>Second Year</i>			
English 5	4	English 6	4
Major (Biol. 51)	4	Major (Biol. 52)	4
Major (Biol. 53)	4	Major (Biol. 54)	4
Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4	Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4
Social Science (Psy., Educ., Econ., Soc.)	2	Social Science (Psy., Educ., Econ., Soc.)	2
	<u>18</u>		<u>18</u>
<i>Third Year</i>			
Major (Biol. 101)	3	Major (Biol. 102)	3
Major (Biol. 103)	2	Major (Biol. 104)	2
Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4	Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4
Electives	7	Electives	7
	<u>16</u>		<u>16</u>
<i>Fourth Year</i>			
Major (Biol. 199)	2	Major (Biol. 200)	2
Major (Biol. 153)	1	Major (Biol. 154)	1
Major (Biol. —)	4	Major (Biol. —)	4
Electives	9	Electives	9
	<u>16</u>		<u>16</u>

Department of Biology
Schedule

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
8:00-9:00		Biol. 106	Biol. 1-2 A	Biol. 106	Biol. 1 2 A	Biol. 3 Lab. Biol. 53,54
9:30-10:30	Biol. 3	Biol. 51,52 Biol. 105 Biol. 156	Biol. 1-2 B Biol. 3	Biol. 51,52 Biol. 105 Biol. 156	Biol. 1-2 B Biol. 3	Biol. 3 Lab. Biol. 53,54, Lab.
10:30-11:30	Biol. 153, 154	Biol. 101, 102	Biol. 158	Biol. 101, 102	Biol. 53,54 Biol. 158	Biol. 3 Lab. Biol. 53,54 Lab.
11:30-12:30						Biol. 53,54 Lab.
1:30-4:30	Biol. 1-2 X Biol. 51,52 A Biol. 103, 104 Biol. 105 Biol. 156	Biol. 1-2 Y Biol. 51,52 B Biol. 106	Biol. 1-2 X Biol. 51,52A Biol. 103, 104 Biol. 105 Biol. 156 Biol. 158	Biol. 1-2 Y Biol. 51,52 B Biol. 106	Biol. 53,54 Biol. 101, 102	

Prerequisite: Biol. 1-2
Required: Major and Pre-medical students
Elective: 2,3
Limited to 40 Students
Lecture: T Th 9:30
Laboratory: Section A—MW 1:30-4:30 (20 students)
Section B—TTh 1:30-4:30 (20 students)

Miss Boring

Biology 53

General Botany

4 Credits

This course consists of the study of the structure and function of the plant body, the relation of plants to their environments and the evolutionary relationships between the different groups of plants. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2
Elective: 2,3,4
Lecture: F 10:30, S 8:00
Laboratory: F 1:30-4:30, S 9:00-12:00

Miss Ma

*Biology 54

Local Flora

4 Credits

This is a practical and systematic study of the characters of the various families and genera of the local plants. The students will receive training in field collecting, preparation of herbarium mounts, and the use of keys for the determination of the specimens in the collection. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2
Elective: 2,3,4 (Not offered in 1931-32)
Lecture: F 10:30, S 8:00
Laboratory: F 1:30-4:30, S 9:00-12:00

Biology 101

General Embryology

3 Credits

The course is designed to acquaint the students with all the fundamental principles of embryology. The cell and mitosis are taken up first; then the descriptive and analytical aspects of germ cells, maturation, fertilization, and cleavage phenomena are treated with more or less detail. The most important facts of recent experimental embryology are outlined. The latter part of the semester is devoted to a comparative study of the early development of the vertebrates, particularly frog and chick; the origin and development of the germinal layers, organogenesis and the formation of embryonic membranes are emphasized. Two lectures and three laboratory hours.

Prerequisite: Biology 51,52
Required: Major students in Biology
Elective: 3,4,5
Lecture: TTh 10:30
Laboratory: F 1:30-4:30

Mr. Li

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Biology 102

Genetics

3 Credits

The object of the course is to give the students an idea of the theories of organic evolution, Mendelism and biometry. The main emphasis is laid on Mendelism. The study of linkage and crossing-over, chromosome theory of heredity and mechanism of sex determination are critically discussed. The work is founded up by the study of biometry and its applications. The first two weeks of laboratory work are devoted to the study of unit characters and method of handling experimental material. The study of the inheritance in corn is taken up, followed by a number of breeding experiments on *Drosophila*. Two lectures and three laboratory hours.

Prerequisite: Biology 51,52
Required: Major students in Biology
Elective: 3,4,5
Lecture: TTh 10:30
Laboratory: F 1:30-4:30

Mr. Li

Biology 103

Biological Technique

2 Credits

Principles and practice of making microscopic preparations. Guyer's Animal Micrology will be followed. Six laboratory hours.

Prerequisite: Biol. 51, 52
Required: Major students in Biology
Elective: 3, 4, 5
Laboratory: MW 1:30-4:30

Mr. Wu

Biology 104

Biological Technique

2 Credits

A practical study of various laboratory methods in collecting, preserving and preparing biological specimens for class and laboratory work. Six laboratory hours.

Prerequisite: Biol. 103
Required: Major students in Biology
Elective: 3, 4, 5
Laboratory: MW 1:30-4:30

Mr. Wu

Biology 105

Animal Histology

4 Credits

A general study of animal cells and tissues and some typical organs. Fresh material will be studied where possible, and its reaction to various chemicals, which constitutes a foundation for the study of microscopic technique. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2
Required: Leather Tanning students
Elective: 3,4,5
Lecture: TTh 9:30
Laboratory: MW 1:30-4:30

Miss Boring

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Biology 106 General Entomology 4 Credits

A study of the morphological characters of insects and the representatives of the different orders, with emphasis on their evolutionary relationships, life histories, economic importance and methods of control. Two lectures and six laboratory hours.

Prerequisite: Biol. 51
Elective: 3, 4, 5
Lecture: TTh 8:00
Laboratory: TTh 1:30-4:30

Mr. Wu

Biology 153 Journal Club 1 Credit

In this course the faculty and students will give reports on articles in current biological journals. One conference hour.

Prerequisite: Two years of Biology
Required: Major students in Biology
Elective: 3, 4, 5
Conference: M 10:30

Miss Boring

Biology 154 Journal Club 1 Credit

Same as Biology 153

Miss Boring

Biology 156 General Bacteriology 4 Credits

A general study of the action of bacteria, yeasts and molds, with emphasis on cultural and staining methods. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2, Chem. 3-4
Required: Leather Tanning students
Elective: 3, 4, 5
Lecture: TTh 9:30
Laboratory: MW 1:30-4:30

Miss Ma

Biology 158 Protozoology 3 Credits

The course deals with an intensive study of the protozoons. Morphological, physical and systematic surveys of the unicellular animals are to be taken up in succession. Recent experimental work on the problems of regeneration, conjugation and endomixis are discussed. Emphasis is also laid upon the relation of the protozoon to disease and human welfare. One lecture and three laboratory hours.

Prerequisite: Biol. 51
Elective: 3, 4, 5
Lecture: WF 10:30
Laboratory: W 1:30-4:30

Mr. Li

*Biology 159 Experimental Biology 2 Credits

An introductory study of the living phenomena in natural and experimental conditions, including discussions on the methods of experimentation and reports on the current literature. Two lecture hours.

Prerequisite: Biology 101, 102
Elective: 3, 4, 5 (Not offered in 1931-32)
Lecture: Time to be arranged

Mr. Li

Biology 192 The Teaching of Biology 2 Credits

Students in this course will be given experience in the preparation of laboratory material and in the conduct of laboratory class work under supervision. Conferences; special assignments; work assigned to fit the needs of each student.

Prerequisite: Biology 51, 52
Open to seniors only
Hours: to be assigned

Mr. Wu

Biology 199 Senior Thesis 2 Credits

Each Major student is expected to show the ability to work out independently a simple problem in Biology under the supervision of one of the Professors who is best trained in the special line. Work equivalent to at least six laboratory hours.

Prerequisite: Two years of Biology
Required: Major students in Biology
Elective: 3, 4
Laboratory: Time to be arranged

Biology Staff

Biology 200 Senior Thesis 2 Credits

Same as Biology 199

Biology Staff

DEPARTMENT OF CHEMISTRY

E. O. Wilson, S.M.	.. . . .	<i>Professor and Chairman</i>
Wm. H. Adolph, Ph. D.	.. . . .	<i>Professor</i>
Stanley D. Wilson, Ph. D.	.. . . .	<i>Professor</i>
Tsao Ching-pan, B.A.	.. . . .	<i>Instructor</i>
Wang Tsan-ch'ing, B.A.	.. . . .	<i>Instructor</i>
Miss Feng Yün Hao, Ph. D.	.. . . .	<i>Instructor</i>
Chang Chüan, P., B. S.	.. . . .	<i>Instructor</i>
*Ts'ai Liu-sheng, M.S.	.. . . .	<i>Instructor</i>
Chang Wen-teh, B.S.	.. . . .	<i>Assistant</i>
Kao Hsueh-tsung, B.S.	.. . . .	<i>Assistant</i>
Hsieh Wei-chieh, B.S.	.. . . .	<i>Assistant</i>
Ho Wei-fah, B.S.	.. . . .	<i>Assistant</i>
Hsiao Chih-chen B.S.	.. . . .	<i>Assistant</i>
Chen Shen Chao, M.S.	.. . . .	<i>Research Fellow</i>

The functions of the Department are (1) to provide the fundamental courses necessary in the curricula in Pre-medicine, Pre-nursing, Leather Tanning and Home Economics; (2) to provide a sequence of courses which will fulfill the requirements for graduation prescribed in the Academic Regulations of the College of Natural Sciences; (3) to train students for teaching chemistry; (4) to train students as practical chemists and tanners; (5) to offer students specializing in other lines an opportunity to become acquainted with the science of chemistry; and (6) to offer opportunities for graduates to carry on research in Chemistry.

Departmental Regulations

Students in this Department who take a major in the general field of Chemistry must fulfill the requirements for graduation listed in section A below. Students who take a major in Chemistry with an option in Leather Tanning must fulfill the requirements for graduation listed in section B below.

*Absent on leave 1931-1932.

A. 1. Chinese	.. . . .	4 credits
English	.. . . .	16 credits
Physics	.. . . .	8 credits
Mathematics	.. . . .	4 credits
Social Sciences (Econ. Soc., Hist., Psy., Rel., or Pol. Sc.)	.. . . .	8 credits
Hygiene (for Women)	.. . . .	1 credit
Major	.. . . .	40 credits

The following courses must be taken in making up the 40 credits in the Major.

Chemistry 3-4	.. . . .	8 credits
Chemistry 5-6	.. . . .	8 credits
Chemistry 9-10	.. . . .	8 credits
Chemistry 199 and or 200	.. . . .	4 or 2 credits
*Chemistry 131-132	.. . . .	8 credits
Correlated subjects (Biology, Geology, Education, Home Economics, Mathematics or Physics)	.. . . .	16 credits
Electives	.. . . .	30 or 32 credits

Total 136 credits
Total (for Women) 137 credits

2. In Chemistry 199 and 200 the student must complete in a satisfactory manner a thesis on a chemical problem, under the direction of a member of the staff of the Department.
3. The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

B. 1. Chinese	.. . . .	4 credits
English	.. . . .	16 credits
Social Sciences (Econ.)	.. . . .	12 credits
Mathematics 1-2	.. . . .	4 credits
Biology 1-2	.. . . .	8 credits
Biology 105	.. . . .	4 credits
Biology 156	.. . . .	4 credits
Physics 5-6	8 credits
Leather 71-72	4 credits

*Calculus is a prerequisite to Chem. 131-132.

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Leather 73-74.	8 credits
Leather 75-76.	8 credits
Chemistry 3-4.	8 credits
Chemistry 5-6.	8 credits
Chemistry 9-10	8 credits
Chemistry 119-120	8 credits
Chemistry 9-10	8 credits
Chemistry 119-120.	8 credits
Chemistry 121-122.	8 credits
Chemistry 131-132.	8 credits
Chemistry 199 and or 200	4 or 2 credits
Electives,	4 or 6 credits

Total 136 credits

- In Chemistry 199 and 200 the student must complete in a satisfactory manner a thesis on a problem relating to leather, under the direction of some member of the staff of the Department.
- The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

Major Curriculum In The General Field Of Chemistry

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Major (Chemistry 3)	4	Major (Chemistry 4)	4
Physics 5	4	Physics 6	4
Mathematics 1	2	Mathematics 2	2
Social Science (Econ., Soc., Hist., Psy., Rel., or Pol. Sc.	2	Social Science (Econ., Soc., Hsit., Psy., Rel., or Pol., Sc.)	2
		Hygiene (for women)	1
	<hr/>		<hr/>
	18		18 or 19
<i>Second Year</i>			
English 5	4	English 6	4
Major (Chemistry 5)	4	Major (Chemistry 6)	4
Cor. Subj. (Biol., Geol., Home Ec., Math., Phys. or Educ.)	4	Cor. Subj. (Biol., Geol., Home Ec., Math., Phys. or Educ.)	4
Social Science (Econ., Soc., Hist., Psy., Rel. or Pol. Sc.	2	Social Science. (Econ., Soc. Hist., Psy., Rel., or Pol., Sc.)	2
Elective (Econ. or History)	4	Elective (Econ. or History)	4
	<hr/>		<hr/>
	18		18
<i>Third Year</i>			
Major (Chemistry 9)	4	Major (Chemistry 10)	4
Major (Chemistry)	4	Major (Chemistry)	4
Cor. Subj. (Biol., Geol., Home Ec., Math., Phys. or Educ.)	4	Cor. Subj. (Biol., Geol., Home Ec., Math., Phys. or Educ.)	4
Elective	4	Elective	4
	<hr/>		<hr/>
	16		16
<i>Fourth Year</i>			
Major (Chemistry 131)	4	Major (Chemistry 132)	4
Major (Chemistry 199)	2	Major (Chemistry)	4
Major (Chemistry)	2	Elective	8
Elective	8		
	<hr/>		<hr/>
	16		16

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**Major Curriculum In Chemistry With
An Option In Leather Tanning**

FIRST SEMESTER		SECOND SEMESTER	
	<i>Credits</i>		<i>Credits</i>
<i>First Year</i>			
Chinese 7	2	Chinese 8	2
English I	4	English 2	4
Major (Chemistry 3)	4	Major (Chemistry 4)	4
Biology I	4	Biology 2	4
Mathematics I	2	Mathematics 2	2
Social Science	2	Social Science	2
	<hr/>		<hr/>
	18		18
<i>Second Year</i>			
English 5	4	English 6	4
Major (Chemistry 5)	4	Major (Chemistry 6)	4
Major (Leather 71)	2	Major (Leather 72)	2
Cor. Subj. (Physics 5)	4	Cor. Subj. (Physics 6)	4
Economics II	4	Economics I2	4
	<hr/>		<hr/>
	18		18
<i>Third Year</i>			
Major (Chemistry 9)	4	Major (Chemistry 10)	4
Major (Leather 73)	4	Major (Leather 74)	4
Major (Chemistry 119)	4	Major (Chemistry 120)	4
Cor. Subj. (Biology 105)	4	Cor. Subj. (Biology 156)	4
	<hr/>		<hr/>
	16		16
<i>Fourth Year</i>			
Major (Leather 75)	4	Major (Leather 76)	4
Major (Chemistry 121)	3	Major (Chemistry 122)	3
Major (Chemistry 131)	4	Major (Chemistry 132)	2
Elective	5	Major (Chemistry 200)	2
		Elective	5
	<hr/>		<hr/>
	16		16

**Department of Chemistry
Schedule**

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
8:00 to 9:00		Chem. 3-4 B Chem. 119- 120		Chem. 3-4 B Chem. 119- 120		
9:30 to 10:30	Chem. 3-4 A Chem. 5 A Chem. 131- 132 Leather 73- 74 (Lab)	Chem. 117	Chem. 3-4 A Chem. 5 A Chem. 6 A Chem. 9-10 Chem. 131- 132	Chem. 117	Chem. 6B Chem. 9-10	Chem. 6 B (Lab) Chem. 7 (Lab) Chem. 131- 132 (Lab) Leather 73- 74 (Lab)
10:30 to 11:30	Leather 73- 74 (Lab)	Chem. 5 B Chem. 7 Chem. 123 Leather 75-76		Chem. 5 B		Chem. 6 B (Lab) Chem. 7 (Lab) Chem. 131-2 (Lab) Leather 73- 74 (Lab)
11:30 to 12:30	Chem. 121- 122 Leather 73- 74 (Lab)		Chem. 121- 122 Leather 73- 74		Chem. 121- 122 Leather 73-74	Chem. 6 B (Lab) Chem. 7 (Lab) Chem. 131-2 (Lab) Leather 73-74 (Lab)
1:30 to 4:30	Chem. 3-4 A Chem. 5 A Chem. 6 A Chem. 7 Chem. 131- 132	Chem. 3-4 B Chem. 5 B Chem. 6 B Chem. 9-10 Leather 75-76	Chem. 3-4 A Chem. 5 A Chem. 6 A Chem. 119- 120	Chem. 3-4 B Chem. 5 B Chem. 6 B Chem. 9-10	Chem. 5 C Chem. 6 A Chem. 7 Chem. 75-76 Chem. 119- 120	

Chemistry 2 Chemistry for Nurses 4 Credits

A study of organic, and physiological chemistry with special emphasis on problems connected with nursing. Two lectures and six hours of laboratory.

Required: Freshman in prenursing course

Lecture: TTh 8:00

Laboratory: TTh 1:30-4:30

Miss Y.H. Feng

Chemistry 3-4 Inorganic Chemistry 4-4 Credits

A course in general inorganic chemistry covering both the non-metals and the metals, one half of the laboratory time is devoted to qualitative analysis. The course acquaints the student with the important laws, theories and applications of chemistry. The bearing of chemistry upon the life of the community and nation is emphasized. Two lectures and six hours of laboratory.

Required: Majors in Chemistry and Premedical

Elective: 1,2 (also 3,4)

Limited to 80 students

Lecture: A—MW 9:30

B—TTh 8:00

Laboratory: Any two of the following periods

M W 1:30-4:30, T Th 1:30-4:30

Mr. C.P. Tsao,
Miss Y.H. Feng
and assistant

Chemistry 5 Second Year College Chemistry 4 Credits

An intensive study of the fundamental laws and principles of chemistry. The laboratory work consists of simple experiments illustrating the laws of physical chemistry. Two lectures and six hours of laboratory.

Prerequisite: Chemistry 3-4

Required: Majors in Chemistry and Premedicals

Elective: 2, 3, 4

Limited to 40 students

Lecture: A—M W 9:30

B—T Th 10:30

Laboratory: A—M W 1:30-4:30

B—T Th 1:30-4:30

Mr. Adolph
and assistant

Chemistry 6 Quantitative Analysis. 4 Credits

Elementary gravimetric and volumetric analysis. One conference and nine laboratory hours.

Prerequisite: Chemistry 5

Required: Majors in Chemistry and Premedicals

Elective: 2, 3, 4

Conference: A—W 9:30

B—F 9:30

Laboratory: A—MWF 1:30-4:30

Mr. Adolph

B—TTh 1:30-4:30, S 9:30-12:30

Chemistry 7 Quantitative Analysis 4 Credits

A study of the theory and practice of quantitative analysis. As far as possible the laboratory work will be adapted to the needs of the individual students. One hour lecture and nine hours laboratory.

Prerequisite: Chemistry 5-6

Elective: 3, 4

Lecture: T 10:30

Laboratory: MF 1:30-4:30, S 9:30-12:30

Mr. E. O. Wilson

Chemistry 9-10 Organic Chemistry 4-4 Credits

A course in the elements of organic chemistry for those beginning the subject. The aliphatic series. The emphasis is placed on general principles. (Students in Home Economics who elect Chemistry 117 may receive credit for Chemistry 9 without taking Chemistry 10.) 2 lectures and 6 laboratory hours.

Prerequisite: For Home Economics students Chemistry 3-4. For all others either the completion of Chemistry 5-6 or the election of Chemistry 5-6 at the same time. Premedical students may receive credit for 9 without taking 10.

Required: Majors in Chemistry

Elective: 2, 3, 4

Lecture: WF 9:30

Laboratory: TTh 1:30-4:30

Mr. S. D. Wilson
and Mr. T. C. Wang

Chemistry 117 General Bio-chemistry 4 Credits

An introductory course including a study of carbohydrates, fats and proteins, —with the fundamental conceptions of bio-chemistry as applied to life processes and metabolism.

Elective: 3, 4, 5

Lecture: TTh 9:30

Laboratory: To be arranged

Mr. Adolph

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Chemistry 119 Leather Chemistry 4 Credits

A study of the chemistry of leather manufacture. The subject is taken up from the viewpoint of physical chemistry. The various tanning operations are reviewed and the importance of chemical control emphasized. The laboratory work illustrates in a quantitative manner some of the most important of the theories presented. Two lectures and six laboratory hours.

Prerequisite: Chem. 6, and if Chem. 9 has not been completed, it must be taken at the same time.

Required: Majors in Leather

Elective: 3, 4, 5

Lecture: TTh 8:00

Laboratory: WF 1:30-4:30

Mr. E. O. Wilson

Chemistry 120 Leather Chemistry 4 Credits

The analysis of materials and products used in the leather industry. Rapid methods suitable for actual use in the tannery are studied. Two conferences and six laboratory hours.

Prerequisite: Chemistry 119

Required: Majors in leather

Elective: 3, 4, 5

Conference: TTh 8:00

Laboratory: WF 1:30-4:30

Mr. E. O. Wilson

Chemistry 121-122 Industrial Chemistry 3-3 Credits

The most important of the industries in which chemical reactions play a major part are considered. Plant equipment is described in some detail and the factors which influence economic large-scale production are discussed. One half of the time in this course is devoted to the subject of industrial stoichiometry. A large number of numerical problems will be solved by the students. Three lectures and recitations.

Prerequisite: Chemistry 6 and 9

Lecture: MWF 11:30

Mr. E. O. Wilson

Chemistry 123 Technical Analysis 4 Credits

This course is designed to accompany Course 121. Instruction will be given in gas, fuel and water analysis. Considerable range of choice will be allowed the individual student, depending upon his interests and previous training. Rapid methods for the analysis of various commercial products, training in the use of the hydrogen electrode, and the practical use of the thermocouple will also be included. One conference and nine laboratory hours.

Prerequisite: Chemistry 6

Conference: To be arranged

Laboratory: To be arranged

Mr. E. O. Wilson

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Chemistry 124 Special Problems in Applied Chemistry 4 Credits

This course should accompany or follow the courses in industrial chemistry and technical analysis. Individual or group investigations will be conducted, the particular nature of the problems will depend upon the interests and previous training of the students. Laboratory and informal conferences.

Prerequisite: Chemistry 123
Lecture: To be arranged
Laboratory: To be arranged

Mr. E. O. Wilson

*Chemistry 127 Qualitative Organic Analysis 3 Credits

This course includes the systematic qualitative analysis of organic compounds and the determinations of unknowns including mixtures. One lecture and six laboratory hours.

Prerequisite: Chemistry 10.
Elective: 3,4,5
Lecture: To be arranged (Not offered 1931-32)
Laboratory: To be arranged

Mr. T. C. Wang

Chemistry 129 Quantitative Organic Analysis 3 Credits

This course consists of the determination of carbon, hydrogen, nitrogen and other elements by the methods usually employed in elementary organic analysis. One lecture and six laboratory hours.

Prerequisite: Chemistry 10.
Elective: 3,4,5
Lecture: to be arranged.
Laboratory: To be arranged

Mr. T. C. Wang

*Chemistry 130 Qualitative Analysis 4 Credits

This course includes a review of the principles of qualitative analysis, and a drill in careful manipulation and exact qualitative procedure. One lecture and Nine laboratory hours.

Prerequisite: Chemistry 6
Elective: 3, 4
Lecture: To be arranged (Not offered 1931-32)
Laboratory: To be arranged

Chemistry 131-132 Physical Chemistry 4-4 Credits

A careful study of the fundamental laws and principles of chemistry. The laboratory exercises are all of a quantitative nature. Two lectures and six laboratory hours.

Prerequisite: Chemistry 6 and 10, and a knowledge of Calculus.
Required: Majors in Chemistry
Elective: 4
Lecture: MW 9:30
Laboratory: To be arranged

Mr. E. O. Wilson

Chemistry 133-134 Advanced Organic Chemistry 4-4 Credits

Lectures, reports on literature and laboratory work in organic chemistry of a more advanced nature than that given in Chemistry 9-10. Two lectures and six laboratory hours.

Prerequisite: Chemistry 10
Elective: 4, 5
Lecture: WF 8:00
Laboratory: To be arranged

Mr. S. D. Wilson

Chemistry 139 Seminar in Biochemistry 1 Credit

For students specializing in Biochemistry.
Prerequisite: Chemistry 116
Elective: 3, 4, 5
One hour to be arranged

Mr. Adolph

Chemistry 140 Seminar in Biochemistry 1 Credit

For students specializing in Biochemistry.
Prerequisite: Chemistry 139
Elective: 3, 4, 5
One hour to be arranged

Mr. Adolph

Chemistry 142 Nutrition and Metabolism 4 Credits

Physiological Chemistry as applied to problems of human nutrition. Lectures; conferences; simple feeding experiments and laboratory study of metabolic processes.
Prerequisite: Chemistry 117
Elective: 3,4,5
Lectures and Conferences: TTh 9:30
Laboratory: TTh 1:30-4:30

Mr. Adolph

Chemistry 144 Biophysics 2 Credits

A study of the laws of physics and chemistry applied to biological processes, osmosis, surface tension, colloids, enzyme action.
Prerequisite: Biology 2, Physics 5, chemistry 5.
Elective: 3,4,5
Lecture: MF 9:30

Mr. Adolph

- Chemistry 152 Advanced Physical Chemistry 2 Credits
 A Seminar Course.
 Prerequisite: Chemistry 132
 Mr. S. D. Wilson
- Chemistry 153 Special Problems 4 Credits
 This course consists of laboratory investigations under the direction of some member of the staff. Detailed information may be secured by consultation with the instructors offering this course.
 Prerequisite: Permission of the Instructor under whom the work is to be done.
 Elective: 4,5 Staff
- Chemistry 154 Special Problems 4 Credits
 For description see 153.
- Chemistry 155 Special Problems 2 Credits
 For description see 153.
- Chemistry 156 Special Problems 2 Credits
 For description see 153.
- Chemistry 191 The Teaching of Chemistry. 2 Credits
 Students in this course will be given experience in the preparation of laboratory material and in the conduct of laboratory class work under supervision. Conferences; special assignments; work assigned to fit the needs of each student.
 Prerequisite: Chem. 5 and 6 or equivalent.
 Open to seniors only
 Hours to be assigned Mr. Adolph
- Chemistry 199 Senior Thesis 2 Credits
 This course involves either a critical study of the literature of some field in Chemistry or a simple original investigation. Each case is decided in conference with the head of the department.
 Time to be arranged.
 Staff
- Chemistry 200 Senior Thesis 2 Credits
 For description see 199
 Required: Seniors who major in Chemistry must elect either one or both of Chemistry 199 and 200.

- Leather 71-72 Elements of Tanning 2-2 Credits
 A general descriptive course, covering in an elementary way, the entire field of Leather Tanning.
 Required: Major students in Leather
 Lecture: MF 9:30
 Laboratory: Mr. P. Chang
- Leather 73-74 Leather Manufacture 4-4 Credits
 The lectures deal with the principles of Chrome, Alum, Iron, and Oil Tannage. Chrome tannage is studied in great detail. The methods of dyeing leather will also be presented.
 Laboratory practice is given in the technic of soaking, liming, unhairing, bating, pickling, and in Chrome Tanning.
 Required: Major students in Leather
 Lecture: WF 11:30
 Laboratory: MS 9:30-11:30 Mr. P. Chang
- Leather 75-76 Leather Manufacture 4-4 Credits
 The lectures include a discussion of the finishing of the various kind of leather, including the methods of currying, lubricating, staking, and glazing. The principles of fur tanning are also presented.
 Laboratory practice in vegetable, aldehyde, and alum tannage. Laboratory practice in fur dressing.
 Required: Major students in Leather
 Lecture: T 10:30
 Laboratory: Hours to be arranged Mr. P. Chang

DEPARTMENT OF GEOGRAPHY AND GEOLOGY

W. W. Davis, M. S. *Professor and Chairman.*
 George B. Barbour, Ph. D. *Professor.*
 Chang Yin-t'ang, M. Sc. *Lecturer.*

The functions of the Department are (1) to provide a sequence of courses which will fulfill the requirements for graduation prescribed in the Academic Regulations of the College of Natural Sciences, (2) to train students for teaching work in Geography, (3) to train students as Practical Geologists, and (4) to offer to students specializing in other lines of study a chance to become better acquainted with our Earth.

Departmental Regulations

A major student in this department must fulfill the following requirements for graduation:

(1) Chinese.. . . .	4 Credits
English.. . . .	16 Credits
Geography 1-2 or Geology 1-2	8 Credits
A Second Natural Science (Biology, Chemistry, Mathematics or Physics)	8 Credits
Social Sciences	4 Credits
Major	36 Credits
Correlated Subjects (One of the following: Biology, Chemistry, Physics, Mathematics, Home Economics, History, Education, Economics, Political Science, Sociology, English, or European Languages.)	16-24 Credits
Electives	44-36 Credits
Total	136 Credits

- (2) A Student must under the supervision of a professor in this Department satisfactorily complete a thesis on a geographical or geological problem.
- (3) A student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

Majors

A student majoring in the Department has a choice between three lines of work.

- (a) Geography.
 (b) Geology.
 (c) Geography and Geology combined.

Major Curriculum in Geography

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Geography 1	4	Geography 2	4
Natural Science (Biology 1, Chemistry 3, Physics 5 or Mathematics)	4	Natural Science (Biology 2, Chemistry 4, Physics 6 or Mathematics)	4
Mathematics	2	Mathematics	2
Social Science	2	Social Science	2
		(Hygiene for women)	1
	18		18 or 19
<i>Second Year</i>			
English 5	4	English 6	4
Major (Geol. 1)	4	Major (Geol. 2)	4
Major	2 or 4	Major	2 or 4
Correlated Subject	4	Correlated Subject	4
Electives	4 or 2	Electives	4 or 2
	18		18
<i>Third Year</i>			
Major	6	Major	6
Correlated Subject	4	Correlated Subject	4
Electives	6	Electives	6
	16		16

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Fourth Year

Major (Geog. 199) 2	Major (Geog. 200) 2
Major 2 or 4	Major 2 or 4
Correlated Subject and Electives 12 or 10	Correlated Subject and Electives 12 or 10
16	16

Major Curriculum in Geology

First Year

Chinese 7 2	Chinese 8 2
English 1 4	English 2 4
Geol. 1 4	Geol. 2 4
Biol. 1 4	Biol. 2 4
Mathematics 2	Mathematics 2
Social Science 2	Social Science 2
	Hygiene for women 1
18	18 or 19

Second Year

English 5 4	English 6 4
Major (Chem. 3) 4	Major (Chem. 4) 4
Major 2 or 4	Major 2 or 4
Correlated Subject 4	Correlated Subject 4
Electives 4 or 2	Electives 4 or 2
18	18

Third Year

Major 6	Major 6
Correlated Subject 4	Correlated Subject 4
Electives 6	Electives 6
16	16

Fourth Year

Major (Geol. 199) 2	Major (Geol. 200) 2
Major 2 or 4	Major 2 or 4
Correlated Subject and Electives 12 or 10	Correlated Subject and Electives 12 or 10
16	16

Major Curriculum in Geography and Geology

This is like the major curriculum in Geography with the following modifications:

In the First Year the Second Natural Science must be either Biol. 1-2 or Chem. 3-4

In the Second, Third and Fourth Years the student may include in his major a total of from 6 to 12 credits in Geology in addition to Geology 1-2

Department of Geography and Geology

Schedule

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
8:00 to 9:00	Geog. 1-2 A and B		Geog. 1-2 A and B		Geog. 1-2 A and B	
9:30 to 10:30	Geog. 5,6 Geol. 1-2	Geog. 57,58 Geog. 55,56	Geog. 5,6 Geol. 1-2	Geog. 57,58 Geog. 55,56	Geog. 5,6 Geol. 1-2	
10:30 to 11:30	Geog. 3,4 Geog. 19-20 Geol. 9	Geog. 107, 108 Geog. 113, 114 Geog. 111 Geol. 112	Geog. 3,4 Geog. 19,20 Geol. 9	Geog. 107, 108 Geog. 113, 114 Geog. 111 Geol. 112	Geog. 3,4 Geol. 9	
11:30 to 12:30	Geol. 107,108 Geog. 110	Geog. 119, 120 Geol. 107, 108	Geol. 107, 108	Geog. 119, 120 Geol. 107, 108	Geog. 110	
1:30 to 4:30	Geog. 1-2 Lab. * Geog. 3,4 Lab. Geog. 5,6 Lab.		Geol. 1-2 Lab.	Geog. 1-2 Lab. *		

* Two Sections if necessary.

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Geography 1-2 Fundamentals of Geography 4-4 Credits

A study of the general principles of physical geography and the geographical factors of environment and how they affect life.

Required: Major Students in Geography

Elective: 1,2, (also 3,4.)

Lecture: MWF 8:00

Laboratory: M. 1:30-4:30 or Th 1:30-4:30

Section A Mr. Chang

Section B Mr. Davis

Geography 3 Agricultural Economic Geography 4 Credits

A study of the geographical factors underlying Agriculture.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 10:30

Laboratory: M 1:30-4:30

Mr. Davis

Geography 4 Industrial Economic Geography 4 Credits

A study of the Geographical factors underlying some of the leading industries.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 10:30

Laboratory: M 1:30-4:30

Mr. Davis

Geography 5 China 4 Credits

The physical, human and economic geography of China.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 9:30

Laboratory: M 1:30-4:30

Mr. Davis
or Mr. Chang

Geography 6 Asia 4 Credits

The physical, human and economic geography of Asia.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 9:30

Laboratory: M 1:30-4:30

Mr. Davis

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Geography 19-20. Human Geography 2-2 Credits
 A study of the relationships between environment and man.
 Prerequisite: Geog. 1-2
 Elective: 2,3,4.
 Lecture: M W 10:30 Mr. Chang

*Geography 31-32 Physical Geography 2-2 Credits
 The principles of Physical Geography
 Prerequisite: Geog. 1-2
 Elective: 2,3,4
 Lecture: TTh 10:30 (Not offered 1931-32) Mr. Chang

*Geography 53 Hopei 2 Credits
 The physical and economic geography of the Province of Hopei.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4
 Lecture: TTh 9:30 (Not offered 1931-32) Mr. Chang

Geography 55 Inner Mongolia 2 Credits
 The physical and economic geography of Inner Mongolia
 Required: May be included as part of the requirements of students majoring in Geography
 Elective, 2,3,4
 Lecture: TTh 9:30 Offered 1931-32 and alternate years. Mr. Chang

Geography 56 Manchuria 2 Credits
 The physical and economic geography of the Three Manchurian Provinces.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4
 Lecture: TTh 9:30 Offered 1931-32 and alternate years. Mr. Chang

Geography 57 India 2 Credits
 The physical, human and economic geography of India.
 Required: May be included as part of the requirements of a student majoring in Geography.
 Elective: 3,4
 Lecture: TTh 9:30 Offered 1931-32 and alternate years. Mr. Davis.

Geography 58 Russia 2 Credits
 The physical and economic geography of Russia.
 Required: May be included as part of the requirements of a student majoring in Geography.

Elective: 3,4
 Lecture: TTh 9:30 Offered 1931-32 and alternate years. Mr. Davis

*Geography 107 Europe 2 Credits
 The natural regions of Europe, the geographic and geologic factors which have made Europe, its resources and possibilities.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:30 Offered 1930-31 and alternate years. Mr. Davis

*Geography 108 North America 2 Credits
 The natural regions of North America, the geographic and geologic factors that have made North America, its resources and possibilities.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:30 Offered 1930-31 and alternate years.

*Geography 109 Some Geographic Factors in History 2 Credits
 A study of a few of the leading geographic factors that have helped to control history, namely, the desert, the sea, the plain, the forest, the steppe, the ocean, rivers and coal.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: MF 11:30 Offered 1930-31 and alternate years. Mr. Davis

Geography 110 Climate 2 Credits
 A study of climate.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: MF 11:30 Offered 1931-32 and alternate years. Mr. Chang

Geography 111 Racial Geography 2 Credits
 A study of the geographical influences in the formation of racial characteristics and the distribution of the human races.
 Elective 3,4,5
 Lectures: TTh 10:30 Mr. Chang

- Geography 113 Japan 2 Credits
 The physical, economic and human geography of Japan.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:30 Offered 1931-32 and alternate years. Mr. Davis
- Geography 114 Malaya 2 Credits
 The physical, economic and human geography of Malaya.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:30 Offered 1931-32 and alternate years. Mr. Davis
- Geography 119 Political Geography of Europe 2 Credits
 A study of Europe from the angle of Political Geography.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 11:30 Offered 1931-32 and alternate years Mr. Davis
- Geography 120 Political Geography of North and South America 2 Credits
 A study of the two Americas from the angle of Political Geography.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3, 4, 5
 Lecture: TTh 11:30 Offered 1931-32 and alternate years. Mr. Davis
- Geography 151 Research Course 1 Credit
- Geography 153 Research Course 2 Credits
 An advanced reading or research course in some special geographical problem under supervision. Credit depending on the amount of work done.
 Prerequisite: At least 20 hours of work in Geography in addition to Geog. 1-2.
 Required: May be included in the requirements by students majoring in Geography.
 Elective: 4,5 Mr. Davis
- Geography 152 Research Course 1 Credit
- Geography 154 Research Course 2 Credits
 Prerequisite: Geog. 1-2 and at least 20 hours additional work in Geography.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 4,5 Mr. Davis

- Geography 191 The Teaching of Geography 2 Credits
 Students in this course will be given experience in the preparation of laboratory material and in the conduct of laboratory class work under supervision. Conferences; special assignments; work assigned to fit the needs of each student.
 Prerequisite: Geog. 1-2 and 8 other credits.
 Open to seniors only
 Hours: to be assigned Mr. Davis
- Geography 199-200 Thesis 2-2 Credits
 Senior Thesis in some geographical problem.
 Prerequisite: Geog. 1-2 and at least 24 other credits in Geography
 Required: Major students in Geography Mr. Davis
- Geology 1-2 General Geology 4-4 Credits
 An introduction to the Earth Science. The work of the atmosphere, ground-water, running water, snow and ice, lakes, and oceans. Study of the common rocks and minerals; volcanism, crustal movements etc: brief outline of Earth History.
 Required: Students majoring in either Geology or Geography
 Elective: 1,2,3,4
 Lecture: MWF 9:30
 Laboratory: W 1:30-4:30 Mr. Barbour
- *Geology 3 Mineralogy 2 Credits
 Determinative mineralogy including crystallography and blowpipe work.
 Prerequisite: Geol. 1-2
 Elective: 3,4,5
 (Not offered 1931-32) Mr. Barbour
- *Geology 4 Petrography 2 Credits
 Study of rocks in the hand specimen.
 Prerequisite: Geol. 1-2
 Elective: 3,4,5
 (Not offered 1931-32) Mr. Barbour
- Geology 5 Field And Laboratory Methods 2 Credits
 Interpretation of geologic maps. Elementary map drawing with training in the field, sketching, stratigraphic and other field work.
 Prerequisite: Geol. 1-2
 Required: Students majoring in Geology
 Elective: 2,3,4
 Laboratory: 2 afternoons a week Mr. Barbour

DEPARTMENT OF HOME ECONOMICS

Miss Caroline I. Ch'en, M. A. *Lecturer and Chairman*

Miss Mary Katherine Russell, B. S. *Instructor*

The functions of the Department are (1) To offer education for homemaking as a part of the general University education of women. (2) To offer training for teaching Home Economics in Secondary Schools. (3) To provide a sequence of courses which will fulfill the requirements for graduation prescribed in the academic regulations of the College of Natural Sciences. (4) To provide foundation courses for those interested in hospital dietetics.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation :

(1)	Chinese	.. . . .	4	Credits
	English	.. . . .	16	Credits
	Chemistry	.. . . .	16	Credits
	Biology	.. . . .	8	Credits
	Mathematics	.. . . .	4	Credits
	Social Sciences	.. . . .	8	Credits
	Major	.. . . .	36	Credits
	Correlated Subjects (Biology, Chemistry, Economics, Education, Psychology, Sociology) 16 Credits			
	Electives 28 Credits			

(2) A student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

Major Curriculum

FIRST SEMESTER		SECOND SEMESTER	
	<i>Credits</i>		<i>Credits</i>
<i>First Year</i>			
Chinese	7	Chinese	8
English	1	English	2
Nat. Sc. (Biol.)	1	Nat. Sc. (Biol.)	2
Nat. Sc. (Chem.)	3	Nat. Sc. (Chem.)	4
Math.	1	Math.	2
*Soc. Sc. (Soc. 1 or Ec. 3)	2	Soc. Sc. (Soc. 2 or Ec. 4)	2
		Hygiene	1
	18		19
<i>Second Year</i>			
English	5	English	6
Cor. Subj.		Cor. Subj.	
Chem.	9	Major (H. Ec. 28)	4
Soc. Sc. (Soc. 1 or Ec. 3)	2	Soc. Sc. (Soc. 1 or Ec. 3)	2
Electives	4	Electives	4
	18		18
<i>Third Year</i>			
Major (H. Ec. 3)	3	Major (H. Ec. 26)	3
Chem. 117	4	Major (H. Ec. 6)	4
Cor. Subj.	4	Cor. Subj.	4
Electives	5	Electives	5
	16		16
<i>Fourth Year</i>			
Major (H. Ec. 23)	3	Major (H. Ec. 40)	3
Major (H. Ec. 45)	1	Major (H. Ec. 46)	1
Major ()	2	Major ()	3
Major ()	3	Major ()	3
Major ()	3	Electives	6
Electives	4		
	16		16

Department of Home Economics

Schedule

Period	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00 to 9:00	H. Ec. 42 H. Ec. 3	H. Ec. 14 H. Ec. 15	H. Ec. 42 H. Ec. 23	H. Ec. 14 H. Ec. 15	H. Ec. 42 H. Ec. 23	
9:30 to 10:30	H. Ec. 11 H. Ec. 26	H. Ec. 6 Lab.	H. Ec. 11 H. Ec. 26	H. Ec. 6 Lab.	H. Ec. 11 H. Ec. 26	
10:30 to 11:30		H. Ec. 6 Lab.	H. Ec. 24	H. Ec. 6 Lab.	H. Ec. 24	
11:30 to 12:30		H. Ec. 6 Lab.	H. Ec. 6 H. Ec. 29	H. Ec. 6 Lab.	H. Ec. 6 H. Ec. 29	
1:30 to 2:30	H. Ec. 23 Lab.	H. Ec. 28	H. Ec. 14 H. Ec. 15 Lab.	H. Ec. 28	H. Ec. 3	
2:30 to 3:30	H. Ec. 23 Lab.	H. Ec. 28	H. Ec. 14 H. Ec. 15 Lab.	H. Ec. 28	H. Ec. 3 Lab.	
3:30 to 4:30	H. Ec. 23 Lab.		H. Ec. 14 H. Ec. 15 Lab.		H. Ec. 3 Lab.	
4:30 to 5:30					H. Ec. 3 Lab.	

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Home Economics 3 Food Selection and Preparation 3 Credit

An introduction to the subject of foods; selection, marketing, preparation, and service; and the fundamental principles of nutrition.

Required: Major students in Home Economics.

Elective: 2,3,4

Lecture: M 8:00, F 1:30

Laboratory: F 2:30-5:30

Home Economics 6 (H. Ec. 5) Nutrition and Dietetics 4 Credits

A study of nutrition with application of the principles to everyday feeding problems of individuals and groups: food values in relation to cost: combination of foods in meals.

Prerequisite: H. Ec. 3, Chem. 9,117

Required: Major students in Home Economics

Lecture: WF 11:30

Laboratory: TTh 9:30-12:30

Home Economics 11 Clothing Problems 3 Credits

A study of the principles underlying the selection, cost, care, and use of clothing.

Elective: 2,3,4

Lecture: MWF 9:30

Home Economics 15 (H. Ec. 14) Home Decoration 3 Credits

A study of art principles and their application to the choices and arrangement of furnishings and decorations of the moderate sized home.

Elective: 2,3,4

Lecture: TTh 8:00

Laboratory: W 1:30-4:30

Home Economics 14 (H. Ec. 15) Applied Design 3 Credits

A study of the principles of design and color developed and applied to clothing and decorative articles in the home.

Elective: 2,3,4

Lecture: TTh 8:00

Laboratory: W 1:30-4:30

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Home Economics 23 Household Technology 3 Credits

A study of the technical processes of housekeeping, selection of equipment, methods of cleaning, laundering, etc.; a study of the sanitary aspects of the home and community.

Required: Major students in Home Economics

Elective: 2,3,4.

Lecture: WF 8:00

Laboratory: M 1:30-4:30

Home Economics 24 Home Care of the Sick 2 Credits

A study of the care of the patient in the home with demonstrations of simple nursing procedure; management of communicable diseases.

Elective: 2, 3, 4

Lecture: WF 10:30

Home Economics 26 Household Management 3 Credits

A study of the organization and management of household operation and finances; family and community relationships.

Required: Major students in Home Economics

Elective: 2, 3, 4

Lecture: MWF 9:30

Home Economics 28 (H. Ec. 27) Child Care and Development 4 Credits

A study of the growth and development of the child through the pre-natal period, infancy, and childhood: factors influencing the health and behaviour of children; habit formation; proper feeding.

Required: Major students in Home Economics

Elective: 2, 3, 4

Lecture: TTh 1:30 3:30

Home Economics 29 Child Training 2 Credits

Principles of child training with special emphasis on the conduct problems met by parents and social workers, such as problems of discipline, play, sex training, fears, etc.

Elective: 2, 3, 4

Lecture: WF 11:30

Miss White

Home Economics 31 or 32 The Nursery School 2 Credits

A study of the aims and organization of the nursery school, equipment and play materials for young children, activities and records in the nursery school. This course includes one hour of lecture a week and three to five hours of observation and practice in the nursery school. It may be taken either semester separately or both semesters.

Elective: 3, 4, 5

Lecture and Practice Hours to be arranged.

Miss White

Home Economics 40 or 41 (H. Ec. 30) Home Management House 3 Credits

A course dealing with the problems of the homemaker. Students live in the Home Management House for one semester each student in turn being responsible for the various duties in the house.

Prerequisite: H. Ec. 3, 6, 23, 26

Required: Major Students in Home Economics

Home Economics 42 Methods of Teaching Home Economics 3 Credits

A study of the materials and methods of teaching Home Economics with supervised practice teaching by the students whenever possible. Emphasis will be placed on organization of courses of study.

Prerequisite: At least 16 credits of Home Economics.

Lecture: MWF 8:00

Home Economics 199-200 Senior Thesis 1-1 Credits

Each Major student is required to take up an individual problem in the Senior year on which she writes a thesis.

DEPARTMENT OF MATHEMATICS

G. H. Ch'en, Ph. D. *Professor and Chairman*
 Miss E. L. Konantz, M. A. *Professor*
 Miss E. M. Hancock, B. Sc. *Assistant Professor*
 Chin Jung-lu, M. S. *Lecturer (Part time)*
 Ho Tseng-yi, B. S. *Assistant*

The functions of the Department are (1) To provide courses fundamental to the curricula of other Departments of the University. (2) To provide a sequence of courses which will fulfill the requirements for graduation prescribed in the academic regulations of the College of Natural Sciences. (3) To train students to teach mathematics, and (4) To offer opportunities to graduate students for more advanced study of the subject.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation :

(1) Chinese	4 Credits
English	16 Credits
Physics 5-6	8 Credits
Social Sciences	8 Credits
Major	40 Credits
(Of the credits of major) the following courses are required.	
Mathematics 21-22	8 Credits
Mathematics 23-24	8 Credits
Mathematics 27-28	8 Credits
Mathematics 55-56	8 Credits
Correlated Subjects (Physics, Chemistry or Biology)	16 Credits
Electives	44
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Total	136 Credits

- (2) The student must, under the supervision of a Professor in this Department, satisfactorily complete a thesis on a Mathematical Subject.
- (3) The student must fulfill all the requirements, prescribed in the academic regulations of the College of Natural Sciences.

Major Curriculum

FIRST SEMESTER		SECOND SEMESTER	
	Credits		Credits
<i>First Year</i>			
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Nat. Sc. Mathematics 21	4	Nat. Sc. Mathematics 22	4
Nat. Sc. Physics	4	Nat. Sc. Physics	4
Soc. Sc.	2	Soc. Sc.	2
Electives	2	Electives	2
		Hygiene (for women)	1
	<hr/>		<hr/>
	18		18 or 19
<i>Second Year</i>			
English 5	4	English 6	4
Major Mathematics 23	4	Major Mathematics 24	4
Cor. Subject	4	Cor. Subject	4
Social Science	2	Social Science	2
Electives	4	Electives	4
	<hr/>		<hr/>
	18		18
<i>Third Year</i>			
Major Mathematics 27	4	Major Mathematics 28	4
Major Mathematics	3 or 2	Major Mathematics	3 or 2
Cor. Subj	4	Cor. Subj	4
Electives	5 or 6	Electives	5 or 6
	<hr/>		<hr/>
	16		16
<i>Fourth Year</i>			
Major Mathematics 55	4	Major Mathematics 56	4
Mathematics	3 or 2	Mathematics	3 or 2
Electives	9 or 10	Electives	9 or 10
	<hr/>		<hr/>
	16		16

<i>Summary:</i>	<i>Credits</i>
Chinese	4
English	16
Nat. Sc. (First Year)	16
Physics	8 (if not included above)
Soc. Sc	8
Hygiene (for women)	1
Major	40
Cor. Subj	16-44
Electives	27

136 (or 137)

Notes on Curriculum

1. *Correlated Subject*

While the Mathematics Department does not wish to make Physics the correlated subject that must be taken by all its Major Students, it would emphasize the special value of the subject in making certain aspects of higher mathematics more easily understood.

2. *Social Science Requirement*

Courses to fulfill this requirement must be chosen from one or more of the following Departments.

- Economics
- Education
- History
- Political Science
- Psychology
- Religion
- Sociology

3. Students who are intending to teach are advised to take some of their elective courses in Education and Psychology.

**Department of Mathematics
Schedule**

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
8:00 to 9:00	29-30 31,32		29-30 31,32		29-30 31,32	
9:30 to 10:30	21-22 23-24 151-152	21-22 23-24	151-152	21-22 23-24 151-152	21-22 23-24 151-152	
10:30 to 11:30	27-28 153-154	1-2 C 27-28	1-2 B 153-154	1-2 C 27-28 153-154	1-2 B 27-28 153-154	
11:30 to 12:30	1-2 D 55-56	1-2 A 115-116 119 120	55-56	1-2 A 55-56 115-116	1-2 D 55-56 119-120	
1:30 to 2:30						
2:30 to 3:30		113-114		113-114		
3:30 to 4:30						

0424

0424

Mathematics 1-2 Introduction to Mathematical Analysis 2-2 Credits

A unified course in trigonometry, algebra, analytic geometry and calculus. These are all treated in a very elementary way, the course being specially planned for Science Students, and others not intending to major in mathematics.

Required: of all Natural Science College Students who do not major in mathematics

Elective: 1, 2, 3, for those not majoring in mathematics

Lecture: A—TTh 11:30

B—WF 10:30

C—TTh 10:30

D—MF 11:30

Each section to contain not more than 20 students
Sections B and C for Premedical students only

Miss Konantz A & D
Miss Hancock B & C

Mathematics 21-22 Algebra, Trigonometry 4-4 Credits

A course in college algebra, and trigonometry to De Moivre's Theorem, designed mainly for major students in their Freshman year.

Required: Major Students in mathematics

Elective: 1, 2, (also 3, 4)

Lecture: MTThF 9:30

Miss Hancock

Mathematics 23-24 Analytic Geometry 4-4 Credits

The fundamental principles of plane and solid analytic geometry including some work in homogenous co-ordinates.

Prerequisite: 21-22

Required: Major Students in mathematics

Elective: 2, 3, 4

Lecture: MTThF 9:30

Miss Konantz

Mathematics 27-28 Calculus 4-4 Credits

An elementary course in differential and integral calculus.

Prerequisite: 23-24 or 1-2

Required: Major Students in mathematics

Lecture: MTThF 10:30

Miss Konantz

Mathematics 29-30 Pure Geometry 3-3 Credits

Pure Geometry and mathematical drawing, an introductory course in modern geometry.

Elective: 1, 2, 3

Lecture: MWF 8:00

Miss Hancock

0425

Mathematics 31 **Differential Equations** **3 Credits**
 Formation of a Differential Equation; Equations of First Order of the different Singular Solutions; Linear Equations with Constant and Variable Coefficients; Degrees; Exact Differential Equations and Equations of Particular Forms; Equations of the Second Order; Equations involving more than Two Variables; Partial Differential Equations; And Applications to Geometry, Mechanics, and Physics.
 Prerequisite: Math. 27-28
 Elective: 3.4
 Lecture: MWF 8:00
Mr. T. H. Ch'en

Mathematics 32 **Theory of Equations** **3 Credits**
 Relations between roots and coefficients of equations. Solution of Cubic and quartic Equations and those of higher degree.
 Prerequisite: 27-28
 Elective: 3.4
 Lecture: MWF 8:00
Mr. T. H. Ch'en

***Mathematics 53-54** **Higher Pure Geometry** **3-3 Credits**
 A Course on projective geometry mainly.
 Prerequisite: 29-30
 Elective: 3.4
 Lecture: Time to be arranged
Miss Hancock

Mathematics 55-56 **Advanced Calculus** **4-4 Credits**
 A continuation of mathematics 27-28 arranged with special reference to the needs of major and more advanced science students.
 Prerequisite: 27-28
 Required: Major Students in mathematics
 Elective: 3.4
 Lecture: MW Th F 11:30
Mr. T. H. Ch'en

Mathematics 113-114 **Methods of Teaching Mathematics** **2-2 Credits**
 A course on special methods of teaching mathematics, mainly for Junior and Senior Middle Schools.
 Elective: 4
 Lecture: TF 2:30
Miss Hancock

***Mathematics 115-116** **History of Mathematics** **2-2 Credits**
 A course dealing with the rise and development of Western Mathematics.
 Prerequisite: Math. 23-24
 Elective: 3.4 Given in alternate years
 Lecture: T Th 11:30
Miss Konantz

***Mathematics 119-120** **History of Chinese Mathematics** **2-2 Credits**
 The origin and history of Chinese Mathematics.
 Elective: 4 Given in alternate years
Mr. T. H. Ch'en

Mathematics 151-152 **Theory of Functions** **2-2 Credits**
 A Course on theory of functions and infinite series.
 Elective: 4
Mr. T. H. Ch'en

Mathematics 153-154 **Theory of a Complex Variable** **4-4 Credits**
Mathematics 199-200 **Senior Thesis.** **2, 3 or 4 Credits**

* Not given every year.

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DEPARTMENT OF PHYSICS

Y. M. Hsieh, Ph. D *Professor and Chairman*
 D. K. Yang, M. S. *Assistant Professor*
 William Band, M. Sc. *Assistant Professor*
 C. Y. Meng, M. S. *Instructor*
 Miss W. Y. Chang, B. S. *Assistant*
 Y. K. Hsü *Assistant*

The instructional work in physics is directed toward the following ends: (1) the training of premedical and pre-engineering students for professional study, (2) the training of general students in scientific methods of work and in the understanding of the place of physical science in the modern world; (3) the training of teachers of physics; (4) the training of research workers in physics.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation:

(1) Chinese	4 credits
English	16 credits
Chemistry	12 credits
Mathematics	16 credits
Social Sciences.	4 credits
Major	40 credits

Of the 40 credits of major the following courses are required:

Physics 5, 6, 7	12 credits
Physics 101-2	6 credits
Physics 131-2	8 credits
Physics 141.	3 credits
Physics 161, 162	2 credits
Physics 199, 200	2 credits

Correlated subjects (Mathematics, Chemistry,
 Biology, Education, or Geology) 16 credits
 Elective. 28 credits

Total 136 credits

- (2) In registering for Physics 199 and 200 the student must satisfactorily complete a thesis on a physical problem under the supervision of a Professor in this Department.
- (3) The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

Suggested Major Curriculum in Physics

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
First Year			
Chinese 7.	2	Chinese 8.	2
English 1.	4	English 2.	4
Nat. Sc. (Phys. 3 or 5).	4	Nat. Sc. (Phys. 4 or 6)	4
Nat. Sc. (Math. 23 or 27)	4	Nat. Sc. (Math. 24 or 28)	4
Nat. Sc. (Chem. 3)	4	Nat. Sc. (Chem. 4)	4
		Hygiene (for women)	1
		<hr/>	<hr/>
	18		18 or 19
Second Year			
English 5.	4	English 6.	4
Major (Physics 5)	4	Major (Physics 6 or any course numbered above 100	4
Cor. Subj. (Chem. 5).	4	Cor. Subj.	4
Math. 27 or 81	4	Math. 28 or 32	4
Soc. Sc.	2	Soc. Sc.	2
	<hr/>		<hr/>
	18		18
Third Year			
Major.	4	Major.	4
Major.	4	Major.	4
Cor. Subj. (Math., Chem. Educa- tion, Biology or Geology)	4	Cor. Subj. (Math., Chem. Biology or Education.)	4
Electives.	4	Electives.	4
	<hr/>		<hr/>
	16		16

Fourth Year

Major.	1	Major.	1
Major.	2	Major.	2
Major.	3	Major.	3
Major.	4	Major.	4
Electives	6	Electives.	6
	16		16

Note:

In view of the fact that the relations of Mathematics and Physics are very close, the study of two years of mathematics is required of all major students in physics. Those who do not take the course in Differential and Integral Calculus in their freshman year, are strongly advised to take it during their sophomore year as almost every course in physics numbered above 100 requires a knowledge of calculus for the theoretical study of the subject.

The courses in mathematics and chemistry of most value to major students of physics are as follows:—

Mathematics 21-22	Introductory Course
Mathematics 23-24	Analytic Geometry
Mathematics 27-28	Calculus
Mathematics 31	Elementary Differential Equations
Mathematics 32	Theory of Equations
Mathematics 35-36	Advanced Calculus
Chemistry 3-4	Inorganic Chemistry
Chemistry 5-6	Second Year College Chem.
Chemistry 131-132	Physical Chemistry

Department of Physics

Schedule

	Monday	Tuesday	Wednes- day	Tues- day	Friday	Saturday
8:00	Phys. 3-4 Phys. 7 Phys. 101-2 Phys. 111 Phys. 152	Phys. 5-6 Phys. 153-4	Phys. 3-4 Phys. 7 Phys. 101-2 Phys. 111 Phys. 152	Phys. 5-6 Phys. 153-4	Phys. 3-4 Phys. 7 Phys. 101-2 Phys. 111 Phys. 152	Phys. 5-6
9:30	Phys. 103-4 Phys. 115 Phys. 118	Phys. 141 Phys. 105	Phys. 103-4 Phys. 115 Phys. 118	Phys. 141 Phys. 105 Phys. 144	Phys. 103-4 Phys. 115 Phys. 118	Phys. 5-6 Lab. C Phys. 141 Phys. 105 Phys. 144
10:30	Phys. 131-2 Phys. 145		Phys. 131-2 Phys. 145		Phys. 131-2 Phys. 145	Phys. 5-6 Lab. (C) *
11:30						Phys. 5-6 Lab. C
1:30 to 4:30	Phys. 3-4 (A) Phys. 145	Phys. 5-6 (A) Phys. 7A Phys. 143	Phys. 3-4 (B) Phys. 111	Phys. 3-4 (X) Phys. 131-2 Phys. 143	Phys. 5-6 (B) Phys. 7 (B)	
4:30		Phys. 161 Phys. 162				

Physics 1 Fundamental Ideas of Physical Science 4 Credits

This course, together with a similar course given by the Biology Department, is especially designed for students in the College of Public Affairs. It has for its object the fixing in mind of the scientific methods of work in the modern world as demonstrated by the historical development of a few well-selected topics. 3 lectures and 3 laboratory hours.

No credit given to students in the College of Natural Sciences.

Lecture: TThS 10:30

Laboratory: M 1:30-4:30

Mr. Yang

Physics 3-4 Principles of Physics 4-4 Credits

An introductory course designed for students without adequate middle school preparation. 3 lectures and 3 laboratory hours

Prerequisites: Algebra and Geometry

Elective: 1, 2

Lecture: MWF 8:00

Laboratory: Section A—M 1:30-4:30

Section B—W 1:30-4:30

Section X—Th 1:30-4:30

Mr. Meng

Physics 5-6 Mechanics, Heat, Sound and Light 4-4 Credits

Forms with Physics 7 a general descriptive course in Physics Principles.

Prerequisite: Physics 3-4 or evidence of adequate middle school preparation.

Algebra, geometry and trigonometry

Required: Major students in Physics and Premedical students

Elective: 1, 2, 3, 4

Lecture: TThS 8:00

Laboratory: Section A—T 1:30-4:30

Section B—F 1:30-4:30

Section C—S 9:00-12:00

Mr. Yang

Physics 7 Electricity and Magnetism 4 Credits

Required: Major students in Physics and Premedical students

Elective: 2, 3, 4

Lecture: MWF 9:00

Laboratory: Section A—T 1:30-4:30

Section B—F 1:30-4:30

Mr. Yang

(For the present this course is given in the spring semester)

Physics 101-2 Analytical Mechanics I & II 3-3 Credits

Statics, Kinematics and the kinetics of particles and rigid bodies, 3 lectures.

Prerequisite: Physics 5-6 and Calculus

Required: Major student in Physics

Elective: 2,3,4

Lecture: MWF 8:00 B115

Mr. Band

Physics 103 An Introduction to Mathematical Physics I 3 Credits

Vectors and vectorial Operators used throughout the course.
Kinematics, Dynamics of a particle and General Principles applied to planetary motion.

Statistical Theory of Thermodynamics

Electrostatic and Magnetostatic Field

Prerequisite: Physics 5,6,7, and Calculus, Physics 101-2 desirable

Elective: 3,4,5

Time: MWF 9:30

Mr. Band

Physics 104 An Introduction to Mathematical Physics II 3 Credits

Theory of Wave Functions, Maxwell's Theory of Electromagnetic Field, Solution of Field Equations in Particular cases, Radiation Pressure, Energy and Mass. Restricted Relativity and Lorentz Transformation. Minkowski's 4-Vectors. General Solution of Field Equations. Motion of Electrons, Tensors. Invariant relativity form to Field Equations.

Prerequisite: Same as for Physics 101

Elective: 3,4,5

Time: MWF 9:30

Mr. Band

Physics 105 or 106 Vector Analysis 3 Credits

Elements of vector algebra and calculus and the linear vector function in three dimensions.

Prerequisite: Physics 5, 6, 7, and Calculus

Elective: 3, 4, 5

Lecture: Three times a week,

Time to be arranged

Mr. Band

Physics 111 or 112 Kinetic Theory of Gases 4 Credits

Viscosity, capillarity, diffusion, change of state, the distribution of linear velocities among the molecules of a gas, the equipartition of kinetic energy and the theory of specific heats, the Brownian movement and allied phenomena.

Prerequisite: Physics 5-6 and Calculus

Required: Major students in Physics

Elective: 3, 4, 5

Lecture: MWF 8:00

Laboratory: W 1:30-4:30

Mr. Hsieh

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Physics 115 Thermodynamics 3 Credits

The principles of thermodynamics and their application to physical and chemical processes. 3 lectures and solution of problems.

Prerequisite: Physics 5,6, and Calculus, Physics III desirable

Elective: 3, 4, 5

Lecture: MWF 9:30

Mr. Band

Physics 118 Quantum Theory 3 Credits

Statistical theory of heat, quantum statistics, quantum theory of radiation, statistical mechanics and wave mechanics of the atom. Three lectures.

Prerequisite: Physics 5, 6, 7, and Calculus, and Physics 115

Elective: 4, 5

Time: MWF 9:30

Mr. Band

Physics 131-2 Advanced Optics 3-3 Credits

The course deals with the more important phenomena and their fundamental theories in both geometrical and physical optics.

Prerequisite: Physics 5, 6, 7, and Calculus

Required: Major students in Physics

Elective: 3, 4, 5

Lecture: MWF 10:30

Mr. Hsieh

Physics 133-4 Advanced Experimental Optics 1-1 Credits

A laboratory course to be taken concurrently with Physics 131-2. It deals with lens systems, prisms, diffraction phenomena due to single slit, double slit, diffraction grating of the concave reflection types, photometer, refractometer, Michelson interferometer, polariscope and polarimeter.

Prerequisite: Same as Physics 131-2.

Required: Major students in Physics,

Elective: 3, 4, 5

Laboratory: F 1:30-4:30

Mr. Hsieh

Physics 141 Advanced Electricity and Magnetism 3 Credits

Electrostatics, electrokinetics and magnetism

Prerequisite: Physics 5, 6, 7, and Calculus

Registration in Physics 143

Lecture: TThS 9:30

Mr. Yang

Physics 143 (Phys. 142) Direct Current Electrical Measurements 3 Credits

Prerequisite: Same as Physics 141 with registration in the latter course

Laboratory: TTh 1:30-4:30

Mr. Yang
and Mr. Meng

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0430

*Physics 144 Alternating current Electrical Measurements 4 Credits

One lecture and 6 laboratory hours

Prerequisite: Physics 5, 6, 7 and Calculus

Laboratory: Time to be arranged

Not offered in 1931-2

Mr. Yang

Physics 146 (Phys. 145) Radio Telegraphy and Telephony 4 Credits

A course of lectures and laboratory work consisting of elementary consideration of the fundamental laws and their applications to the circuits of modern radio telegraph and telephone systems.

Prerequisite: Physics 5, 6, 7, Calculus desirable

Lecture: MWF 8:00

Laboratory: M 1:30-4:30

Mr. Yang

Physics 152 (Phys. 151) Modern Developments in Physics 4 Credits

Conduction of electricity through gases, thermionics, photoelectricity, X-rays and atomic structure. 3 lectures and 3 laboratory hours.

Prerequisite: Physics 5, 6, 7, 141, and Calculus.

Required: Major students in Physics

Elective: 3, 4, 5

Lecture: MWF 8:00

Laboratory: W 1:30-4:30

Mr. Hsieh

Physics 153-4 The Natural Philosophy of Modern Physics 2-2 Credits

To include the Natural Philosophy of Whitehead, Broad, Russell and Eddington; introduced by a summary of the theories of Relativity, Wave Mechanics of the Atom, and Statistical Mechanics.

This course would be suitable for Graduates from other colleges or subjects- besides giving students and graduates in physics a grasp of the significance of their own subject; it is not intended as exactly elementary in nature, but the physics included will be as non-technical as possible. There would be sufficient difficulty found in understanding the philosophical part of the subject however to make the course suitable more to mature students than to undergraduates.

To be elected with the permission of the instructor

Lecture: TTh 8:00

Mr. Band

Physics 161

Physics Journal Club

1 credit

This organization, consisting of all instructors and graduate and senior students, meets weekly, for the review and discussion of the current literature in this department of study. (Regular attendance at the meetings of this club is required of graduate and senior students in the Department).

Prerequisite: at least 2 years of Physics

Required: Major and Graduate students in Physics

Elective: 3,4,5

Time: T 4:30

Mr. Hsieh

Physics 162

Physics Journal Club

1 Credit

For description of the course and conditions of election see Physics 161

Physics 192

The Teaching of Physics

2 Credits

Student in this course will be given experience in the preparation of laboratory material, in the conduct of laboratory work under supervision and in helping professors to set up demonstration lectures for General Physics. Opportunity will also be given to students for making and repairing simple physical apparatus. Conferences; special assignments, work assigned to fit the needs of each student.

Prerequisite: Physics 5, 6, 7, or equivalent

Open to seniors only

Hours: to be assigned

Mr. Hsieh

Physics 199

Senior Thesis

1 or 2 Credits

Required of students majoring in Physics. Involves the preparation of a critical resume of some field of research and a simple original investigation as decided in conference with the instructor.

Time to be arranged.

Physics Staff

Physics 200

Senior Thesis

1 or 2 Credits

For description of the course and condition of election see Physics 171

Physics Staff

Note:—

Some of these courses cannot be given every year, but arrangements will be made so that each student may have opportunity to take the required work at some time during his residence at the University.

DEPARTMENT OF PSYCHOLOGY

C. W. Luh, Ph. D. *Professor & Chairman*
 T. T. Lew, Ph. D. *Professor*
 R. C. Sailer, Ph. D. *Assistant Professor*
 Miss Roberta S. White, Ph. D. *Lecturer*
 Y. Hsia, M. S. *Assistant*

The aim of the Department of Psychology is twofold

1. To impart a scientific knowledge of theoretical and experimental psychology so as to prepare students to do independent research work or to teach psychology in colleges and Middle Schools, and
2. To give special training in the various fields of applied psychology. The Department looks forward to the time when training in psycho-technique can be given on a more extensive basis.

Departmental Requirements.

For admission to the Department

1. The candidate must have fulfilled the general requirements of the College of Natural Sciences except Mathematics for which may be substituted Psychology 117 to be taken in the second year.
2. The candidate must demonstrate the ability to read psychological literature in Chinese and in English. Deficiency in such ability must be made up in the second year by taking more required courses in Chinese or English or both.
3. The candidate must have had Psychology 1-2, or its equivalent in the case of a transfer student. (Adjustment may be made for students who for special reasons have not fulfilled all these requirements in the first year.)

For graduation

1. The major requirement is from 40-60 credits in which the following courses must be included: Psychology 1-2, 5, 6, 103-104, 105-106, 117, 118, 191 or 192 (4 semesters); and 199 or 200 (4-6 credits).

2. The candidate must have elected a sequence of 20 credits in a correlated subject, preferably Biology, Physics, Education, or Sociology. These courses must be elected under the supervision of the chairman of the major department.
3. The graduating thesis, amounting to not less than four credits of work, must be written on an experimental topic. For this reason, Psychology 111 and 112 or Psychology 113 and 114 are strongly recommended as electives.

Proposed Curriculum

I		II	
First Year		First Year	
Chinese 7-8	4	Chinese 7-8	4
English 1-2	8	English 1-2	8
Biology 1-2 or		Biology 1-2	8
Physics 5-6	8	Psychology 1-2	4
Psychology 1-2	4	*Elective	12
*Elective	12		36
	36		
Second Year		Second Year	
Psychology 103-4	4	Psychology 103-4	4
Psychology 5 and 6	8	Psychology 5 and 6	8
Other Psychology	6-8	Other Psychology	6-8
Physics 5-6 or		Correlative	8-6
Biology 1-2	8	Elective	19
Elective	10-8		36
	36		
Third Year		Third Year	
Psychology	10	Psychology	10
Biology 4	4	Correlative	8
Physics 7	4	Elective, at most	14
Elective, at most	14		32
	32		

* Mathematics 1-2 and a second foreign language recommended.

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Fourth Year		Fourth Year	
Psychology,	8+	Psychology.	8+
Biology or Physics	8+	Correlative.	8+
Elective, at most	16-	Elective, at most	16-
	<u>32</u>		<u>32</u>

Courses of Instruction

Psychology 1-2 General Psychology 2-2 Credits

This course deals with the fundamentals of human nature and behavior, with special emphasis on the objective standpoint.

Elective: 1, 2, 3
Section A—WF 8:00
Section B—TTh 9:00

Mr. Luh

Psychology 5 Experimental Psychology 4 Credits

Introduction to the data of experimental psychology and the application of experimental methods to the study of psychological problems. (Sensation, Perception, and related topics).

Prerequisite: Psychology 1-2 or equivalent
Elective: 2, 3, 4
Lecture: TThS 8:00
Lab: M 1:30-4:30

Mr. Luh
and Mr. Hsia

Psychology 6 Experimental Psychology 4 Credits

Learning, Memory and related topics
Prerequisite: Psychology 1-2 or equivalent
Elective: 2, 3, 4
Lecture: TThS 8:00
Lab: M 1:30-4:30

Mr. Luh
and Mr. Hsia

Psychology 9 or 10 Mental Hygiene 2 Credits

Principles of modern mental hygiene, with application to personal problems and difficulties. Special attention will be given to the development of personality in children.

First semester, repeated second semester
Elective: 1, 2, 3
Lecture: TTh 8:00 Fall, TTh 11:30 Spring

Miss White
and Mr. Sailer

**Department of Psychology
Schedule**

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
8:00 to 9:00	Psy. 105-106 Psy. 131	Psy. 5,6 Psy. 9	Psy. 1-2A Psy. 131 Psy. 132	Psy. 5,6 Psy. 9	Psy. 1-2A Psy. 132	Psy. 5,6
9:30 to 10:30		Psy. 1-2B Psy. 153-154	Psy. 103-104 Psy. 113, 114	Psy. 1-2B Psy. 153-154	Psy. 103-104 Psy. 113, 114	
10:30 to 11:30		Psy. 141, 142 Psy. 155-156	Psy. 151-152	Psy. 141-142 Psy. 155-156	Psy. 151-152	
11:30 to 12:30	Psy. 118, 119	Psy. 10 Psy. 143	Psy. 118, 119	Psy. 10 Psy. 143	Psy. 118	
1:30 to 2:30	Psy. 5,6 (Lab)	Psy. 11-12		Psy. 11-21		
2:30 to 3:30	Psy. 5,6 (Lab)	Psy. 117 (Lab)		Psy. 117 (Lab)	Psy. 105-106	
3:30 to 4:30	Psy. 5,6 (Lab)	Psy. 117 (Lab)		Psy. 117 (Lab)		
7:30	Psy. 191, 192 Jour. Club					

Psychology 11-12 Personality Tests and Measurements 2-2 Credits

Study will be made of existing personality tests, and practice given in developing new forms. For those not majoring in Psychology.

Elective: 2, 3, 4
Lecture: TTh 1:30

Mr. Sailer

Psychology 103-4 Introduction to the Fields and Schools of Psychology 2-2 Credits

A general survey of comparative psychology in its broadest sense and a brief presentation of the modern schools.

Prerequisite: Psychology 1-2

Elective: 2, 3, 4. (Students who have had ten or more credits in psychology can elect this course only with permission).

Lecture: WF 9:30

Mr. Lew

Psychology 105-106 Systematic Psychology 2-2 Credits

Systematic study of the theoretical basis of some representative schools.

Prerequisite: 10 credits of psychology. For students of Philosophy, Psychology 1-2 only.

Elective: 3, 4, 5

Lecture: M 8:00 F 2:30

Mr. Luh

*Psychology 111 Advanced Experimental Psychology 3 Credits

Learning, Memory and related topics. Special emphasis on the original literature. Discussion and experiment to center around a few main topics.

Prerequisite: Psychology 5,6

Elective: 3, 4, 5

Lecture: MWF 9:30

Laboratory: Hours to be arranged (Not given 1931-2)

Mr. Luh

*Psychology 112 Advanced Experimental Psychology 3 Credits

Congenital Behavior, Emotions and related topics.
(Not given 1931-2)

Mr. Luh

Psychology 113 Advanced Experimental Psychology 2 Credits

Perception and Judgment

Prerequisite: Psychology 5,6

Elective: 3, 4, 5

Lecture: WF 9:30

Laboratory: Hours to be arranged

Mr. Luh

Psychology 114 Advanced Experimental Psychology 2 Credits

The Sensory Processes

Prerequisite: Psychology 5 and 6

Elective: 3, 4, 5

Lecture: WF 9:30

Laboratory: Hours to be arranged

Mr. Luh

Psychology 117 Statistical Methods Applied to Psychology 3 Credits

The practice and theory of elementary statistical methods applied to Psychology. One lecture and two two-hour laboratory periods.

Prerequisite: Psychology 1-2

Elective: 2, 3, 4

Lecture: To be arranged

Laboratory: TTh 2:30-3:30

Mr. Sailer

Psychology 118 The Measurement of Intelligence 3 Credits

This course deals with theories of intelligence, the technique of measurement, the interpretation of data, and a survey of existing forms.

Prerequisite: Psychology 117

Elective: 2, 3, 4

Lecture: MWF 11:30

Mr. Sailer

Psychology 119 (Psy. 120) Personality 2 Credits

A study of the methods of measuring personality with consideration of theories involved.

Prerequisite: Psychology 117

Elective: 3, 4, 5

Lecture: MW 11:30

Mr. Sailer

Psychology 131 Abnormal Psychology 2 Credits

The abnormal in relation to the normal. Ways of reacting to difficulties. The Psychoneuroses.

Prerequisite: Psychology 1-2 or equivalent

Elective: 2, 3, 4

Lecture: MW 8:00

Mr. Sailer

Psychology 132 Abnormal Psychology 2 Credits

Continuation of Psychology 131. Psychoanalysis, the Psychoses, Hypnotism, Feeble-mindedness.

Prerequisite: Psychology 131

Elective: 2, 3, 4

Lecture: WF 8:00

Mr. Sailer

Psychology 141 Introduction to Social Psychology 2 Credits

This course is organized for Social Science students who do not intend to make an exhaustive study of psychology but at the same time find the knowledge of social psychology important to their own lines of work. Introduction to Psychology 142, no credits given unless taken together with that course.

Elective: 2, 3, 4

Lecture: TTh 10:30

(Not open to students who have already taken Psychology 1-2)

Miss White

Psychology 142 Social Psychology 2 Credits

A psychological study of the means of social stimulation and of the development of social habits and attitudes.

Prerequisite: Psychology 1-2 or 141

Elective: 2, 3, 4

Lecture: TTh 10:30

Miss White

Psychology 143 Industrial Psychology 2 Credits

A study of some of the experimental work done in the field of Industrial Psychology, intended for those without special training in Psychology. Some knowledge of Statistics would be desirable for those electing this course. Not credited toward psychology major.

Elective: 2, 3, 4

Lecture: TTh 11:30

Mr. Sailer

Psychology 151-152 Psychology of Childhood. 2-2 Credits

This is an introductory course presenting the main facts concerning the psychology of children. Emphasis will be placed upon the significance of these facts for education and an acquaintance with the literature concerned.

Prerequisite: Psychology 1-2, or Education 15-16 or special permission of the instructor.

Elective: 2, 3, 4

Lecture: WF 10:30

Mr. Lew

Psychology 153-154 Psychology of Adolescence 2-2 Credits

This is an introductory course presenting the main facts concerning the psychology of adolescents. It will include the reading of a certain amount of literature illustrating experiences of adolescents. Application of the principles to the educational problems of youth, especially middle school students, will be emphasized.

Prerequisite: Psychology 1-2, or Education 15-16 or special permission of the instructor.

Elective: 2, 3, 4

Lecture: TTh 9:30

Mr. Lew

Psychology 155-156 Advanced Educational Psychology 2-2 Credits

This course will deal in fact with the theories of learning, laws of learning, and conditions of effective study, and problems of instinct, emotion, individual difference, and certain educational problems from the point of view of educational psychology. Other problems will be introduced from year to year according to the preparation and the need of the students.

Prerequisite: Psychology 1-2 or Education 15-16

Elective: 2, 3, 4

Lecture: TTh 10:30

Mr. Lew

***Psychology 161 Animal Psychology 3 Credits**

A comparative study of the behavior of the vertebrates, especially in its relation to human behavior.

Prerequisite: Psychology 5-6 and Biology 52

Elective: 3, 4, 5

(Not given 1931-32)

***Psychology 172 (Psy. 171) The Neurological Basis of Psychology 3 Credits**

Elementary study of the anatomy and physiology of the vertebrate nervous system, emphasizing its bearing on human and animal psychology.

Prerequisite: Psychology 5-6 and Biology 52

Elective: 3, 4, 5

Two lectures to be arranged

Lab. W 1:30 4:30

(Not given 1931-32)

Mr. Luh

***Psychology 175 Research in Child Development 2 Credits**

Prerequisite: Psychology 151-2

Elective: 3, 4, 5

(Not given 1931-32)

Miss White

***Psychology 176 Research in Child Development 2 Credits**

Prerequisite: Psychology 175

Elective: 3, 4, 5

(Not given 1931-32)

Miss White

Psychology 191 or 192 Journal Club 1 Credit for each semester

The staff and students will give reports on current literature.

Prerequisite: Major students or at least 10 credits of Psychology

Elective: 3, 4, 5

Time: M 7:30 p. m.

Psychology Staff

Psychology 199 or 200 Psychology Problems 1 to 3 Credits for each semester

Every major student is required to take up an individual problem on which he writes his graduating thesis. Such work may be started in the second semester of the Junior year.

Hours to be arranged.

Psychology Staff

PREMEDICAL CURRICULUM

Advisor to Premedical students—Miss Alice M. Boring.

Students desiring to do Premedical work in the College of Natural Sciences of the University will enter in the same manner as other regular students in other courses and Departments of the University. There is a Premedical Advisor, with whom all students taking Premedical work should consult at the time of registration.

The Premedical curriculum as outlined below covers the Freshman, Sophomore and Junior years.

At the end of three years students are prepared to take the examinations which may admit them to the Peking Union Medical College as regular medical students, or any other medical school in China.

Those students who have fulfilled all of the requirements for the Premedical courses at Yenching will be given the Degree of Bachelor of Science after they have satisfactorily completed the first year's work in the medical school at the Peking Union Medical College.

Those students who have had an adequate course in Physics in Middle school should complete the requirements outlined in section A below, while those who have not had such an adequate course in Physics should fulfill the requirements outlined in Section B.

Premedical Requirements

A. Chinese	10 credits
English	16 credits
Mathematics 1-2	4 credits
Biology 1-2	8 credits
Biology 51,52	8 credits
Biology 101-2 (recommended)	6 credits
Chemistry 3-4	8 credits
Chemistry 5-6	8 credits
Chemistry 9	4 credits
Physics 5-6	8 credits
Physics 7	4 credits
German or French (or Physical Chemistry and higher Mathematics; or Psychology and Education; or Economics, Political Science and Sociology)	10

Social sciences (Ed., Econ., Hist., Phil., Pol. Sci., Psy. 1-2, Rel.)	8
Elective	2
Hygiene (for women)	1
Total	104 or 105 credits

B. Chinese	10 credits
English	16 credits
Mathematics 1-2	4 credits
Biology 1-2	8 credits
Biology 51,52	8 credits
Chemistry 3-4	8 credits
Chemistry 5-6	8 credits
Chemistry 9	4 credits
Physics 3-4	8 credits
Physics 5-6	8 credits
Physics 7	4 credits
German or French (or Physical Chemistry and higher Mathematics; or Psychology and Education; or Economics, Political Science and Sociology)	10
Social sciences (Ed., Econ., Hist., Phil., Pol. Sc., Psy., Rel.)	8
Hygiene (for women)	1
Total	104 or 105 credits

Premedical Curriculum A

FIRST SEMESTER	SECOND SEMESTER
<i>Freshman Year</i>	
Chinese 7 2	Chinese 8 2
English 1 4	English 2 4
Mathematics 1 2	Mathematics 2 2
Biology 1 4	Biology 2 4
Chemistry 3 4	Chemistry 4 4
Soc. Sci. 2	Soc. Sci. 2
	Hygiene (Women) 1
18	18 or 19

Sophomore Year

Chin 9 2	Chin. 10 2
Eng. 5 4	Eng. 6 4
Biol. 51 4	Biology 52 4
Chem. 5 4	Phys. 6 4
Phys. 5 4	Phys. 7 4
18	18

Junior Year

Chin. 51 or (Elective) 2	(Chin. 52) or Elective 2
Biol. 101 or Elective 3	Biol. 102 or Elective 3
Chem. 9 4	Chem. 6 4
German 131 5	German 132 5
Soc. Sci. 2	Soc. Sci. 2
16	16

Premedical Curriculum B

FIRST SEMESTER	SECOND SEMESTER
<i>Freshman Year</i>	
Chinese 7 2	Chinese 8 2
English 1 4	English 2 4
Mathematics 1 2	Mathematics 2 2
Chemistry 3 4	Chemistry 4 4
Physics 3 4	Physics 4 4
Soc. Sci. 2	Soc. Sci. 2
	Hygiene (Women) 1
18	18 or 19

Sophomore Year

Chinese 9 2	Chinese 10 2
English 5 4	English 6 4
Biology 1 4	Biology 2 4
Chemistry 5 4	Physics 6 4
Physics 5 4	Physics 7 4
18	18

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Junior Year

Chinese 51. 2	
Biology 51. 4	Biology 52 4
Chemistry 9 4	Chemistry 6 4
German 131 5	German 132 5
Soc. Sci. 2	Soc. Sci. 2
17	15

PRE-NURSING CURRICULUM

Advisor to Pre-nursing students—Miss Alice M. Boring.

Yenching University offers Pre-nursing courses in cooperation with the School of Nursing of the Peping Union Medical College. All candidates for these courses must meet all requirements for admission as Freshmen to Yenching University.

Curriculum I is for students who wish to get their nursing certificate in four years and can not take the extra time to fulfil all the requirements for a Bachelor of Science degree. This Course requires one year at Yenching, two and a half years at the School of Nursing of Peping Union Medical College and half of the fourth year back at Yenching.

Curriculum II is for students who wish a Bachelor of Science degree from Yenching University in addition to the certificate in Nursing. This Course requires five years. The first two years are spent at Yenching and all the University and Natural Science College requirements are in the curriculum of these two years. In addition each student may elect certain other subjects which form a foundation for the strictly technical subjects which are given in the School of Nursing during the two and a half years spent there. Half of the fifth year will be devoted to such specialized work at either Yenching University or Peping Union Medical College as the student may choose to pursue.

Pre-nursing Curriculum I

FIRST SEMESTER	SECOND SEMESTER
Freshman Year	
Biology 1 4	Biology 2 4
Chemistry 3 4	Chemistry 2 4
English 1 4	English 2 4
Chinese 7 2	Chinese 8 2
Psychology 1 2	Psychology 2 2
Sociology 1. 2	Sociology 2. 2
18	19

Pre-nursing Curriculum II

FIRST SEMESTER	SECOND SEMESTER
Freshman Year	
Biology 1 4	Biology 2 4
Chemistry 3 4	Chemistry 2 4
Chinese 7 2	Chinese 8 2
English 1 4	English 2 4
Psychology 1 2	Psychology. 2
Sociology 1. 2	Sociology 2. 2
18	19
Sophomore Year	
English 5 4	English 6 4
Chinese 9 2	Chinese 10 2
Mathematics 1 2	Mathematics 2 2
Home Econ. 29 2	Home Econ. 32 2
*Elective 8	*Elective 8
18	18

* These electives should consist of a group of Natural Sciences (Biology, Chemistry, Physics and Mathematics) or a group of Social Sciences (Economics, Sociology and Political Science) or a group of courses in Education and Psychology.

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**CURRICULUM FOR TRAINING OF TEACHERS OF MIDDLE
SCHOOL SCIENCES**

Advisor:—Mr. W. H. Adolph.

A group of courses is being organized in the College of Natural Sciences which will offer specific training for students preparing for middle school science teaching. Unusual opportunities are open to college graduates who have received adequate training in this field.

The demand at present is for teachers prepared to teach (1) both physics and chemistry (2) biology, both zoology and botany. All teachers of middle school science should be familiar with the aims and methods of the General Science course in the middle school.

Students who select this curriculum of work will register in one of the regular major subjects but will in consultation with the advisor make a more complete selection of correlated subjects and will be eligible to take the special courses in laboratory and class room practice offered in biology, chemistry, physics, geography.

SPECIAL COURSE IN LEATHER TANNING

Advisor to Short Course Leather Students—Mr. E. O. Wilson

This course is planned to meet the needs of students who wish to become operators or managers of tanneries, but cannot take the complete four year course.

Instruction is given in Chemistry, Physics, English, Chinese, and elementary Economics. A major portion of the time is devoted to instruction in Leather Manufacture and to practice work in the experimental tannery.

Candidates for this course must meet all requirements for admission as Freshmen to Yenching University. Those who satisfactorily complete the two years of work are given a certificate.

Further details may be obtained by application to the Registrar.

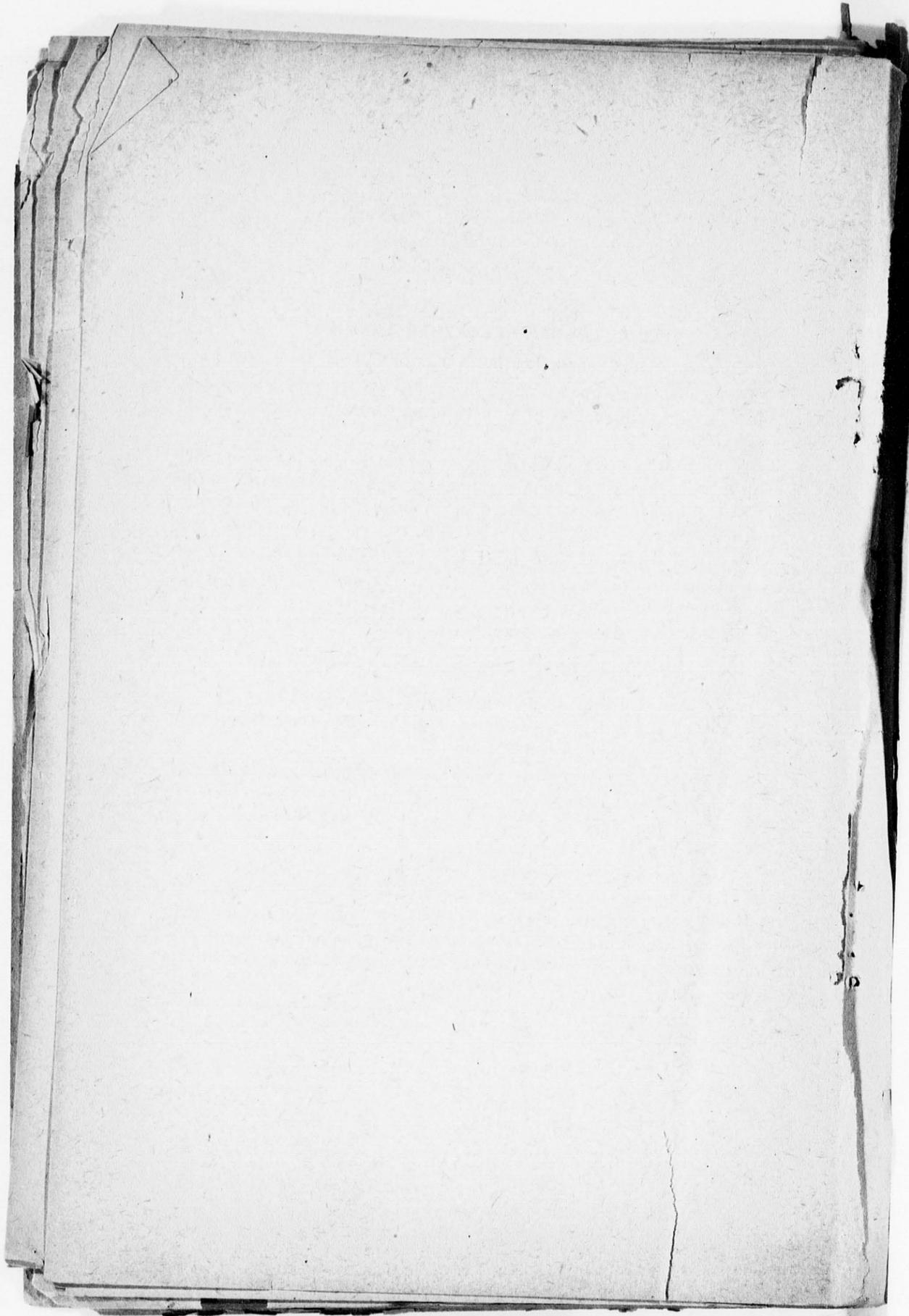
YENCHING CROP IMPROVEMENT STATION

* Shen Shou-chuan, B.S.—Director of Experimental Projects
Chang Teh-jen, B. S.—Business Manager and Acting Director
Hsu Tien-ssu, B. S.—Assistant

The work of this station is under the direction of the College of Agriculture of the University of Nanking, and these three men are Associates on the faculty of the University of Nanking and also of Yenching University.

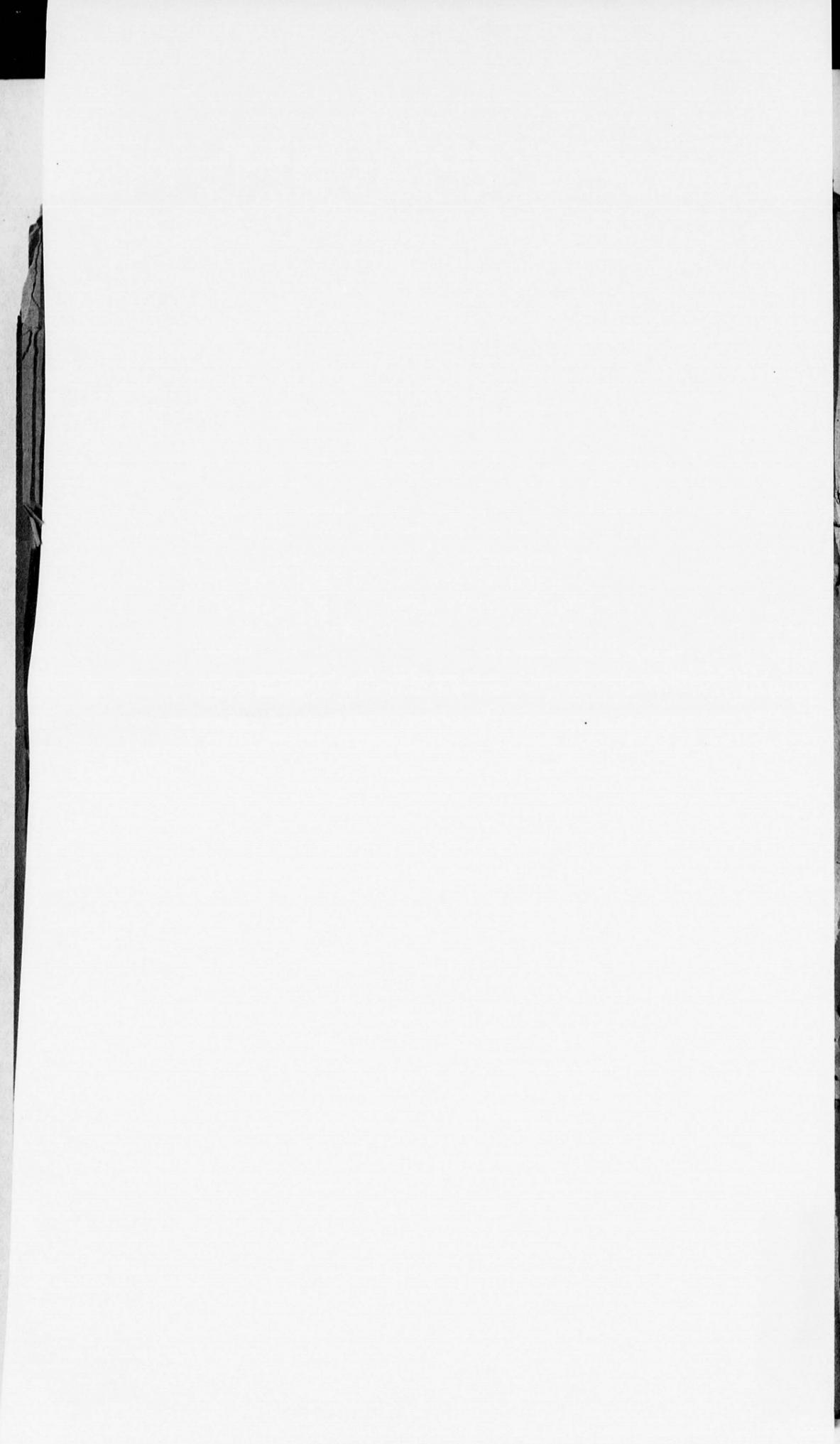
The experimental work is now being concentrated on plant breeding and crop improvement, especially with respect to the fundamental grain crops of North China, such as kaoliang, millet, wheat, and corn, with the purpose of developing new strains of improved grains and thus of contributing to the resources of the farmers and to the prevention of famine.

* Absent on leave, 1931-32.



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燕京大學
YENCHING UNIVERSITY
BULLETIN

College of Natural Sciences



Volume XVII—Number 25
Peiping, China
August, 1932

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燕京大學
YENCHING UNIVERSITY
BULLETIN

College of Natural Sciences



Volume XVII—Number 25
Peiping, China
August 1932

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學大京港
YENCHING UNIVERSITY
BULLETIN

College of Natural Sciences



Volume XVII - Number 2
Peking, China
August 1933

YENCHING UNIVERSITY BULLETINS

The regular bulletins of the University are issued at stated times during the year. Special bulletins are issued from time to time as the need arises. Requests for bulletins should be made to the University Book Store with cost prepaid. Bulletins given without charge are distributed by the Admissions Bureau.

- University Catalogue (in Chinese) 50 cents
- Guide book for Students. Every student of the University is entitled to one copy free. For each extra copy is charged . . 15 cents
- Directory of Faculty and Students 15 cents
- Graduate Division 15 cents
- Graduate Division Information Sheet Free
- School of Religion Free
- College of Arts and Letters 15 cents
- College of Natural Sciences 15 cents
- College of Public Affairs 15 cents
- Description of Departments (in Chinese) Free
- Undergraduate College Entrance Information (in Chinese) . . Free
- Entrance Examination Questions, 1931 15 cents
- Chuan Hsiu K'e General Information (in Chinese) Free

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YENCHING UNIVERSITY
Academic Calendar 1932-1933

Fall Semester

Fall semester begins	Sept. 1 (Thurs.)	
Dormitories open to students	Sept. 1 (Thurs.)	
Freshman week	Sept. 1 (Thurs.)-Sept. 4 (Sun.)	
Faculty preessional conference	Sept. 2 (Fri.) -Sept. 3 (Sat.)	
Exemption examinations	Sept. 3 (Sat.)	
Opening convocation	Sept. 5 (Mon.)	
Registration	Sept. 5 (Mon.) -Sept. 7 (Wed.)	
Class work begins	Sept. 8 (Thurs.)	
Late registration with fine	Sept. 8 (Thurs.)-Sept. 21 (Wed.)	
Change of courses without fine	Sept. 8 (Thurs.)-Sept. 14 (Wed.)	
Last day for taking make-up examinations	Sept. 14 (Wed.)	
Change of courses with fine	Sept. 15 (Thurs.)-Sept. 21 (Wed.)	
National holiday	Oct. 10 (Mon.)	
Senior thesis topic due	Oct. 15 (Sat.)	
Freshman mid-semester examinations	Nov. 7 (Mon.) -Nov. 12 (Sat.)	
Sun Yat Sen's birthday anniversary holiday	Nov. 12 (Sat.)	
Senior thesis outline due	Dec. 10 (Sat.)	
University anniversary holiday	*Dec. 25 (Sun.)	
Founding of the Republic of China anniversary holiday	Jan. 1 (Sun.)	
New Year holiday	Jan. 1 (Sun.) -Jan. 3 (Tues.)	
Fall semester examinations	Jan. 9 (Mon.) -Jan. 17 (Tues.)	
Winter recess	Jan. 18 (Wed.) -Jan. 31 (Tues.)	

Spring Semester

Spring semester begins	Feb. 1 (Wed.)	
Registration	Feb. 1 (Wed.) -Feb. 2 (Thurs.)	
Class work begins	Feb. 3 (Fri.)	
Late registration with fine	Feb. 3 (Fri.) -Feb. 16 (Thurs.)	
Change of courses without fine	Feb. 3 (Fri.) -Feb. 9 (Thurs.)	
Last day for taking make-up examinations	Feb. 9 (Thurs.)	
Change of courses with fine	Feb. 10 (Fri.) -Feb. 16 (Thurs.)	
Sun Yat Sen's memorial day holiday	*Mar. 12 (Sun.)	
Leaders of Revolution memorial day holiday	Mar. 29 (Wed.)	
Master's thesis due to major department	Mar. 31 (Fri.)	
Spring recess	Apr. 3 (Mon.) -Apr. 9 (Sun.)	
Alumni home-coming day holiday	Apr. 29 (Sat.)	
Senior thesis due to major department	May 1 (Mon.)	
National Government Inauguration Day holiday	May 5 (Fri.)	
Master's thesis due to graduate committee	May 15 (Mon.)	
Senior thesis due to dean of college	May 15 (Mon.)	
Spring semester examinations	June 8 (Thurs.)-June 17 (Sat.)	
Baccalaureate	June 18 (Sun.)	
Class day	June 19 (Mon.)	
Commencement	June 20 (Tues.)	

* A Make-up holiday will be given the following Monday

UNIVERSITY OFFICERS OF ADMINISTRATION

Wu Lei-ch'uan, Hanlin Academy	Chancellor
J. Leighton Stuart, D. D.	President
Howard S. Galt, Ed. D., D. D.	Chairman of the Committee for the Graduate Division
*Chao Tsu-ch'en, M.A., B.D., D. Litt. ..	Dean of the School of Religion
Chou Hsüeh-chang, H., Ph. D.	Dean of the College of Arts and Letters
Stanley D. Wilson, Ph. D.	Dean of the College of Natural Sciences
Ch'en Chi-t'ien, G., B.A.	Dean of the College of Public Affairs
Miss Soo-hoo, Nettie, M.A.	Dean of the College for Women
Mei Yi-pao, Ph. D.	Director of Studies
*Ts'ai I-o, S., B.A.	Comptroller and Treasurer
Miss Mary Cookingham, B.A.	Associate Treasurer
William Hung, M.A., S. T. B.	Director of the Library
Tien Hung-tu, B.A.	Librarian
Basil L.L. Learmonth, M.D.	Medical Officer.
Li Tien Chueh, M.D.	Medical Officer
Clara Nutting, M.D.	Medical Officer, College for Women
Ma Wen-cho, B. Com.	Chairman, Committee on Loans Scholarships and Self-help

*On leave of absence 1932-33.

YENCHING UNIVERSITY
Academic Calendar 1932-1933

Fall Semester

Fall semester begins	Sept. 1 (Thurs.)
Dormitories open to students	Sept. 1 (Thurs.)
Freshman week	Sept. 1 (Thurs.)-Sept. 4 (Sun.)
Faculty preessional conference	Sept. 2 (Fri.) -Sept. 3 (Sat.)
Exemption examinations	Sept. 3 (Sat.)
Opening convocation	Sept. 5 (Mon.)
Registration	Sept. 5 (Mon.) -Sept. 7 (Wed.)
Class work begins	Sept. 8 (Thurs.)
Late registration with fine	Sept. 8 (Thurs.)-Sept. 21 (Wed.)
Change of courses without fine	Sept. 8 (Thurs.)-Sept. 14 (Wed.)
Last day for taking make-up examinations	Sept. 14 (Wed.)
Change of courses with fine	Sept. 15 (Thurs.)-Sept. 21 (Wed.)
National holiday	Oct. 10 (Mon.)
Senior thesis topic due	Oct. 15 (Sat.)
Freshman mid-semester examinations	Nov. 7 (Mon.) -Nov. 12 (Sat.)
Sun Yat Sen's birthday anniversary holiday	Nov. 12 (Sat.)
Senior thesis outline due	Dec. 10 (Sat.)
University anniversary holiday	*Dec. 25 (Sun.)
Founding of the Republic of China anniversary holiday	Jan. 1 (Sun.)
New Year holiday	Jan. 1 (Sun.) -Jan. 3 (Tues.)
Fall semester examinations	Jan. 9 (Mon.) -Jan. 17 (Tues.)
Winter recess	Jan. 18 (Wed.) -Jan. 31 (Tues.)

Spring Semester

Spring semester begins	Feb. 1 (Wed.)
Registration	Feb. 1 (Wed.) -Feb. 2 (Thurs.)
Class work begins	Feb. 3 (Fri.)
Late registration with fine	Feb. 3 (Fri.) -Feb. 16 (Thurs.)
Change of courses without fine	Feb. 3 (Fri.) -Feb. 9 (Thurs.)
Last day for taking make-up examinations	Feb. 9 (Thurs.)
Change of courses with fine	Feb. 10 (Fri.) -Feb. 16 (Thurs.)
Sun Yat Sen's memorial day holiday	*Mar. 12 (Sun.)
Leaders of Revolution memorial day holiday	Mar. 29 (Wed.)
Master's thesis due to major department	Mar. 31 (Fri.)
Spring recess	Apr. 3 (Mon.) -Apr. 9 (Sun.)
Alumni home-coming day holiday	Apr. 29 (Sat.)
Senior thesis due to major department	May 1 (Mon.)
National Government Inauguration Day holiday	May 5 (Fri.)
Master's thesis due to graduate committee	May 15 (Mon.)
Senior thesis due to dean of college	May 15 (Mon.)
Spring semester examinations	June 8 (Thurs.)-June 17 (Sat.)
Baccalaureate	June 18 (Sun.)
Class day	June 19 (Mon.)
Commencement	June 20 (Tues.)

* A Make-up holiday will be given the following Monday

UNIVERSITY OFFICERS OF ADMINISTRATION

Wu Lei-ch'uan, Hanlin Academy	Chancellor
J. Leighton Stuart, D. D.	President
Howard S. Galt, Ed. D., D. D.	Chairman of the Committee for the Graduate Division
*Chao Tsu-ch'en, M.A., B.D., D. Litt. ..	Dean of the School of Religion
Chou Hsüeh-chang, H., Ph. D.	Dean of the College of Arts and Letters
Stanley D. Wilson, Ph. D.	Dean of the College of Natural Sciences
Ch'en Chi-t'ien, G., B.A.	Dean of the College of Public Affairs
Miss Soo-hoo, Nettie, M.A.	Dean of the College for Women
Mei Yi-pao, Ph. D.	Director of Studies
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Li Tien Chueh, M.D.	Medical Officer
Clara Nutting, M.D.	Medical Officer, College for Women
Ma Wen-cho, B. Com.	Chairman, Committee on Loans Scholarships and Self-help

*On leave of absence 1932-33.

THE COLLEGE OF NATURAL SCIENCES

THE FACULTY

Stanley D. Wilson, Ph. D.	.. ..	Dean of the College and Professor of Chemistry.
Ch'en Tsai-hsin, Ph. D.	.. ..	Professor and Chairman of the Department of Mathematics.
Walter W. Davis, M. S.	.. ..	Professor of Geography and Chairman of the Department of Geography and Geology.
Lew T'ing-fang, T., Ph. D.	.. ..	Professor of Psychology.
*George B. Barbour, Ph. D.	.. ..	Professor of Geology.
Earl O. Wilson, S.M.	.. ..	Professor and Chairman of the Department of Chemistry.
Miss Emma L. Konantz, M.A.	.. ..	Professor of Mathematics
Miss Alice M. Boring, Ph. D.	.. ..	Professor of Biology.
*Hsieh Yü-ming, Ph. D.	.. ..	Professor of Physics.
Wu Chen-fu F., Ph. D.	.. ..	Professor of Biology.
Luh Chih-wei, Ph. D.	Professor and Chairman of the Department of Psychology.
William H. Adolph, Ph. D.	Professor of Chemistry.
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Yang Chin-ch'ing, M.S.	Assistant Professor of Physics.
*Miss Ethel M. Hancock, B. Sc.	Assistant Professor of Mathematics
Li Ju-ch'i, Ph. D.	.. ..	Assistant Professor and Chairman of the Department of Biology.
Randolph C. Sailer, Ph. D.	.. ..	Assistant Professor of Psychology.
*Liu Ju-ch'iang, M.A.	.. ..	Assistant Professor of Biology.
William Band, M.Sc.	.. ..	Assistant Professor and Chairman of the Department of Physics.

Note: With the exception of the dean the list is arranged in the order of seniority according to rank.

*Absent on leave 1932-33.

Miss Ch'en I, C., M.A.	.. ..	Lecturer and Chairman of the Department of Home Economics.
Chang Yin-t'ang, M.Sc.	.. ..	Lecturer in Geography.
Miss Ma R. Moh-ling, Ph. D.	.. ..	Lecturer in Biology.
Ts'ai Liu Sheng, Ph. D.	.. ..	Lecturer in Chemistry.
Miss Feng Yun-hao, Ph. D.	.. ..	Lecturer in Chemistry.
E. T. Nyström, Ph. D.	.. ..	Lecturer in Geology (part time)
Chin Jung-lu, M.S.	.. ..	Lecturer in Mathematics (part time)
Shen Shou-ch'uan, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Ch'ang Teh-jen, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Hsu Tien-ssu, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Weng Teh-chi, B.S.	Visiting Associate in Agriculture, University of Nanking.
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Wang Tsan-ch'ing, B.A.	Instructor in Chemistry.
Ts'ao Ching-p'an, B.A.	Instructor in Chemistry.
Chang Ch'uan, P., B.S.	.. ..	Instructor in Chemistry.
Meng Chao-ying, M.S.	.. ..	Instructor in Physics.
Hsia Yün, M.S.	.. ..	Instructor in Psychology.
Kung Lan-chen, Ph.D.	Instructor in Home Economics.
---	Instructor in Home Economics.
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Chang Tso-kan, B.S.	Assistant in Biology.
Mao Ying-tou, B.S.	Assistant in Biology.
Yen Chia-hsien, B.S.	.. ..	Assistant in Biology.
Hsiao Chih-ti, B.S.	.. ..	Assistant in Biology.
Lin Cho-yuan, B.S.	.. ..	Assistant in Chemistry.
Wang Peng-chu, B.S.	.. ..	Assistant in Chemistry.
Weng Hsi-kuang, B.S.	Assistant in Chemistry.

THE COLLEGE OF NATURAL SCIENCES

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*Miss Ethel M. Hancock, B. Sc.	Assistant Professor of Mathematics
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Randolph C. Sailer, Ph. D.	Assistant Professor of Psychology.
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Note: With the exception of the dean the list is arranged in the order of seniority according to rank.

*Absent on leave 1932-33.

Miss Ch'en I, C., M.A.	.. ..	Lecturer and Chairman of the Department of Home Economics.
Chang Yin-t'ang, M.Sc.	.. ..	Lecturer in Geography.
Miss Ma R. Moh-ling, Ph. D.	.. ..	Lecturer in Biology.
Ts'ai Liu Sheng, Ph. D.	.. ..	Lecturer in Chemistry.
Miss Feng Yun-hao, Ph. D.	.. ..	Lecturer in Chemistry.
E. T. Nyström, Ph. D.	.. ..	Lecturer in Geology (part time)
Chin Jung-lu, M.S.	.. ..	Lecturer in Mathematics (part time)
Shen Shou-ch'uan, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Ch'ang Teh-jen, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Hsu Tien-ssu, B.S.	.. ..	Visiting Associate in Agriculture, University of Nanking.
Weng Teh-chi, B.S.	Visiting Associate in Agriculture, University of Nanking.
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Wang Tsan-ch'ing, B.A.	Instructor in Chemistry.
Ts'ao Ching-p'an, B.A.	Instructor in Chemistry.
Chang Ch'uan, P., B.S.	.. ..	Instructor in Chemistry.
Meng Chao-ying, M.S.	.. ..	Instructor in Physics.
Hsia Yün, M.S.	.. ..	Instructor in Psychology.
Kung Lan-chen, Ph.D.	Instructor in Home Economics.
---	Instructor in Home Economics.
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Chang Tso-kan, B.S.	Assistant in Biology.
Mao Ying-tou, B.S.	Assistant in Biology.
Yen Chia-hsien, B.S.	.. ..	Assistant in Biology.
Hsiao Chih-ti, B.S.	.. ..	Assistant in Biology.
Lin Cho-yuan, B.S.	.. ..	Assistant in Chemistry.
Wang Peng-chu, B.S.	.. ..	Assistant in Chemistry.
Weng Hsi-kuang, B.S.	.. ..	Assistant in Chemistry.

Sun Ling-hsien, B.S. *Assistant in Chemistry.*
 Tsiang Shien-ting, B.S. *Assistant in Chemistry.*
 Chang Wen-yü, B.S. *Assistant in Physics.*
 Pi Te-hsien, B.S. *Assistant in Physics.*
 Ch'en Shang-yi, B.S. *Assistant in Physics.*
 Yuan Chia-liu, B.S. *Assistant in Physics.*
 Miss Wang Ch'eng-shih, B.S. *Assistant in Physics.*
 Kao Hsueh-chung, M.S. *Research Fellow in Chemistry.*
 Hsiung Ta-chiang, B.S. *Research Assistant in Chemistry.*

EXECUTIVE COMMITTEE OF THE COLLEGE

S. D. Wilson, Ph. D. *Dean.*
 Li Ju-chi, Ph. D. *Biology.*
 Earl O. Wilson, S.M. *Chemistry.*
 Walter W. Davis, M.S. *Geography and Geology.*
 Miss Chen I, M.A. *Home Economics.*
 Chen Tsai-hsin, Ph. D. *Mathematics.*
 William Band, M. Sc *Physics.*
 Luh Chih-wei, Ph. D. *Psychology.*

ADVISORS

Miss Alice M. Boring, Ph. D. *Pre-medical and Pre-nursing.*
 William H. Adolph, Ph. D. *Course for Training Science Teachers.*
 Earl O. Wilson, S.M. *Leather Short Course*
 R.C. Sailer, Ph. D. *Freshmen Men*
 Miss Tseng Hsiu-hsiang, M.A. *Freshmen Women.*

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COLLEGE OF NATURAL SCIENCES

ACADEMIC REGULATIONS:

1. *Entrance.* Students graduating from government or registered private Senior Middle Schools or other schools of similar standing may be admitted into the College by successfully passing the Entrance Examinations.
2. *Major Department.* A regular student in this College must elect one of the following Departments as his or her Major Department: Biology, Chemistry, Geography and Geology, Home Economics, Mathematics, Physics or Psychology.
3. *Graduation.* A regular student on fulfilling the prescribed curriculum of one of the Major Departments in this College and passing all examinations will receive the diploma of Bachelor of Science.
4. *Required Courses.* The College offers the following types of required courses.

A. *General Requirements.* A regular Freshman student must fulfill the following requirements during the First Year. Under special conditions some of these requirements may be made up in the second year.

<u>Subject</u>	<u>Year Credits</u>
Chinese.	4 Credits
English.	8 Credits
Natural Sciences.	16 Credits

This requirement may be fulfilled by electing courses from any two of the following: Biology, Chemistry, Geography, Geology, Mathematics, Physics, Psychology 5-6.

Mathematics. 4 Credits

A student who takes 8 credits in Mathematics as one of the Natural Sciences will be excused from this requirement.

Social Science 4 Credits

Total Credits for the First Year 36 Credits

A woman student must take one credit in Hygiene in the first semester of the first year. This credit should be taken within the regular quota wherever possible but where necessary may be taken extra.

Physical Training

All First Year students are required to take two hours of Physical Training per week throughout the year. This is in addition to the 136 credits required for graduation.

Women students are required to take two hours of Physical Training per week for each of the second and third years of their course. This also is in addition to the 136 credits required for graduation.

Military Training

All able-bodied men students are required to take Military Training equivalent to six credits during the second and third years of their college course. This is in addition to the 136 credits required for graduation.

Party Principles

All students are required to take work in Party Principles equivalent to two credits before graduation. This is also in addition to the 136 credits required for graduation.

B. *Department Requirements.*

- (1) A regular student in this College must at the beginning of the Second Year elect one of the Departments as his or her Major Department. If for special reasons the student is unable to do so at the stated time, he or she must secure permission of the Dean to defer the decision to a later date.
- (2) In addition to the general requirements prescribed for the First Year, a regular student in this College must fulfill the following requirements for graduation besides other requirements that are prescribed by the Major Department:

<u>Courses</u>	<u>Total Credits</u>
In Major Department.....	32-68 credits
In correlated subjects.....	16-24 credits
The nature of the correlated subjects is determined by each Major Department.	

5. *Credits and Grade Ratio.*

- A. A regular student in the College must take 136 credits and have a general grade ratio of 1.00 or more in order to graduate.
- B. A regular student in the First and Second Year Classes should take 18 credits each semester and a regular student in the Third and Fourth Year Classes should take 16 credits each semester. A woman student taking one credit in Hygiene in the first semester of the First Year may take a total of 19 credits in that semester.
- C. A regular student should not take less than 12 credits in any semester.
- D. If a student during any year has a general grade ratio of less than .80 for the work of that year, the student will be dropped from the College.
- E. If a student during any two successive years has a general grade ratio of less than 1.00 for the work of each year, that student will be dropped from the College.

F. The grade of any student who has not paid his breakage fees is to be sent to the Registrar as Incomplete and will therefore automatically become F unless the bill is paid before the time of the make-up examinations.

6. *Short Courses.* Different types of Short Courses may be given by the College. A student who completes the prescribed work in a short course and who passes all examinations will receive the certificate for that Short Course. No college credit will be given to students in these short courses except in cases where the students have passed regular entrance examination to the University, previous to taking the work in the short course, and then only credit for such courses as are of regular college grade may be granted towards graduation from the University.

001-57-001-1

DEPARTMENT OF BIOLOGY

Li Ju-ch'i, Ph. D. *Assistant Professor and Chairman*
 Miss Boring, Alice M., Ph. D. . . . *Professor*
 Wu Chenfu F., Ph. D. *Professor*
 *Liu Ju-ch'iang, M. S. *Assistant Professor*
 Miss Ma R. Moh-ling, Ph. D. . . . *Lecturer*
 Chang Tso-kan, B. S. *Assistant*
 Mao Ying-tou, B. S. *Assistant*
 Yen Chia-hsien, B. S. *Assistant*
 Hsiao Chih-ti, B. S. *Assistant*

The functions of the Department are (1) to provide the necessary courses which are fundamental to the curricula in Pre-medicine, Pre-nursing, Leather Tanning and Home Economics and other professional and technical work in Biology, (2) to provide a sequence of courses which will fulfill the requirements for graduation prescribed in the Academic Regulations of the College of Natural Science, (3) to train students for teaching General Science and Biology, (4) to prepare students for research work in Biology, and (5) to offer opportunities to graduates for carrying on research work in Biology.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation:

(1) Chinese	.. .. .	4 credits
English	.. .. .	16 credits
Chemistry	.. .. .	8 credits
Mathematics	.. .. .	4 credits
Social Sciences (Psy., Educ., Econ., or Soc.)	.. .. .	8 credits
Major	.. .. .	40 credits

* Absent on leave 1932-33.

Of the 40 credits of major the following courses are required:

Biology 1-2	.....8	credits
Biology 51, 52	....8	credits
Biology 53, 54	....8	credits
Biology 101, 102	....6	credits
Biology 103, 104	....4	credits
Biology 199, 200	....4	credits
Biology 153, 154	....2	credits

Correlated subjects (Physics, chemistry, Geology or Experimental Psychology).. 16 credits
 Electives 40 credits

Total 136 credits

- (2) In Biology 199 and 200 the student must satisfactorily complete a thesis on a biological problem under the supervision of a member in this Department.
- (3) The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

0454

00151

Major Curriculum in Biology

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>	<i>First Year</i>	<i>Credits</i>
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Nat. Sc. (Biol. I)	4	Nat. Sc. (Biol. 2)	4
Nat. Sc. (Chem. 3)	4	Nat. Sc. (Chem. 4)	4
Mathematics 1	2	Mathematics 2	2
Social Science (Psy., Educ., Econ., Soc.)	2	Social Science (Psy., Educ., Econ., Soc.)	2
Hygiene (for women).. .. .	1		
	<hr/>		<hr/>
	18 or 19		18
<i>Second Year</i>		<i>Second Year</i>	
English 5	4	English 6	4
Major (Biol. 51)	4	Major (Biol. 52)	4
Major (Biol. 53)	4	Major (Biol. 54)	4
Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4	Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4
Social Science (Psy., Educ., Econ., Soc.)	2	Social Science (Psy., Educ., Econ., Soc.)	2
	<hr/>		<hr/>
	18		18
<i>Third Year</i>		<i>Third Year</i>	
Major (Biol. 101)	3	Major (Biol. 102)	3
Major (Biol. 103)	2	Major (Biol. 104)	2
Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4	Cor. Subj. (Physics, Chem., Geol. Exp. Psy.)	4
Electives	7	Electives	7
	<hr/>		<hr/>
	16		16
<i>Fourth Year</i>		<i>Fourth Year</i>	
Major (Biol. 199)	2	Major (Biol. 200)	2
Major (Biol. 153)	1	Major (Biol. 154)	1
Major (Biol. -)	4	Major (Biol. -)	4
Electives	9	Electives	9
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	16		16
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	16		

**Department of Biology
Schedule**

Day	Time	7:50-8:40	9:10-10:00	10:10-11:00	11:10-12:00	1:00-4:00
Sat.						
Fri.		Biol. 53.54	Biol. 53.54 Lab.	Biol. 53.54 Lab.	Biol. 53.54 Lab.	
Thurs.		Biol. 1-2 A	Biol. 1-2 B	Biol. 53.54 Biol. 158		Biol. 53.54 Biol. 101, 102
Wed.		Biol. 106	Biol. 51.52 Biol. 05	Biol. 101,102		Biol. 1-2 Y Biol. 51.52 B Biol. 106
Tues.		Biol. 1-2 A	Biol. 1-2 B	Biol. 158		Biol. 1-2 X Biol. 51.52A Biol. 103,104 Biol. 105 Biol. 158
Mon.		Biol. 106	Biol. 51.52 Biol. 105	Biol. 101,102		Biol. 1-2 Y Biol. 51.52 B Biol. 106.
				Biol. 153, 154		Biol. 1-2 X Biol. 51.52 A Biol. 103,104 Biol. 105

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Biology 1-2 **General Biology** **4-4 Credits**

A course in the fundamental principles of structure and function in both animals and plants. Emphasis is placed on laboratory methods and on practical applications to everyday life whenever possible. The principles of evolution and inheritance are discussed. Two lectures and six laboratory hours.

Required: Major and Pre-medical and Pre-nursing students

Elective: 1,2

Limited to 70 students

Lecture: Section A—WF 7:50

Section B—WF 9:10

Laboratory: Section X—MW 1:00-4:00 (35 students)

Section Y—TTh 1:00-4:00 (35 students)

Miss Boring
Miss Ma
and Mr. Chang

Biology 51 **Invertebrate Zoology** **4 Credits**

This is a course on the morphology and physiology of the invertebrate groups with special emphasis on the life histories of the pathogenic forms, the evolutionary relationships between the different phyla, and the more important biological principles. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2

Required: Major and Pre-medical students

Elective: 2,3

Limited to 40 Students

Lecture: T Th 9:10

Laboratory: Section A—MW 1:00-4:00 (20 Students)

Section B—TTh 1:00-4:00 (20 Students)

Mr. Wu

Biology 52 **Comparative Anatomy of the Vertebrates** **4 Credits**

A study of comparative anatomy of the different classes of vertebrates with emphasis on those features in lower vertebrates which throw light on similar features in mammals and man. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2

Required: Major and Pre-medical students

Elective: 2,3

Limited to 40 Students

Lecture: T Th 9:10

Laboratory: Section A—MW 1:00-4:00 (20 students)

Section B—TTh 1:00-4:00 (20 students)

Miss Boring

Biology 53 **General Botany** **4 Credits**

This course consists of the study of the structure and function of the plant body, the relation of plants to their environments and the evolutionary relationships between the different groups of plants. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2

Elective: 2,3,4

Lecture: F 10:10, S 7:50

Laboratory: F 1:00-4:00, S 9:00-12:00

Miss Ma

Biology 54 **Local Flora** **4 Credits**

This is a practical and systematic study of the characters of the various families and genera of the local plants. The students will receive training in

field collecting, preparation of herbarium mounts, and the use of keys for the determination of the specimens in the collection. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2

Elective: 2,3,4

Lecture: F 10:10, S 7:50

Laboratory: F 1:00-4:00, S 9:10-12:00

Biology 101 **General Embryology** **3 Credits**

The course is designed to acquaint the students with all the fundamental principles of embryology. The cell and mitosis are taken up first; then the descriptive and analytical aspects of germ cells, maturation, fertilization, and cleavage phenomena are treated with more or less detail. The latter part of the semester is devoted to a comparative study of the early development of the vertebrates—the origin and development of the germinal layers, organogenesis and the formation of embryonic membranes. Two lectures and three laboratory hours.

Prerequisite: Biology 51,52

Required: Major students in Biology

Elective: 3,4,5

Lecture: TTh 10:10

Laboratory: F 1:00-4:00

Mr. Li

Biology 102 **Genetics** **3 Credits**

The object of the course is to give the students an idea of the theories of organic evolution, Mendelism and biometry. The main emphasis is laid on Mendelism. The study of linkage and crossing-over, the chromosome theory of heredity and the mechanism of sex determination are critically discussed. Two lectures and three laboratory hours.

Prerequisite: Biology 51,52

Required: Major students in Biology

Elective: 3,4,5

Lecture: TTh 10:10

Laboratory: F 1:00-4:00

Mr. Li

Biology 103 **Biological Technique** **2 Credits**

Principles and practice of making microscopic preparations. Guyer's Animal Micrology will be followed. Six laboratory hours.

Prerequisite: Biol. 51, 52

Required: Major students in Biology

Elective: 3, 4, 5

Laboratory: MW 1:00-4:00

Mr. Wu

Biology 104 **Biological Technique** **2 Credits**

A practical study of various laboratory methods in collecting, preserving and preparing biological specimens for class and laboratory work. Six laboratory hours.

Prerequisite: Biol. 103

Required: Major students in Biology

Elective: 3, 4, 5

Laboratory: MW 1:00-4:00

Mr. Wu

Biology 105 Animal Histology 4 Credits

A general study of animal cells and tissues and some typical organs. Fresh material will be used where possible, and its reaction to various chemicals, which constitutes a foundation for the study of microscopic technique, will be studied. Two lectures and six laboratory hours.

Prerequisite: Biol. 1-2
Required: Leather Tanning students
Elective: 3, 4, 5
Lecture: TTh 9:10
Laboratory: MW 1:00-4:00

Miss Boring

Biology 106 General Entomology 4 Credits

A study of the morphological characters of insects and the representatives of the different orders, with emphasis on their evolutionary relationships, life histories, economic importance and methods of control. Two lectures and six laboratory hours.

Prerequisite: Biol. 51
Elective: 3, 4, 5
Lecture: TTh 7:50
Laboratory: TTh 1:00-4:00

Mr. Wu

Biology 107-108 Plant Pathology 2-2 Credits

A study of the diseases of plants with emphasis on symptoms and causes and on economic importance and methods of prevention. One lecture and three laboratory hours.

Prerequisite: Biol. 53 and 54
Elective: 3 and 4
Lecture: Hour to be arranged
Laboratory: Time to be arranged

Miss Ma

Biology 153 Journal Club 1 Credit

In this course the faculty and students will give reports on articles in current biological journals. One conference hour.

Prerequisite: Two years of Biology
Required: Major students in Biology
Elective: 3, 4, 5
Conference: Time to be arranged

Miss Boring

Biology 154 Journal Club 1 Credit

Same as Biology 153

Miss Boring

Biology 158 Protozoology 3 Credits

The course deals with an intensive study of the protozoons. Morphological, physical and systematic surveys of the unicellular animals are to be taken up in succession. Recent experimental work on the problems of conjugation and endomixis will be discussed. One lecture and three laboratory hours.

Prerequisite: Biol. 51
Elective: 3, 4, 5
Lecture: WF 10:10
Laboratory: W 1:00-4:00

Mr. Li

Biology 159 Experimental Biology 2 Credits

An introductory study of the living phenomena in natural and experimental conditions, including discussions on the methods of experimentation and reports on the current literature. Two lecture hours.

Prerequisite: Biology 101, 102
Elective: 3,4,5
Lecture: Time to be arranged

Mr. Li

Biology 192 The Teaching of Biology 2 Credits

Students in this course will be given experience in the preparation of laboratory material and in the conduct of laboratory class work under supervision. Conferences; special assignments; work assigned to fit the needs of each student.

Prerequisite: Biology 51, 52
Open to seniors only
Hours: to be assigned

Mr. Wu

Biology 199 Senior Thesis 2 Credits

Each Major student is expected to show the ability to work out independently a simple problem in Biology under the supervision of a member of the department who is best trained in the special line. Work equivalent to at least six laboratory hours.

Prerequisite: Two years of Biology
Required: Major students in Biology
Elective: 3, 4
Laboratory: Time to be arranged

Biology Staff

Biology 200 Senior Thesis 2 Credits

Same as Biology 199

Biology Staff

DEPARTMENT OF CHEMISTRY

E. O. Wilson, S.M.	<i>Professor and Chairman</i>
Wm. H. Adolph, Ph. D.	<i>Professor</i>
Stanley D. Wilson, Ph. D.	<i>Professor</i>
Ts'ai Liu-sheng, M.S., Ph. D.	<i>Lecturer</i>
Miss. Feng Yun-hao, Ph. D.	<i>Lecturer</i>
Ts'ao Ching-p'an, B.A.	<i>Instructor</i>
Wang Tsan-ch'ing, B.A.	<i>Instructor</i>
Chang Ch'üan P., B.S.	<i>Instructor</i>
Lin Cho-yuan, B.S.	<i>Assistant</i>
Wang Peng-chu, B. S.	<i>Assistant</i>
Weng Hsi-kuang, B.S.	<i>Assistant</i>
Sun Ling-hsien, B.S.	<i>Assistant</i>
Tsiang Shien-tsing, B.S.	<i>Assistant</i>
Kao Hsueh-chung, M.S.	<i>Research Fellow</i>
Hsiung Ta-chiang, B.S.	<i>Research Assistant in Chemistry.</i>

The functions of the Department are (1) to provide the fundamental courses necessary in the curricula in Pre-medicine, Pre-nursing, Leather Tanning and Home Economics; (2) to provide a sequence of courses which will fulfill the requirements for graduation prescribed in the Academic Regulations of the College of Natural Sciences; (3) to train students for teaching chemistry; (4) to train students as practical chemists and tanners; (5) to offer students specializing in other lines an opportunity to become acquainted with the science of chemistry; and (6) to offer opportunities for graduates to carry on research in Chemistry.

Department Regulations

Students in this Department who take a major in the general field of Chemistry must fulfill the requirements for graduation listed in section A below. Students who take a major in Chemistry with an option in Leather Tanning must fulfill the requirements for graduation listed in section B below.

A. 1. Chinese	4 credits
English	16 credits
Physics	8 credits
Mathematics	12 credits
Social Sciences (Econ. Soc., Hist., Psy., Rel., or Pol. Sc.)	8 credits
Hygiene (for Women)	1 credits
Major	40 credits

The following courses must be taken in making up the 40 credits in the Major.

Chemistry 3-4	8 credits
Chemistry 5-6	8 credits
Chemistry 9-10	8 credits
Chemistry 199 and or 200	4 or 2 credits
*Chemistry 131-132	8 credits
Correlated subjects (Biology, Geology, Education, Home Economics, Mathematics or Physics.)	16 credits
Electives	30 or 32 credits

Total 136 credits

2. In Chemistry 199 and 200 the student must complete in a satisfactory manner a thesis on a chemical problem, under the direction of a member of the staff of the Department.
 3. The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.
- | | |
|-----------------------------------|------------|
| B. 1. Chinese | 4 credits |
| English | 16 credits |
| Social Sciences (Econ.) | 8 credits |
| Mathematics 1-2, 27-28 | 12 credits |
| Biology 1-2 | 8 credits |

*Calculus is a prerequisite to Chem. 131-132.

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Biology 105	4 credits
Physics 5-6	8 credits
Leather 71-72	4 credits
Leather 73-74	8 credits
Leather 75-76	8 credits
Chemistry 3-4	8 credits
Chemistry 5-6	8 credits
Chemistry 9-10	8 credits
Chemistry 119-120	8 credits
Chemistry 121-122	8 credits
Chemistry 131-132	8 credits
Chemistry 199 and or 200	4 or 2 credits
Electives	8 or 10 credits

Total 136 credits

2. In Chemistry 199 and 200 the student must complete in a satisfactory manner a thesis on a problem relating to leather, under the direction of some member of the staff of the Department.
3. The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

**Major Curriculum In The General Field
of Chemistry**

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Major (Chemistry 3)	4	Major (Chemistry 4)	4
Physics 5	4	Physics 6	4
Mathematics 1	2	Mathematics 2	2
Social Science (Econ. Soc., Hist., Psy., Rel., or Pol., Sc.)	2	Social Science .. Soc., Hist., Psy., Rel., or Pol., Sc.)	2
Hygiene (for women)	1		
	18 or 19		18

Second Year

English 5	4	English 6	4
Major (Chemistry 5)	4	Major (Chemistry 6)	4
Mathematics 27	4	Mathematics 28	4
Social Science (Econ., Soc., Hist., Psy., Rel. or Pol. Sc.)	2	Social Science (Econ., Soc., Hist., Psy., Rel., or Pol., Sc.)	2
Elective (Econ. or History)	4	Elective (Econ. or History)	4
	18		18

Third Year

Major (Chemistry 9)	4	Major (Chemistry 10)	4
Major (Chemistry)	4	Major (Chemistry)	4
Cor. Subj., (Biol., Geol., Home Ec., Math., Phys. or		Cor. Subj., (Biol., Geol., Home Ec., Math., Phys. or	

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Educ.)	4	Educ.)	4
Elective	4	Elective	4
	<u>16</u>		<u>16</u>

Fourth Year

Major (Chemistry 131)	4	Major (Chemistry 132)	4
Major (Chemistry 199)	2	Major (Chemistry ..)	4
Major (Chemistry ..)	2	Elective	8
Elective	8		
	<u>16</u>		<u>16</u>

**Major Curriculum in Chemistry with
An Option in Leather Tanning**

FIRST SEMESTER

SECOND SEMESTER

First Year

Credits

Credits

Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Major (Chemistry 3)	4	Major (Chemistry 4)	4
Biology 1	4	Biology 2	4
Mathematics 1	2	Mathematics 2	2
Social Science	2	Social Science	2
	<u>18</u>		<u>18</u>

Second Year

English 5	4	English 6	4
Major (Chemistry 5)	4	Major (Chemistry 6)	4
Major (Leather 71)	2	Major (Leather 72)	2
Cor. Subj. (Physics 5)	4	Cor. Subj. (Physics 6)	4
Mathematics 27	4	Mathematics 28	4
	<u>18</u>		<u>18</u>

Third Year

Major (Chemistry 9)	4	Major (Chemistry 10)	4
Major (Leather 73)	4	Major (Leather 74)	4
Major (Chemistry 119)	4	Major (Chemistry 120)	4
Cor. Subj. (Biology 105)	4	Elective	4
	<u>16</u>		<u>16</u>

Fourth Year

Major (Leather 75)	4	Major (Leather 76)	4
Major (Chemistry 121)	3	Major (Chemistry 122)	3
Major (Chemistry 131)	4	Major (Chemistry 132)	2
Elective	5	Major (Chemistry 200)	2
		Elective	5
	<u>16</u>		<u>16</u>

Department of Chemistry

Schedule

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
7:50 to 8:40		Chem. 3-4 B Chem. 119-120		Chem. 3-4 B Chem. 119-120		
9:10 to 10:00	Chem. 3-4 A Chem. 5 A Chem. 131-132 Leather 73-74 (Lab)	Chem. 117	Chem. 3-4 A Chem. 5 A Chem. 6 A Chem. 9-10 Chem. 131-132	Chem. 117	Chem. 6B Chem. 9-10	Chem. 5C Chem. 6B (Lab) Chem. 7 (Lab) Chem. 131-132 (Lab) Leather 73-74 (Lab)
10:10 to 11:00	Leather 73-74 (Lab)	Chem. 5 B Chem. 7 Chem. 123 Leather 75-76		Chem. 5 B		Chem. 5C Chem. 6B (Lab) Chem. 7 (Lab) Chem. 131-2 (Lab) Leather 73-74 (Lab)
11:10 to 12:00	Chem. 121-122 Leather 73-74 (Lab)		Chem. 121-122 Leather 73-74		Chem. 121-122 Leather 73-74	Chem. 5C Chem. 6B (Lab) Chem. 7 (Lab) Chem. 131-2 (Lab) Leather 73-74 (Lab)
1:00 to 4:00	Chem. 3-4 A Chem. 5 A Chem. 6 A Chem. 7 Chem. 131-132	Chem. 3-4 B Chem. 5 B Chem. 6 B Chem. 9-10 Leather 75-76	Chem. 3-4 A Chem. 5 A Chem. 6 A Chem. 119-120	Chem. 3-4 B Chem. 5 B Chem. 6 B Chem. 9-10	Chem. 5 C Chem. 6 A Chem. 7 Chem. 75-76 Chem. 119-120	

Chemistry 2

Chemistry for Nurses 4 Credits

A study of organic, and physiological chemistry with special emphasis on problems connected with nursing. Two lectures and six hours of laboratory.

Required: Freshman in prenursing course

Lecture: TTh 7:50

Laboratory: TTh 1:00-4:00

Mr. T. C. Wang

Chemistry 3-4

Inorganic Chemistry 4-4 Credits

A course in general inorganic chemistry covering both the non-metals and the metals, one half of the laboratory time is devoted to qualitative analysis. The course acquaints the student with the important laws, theories and applications of chemistry. The bearing of chemistry upon the life of the community and nation is emphasized. Two lectures and six hours of laboratory.

Prerequisite: Physics 3-4 or equivalent.

Required: Majors in Chemistry and Premedical

Elective: 1,2 (also 3,4)

Lecture: A-MW 9:10

B-TTh 7:50

Laboratory: Any two of the following periods

M W 1:00-4:00, TTh 1:00-4:00

Mr. S. D. Wilson

Mr. C. P. Tsao

Chemistry 5

Elementary Physical Chemistry 4 Credits

An intensive study of the fundamental laws and principles of chemistry. The laboratory work consists of simple experiments developing the important conceptions of physical chemistry. Two conferences and six hours of laboratory.

Prerequisites: Chemistry 3-4; Physics 3-4 or equivalent

Required: Majors in Chemistry and Premedicals

Elective: 2, 3, 4

Sections: A-MW 9:10; MW 1:00-4:00

B-TTh 10:10; TTh 1:00-4:00

C- ; F 1:00-4:00; S 9:00-12:00

Mr. Adolph

Chemistry 6

Quantitative Analysis 4 Credits

Elementary gravimetric and volumetric analysis. One conference and nine laboratory hours.

Prerequisite: Chemistry 5

Required: Majors in Chemistry and Premedicals

Elective: 2, 3, 4

Conference: A-W 9:10

B-F 9:10

Laboratory: A-MWF 1:00-4:00

B-TTh 1:00-4:00, S 9:10-12:00

Mr. Adolph

and Mr. E. O. Wilson

Chemistry 7

Quantitative Analysis 4 Credits

A study of the theory and practice of quantitative analysis. As far as possible the laboratory work will be adapted to the needs of the individual students. One hour lecture and nine hours laboratory.

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Prerequisite: Chemistry 5-6
Elective: 3, 4
Lecture: T 10:10
Laboratory: MF 1:00-4:00, S 9:10-12:00

Mr. E. O. Wilson

Chemistry 9-10 Organic Chemistry 4-4 Credits

A course in the elements of organic chemistry for those beginning the subject. The aliphatic and aromatic series. The emphasis is placed on general principles. (Students in Home Economics who elect Chemistry 117 may receive credit for Chemistry 9 without taking Chemistry 10). 2 lectures and 6 laboratory hours.

Prerequisite: For Home Economics students Chemistry 3-4. For all others either the completion of Chemistry 5-6 or the election of Chemistry 5-6 at the same time. Premedical students may receive credit for 9 without taking 10.

Required: Majors in Chemistry
Elective: 2, 3, 4
Lecture: WF 9:10
Laboratory: TTh 1:00-4:00

Mr. T. C. Wang

Chemistry 117 General Bio-chemistry 4 Credits

An introductory course including a study of carbohydrates, fats and proteins with the fundamental conceptions of bio-chemistry as applied to life processes and metabolism.

Prerequisite: Chemistry 6, 9.
Laboratory: T, Th, 9:10-12:00
Conference and Seminar: Two hours to be arranged
Elective: 3, 4, 5.

Mr. Adolph

Chemistry 119 Leather Chemistry 4 Credits

A study of the chemistry of leather manufacture. The subject is taken up from the viewpoint of physical chemistry. The various tanning operations are reviewed and the importance of chemical control emphasized. The laboratory work illustrates in a quantitative manner, some of the most important of the theories presented. Two lectures and six hours laboratory work.

Prerequisite: Chemistry 6, 9
Lecture: TTh 7:50 1st semester
Laboratory: Time to be arranged
Offered 1931-32 and alternate years
Elective: 3, 4, 5

Mr. E. O. Wilson

Chemistry 120 Leather Chemistry 4 Credits

The analysis of materials and products used in the leather industry. Rapid methods suitable for actual use in the tannery are studied. Two conferences and six laboratory hours.

Prerequisite: Chemistry 119
Lecture: TTh, 7:50 2nd semester
Laboratory: Time to be arranged
Offered 1931-32 and alternate years.
Elective: 3, 4, 5

Mr. E. O. Wilson

Chemistry 121-122 Industrial Chemistry 3-3 Credits

The most important of the industries in which chemical reactions play a major part are considered. Plant equipment is described in some detail and the factors which influence economic large-scale production are discussed. One half of the time of this course is devoted to the subject of industrial stoichiometry. A large number of numerical problems will be solved by the students. Three lectures and recitations.

Prerequisite: Chemistry 6, 10
Lecture: TThF 11:10
Elective: 3, 4, 5

Mr. E. O. Wilson

Chemistry 123 Technical Analysis 4 Credits

Instruction will be given in gas, fuel and water analysis. Considerable range of choice will be allowed the individual student, depending upon his interests and previous training. Rapid methods for the analysis of various commercial products, training in the use of the hydrogen electrode, and the practical use of the thermocouple will also be included. One conference and nine laboratory hours.

Prerequisite: Chemistry 6
Time to be arranged. 1st semester
Elective: 3, 4, 5

Mr. E. O. Wilson

Chemistry 124 Special Problems in Applied Chemistry 4 Credits

This course should accompany or follow the courses in industrial chemistry and technical analysis. Individual or group investigations will be conducted; the particular nature of the problems will depend upon the interests and previous training of the students. Laboratory and informal conferences.

Prerequisite: Chemistry 123
Time to be arranged. 2nd semester
Elective: 3, 4, 5

Mr. E. O. Wilson

Chemistry 126 Chemical Engineering 3 Credits

Problems and discussions illustrating, in a quantitative way, the methods of carrying out chemical reactions on a commercial scale. The unit operations of chemical industry (such as flow of fluids, flow of heat, evaporation, distillation and drying) are studied in detail.

Prerequisite: Chemistry 122, 132.
Time to be arranged.
Elective: 4, 5

Mr. E. O. Wilson

Chemistry 127 Qualitative Organic Analysis 3 Credits

A study of the systematic classification of organic compounds including methods for the identification of various groups and compounds. One lecture and six laboratory hours.

Prerequisite: Chemistry 10
Time to be arranged
Offered: 1932-33, and alternate years.
Elective: 4, 5

Mr. Wang

- Chemistry 129 Quantitative Organic Analysis 3 Credits
Practice in the standard methods used for the quantitative analysis of organic compounds and the quantitative estimation of organic radicals. One lecture and six laboratory hours.
Prerequisite: Chemistry 10
Time to be arranged
Offered: 1931-32 and alternate years
Elective: 4, 5
Mr. Wang
- Chemistry 131-132 Physical Chemistry 4-4 Credits
A careful study of the fundamental laws and principles of chemistry. The laboratory exercises are all of a quantitative nature. Two lectures and six laboratory hours. Graduate students receive $\frac{1}{2}$ credit for this course.
Prerequisite: Chemistry 6, 10 and Calculus
Time to be arranged
Elective: 3, 4, 5
Mr. L. S. Ts'ai
- Chemistry 133 Advanced Organic Chemistry 3 Credits
Lectures and reports on literature in organic chemistry of a more advanced nature than that given in Chemistry 9-10. Students without adequate laboratory work in organic chemistry must elect chemistry 135 with this course.
Prerequisite: Chemistry 10
Lecture: MWF 10:10
Elective: 4, 5
Mr. S. D. Wilson
- Chemistry 134 Advanced Organic Chemistry 3 Credits
For description see 133. Students without adequate laboratory work in organic chemistry must elect chemistry 136 with this course.
Prerequisite: Chemistry 133 or equivalent
Lecture: MWF 10:10
Elective: 4, 5
Mr. S. D. Wilson
- Chemistry 135 Organic Preparations 2 Credits
Organic preparations of a more advanced type than those offered in chemistry 9-10. As far as possible the type of preparations will be adapted to needs of the individual students. Six laboratory hours.
Prerequisite: Chemistry 10
Laboratory: Time to be arranged
Elective: 4, 5
Mr. S. D. Wilson
- Chemistry 136 Organic Preparations 2 Credits
For description see 135.
Prerequisite: Chemistry 135 or equivalent
Laboratory: Time to be arranged
Elective: 4, 5
Mr. S. D. Wilson
- Chemistry 139 Seminar in Bio-chemistry 1 Credit
For students specializing in Bio-chemistry
Prerequisite: Chemistry 117
Time to be arranged
Elective: 3, 4, 5
Mr. Adolph

- Chemistry 140 Seminar in Bio-chemistry 1 Credit
For students specializing in Biochemistry
Prerequisite: Chemistry 117
Time to be arranged
Elective: 3, 4, 5
Mr. Adolph
- Chemistry 142 Nutrition and Metabolism 4 Credits
Physiological Chemistry as applied to problems of human nutrition. Lectures; conferences; simple feeding experiments and laboratory study of metabolic processes.
Prerequisite: Chemistry 117
Lectures and Conferences: TTh 9:10
Laboratory: TTh 1:00-4:00
Elective: 3, 4, 5
Mr. Adolph
- Chemistry 144 Biophysics 2 Credits
A study of the laws of physics and chemistry applied to biological processes, osmosis, surface tension, colloids, enzyme action.
Prerequisite: Biology 2, Physics 5, Chemistry 5
Time: MF 9:10
(Given 1932-1933 and alternate years)
Elective: 3, 4, 5
Mr. Adolph
- Chemistry 146 Chemistry of the Colloidal State 2 Credits
A study of the fundamental conceptions of colloid chemistry. Lectures and conferences.
Prerequisite: Chemistry 131
Time: TTh 10:10
(Given 1931-1932 and alternate years)
Elective: 4, 5
Mr. Adolph
- Chemistry 152 Advanced Physical Chemistry 2 Credits
Prerequisite: Chemistry 132
Elective: 4, 5
Mr. Ts'ai
- Chemistry 153 A Special Problems 4 Credits
This course consists of laboratory investigations under the direction of some member of the staff. Detailed information may be secured by consultation with the instructors offering graduate courses.
Prerequisite: Permission of the Instructor under whom the work is to be done
- Chemistry 153 B Special Problems 2 Credits
For description see 153 A.
- Chemistry 154 A Special Problems 4 Credits
For description see 153 A.
- Chemistry 154 B Special Problems 2 Credits
For description see 153 A.

Chemistry 191 The Teaching of Chemistry. 2 Credits

Students in this course will be given experience in the preparation of laboratory material and in the conduct of laboratory class work under supervision. Conferences; special assignments; work assigned to fit the needs of each student.

Prerequisite: Chem. 5 and 6 or equivalent.

Open to seniors only

Hours to be assigned

Mr. Adolph

Chemistry 199 Senior Thesis 2 Credits

This course involves either a critical study of the literature of some field in Chemistry or a simple original investigation. Each case is decided in conference with the head of the department.

Time to be arranged.

Staff

Chemistry 200 Senior Thesis 2 Credits

For description see 199

Required: Seniors who major in Chemistry must elect either one or both of Chemistry 199 and 200.

Leather 71-72 Elements of Tanning 2-2 Credits

A general descriptive course, covering in an elementary way, the entire field of Leather Tanning.

Required: Major students in Leather

Lecture: MF 9:10

Mr. P. Chang

Leather 73-74 Leather Manufacture 4-4 Credits

The lectures deal with the principles of Chrome, Alum, Iron, and Oil Tannage. Chrome tannage is studied in great detail. The methods of dyeing leather will also be presented.

Laboratory practice is given in the technic of soaking, liming, unhairing, bating, pickling, and in Chrome Tanning.

Required: Major students in Leather

Lecture: WF 11:10

Laboratory: MS 9:10-12:00

Mr. P. Chang

Leather 75-76 Leather Manufacture 4-4 Credits

The lectures include a discussion of the finishing of the various kind of leather, including the methods of currying, lubricating, staking, and glazing. The principles of fur tanning are also presented.

Laboratory practice in vegetable, aldehyde, and alum tannage. Laboratory practice in fur dressing.

Required: Major students in Leather

Lecture: T 10:10

Laboratory: Hours to be arranged

Mr. P. Chang

THESIS

Suitably prepared students may elect research work for the Master's thesis in the following fields: inorganic chemistry, organic chemistry, physical chemistry, food chemistry, biochemistry, and applied chemistry. All candidates for the Master's degree in chemistry will be required to present a creditable thesis. The time devoted to the thesis will in general be equivalent to 12 credit hour. Such work can be elected only with the approval of the Chairman of the Department and of the staff member directing the individual piece of work.

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DEPARTMENT OF GEOGRAPHY AND GEOLOGY

W. W. Davis, M. S. *Professor and Chairman.*
 *George B. Barbour, Ph. D. *Professor*
 Chang Yin-t'ang, M. Sc. *Lecturer.*
 E. T. Nyström, Ph. D. *Lecturer (part time)*

The functions of the Department are (1) to provide a sequence of courses which will fulfill the requirements for graduation prescribed in the Academic Regulations of the College of Natural Sciences, (2) to train students for teaching work in Geography, (3) to train students as Practical Geologists, and (4) to offer to students specializing in other lines of study in chance to become better acquainted with our Earth.

Departmental Regulations

A major student in this department must fulfill the following requirements for graduation:

(1) Chinese.. . . .	4 Credits
English.. . . .	16 Credits
Geography 1-2 or Geology 1-2	8 Credits
A Second Natural Science (Biology, Chemistry, Mathematics or Physics)	8 Credits
Social Sciences	4 Credits
Major	36 Credits
Correlated Subjects (One of the following: Biology, Chemistry, Physics, Mathematics. Home Economics, History, Education, Economics, Political Science, Sociology, English, or European Languages.)	16-24 Credits
Electives	4-36 Credits
Total	136 Credits

* Absent on leave 1932-33

- (2) A Student must under the supervision of a professor in this Department satisfactorily complete a thesis on a geographical or geological problem.
- (3) A student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences

Majors

A student majoring in the Department has a choice between three lines of work.

- (a) Geography.
- (b) Geology.
- (c) Geography and Geology combined.

Major Curriculum in Geography

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Geography 1	4	Geography 2	4
Natural Science (Biology 1, Chemistry 3, Physics 5 or Mathematics)	4	Natural Science (Biology 2, Chemistry 4, Physics 6 or Mathematics)	4
Mathematics	2	Mathematics	2
Social Science	2	Social Science	2
Hygiene (for women)	1		
	<u>18 or 19</u>		<u>18</u>
<i>Second Year</i>			
English 5	4	English 6	4
Major (Geol. 1).. . . .	4	Major (Geol. 2)	4

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Major	2. or 4	Major2 or 4
Correlated Subject.. 4	Correlated Subject 4
Electives4 or 2	Electives4 or 2
	<u>18</u>		<u>18</u>

Third Year

Major .. .. .	.. .. 6	Major .. .. .	.. .. 6
Correlated Subject ..	.. .. 4	Correlated Subject .. .. .	.. .. 4
Electives .. .. .	.. .. 6	Electives .. .. .	.. .. 6
	<u>16</u>		<u>16</u>

Fourth Year

Major (Geog. 199)	2	Major (Geog. 200)	2
Major	2 or 4	Major	2 or 4
Correlated Subject and Elec- tives . . . . .	..12 or 10	Correlated Subject and Elec- tives . . . . .	..12 or 10
	<u>16</u>		<u>16</u>

Major Curriculum in Geology

First Year

Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Geol. 1.. .. .	4	Geol. 2.. .. .	4
Biol. 1	4	Biol. 2	4
Mathematics	2	Mathematics.	2
Social Science	2	Social Science	2
Hygiene (for women)	1		
	<u>18-19</u>		<u>18</u>

Second Year

English 5	4	English 6	4
Major (Chem. 3)	4	Major (Chem. 4)	4
Major	2 or 4	Major	2 or 4
	<u>38</u>		

Correlated Subject	4	Correlated Subject	4
Electives	4 or 2	Electives	4 or 2
	<u>18</u>		<u>18</u>

Third Year

Major	6	Major	6
Correlated Subject	4	Correlated Subject	4
Electives	6	Electives	6
	<u>16</u>		<u>16</u>

Fourth Year

Major (Geol. 199)	2	Major (Geol. 200)	2
Major	2 or 4	Major	2 or 4
Correlated Subject and Elec- tives12 or 10	Correlated Subject and Elec- tives..12 or 10
	<u>16</u>		<u>16</u>

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Major Curriculum in Geography and Geology

This is like the major curriculum in Geography with the following modifications:

In the First Year the Second Natural Science must be either Biol. 1-2 or Chem. 3-4.

In the Second, Third and Fourth Years the student may include in his major a total of from 6 to 12 credits in Geology in addition to Geology 1-2.

Department of Geography and Geology Schedule

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
7:50 to 8:40	Geog. 1-2 A		Geog. 1-2 A		Geog. 1-2 A	
9:10 to 10:00	Geog. 5, 6 Geol. 1-2	Geog. 57,58 Geog. 55,56	Geog. 5,6 Geol. 1-2	Geog. 57,58 Geog. 55,56	Geog. 5,6 Geol. 1-2	
10:10 to 11:00	Geog. 3,4 Geog. 19-20 Geol. 9	Geog. 107, 108 Geog. 113, 114 Geog. 111 Geol. 112	Geog. 3,4 Geog. 19,20 Geol. 9	Geog. 107, 108 Geog. 113, 114 Geog. 111 Geol. 112	Geog. 3,4 Geol. 9	
11:10 to 12:00	Geol. 107, 108 Geog. 110	Geog. 119, 120 Geog. 107, 108	Geol. 107, 108	Geog. 119, 120 Geol. 107, 108	Geog. 110	
1:00 to 4:00	Geog. 1-2 Lab.* Geog. 3,4 Lab. Geog. 5,6 Lab.		Geol. 1-2 Lab.	Geog. 1-2 Lab.*		

*Two Sections if necessary.

Geography 1-2 Fundamentals of Geography 4-4 Credits

A study of the general principles of physical geography and the geographical factors of environment, and how they affect life.

Required: Major Students in Geography

Elective: 1,2, (also 3,4)

Lecture: MWF 7:50

Laboratory: Th 1:00-4:00

Section A Mr. Chang

Geography 3 Agricultural Economic Geography 4 Credits

A study of the geographical factors underlying Agriculture.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 10:10

Laboratory: M 1:00-4:00

Mr. Davis

Geography 4 Industrial Economic Geography 4 Credits

A study of the Geographical factors underlying some of the leading industries.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 10:10

Laboratory: M 1:00-4:00

Mr. Davis

Geography 5 China 4 Credits

The physical, human and economic geography of China.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 9:10

Laboratory: M 1:00-4:00

Mr. Chang

Geography 6 Asia 4 Credits

The physical, human and economic geography of Asia.

Required: Major students in Geography

Elective: 2,3,4

Lecture: MWF 9:10

Laboratory: M 1:00-4:00

Mr. Davis

Geography 19-20 Human Geography 2-2 Credits

A study of the relationships between environment and man.

Prerequisite: Geog. 1-2

Elective: 2,3,4

Lecture: M W 10:10

Mr. Chang

*Geography 31-32 Physical Geography 2-2 Credits

The principles of Physical Geography

Prerequisite: Geog. 1-2

Elective: 2,3,4

Lecture: TTh 10:10 (Not offered 1932-33)

Mr. Chang

- *Geography 53** Hopei 2 Credits
 The physical and economic geography of the Province of Hopei.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4
 Lecture: TTh 9:10 (Not offered 1932-33) Mr. Chang
- Geography 55** Inner Mongolia 2 Credits
 The physical and economic geography of Inner Mongolia.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 2,3,4
 Lecture: TTh 9:10 Mr. Chang
- Geography 56** Manchuria 2 Credits
 The physical and economic geography of the Three Manchurian Provinces.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4
 Lecture: TTh 9:10 Mr. Chang
- Geography 57** India 2 Credits
 The physical, human and economic geography of India.
 Required: May be included as part of the requirements of a student majoring in Geography.
 Elective: 3,4
 Lecture: TTh 9:10 Offered 1932-33 and alternate years. Mr. Davis.
- Geography 58** Russia 2 Credits
 The physical and economic geography of Russia.
 Required: May be included as part of the requirements of a student majoring in Geography.
 Elective: 3,4
 Lecture: TTh 9:10 Offered 1932-33 and alternate years. Mr. Davis
- *Geography 107** Europe 2 Credits
 The natural regions of Europe, the geographic and geologic factors which have made Europe, its resources and possibilities.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:10 Offered 1932-33 and alternate years. Mr. Chang or Mr. Davis
- *Geography 108** North America 2 Credits
 The natural regions of North America, the geographic and geologic factors that have made North America its resources and possibilities.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:10 Offered 1932-33 and alternate years. Mr. Davis

- *Geography 109** Some Geographic Factors in History 2 Credits
 A study of a few of the leading geographic factors that have helped to control history, namely, the desert, the sea, the plain, the forest, the steppe, the ocean rivers and coal.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: MF 11:10 Not Offered 1932-23. Mr. Davis
- Geography 110** Climate 2 Credits
 A study of climate.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: MF 11:10 Offered 1933-34 and alternate years. Mr. Chang
- Geography 111** Racial Geography 2 Credits
 A study of the geographical influences in the formation of racial characteristics and the distribution of the human races.
 Elective: 3,4,5
 Lectures: MF 11:10 Mr. Chang
- Geography 113** Japan 2 Credits
 The physical, economic and human geography of Japan.
 Required: May be included as part of the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:10 Offered 1933-34 and alternate years. Mr. Davis
- Geography 114** Malaya 2 Credits
 The physical, economic and human geography of Malaya.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 10:10 Offered 1933-34 and alternate years. Mr. Davis
- Geography 119** Political Geography of Europe 2 Credits
 A study of Europe from the angle of Political Geography.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 11:10 Offered 1933-34 and alternate years. Mr. Davis
- Geography 120** Political Geography of North and South America 2 Credits
 A study of the two Americas from the angle of Political Geography.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 3,4,5
 Lecture: TTh 11:10 Offered 1933-34 and alternate years. Mr. Davis

- Geography 151 Research Course 1 Credit
 Geography 153 Research Course 2 Credits
 An advanced reading or research course in some special geographical problem under supervision. Credit depending on the amount of work done.
 Prerequisite: At least 20 hours of work in Geography in addition to Geog. 1-2.
 Required: May be included in the requirements by students majoring in Geography.
 Elective: 4,5 Mr. Chang
 And or Mr. Davis
- Geography 152 Research Course 1 Credit
 Geography 154 Research Course 2 Credits
 Prerequisite: Geog. 1-2 and at least 20 hours additional work in Geography.
 Required: May be included in the requirements of students majoring in Geography.
 Elective: 4,5 Mr. Davis
 And or Mr. Chang
- Geography 191 The Teaching of Geography 2 Credits
 Students in this course will be given experience in the preparation of laboratory material and in the conduct of laboratory class work under supervision. Conferences; special assignments; work assigned to fit the needs of each student.
 Prerequisite: Geog. 1-2 and 8 other credits.
 Open to seniors only
 Hours: to be assigned Not offered 1932-33 Mr. Davis
- Geography 199-200 Thesis 2-2 Credits
 Senior Thesis in some geographical problem.
 Prerequisite: Geog. 1-2 and at least 24 other credits in Geography. Mr. Chang
 Required: Major students in Geography and or Mr. Davis
- Geology 1-2 General Geology 4-4 Credits
 An introduction to the Earth Science. The work of the atmosphere, ground-water, running water, snow and ice, lakes, and oceans. Study of the common rocks and minerals; volcanism, crustal movements etc., brief outline of Earth History.
 Required: Students majoring in either Geology or Geography
 Elective: 1,2,3,4
 Lecture: MWF 9:10
 Laboratory: W 1:00-4:00 Mr. Davis
- *Geology 3 Mineralogy 2 Credits
 Determinative mineralogy including crystallography and blowpipe work.
 Prerequisite: Geol. 1-2
 Elective: 3,4,5
 (Not offered 1932-33)
- *Geology 4 Petrography 2 Credits
 Study of rocks in the handspecimen.
 Prerequisite: Geol. 1-2
 Elective: 3,4,5
 (Not offered 1932-33)

- Geology 5 Field And Laboratory Methods 2 Credits
 Interpretation of geologic maps. Elementary map drawing with training in the field, sketching, stratigraphic and other field work.
 Prerequisite: Geol. 1-2
 Required: Students majoring in Geology
 Elective: 2,3,4
 Laboratory: 2 afternoons a week
- Geology 6 Field Work 2 Credits
 Field work in geology.
 Prerequisite: Geol. 1-2 and Geol. 5
 Required: Students majoring in Geology
 Elective: 2,3,4
 Lecture: One afternoon a week and
 Laboratory: occasional Saturdays or field trip of several days Mr.
- Geology 9 Introduction to Historical Geology 2 Credits
 A brief outline of geologic history for those who wish to study geology from the cultural point of view.
 Elective: 2,3,4
 Lecture: MF 10:10 Mr.
- Geology 10 (Geol. 112) Mineral Resources of China 2 Credits
 A discussion of China's mineral resources.
 Elective: 2,3,4
 Lecture: TTh 10:10 Mr.
- Geology 107 Historical Geology 4 Credits
 Detailed work in Stratigraphy and Palaeontology with special reference to China and Asia as a whole.
 Prerequisite: Geol. 1-2
 Required: Students majoring in Geology
 Elective: 3,4,5
 Lecture: MTWTh 11:10 Mr. Davis
- Geology 108 Historical Geology 4 Credits
 Essentially a continuation of Geology 107 dealing with later phases of geological history.
 Prerequisite: Geol. 107
 Required: Students majoring in Geology
 Elective: 3,4,5
 Lecture: MTWTh 11:10 Mr. Davis
- Geology 109 Advanced Geology 4 Credits
 Geology 110 Advanced Geology 4 Credits
 An advanced course in geology. The nature of the course will vary from year to year.
 Prerequisite: Geol. 1-2
 Required: Students majoring in Geology.
 Lecture: To be arranged
 Laboratory: To be arranged Not offered 1932-33 Mr. Davis

Geology 151	Research Course	1 Credit
Geology 153	Research Course	2 Credits
Advanced reading or research in special geological problems under supervision.		
Prerequisite: Geol. 1-2 and at least 20 additional hours in Geology		
Required: May be taken by students majoring in Geology		
Elective: 4,5		
Laboratory:		
		Mr. Davis
Geology 152	Research Course	1 Credit
Geology 154	Research Course	2 Credits
Prerequisite: Geol. 1-2 and at least 20 additional hours in Geology		
Required: May be taken by students majoring in Geology		
Elective: 4,5		
		Mr. Davis
Geology 199-200	Thesis	2-2 Credits
Senior Thesis in some geological problem.		
Prerequisite: Geol. 1-2 and at least 24 other credits in Geology		
Required: Major students in Geology		
		Mr. Davis

DEPARTMENT OF HOME ECONOMICS

Miss Caroline I. Ch'en, M. A. Lecturer and Chairman
 Miss Kung Lan-chen, Ph. D. Instructor
 Instructor

The functions of the Department are (1) To offer education for homemaking as a part of the general University education of women. (2) To offer training for teaching Home Economics in Secondary Schools. (3) To provide a sequence of courses which will fulfill the requirements for graduation prescribed in the academic regulations of the College of Natural Sciences. (4) To provide foundation courses for those interested in hospital dietetics.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation:

(1) Chinese	4 Credits
English	16 Credits
Chemistry	16 Credits
Biology	8 Credits
Mathematics	4 Credits
Social Sciences	8 Credits
Major	36 Credits
Correlated Subjects (Biology, Chemistry, Economics, Education, Psychology, Sociology)	16 Credits
Electives	28 Credits

(2) A student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

Major Curriculum

FIRST SEMESTER		SECOND SEMESTER	
	Credits		Credits
<i>First Year</i>			
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Nat. Sc. (Biol. 1)	4	Nat. Sc. (Biol. 2)	4
Nat. Sc. (Chem. 3)	4	Nat. Sc. (Chem. 4)	4
Math. 1	2	Math. 2	2
Soc. Sc. (Soc. 1 or Ec. 3)	2	Soc. Sc. (Soc. 2 or Ec. 4)	2
Hygiene	1		
	<u>19</u>		<u>18</u>
<i>Second Year</i>			
English 5	4	English 6	4
Cor. Subj.	4	Cor. Subj.	4
Chem. 9	4	Major (H. Ec. 28)	4
Soc. Sc. (Soc. 1 or Ec. 3)	2	Soc. Sc. (Soc. 1 or Ec. 3)	2
Electives	4	Electives	4
	<u>18</u>		<u>18</u>
<i>Third Year</i>			
Major (H. Ec. 3)	3	Major (H. Ec. 26)	3
Chem. 117	4	Major (H. Ec. 6)	4
Cor. Subj.	4	Cor. Subj.	4
Electives	5	Electives	5
	<u>16</u>		<u>16</u>
<i>Fourth Year</i>			
Major (H. Ec. 23)	3	Major (H. Ec. 40)	3
Major (H. Ec. 45)	1	Major (H. Ec. 46)	1
Major ()	2	Major ()	3
Major ()	3	Major ()	3
Major ()	3	Electives	6
Electives	4		
	<u>16</u>		<u>16</u>

Department of Home Economics

Schedule

Period	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
7:50 to 8:40	H. Ec. 42 H. Ec. 3	H. Ec. 14 H. Ec. 15	H. Ec. 42 H. Ec. 23	H. Ec. 14 H. Ec. 15	H. Ec. 42 H. Ec. 23	
9:10 to 10:00	H. Ec. 11 H. Ec. 26	H. Ec. 6 Lab.	H. Ec. 11 H. Ec. 26	H. Ec. 6 Lab.	H. Ec. 11 H. Ec. 26	
10:10 to 11:00		H. Ec. 6 Lab.	H. Ec. 24	H. Ec. 6 Lab.	H. Ec. 24	
11:10 to 12:00		H. Ec. 6 Lab.	H. Ec. 6 H. Ec. 29	H. Ec. 6 Lab.	H. Ec. 6 H. Ec. 29	
1:00 to 2:00	H. Ec. 23 Lab.	H. Ec. 28	H. Ec. 14 H. Ec. 15 Lab.	H. Ec. 28	H. Ec. 3	
2:00 to 3:00	H. Ec. 23 Lab.	H. Ec. 28	H. Ec. 14 H. Ec. 15 Lab.	H. Ec. 28	H. Ec. 3 Lab.	
3:00 to 4:00	H. Ec. 23 Lab.		H. Ec. 14 H. Ec. 15 Lab.		H. Ec. 3 Lab.	
4:00 to 5:00					H. Ec. 3 Lab.	

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Home Economics 3 Food Selection and Preparation 3 Credits

An introduction to the subject of foods; selection, marketing, preparation, and service; and the fundamental principles of nutrition.

Required: Major students in Home Economics.

Elective: 2,3,4

Lecture: M 7:50, F 1:00

Laboratory: F 2:00-5:00

Home Economics 6 (H. Ec. 5) Nutrition and Dietetics 4 Credits

A study of nutrition with application of the principles to everyday feeding problems of individuals and groups; food values in relation to cost; combination of foods in meals.

Prerequisite: H. Ec. 3, Chem. 9,117

Required: Major students in Home Economics

Lecture: WF 11:10

Laboratory: TTh 9:10-12:10

Home Economics 11 Clothing Problems 3 Credits

A study of the principles underlying the selection, cost, care, and use of clothing.

Elective: 2,3,4

Lecture: MWF 9:10

Home Economics 15 (H. Ec. 14) Home Decoration 3 Credits

A study of art principles and their application to the choices and arrangement of furnishings and decorations of the moderate sized home.

Elective: 2,3,4

Lecture: TTh 7:50

Laboratory: W 1:00-4:00

Home Economics 14 (H. Ec. 15) Applied Design 3 Credits

A study of the principles of design and color developed and applied to clothing and decorative articles in the home.

Elective: 2,3,4

Lecture: TTh 7:50

Laboratory: W 1:00-4:00

Home Economics 23 Household Technology 3 Credits

A study of the technical processes of housekeeping, selection of equipments, methods of cleaning, laundering, etc.; a study of the sanitary aspects of the home and community.

Required: Major students in Home Economics

Elective: 2,3,4

Lecture: WF 7:50

Laboratory: M 1:00-4:00

Home Economics 24 Home Care of the Sick 3 Credits

A study of the care of the patient in the home with demonstrations of simple nursing procedure; management of communicable diseases.

Elective: 2, 3, 4

Lecture: WF 10:10

Home Economics 26 Household Management 3 Credits

A study of the organization and management of household operation and finances, family and community relationships.

Required: Major students in Home Economics

Elective: 2, 3, 4

Lecture: MWF 9:10

Home Economics 28 (H. Ec. 27) Child Care and Development 4 Credits

A study of the growth and development of the child through the pre-natal period, infancy, and childhood; factors influencing the health and behaviour of children; habit formation; proper feeding.

Required: Major students in Home Economics

Elective: 2, 3, 4

Lecture: TTh 1:00-3:00

Home Economics 29 Child Training 2 Credits

Principles of child training with special emphasis on the conduct problems met by parents and social workers, such as problems of discipline, play, sex training, fears, etc.

Elective: 2, 3, 4

Lecture: WF 11:10

Home Economics 31 or 32 The Nursery School 2 Credits

A study of the aims and organization of the nursery school, equipment and play materials for young children, activities and records in the nursery school. This course includes one hour of lecture a week and three to five hours of observation and practice in the nursery school. It may be taken either semester separately or both semesters.

Elective: 3,4,5

Lecture and Practice Hours to be arranged.

Mrs. Ritter

Home Economics 40 or 41 (H. Ec. 30) Home Management House 3 Credits

A course dealing with the problems of the homemaker. Students live in the Home Management House for one semester each student in turn being responsible for the various duties in the house.

Prerequisite: H. Ec. 3, 6, 23, 26

Required: Major Students in Home Economics

Home Economics 42 Methods of Teaching Home Economics 3 Credits

A study of the materials and methods of teaching Home Economics with supervised practice teaching by the students whenever possible. Emphasis will be placed on organization of courses of study.

Prerequisite: At least 16 credits of Home Economics.

Lecture: MWF 7:50

Home Economics 199-200 Senior Thesis 1-1 Credits

Each Major student is required to take up an individual problem in the Senior year on which she writes a thesis.

DEPARTMENT OF MATHEMATICS

Ch'en Tsai-hsin, Ph. D. *Professor and Chairman*
 Miss E. L. Konantz, M. A. *Professor*
 * Miss E. M. Hancock, B. Sc. *Assistant Professor*
 Chin Jung-lu, M. S. *Lecturer (Part time)*

The functions of the Department are (1) To provide courses fundamental to the curricula of other Departments of the University. (2) To provide a sequence of courses which will fulfill the requirements for graduation prescribed in the academic regulations of the College of Natural Sciences. (3) To train students for the teaching of mathematics, and (4) To offer opportunities to graduate students for more advanced study of the subject.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation:

(1) Chinese..	4 Credits
English..	16 Credits
Physics 5-6..	8 Credits
Social Sciences ..	8 Credits
Major ..	40 Credits
(Of the credits of major) the following courses are required.	
Mathematics 21-22 ..	8 Credits
Mathematics 23-24 ..	8 Credits
Mathematics 27-28 ..	8 Credits
Mathematics 55-56 ..	8 Credits
Correlated Subjects (Physics, Chemistry or Biology) ..	16 Credits
Electives ..	44
Total ..	136 Credits

* Absent on leave 1932-3.

- (2) The student must, under the supervision of a Professor in this Department, satisfactorily complete a thesis on a Mathematical Subject.
- (3) The student must fulfill all the requirements, prescribed in the academic regulations of the College of Natural Sciences.

Major Curriculum

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Nat. Sc. Mathematics 21 ..	4	Nat. Sc. Mathematics 22 ..	4
Nat. Sc. Physics	4	Nat. Sc. Physics	4
Soc. Sc.	2	Soc. Sc.	2
Electives	2	Electives	2
Hygiene (for women) ..	1		
	18 or 19		18
<i>Second Year</i>			
English 5	4	English 6	4
Major Mathematics 23 ..	4	Major Mathematics 24 ..	4
Cor. Subject	4	Cor. Subject	4
Social Science	2	Social Science	2
Electives	4	Electives	4
	18		18
<i>Third Year</i>			
Major Mathematics 27 ..	4	Major Mathematics 28 ..	4
Major Mathematics ..	3 or 2	Major Mathematics ..	3 or 2
Cor. Subj.	4	Cor. Subj.	4
Electives	5 or 6	Electives	5 or 6
	16		16
<i>Fourth Year</i>			
Major Mathematics 55 ..	4	Major Mathematics 56 ..	4
Mathematics	3 or 2	Mathematics	3 or 2
Electives	9 or 10	Electives	9 or 10
	16		16

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Summary:

	<i>Credits</i>
Chinese..	4
English..	16
Nat. Sc. (First Year)..	16
Physics	8 (if not included above)
Soc. Sc...	8
Hygiene (for women)..	1
Major	40
Cor. Subj.	16-44
Electives	27
	136

Notes on Curriculum

1. Correlated Subject

While the Mathematics Department does not wish to make Physics the correlated subject that must be taken by all its Major Students, it would emphasize the special value of the subject in making certain aspects of higher mathematics more easily understood.

2. Social Science Requirement

Courses to fulfill this requirement must be chosen from one or more of the following Departments.

- Economics
- Education
- History
- Political Science
- Psychology
- Religion
- Sociology

3. Students who are intending to teach are advised to take some of their elective courses in Education and Psychology.

Department of Mathematics

Schedule

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
7:50 to 8:40	31,32		31,32		31,32	
9:10 to 10:00	21-22	21-22		21-22	21-22	
10:10 to 11:00	27-28 151-152	1-2 C 27-28	1-2 B 151-152	1-2 C 27-28 151-152	1-2 B 27-28 151-152	
11:10 to 12:00	1-2 D 55-56	1-2 A 119-120 115-6	55-56	1-2 A 55-56 115-6	1-2 D 55-56 119-120	
1:00 to 2:00						
2:00 to 3:00						
3:00 to 4:00						

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Mathematics 0-00 Sub, Freshmen Mathematics No Credit

A course designed for students who have not had sufficient preparation in mathematics to carry Math. 1-2.
Time to be arranged

Mathematics 1-2 Introduction to Mathematical Analysis 2-2 Credits

A unified course in trigonometry, algebra, analytic geometry and calculus. These are all treated in a very elementary way, the course being specially planned for Science Students, and others not intending to major in mathematics.

Required: of all Natural Science College Students who do not major in mathematics

Elective: 1, 2, 3, for those not majoring in mathematics

Lecture: A—TTh 11:10
B—WF 10:10
C—TTh 10:10
D—MF 11:10

Each section to contain not more than 20 students
Sections B and C for Premedical students only

Miss Konantz A & D
B & C

Mathematics 21-22 Algebra, Trigonometry 4-4 Credits

A course in college algebra, and trigonometry to De Moivre's Theorem, designed mainly for major students in their Freshman year.

Required: Major Students in mathematics

Elective: 1, 2, (also 3, 4)

Lecture: MTThF 9:10

Miss Konantz

*Mathematics 23-24 Analytic Geometry 4-4 Credits

The fundamental principles of plane and solid analytic geometry including some work in homogeneous co-ordinates.

Prerequisite: 21-22

Required: Major Students in mathematics

Elective: 2, 3, 4

Lecture: MTThF 9:10

Miss Hancock

Mathematics 27-28 Calculus 4-4 Credits

An elementary course in differential and integral calculus.

Prerequisite: 23-24 or 1-2

Required: Major Students in mathematics

Lecture: MTThF 10:10

Miss Konantz

*Mathematics 29-30 Pure Geometry 3-3 Credits

Pure Geometry and mathematical drawing, an introductory course in modern geometry.

Elective: 1, 2, 3

Lecture: MWF 7:50

Miss Hancock

* Not offered in 1932-3.

Mathematics 31 Differential Equations 3 Credits

Formation of a Differential Equation; Equations of First Order of the different Singular Solutions; Linear Equations with Constant and Variable Coefficients; Degrees; Exact Differential Equations and Equations of Particular Forms; Equations of the Second Order; Equations involving more than Two Variables; Partial Differential Equations; And Applications to Geometry, Mechanics, and Physics.

Prerequisite: Math. 27-28

Elective: 3, 4

Lecture: MWF 7:50

Mr. T. H. Ch'en

Mathematics 32 Theory of Equations 3 Credits

Relations between roots and coefficients of equations. Solution of Cubic and Quartic Equations and those of higher degree.

Prerequisite: 27-28

Elective: 3, 4

Lecture: MWF 7:50

Mr. T. H. Ch'en

*Mathematics 53-54 Higher Pure Geometry 3-3 Credits

A Course on projective geometry mainly.

Prerequisite: 29-30

Elective: 3, 4

Lecture: Time to be arranged

Miss Hancock

Mathematics 55-56* Advanced Calculus 4-4 Credits

A continuation of mathematics 27-28 arranged with special reference to the needs of major and more advanced science students.

Prerequisite: 27-28

Required: Major Students in mathematics

Elective: 3, 4

Lecture: MW Th F 11:10

*Mathematics 113-114 Methods of Teaching Mathematics 2-2 Credits

A course on special methods of teaching mathematics, mainly for Junior and Senior Middle Schools.

Elective: 4

Lecture: TF 2:10

Miss Hancock

Mathematics 115-116 History of Mathematics 2-2 Credits

A course dealing with the rise and development of Western Mathematics.

Prerequisite: Math. 23-24

Elective: 3, 4 in alternate years

Lecture: T Th 11:10

Miss Konantz

* Not offered in 1932-33.

Mathematics 119-120	History of Chinese Mathematics	2-2 Credits
The origin and history of Chinese Mathematics.		
Elective: 4 Given in alternate years		
		Mr. T. H. Ch'en
Mathematics 151-152	Theory of Functions	2-2 Credits
A Course on theory functions and infinite series.		
Elective: 4		
		Mr. T. H. Ch'en
*Mathematics 153-154	Theory of a Complex Variable	4-4 Credits
Mathematics 199-200	Senior Thesis.	2, 3 or 4 Credits

* Not given every year.

DEPARTMENT OF PHYSICS

William Band, M. Sc.	Assistant Professor and Chairman
*Hsieh Yu-ming, Ph. D.	Professor
Yang Chin-ch'ing, M. S.	Assistant Professor
Meng Chao-ying, M. S.	Instructor
Chang Wen-yü, B. S.	Assistant
Pi Te-hsien, B. S.	Assistant
Ch'en Shang-yi, B. S.	Assistant
Yuan Chia-liu, B. S.	Assistant
Miss Wang Ch'eng-shih, B. S.	Assistant

The instructional work in physics is directed toward the following ends: (1) the training of premedical and pre-engineering students for professional study. (2) the training of general students in scientific methods of work and in the understanding of the place of physical science in the modern world; (3) the training of teachers of physics; (4) the training of research workers in physics.

Departmental Regulations

A major student in this Department must fulfill the following requirements for graduation:

(I) Chinese	4 credits
English	16 credits
Chemistry	8 credits
Mathematics	8 credits
Social Sciences	4 credits
Major	40 credits

Of the 40 credits of major the following courses are required:

* Absent on leave, 1932-33.

Physics 5,6,7	12 credits
Physics 101-2	6 credits
Physics 131-2	8 credits
Physics 141	3 credits
Physics 161, 162.	2 credits
Physics 199, 200.	2 credits
Correlated subjects (Mathematics, Chemistry, Biology, Education, or Geology) . . . . .	.16 credits
Elective . . . . .	.40 credits
Total 136 credits	

- (2) In registering for Physics 199 and 200 the student must satisfactorily complete a thesis on a physical problem under the supervision of a member of this Department.
- (3) The student must fulfill all the requirements prescribed in the Academic Regulations of the College of Natural Sciences.

Suggested Major Curriculum in Physics

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
Chinese 7	2	Chinese 8.	2
English 1.	4	English 2.	4
Nat. Sc. (Phys. 3 or 5)	4	Nat. Sc. (Phys. 4 or 6)	4
Nat. Sc. (Math. 23 or 27)	4	Nat. Sc. (Math. 24 or 28).	4
Nat. Sc. (Chem. 3)	4	Nat. Sc. (Chem. 4)	4
Hygiene (for women)	1		
	18 or 19		18
<i>Second Year</i>			
English 5.	4	English 6.	4
Major (Physics 5)	4	Major (Physics 6 or any course numbered above 100)	4
Cor. Subj. (Chem. 5)	4	Cor. Subj.	4
Math. 27 or 31.	4	Math. 28 or 32	4
Soc. Sc.	2	Soc. Sc.	2
	18		18
	60		

Third Year

Major.	4	Major.	4
Major.	4	Major.	4
Cor. Subj. (Math., Chem. Edu- cation, Biology or Geology)	4	Cor. Subj. (Math., Chem. Biology or Education.)	4
Electives.	4	Electives.	4
	16		16

Fourth Year

Major.	1	Major.	1
Major.	2	Major.	2
Major.	3	Major.	3
Major.	4	Major.	4
Electives	6	Elective	6
	16		16

Note:

In view of the fact that the relations of Mathematics and Physics are very close, the study of two years of mathematics is required of all major students in physics. Those who do not take the course in Differential and Integral Calculus in their freshman year, are strongly advised to take it during their sophomore year as almost every course in physics numbered above 100 requires a knowledge of calculus for the theoretical study of the subject.

The courses in mathematics and chemistry of most value to major students of physics are as follows:—

Mathematics 21-22	Introductory Course
Mathematics 23-24	Analytic Geometry
Mathematics 27-28	Calculus
Mathematics 31	Elementary Differential Equations
Mathematics 32	Theory of Equations
Mathematics 35-36	Advanced Calculus
Chemistry 3-4	Inorganic Chemistry
Chemistry 5-6	Second Year College Chem.
Chemistry 131-132	Physical Chemistry

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Department of Physics

Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
7:50	Phys. 3-4 Phys. 7 Phys. 101-2 Phys. 111 Phys. 152	Phys. 5-6 Phys. 153-4	Phys. 3-4 Phys. 7 Phys. 101-2 Phys. 111 Phys. 152	Phys. 5-6 Phys. 153-4	Phys. 3-4 Phys. 7 Phys. 101-2 Phys. 111 Phys. 152	Phys. 5-6
9:10	Phys. 103-4 Phys. 115 Phys. 118	Phys. 141 Phys. 105	Phys. 103-4 Phys. 115 Phys. 118	Phys. 141 Phys. 105 Phys. 144	Phys. 103-4 Phys. 115 Phys. 118	Phys. 5-6 Lab. C Phys. 141 Phys. 105 Phys. 144
10:10	Phys. 131-2 Phys. 145		Phys. 131-2 Phys. 145		Phys. 131-2 Phys. 145	Phys. 5-6 Lab. (C)
11:10						Phys. 5-6 Lab. C
1:10 to 4:00	Phys. 3-4 (A) Phys. 145	Phys. 5-6 (A) Phys. 7A Phys. 143	Phys. 3-4 (B) Phys. 111	Phys. 3-4 (X) Phys. 131-2 Phys. 143	Phys. 5-6 (B) Phys. 7 (B)	
4:00		Phys. 161 Phys. 162				

Physics I Fundamental Ideas of Physical Science 4 Credits

This course, together with a similar course given by the Biology Department, is especially designed for students in the College of public Affairs. It has for its object the fixing in mind of the scientific methods of work in the modern world as demonstrated by the historical development of a few well-selected topics. 3 lectures and 3 laboratory hours.

No credit given to students in the College of Natural Sciences.
Lecture: TThS 10:10
Laboratory: M 1:10-4:00

Mr. Yang

Physics 3-4 Principles of Physics 4-4 Credits

An introductory course designed for students without adequate middle school preparation. 3 lectures and 3 laboratory hours

Prerequisites: Algebra and Geometry
Elective: 1,2
Lecture: MWF 8:00
Laboratory: Section A—M 1:10-4:00
Section B—W 1:00-4:00
Section X—Th 1:10-4:00

Mr. Meng

Physics 5-6 Mechanics, Heat, Sound and Light 4-4 Credits

Forms with Physics 7 a general descriptive course in Physics Principles.

Prerequisite: Physics 3-4 or evidence of adequate middle school preparation. Algebra, geometry and trigonometry

Required: Major students in Physics and Premedical students
Elective: 1, 2, 3, 4
Lecture: TThS 8:00
Laboratory: Section A—T 1:10-4:00
Section B—F 1:10-4:00
Section C—S 9:00-12:00

Mr. Meng

Physics 7 Electricity and Magnetism 4 Credits

Required: Major students in Physics and Premedical students
Elective: 2,3,4
Lecture: MWF 9:00
Laboratory: Section A—T 1:10-4:00
Section B—F 1:10-4:00

Mr. Yang

(For the present this course is given in the spring semester)

Physics 101-2 Analytical Mechanics I & II 3-3 Credits

Statics, Kinematics and the kinetics of particles and rigid bodies, 3 lectures.

Prerequisite: Physics 5-6 and Calculus
Required: Major student in Physics
Elective: 2,3,4
Lecture: MWF 7:50

Mr. Yang

Physics 103 An Introduction to Mathematical 3 Credits
Physics I

Vectors and vectorial Operators used throughout the course.
Kinematics, Dynamics of a particle and General Principles applied to planetary motion.

Statistical Theory of Thermodynamics
Electrostatic and Magnetostatic Field
Prerequisite: Physics 5,6,7, and Calculus, Physics 101-2 desirable
Elective: 3,4,5
Time: MWF 9:10

Mr. Band

Physics 104 An Introduction to Mathematical 3 Credits
Physics II

Theory of Wave Functions. Maxwell's Theory of Electromagnetic Field. Solution of Field Equations in Particular cases. Radiation Pressure, Energy and Mass. Restricted Relativity and Lorentz Transformation. Minkowski's 4-Vectors. General Solution of Field Equations. Motion of Electrons. Tensors. Invariant relativity form to Field Equations.

Prerequisite: Same as for Physics 101
Elective: 3,4,5
Time: MWF 9:10

Mr. Band

Physics 105 or 106 Vector Analysis 3 Credits

Elements of vector algebra and calculus and the linear vector function in three dimensions.

Prerequisite: Physics 5, 6, 7, and Calculus
Elective: 3, 4, 5
Lecture: Three times a week.
Time to be arranged

Mr. Band

Physics 111 or 112 Kinetic Theory of Gases 4 Credits

Viscosity, capillarity, diffusion, change of state, the distribution of linear velocities among the molecules of a gas, the equipartition of kinetic energy and the theory of specific heats, the Brownian movement and allied phenomena.

Prerequisite: Physics 5-6 and Calculus
Elective: 3, 4, 5
Lecture: MWF 7:50
Laboratory: W 1:10-4:00

Mr. Hsieh

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Physics 115 Thermodynamics 3 Credits

The principles of thermodynamics and their application to physical and chemical processes. 3 lectures and solution of problems.

Prerequisite: Physics 5, 6, and Calculus, Physics III desirable

Elective: 3, 4, 5
Lecture: MWF 9:10

Mr. Band
or Mr. Yang

Physics 118 Quantum Theory 3 Credits

Statistical theory of heat, quantum statistics, quantum theory of radiation, statistical mechanics and wave mechanics of the atom. Three lectures.

Prerequisite: Physics 5, 6, 7, and Calculus, and Physics 115

Elective: 4, 5
Time: MWF 9:10

Mr. Band

Physics 131-2 Advanced Optics 3-3 Credits

The course deals with the more important phenomena and their fundamental theories in both geometrical and physical optics.

Prerequisite: Physics 5, 6, 7, and Calculus

Required: Major students in Physics

Elective: 3, 4, 5
Lecture: MWF 10:10

Mr. Band.

Physics 133-4 Advanced Experimental Optics 1-1 Credits

A laboratory course to be taken concurrently with Physics 131-2. It deals with lens systems, prisms, diffraction phenomena due to single slit, double slit, diffraction grating of the concave reflection types, photometer, refractometer, Michelson interferometer, polariscope and polarimeter.

Prerequisite: Same as Physics 131-2.

Required: Major students in Physics.

Elective: 3, 4, 5.
Laboratory: F 1:10-4:00

Mr. Meng

Physics 141 Advanced Electricity and Magnetism 3 Credits

Electrostatics, electrokinetics and magnetism

Prerequisite: Physics 5, 6, 7, and Calculus

Registration in Physics 143

Lecture: TThS 9:10

Mr. Yang

Physics 143 (Phys. 142) Direct Current Electrical Measurements 3 Credits

Prerequisite: Same as Physics 141 with registration in the latter course

Laboratory: TTh 1:10-4:00

Mr. Yang
and Mr. Meng

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Physics 144 Alternating Current Electrical Measurements 4 Credits

One lecture and 6 laboratory hours
Prerequisite: Physics 5, 6, 7 and Calculus
Laboratory: Time to be arranged

Mr. Yang

Physics 146 (Phys. 145) Radio Telegraphy and Telephony 4 Credits

A course of lectures and laboratory work consisting of elementary consideration of the fundamental laws and their applications to the circuits of modern radio telegraph and telephone systems.

Prerequisite: Physics 5, 6, 7, Calculus desirable
Lecture: MWF 7:50
Laboratory: M 1:10-4:00

Mr. Yang

Physics 152 (Phys. 151) Modern Developments in Physics 4 Credits

Conduction of electricity through gases, thermionics, photoelectricity, X-rays and atomic structure. 3 lectures and 3 laboratory hours.

Prerequisite: Physics 5, 6, 7, 141, and Calculus.
Required: Major students in Physics
Elective: 3, 4, 5
Lecture: MWF 7:50
Laboratory: W 1:10-4:00

Mr. Hsieh

Physics 153-4 The Natural Philosophy of Modern 2-2 Credits

Physics

To include the Natural Philosophy of Whitehead, Broad, Russell and Eddington; introduced by a summary of the theories of Relativity. Wave Mechanics of the Atom, and Statistical Mechanics.

This course would be suitable for Graduates from other colleges or subjects—besides giving students and graduates in physics a grasp of the significance of their own subject; it is not intended as exactly elementary in nature, but the physics included will be as non-technical as possible. There would be sufficient difficulty found in understanding the philosophical part of the subject however to make the course suitable more to mature students than to undergraduates.

To be elected with the permission of the instructor

Lecture: TTh 8:00

Mr. Band

Physics 161

Physics Journal Club

1 Credit

This organization, consisting of all instructors and graduate and senior students meets weekly, for the review and discussion of the current literature in this department of study. (Regular attendance at the meetings of this club is required of graduate and senior students in the Department).

Prerequisite: at least 2 years of Physics
Required: Major and Graduate students in Physics
Elective: 3,4,5
Time: T 4:10

Mr. Yang

Physics 162

Physics Journal Club

1 Credit

For description of the course and conditions of election see Physics 161

Physics 192

The Teaching of Physics

2 Credits

Student in this course will be given experience in the preparation of laboratory material, in the conduct of laboratory work under supervision and in helping professors to set up demonstration lectures for General Physics. Opportunity will also be given to students for making and repairing simple physical apparatus. Conferences: special assignments, work assigned to fit the needs of each student.

Prerequisite: Physics, 5, 6, 7, or equivalent
Open to seniors only
Hours: to be assigned

Physics 193

Special Experimental Problems

3 Credits

A course of laboratory work devoted either to the repetition of classical experiments or to the attack of some special problem in physics.

Prerequisite: Approval of the instructor under whom the work is to be done.
Elective: 4, 5. Staff.

Physics 194

Special Experimental Problems

3 Credits

For description see Physics 193.

Staff.

Physics 199

Senior Thesis

1 or 2 Credits

Required of students majoring in Physics. Involves the preparation of a critical resume of some field of research and a simple original investigation as decided in conference with the instructor.

Time to be arranged.

Physics Staff

Physics 200

Senior Thesis

1 or 2 Credits

For description of the course and condition of election see Physics 199

Physics Staff

Note:—

Some of these courses cannot be given every year, but arrangements will be made so that each student may have opportunity to take the required work at some time during his residence at the University.

DEPARTMENT OF PSYCHOLOGY

Luh Chih-wei, Ph. D. *Professor and Chairman*
 Lew T'ing-fang, T., Ph. D. *Professor*
 R. C. Sailer, Ph. D. *Assistant Professor*
 Hsia Yun, M. S. *Instructor*

The aim of the Department of Psychology is Twofold

1. To impart a scientific knowledge of theoretical and experimental psychology so as to prepare students to do independent research work or to teach psychology in colleges and middle schools, and
2. To give special training in the various fields of applied psychology. The Department looks forward to the time when training in psycho-technique can be given on a more extensive basis.

Departmental requirements:

For Admission to the Department

1. The candidate must have fulfilled the general requirements of the College of Natural Sciences except Mathematics for which may be substituted Psychology 117 to be taken in the second year.
2. The candidate must demonstrate the ability to read psychological literature in Chinese and in English. Deficiency in such ability must be made up in the second year by taking more required courses in Chinese or English or both.
3. The candidate must have had Psychology 1-2, or its equivalent in the case of a transfer student.
 (Adjustment may be made for students who for special reasons have not fulfilled all these requirements in the first year.)

For Graduation

1. The major requirement is from 40-60 credits in which the following courses must be included: Psychology 1-2, 5, 6, 103-104,

105-106, 117, 120, 191 or 192 (4 semesters); and 199 or 200 (4-6 credits).

2. The candidate must have elected a sequence of 20 credits in a correlated subject, preferably Biology, Physics, Education, or Sociology. These courses must be elected under the supervision of the chairman of the major department.

The graduating thesis, amounting to not less than four credits of work, must be written on an experimental topic. For this reason, Psychology 111 and 112 or Psychology 113 and 114 are strongly recommended as electives.

Proposed Curricula

Curriculum I

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
Chinese 7	2	Chinese 8	2
English 1	4	English 2	4
Biology 1 or		Biology 2 or	
Physics 5	4	Physics 6	4
Psychology 1	2	Psychology 2	2
*Elective	6	*Elective	6
	18		18
 <i>Second Year</i>			
Psychology 103	2	Psychology 4	2
Psychology 5	4	Psychology 6	4
Other Psychology	3-4	Other Psychology.....	3-4
Physics 5 or		Physics 6 or	
Biology 1	4	Biology 2	4
Elective	5-4	Elective	5-4
	18		18

* Mathematics 1-2 and a second foreign Language recommended.

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Third Year

Psychology 5	Psychology 5
	Biology 52 4
	Physics 7 4
Elective, at most 7	Elective, at most 3
	16

Fourth Year

Psychology 4	Psychology 4
Biology or Physics 4	Biology or Physics 4
Elective, at most 8	Elective, at most 8
	16

Curriculum II

FIRST SEMESTER

SECOND SEMESTER

<i>First Year</i>	<i>Credits</i>	<i>Second Semester</i>	<i>Credits</i>
Chinese 7 2		Chinese 8 2	
English I 4		English 2 4	
Biology 1 4		Biology 2 4	
Psychology 1 2		Psychology 2 2	
*Elective 6		*Elective 6	
	18		18

Second Year

Psychology 103 2	Psychology 104 2
Psychology 5 4	Psychology 6 4
Other Psychology 3-4	Other Psychology 3-4
Correlative 4-3	Correlative 4-3
Elective 5	Elective 5
	18

Third Year

Psychology 5	Psychology 5
Correlative 4	Correlative 4
Elective, at most 7	Elective, at most 7
	16

Fourth Year

Psychology 4	Psychology 4
Correlative 4	Correlative 4
Elective, at most 8	Elective, at most 8
	16

Department of Psychology

Schedule

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
7:50 to 8:50	Psy. 105-106 Psy. 131	Psy. 5,6 Psy. 10	Psy. 1-2A Psy. 10 Psy. 131, 132	Psy. 5,6 Psy. 10	Psy. 1-2A Psy. 10 Psy. 132	Psy. 5, 6
9:10 to 10:10	Psy. 111, 112	Psy. 1-2B Psy. 9 Psy. 153	Psy. 103-104 Psy. 111, 112	Psy. 1-2B Psy. 9 Psy. 153	Psy. 103-104 Psy. 111, 112	
10:10 to 11:10		Psy. 141, 142 Psy. 156	Psy. 151-152 Psy. 161	Psy. 141, 142 Psy. 156	Psy. 151-152 Psy. 161	
11:10 to 12:10	Psy. 119 Psy. 120	Psy. 144	Psy. 119 Psy. 120	Psy. 144	Psy. 119 Psy. 120	
1:00 to 2:00	Psy. 5,6 (Lab.)					
2:00 to 3:00	Psy. 5,6 (Lab.)	Psy. 117 (Lab.)		Psy. 177 (Lab.)	Psy. 105-106	
3:00 to 4:00	Psy. 5,6 (Lab.)	Psy. 117 (Lab.)		Psy. 117 (Lab.)		
7:30	Psy. 191, 192 Jour. Club					

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Courses of Instruction

- Psychology 1-2 General Psychology 2-2 Credits**
 This course deals with the fundamentals of human nature and behavior, with special emphasis on the objective standpoint.
 Elective: 1, 2, 3
 Section A—WF 7:50
 Section B—TTh 9:10
 Mr. Luh
- Psychology 5 Experimental Psychology 4 Credits**
 Introduction to the data of experimental psychology and the application of experimental methods to the study of psychological problems. (Sensation, perception, and related topics).
 Prerequisite: Psychology 1-2 or equivalent
 Elective: 2, 3, 4
 Lecture: TThS 7:50
 Lab: M 1:00-4:00
 Mr. Luh and Mr. Hsia
- Psychology 6 Experimental Psychology 4 Credits**
 (Learning, Memory and related topics).
 Prerequisite: Psychology 1-2 or equivalent
 Elective: 2, 3, 4
 Lecture: TThS 7:50
 Lab: M 1:00-4:00
 Mr. Luh and Mr. Hsia
- Psychology 9 or 10 Mental Hygiene 2 Credits**
 A study of common personal problems and difficulties viewed as maladjustments in the development of personality. Repeated second semester.
 Lecture: 1st sem. Elective: 2, 3, 4 TTh 9:10
 2nd sem. Elective: 1, 2, 3 TTh. 7:50
 Mr. Sailer
- Psychology 103-4 Introduction to the Fields and Schools of Psychology 2-2 Credits**
 A general survey of comparative psychology in its broadest sense and a brief presentation of the modern schools.
 Prerequisite: Psychology 1-2
 Elective: 2, 3, 4. (Students who have had ten or more credits in Psychology can elect this course only with permission).
 Lecture: WF 9:10
 Mr. Lew
- Psychology 105-106 Systematic Psychology 2-2 Credits**
 Systematic study of the theoretical basis of some representative schools.
 Prerequisite: 10 credits of psychology. For students of Philosophy, Psychology 1-2 only.
 Elective: 3, 4, 5
 Lecture: M 7:50 F 2:00
 Mr. Luh
- Psychology 111 Advanced Experimental Psychology 3 Credits**
 Learning, Memory and related topics. Special emphasis on the original literature. Discussion and experiment to center around a few main topics.

- Prerequisite: Psychology 5, 6
 Elective: 3, 4, 5
 Lecture: MWF 9:10
 Laboratory: Hours to be arranged
 Mr. Luh
- Psychology 112 Advanced Experimental Psychology 3 Credits**
 Congenital Behavior, Emotions and related topics.
 Prerequisite: Psychology 5, 6
 Elective: 3, 4, 5
 Lecture: MWF 9:10
 Laboratory: Hours to be arranged
 Mr. Luh
- Psychology 113 Advanced Experimental Psychology 2 Credits**
 Perception and Judgement
 Prerequisite: Psychology 5, 6
 Elective: 3, 4, 5
 Lecture: WF 9:10
 Laboratory: Hours to be arranged
 (Not given 1932-1933)
 Mr. Luh
- Psychology 114 Advanced Experimental Psychology 2 Credits**
 The Sensory Processes
 Prerequisite: Psychology 5, 6
 Elective: 3, 4, 5
 Laboratory: Hours to be arranged
 (Not given 1932-1933)
 Mr. Luh
- Psychology 117 Statistical Methods Applied to Psychology 3 Credits**
 The Practice and theory of elementary statistical methods applied to Psychology.
 Prerequisite: Psychology 1-2
 Elective: 2, 3, 4
 Lecture: One hour to be arranged
 Laboratory: TTh 2:00-4:00
 Mr. Sailer
- Psychology 119 The Measurement of Intelligence and Personality Traits 3 Credits**
 The simpler techniques of personality measurement, with emphasis on practical applications.
 Elective: 2, 3, 4.
 Lecture: MWF 11:10
 Mr. Sailer
- Psychology 120 Techniques of Personality Measurement 3 Credits**
 The study of original investigations and critical evaluation of the techniques employed. Consideration of the theories underlying them.

Prerequisite: Psychology 1-2, Psychology 117, Psychology 119, or equivalent

Elective: 3, 4, 5

Lecture: MWF 11:10

Mr. Sailer

Psychology 131 Abnormal Psychology 2 Credits

The abnormal in relation to the normal. Ways of reacting to difficulties. The Psychoneuroses.

Prerequisite: Psychology 1-2, or equivalent.

Elective: 2, 3, 4

Lecture: MW 7:50

Mr. Sailer

Psychology 132 Abnormal Psychology 2 Credits

Continuation of Psychology 131. Psychoanalysis, the Psychoses, hypnotism, Feeble-mindedness.

Prerequisite: Psychology 9 or 131

Elective: 2, 3, 4

Lecture: MW 7:50

Mr. Sailer

Psychology 141 Introduction to Social Psychology 2 Credits

This course is organized for Social Science students who do not intend to make an exhaustive study of psychology but at the same time find the knowledge of social psychology important to their own lines of work. Introduction to Psychology 142, no credits given unless taken together with that course.

Elective: 2, 3, 4

Lecture: TTh 10:10

Mr. Luh and
Mr. Hsia

Psychology 142 Social Psychology 2 Credits

A psychological study of the means of social stimulation and of the development of social habits and attitudes.

Prerequisite: Psychology 1-2 or 141

Elective: 2, 3, 4

Lecture: TTh 10:10

Mr. Luh

Psychology 144 Industrial Psychology 2 Credits

Psychological techniques involved in selection of employees and efficient adjustment of the working environment. The satisfactions and maladjustments of workers.

(Not credited toward a major in Psychology).

Elective: 2, 3, 4.

Lecture: TTh 11:10

Mr. Sailer

Psychology 151-152 Psychology of Childhood 2-2 Credits

This is an introductory course presenting the main facts concerning the psychology of children. Emphasis will be placed upon the significance of these facts for education and an acquaintance with the literature concerned.

Prerequisite: Psychology 1-2, or Education 15-16, or special permission of the instructor.

Elective: 2, 3, 4

Lecture: WF 10:10.

Mr. Lew

Psychology 153 Psychology of Adolescence 2 Credits

This is an introductory course presenting the main facts concerning the psychology of adolescents. It will include the reading of a certain amount of literature illustrating experiences of adolescents. Application of the principles to the educational problems of youth, especially middle school students, will be emphasized.

Prerequisite: Psychology 1-2, or Education 15-16, or special permission of the instructor.

Elective: 2, 3, 4

Lecture: TTh 9:10

Psychology 156 Advanced Educational Psychology 2 Credits

This course will deal in fact with the theories of learning, laws of learning, and conditions of effective study, and problems of instinct, emotion, individual difference, and certain educational problems from the point of view of educational psychology. Other problems will be introduced from year to year according to the preparation and the need of the students.

Prerequisite: Psychology 1-2 or Education 15-16

Elective: 2, 3, 4

Lecture: TTh 10:10

Mr. Lew

Psychology 161 Animal Psychology 2 Credits

A comparative study of the behavior of the vertebrates, especially in its relation to human behavior.

Prerequisite: Psychology 1-2

Elective: 2, 3, 4

Lecture: WF 10:10

Laboratory: Hours to be arranged

Mr. Hsia

Psychology 172 The Neurological Basis of Psychology 3 Credits

Elementary study of the anatomy and physiology of the vertebrate nervous system, emphasizing its bearing on human and animal psychology.

Prerequisite: Psychology 5-6 and Biology 52

Elective: 3, 4, 5

Two lectures to be arranged

Lab. W. 1:00-4:00

(Not given 1932-1933)

Psychology 191 or 192 Journal Club 1 Credit each semester

The staff and students will give reports on current literature.

Prerequisite: Major students or at least 10 credits of psychology

Elective: 3, 4, 5

Time: M 7:30

Psychology Staff

Psychology 199 or 200 Psychology Problems 1 to 3 Credits
each semester

Every major student is required to take up an individual problem on which he writes his graduating thesis. Such work may be started in the second semester of the third year.

Hours to be arranged.

Psychology Staff

PREMEDICAL AND PRENURSING TRAINING.

Advisor to Premedical and Prenursing Students—Miss Alice M. Boring, Ph. D.

While there are no more Premedical and Prenursing courses as such, students will be provided every opportunity to prepare themselves for entrances to medical colleges and nursing schools by selecting work offered in the different departments of this college and the other colleges of the University.

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**CURRICULUM FOR TRAINING OF TEACHERS OF MIDDLE
SCHOOL SCIENCES**

Advisor:—Mr. W. H. Adolph.

A group of courses is being organized in the College of Natural Sciences which will offer specific training for students preparing for middle school science teaching. Unusual opportunities are open to college graduates who have received adequate training in this field.

The demand at present is for teachers prepared to teach (1) both physics and chemistry (2) biology, both zoology and botany. All teachers of middle school science should be familiar with the aims and methods of the General Science course in the middle school.

Students who select this curriculum of work will register in one of the regular major subjects but will in consultation with the advisor make a more complete selection of correlated subjects and will be eligible to take the special courses in laboratory and class room practice offered in biology, chemistry, physics, geography.

SPECIAL COURSE IN LEATHER TANNING

Advisor to Short Course Leather Students—Mr. E. O. Wilson

This course is planned to meet the needs of students who wish to become operators or managers of tanneries, but cannot take the complete four year course.

Instruction is given in Chemistry, Physics, English, Chinese, and elementary Economics. A major portion of the time is devoted to instruction in Leather Manufacture and to practice work in the experimental tannery.

Candidates for this course must meet all requirements for admission as Freshmen to Yenching University. Those who satisfactorily complete the two years of work are given a certificate.

Further details may be obtained by application to the Registrar.

YENCHING CROP IMPROVEMENT STATION

Shen Shou-chuan, B. S.—Director of Experimental Projects
Chang Teh-jen, B. S.—Business Manager and Acting Director
Hsu Tien-ssu, B. S.—Assistant
Weng Teh-chi, B. S.—Assistant.

The work of this station is under the direction of the College of Agriculture of the University of Nanking, and these men are Associates on the faculty of the University of Nanking and also of Yenching University.

The experimental work is now being concentrated on plant breeding and crop improvement, especially with respect to the fundamental grain crops of North China, such as kaoliang, millet, wheat, and corn with the purpose of developing new strains of improved grains and thus of contributing to the resources of the farmers and to the prevention of famine.

SPECIAL COURSE IN LEATHER TANNING

Address to your course leader's address - Mr. J. Wilson
This course is intended to give the student who wishes to
become an expert in leather tanning, and also to give the student
a general knowledge of the subject.
The course is given in English, French, Italian, Spanish, and
Portuguese. A major portion of the time is given to the
study of the leather tanning process, and the student is
taught to make leather from raw skins.
Candidates for this course must meet all requirements for admission
to the University of Toronto. There is a \$100.00 fee for the course.
Further details may be obtained by application to the Registrar.

VENUE OF THE COURSE

The course is given in the Department of Chemistry, University of Toronto,
Toronto, Ontario.
The course is given in the Department of Chemistry, University of Toronto,
Toronto, Ontario.
The course is given in the Department of Chemistry, University of Toronto,
Toronto, Ontario.
The course is given in the Department of Chemistry, University of Toronto,
Toronto, Ontario.
The course is given in the Department of Chemistry, University of Toronto,
Toronto, Ontario.
The course is given in the Department of Chemistry, University of Toronto,
Toronto, Ontario.

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