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Yenching
Academic
College of Natural Sciences;
general bulletins + reports
1933-1934,
1942,
1949

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LIST OF PUBLICATIONS

from the

COLLEGE OF NATURAL SCIENCES

of

YENCHING UNIVERSITY

July 1, 1932 to June 30, 1933.

0491

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ADOLPH, WILLIAM H.

(and Ch'en, Shen-chao)
The Utilization of Calcium in Soybean Diets.
Jour. Nutrition, 1932, 5: 379-385.

(and Kao, Hsueh-chung)
Hemoglobin-building Properties of Soybean Products.
Chinese Jour. Physiol., 1932, 6: 257-264.

(and Ts'ao, Hui-ch'un)
近世無機化學 (A Textbook of General Chemistry.)
Science Press, 1932, 2nd. edition: 660 pp.

(Wang, Tsung-yao and Wang, P'eng-chü)
Emotional Glycosuria in Chinese Students.
Chinese Jour. Physiol., 1933, 7: 1-4.

(and Whang, Pao-chun)
Iodine in Nutrition in Coastal Mid-China.
Chinese Jour. Physiol., 1932, 6: 345-352.

(and Yang, En-fu)
The Estimation of Soybean Milk Used as an Adulterant in Cow's Milk.
Jour. Chinese Chem. Soc., 1933, 1: 29-34.

RAND, WILLIAM

(and Chang, Wen-yü)
Thermomagnetic Hysteresis in Steel.
Proc. Phys. Soc. London, 1933, 45: 602-609.

CHANG, CH'UAN P.

(and Chou, Yü-t'ing)
北平市製革業之研究 (A Critical Survey of the Leather Tanning Industry of Peiping.)
Bull. Bur. Inspect., Board of Industry, Tientsin, 1932: 19 pp.

(and Chou, Yung-nien)
蚌埠製革業 (The Leather Tanning Industry of Pengpu and Northern Anhwei.)
Bull. Bur. Inspect., Board of Industry, Tientsin, 1932: 13 pp.

CHANG, WEN-YU

(and Band, William)
Thermomagnetic Hysteresis in Steel.
Proc. Phys. Soc. London, 1933, 45: 602-609.

KAO, HSUEH-CHUNG

(and Adolph, William H.)
Hemoglobin-building Properties of Soybean Products.
Chinese Jour. Physiol., 1932, 6: 257-264.

KUNG, LAN-CHEN

(and Rose, Mary Swartz)
Factors in Food Influencing Hemoglobin Regeneration. II. Liver in Comparison with Whole Wheat and Prepared Bran.
Jour. Biol. Chem., 1932, 98: 417-437.

LI, JU-CH'I

(and Tan, Chia-chen)
Variations in the Color Patterns in the Lady-bird Beetles, *Ptychanatis axyridis* Pall.
Peking Nat. Hist. Bull., 1932, 7: 175-194.

LIN, CHO-YUAN

(and Wilson, Earl O.)
Hydrogen Ion Concentration of Clays and Their Efficiency as Dehydration Catalysts.
Bull. Geol. Surv. China, 1933, 20: 55-64.

LUH, CHIH-WEI

(and Liang, P'ei-te)
Further Studies in Forgetting and Reminiscence.
Yenching Studies in Psychology, 1933, 3: 1-15.

(and Sailer, Randolph C.)
The Self-estimation of Chinese Students.
Jour. Soc. Psych., 1933, 4: 245-249.

(and Shen, Nai-chang)
Direction Orientation in Mice.
Yenching Studies in Psychology, 1933, 3: 25-37.

SAILER, RANDOLPH C.

(and Luh, Chih-wei)
The Self-estimation of Chinese Students.
Jour. Soc. Psych., 1933, 4: 245-249.

TS'AI, LIU-SHENG

(and Hogness, T. R.)
The Diffusion of Gases through Fused Quartz.
Jour. Phys. Chem., 1932, 36: 2595-2600.

WILSON, EARL O.

(Hsieh, Wei-chieh and Hou, Teh-pang)
Brine Purification by Ammoniation.
Ind. Eng. Chem., 1933, 25: 165-167.

(and Lin, Cho-yuan)
Hydrogen Ion Concentration of Clays and Their Efficiency as
Dehydration Catalysts.
Bull. Geol. Surv. China, 1933, 20: 55-64.

WILSON, STANLEY D.

華北煤質之工業分析 (Proximate Analysis of Coals from North
China).
Chem. Ind. (China), 1933, 7: 24-37.

(Ma, Chi-ming and T'ien, Yu-lin).
Butyl and Amyl Ethers of Naphthols and Some of their
Derivatives.
Jour. Chinese Chem. Soc., 1933, 1: 11-16.

(Wang, Yu-chuan, Kao, Shih-luan and Ch'en, Kuo-chun).
數種華北煤質之分析 (Analysis of Coals from North China).
Chem. Ind. (China), 1933, 7: 16-23.

WU, CHENFU F.

A New Jumping Plant Louse from Peiping.
Peking Nat. Hist. Bull., 1932, 7: 71-72.

Aquatic Insects of China. IX-XV.
Peking Nat. Hist. Bull., 1933, 7: 335-353.

A Preliminary Check List of Hemiptera Heretofore Recorded
from Kwangtung Province, South China.
Lingnan Sci. Jour., 1933, 12 (Suppl.): 203-231.

燕京大學
YENCHING UNIVERSITY
BULLETIN

College of Natural Sciences
1934-1935



Volume XIX—Number 25
Peiping, China
August, 1934

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燕京大學
YENCHING UNIVERSITY
BULLETIN

College of Natural Sciences
1934-1935



Volume XIX—Number 25
Peiping, China
August, 1934

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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 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, out of print)	50 cents
Graduate Division	15 cents
College of Arts and Letters	15 cents
College of Natural Sciences	15 cents
College of Public Affairs	15 cents
Directory of Faculty	15 cents
Directory of Students	15 cents
Guidebook for Students. Each student of the University is entitled to one copy free. Extra copies, each	15 cents
Entrance Examination Questions, 1933	15 cents
(with syllabus of subjects)	
Graduate Division Information Sheet	Free
Undergraduate College Entrance Information (in Chinese)	Free
School of Religion	Free

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YENCHING UNIVERSITY

Academic Calendar 1934-1935

Fall Semester

Fall semester begins	Sept. 1 (Sat.)
Dormitories open to students	Sept. 1 (Sat.)
New students to arrive	Sept. 1 (Sat.) -Sept. 4 (Tues.)
Faculty Pre-Sessional Conference	Sept. 3 (Mon.) -Sept. 4 (Tues.)
Exemption and placement tests	Sept. 5 (Wed.)
Freshman Week	Sept. 5 (Wed.) -Sept. 10 (Mon.)
Registration	Sept. 10 (Mon.) -Sept. 12 (Wed.)
Opening Convocation	Sept. 13 (Thurs.)
Class work begins	Sept. 13 (Thurs.)
Change of courses without fee	Sept. 13 (Thurs.)-Sept. 19 (Wed.)
Late registration with fee	Sept. 13 (Thurs.)-Sept. 26 (Wed.)
Last day for taking make-up examinations	Sept. 19 (Wed.)
Change of courses with fee	Sept. 20 (Thurs.)-Sept. 26 (Wed.)
National holiday	Oct. 10 (Wed.)
Sun Yat Sen's birthday anniversary holiday	Nov. 12 (Mon.)
Freshman mid-semester examinations	Nov. 13 (Tues.) -Nov. 17 (Sat.)
University anniversary holiday	Dec. 25 (Tues.)
Founding of the Republic of China anniversary holiday	Jan. 1 (Tues.)
New Year holiday	Jan. 1 (Tues.) -Jan. 3 (Thurs.)
Fall semester examinations	Jan. 9 (Wed.) -Jan. 17 (Thurs.)
Winter recess	Jan. 18 (Fri.) -Jan. 31 (Thurs.)

Spring Semester

Spring semester begins	Feb. 1 (Fri.)
Registration	Feb. 1 (Fri.) -Feb. 2 (Sat.)
Class work begins	Feb. 4 (Mon.)
Change of courses without fee	Feb. 4 (Mon.) -Feb. 9 (Sat.)
Late registration with fee	Feb. 4 (Mon.) -Feb. 16 (Sat.)
Last day for taking make-up examinations	Feb. 9 (Sat.)
Change of courses with fee	Feb. 11 (Mon.) -Feb. 16 (Sat.)
Sun Yat Sen's memorial day holiday	Mar. 12 (Tues.)
Leaders of Revolution memorial day holiday	Mar. 29 (Fri.)
Spring recess	Apr. 1 (Mon.) -Apr. 7 (Sun.)
Alumni home-coming day holiday	Apr. 27 (Sat.)
National Government Inauguration Day holiday	May 5 (Sun.)*
Last day for handing in master's thesis to Graduate Committee	May 15 (Wed.)
Last day for handing in senior thesis to Dean of College	May 31 (Fri.)
Spring semester examinations	June 12 (Wed.) -June 21 (Fri.)
Class day	June 22 (Sat.)
Baccalaureate	June 23 (Sun.)
Commencement	June 24 (Mon.)

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

UNIVERSITY OFFICERS OF ADMINISTRATION

Y. T. Tsur, M.A., D., Litt.,	Acting 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 Margaret B. Speer., M.A.	Acting Dean of the College for Women
*Mei Yi-pao, Ph. D.	Director of Studies
Ts'ai I-o, S., B.A.	Controller
*Miss Mary Cookingham, B.A.	Bursar
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

*On leave of absence 1934-35

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.*
- *Earl O. Wilson, S.M. *Professor 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 and Chairman of the Department of Chemistry.*
- Li Ju-ch'i, Ph. D. *Professor and Chairman of the Department of Biology.*
- Randolph C. Sailer, Ph. D. *Professor of Psychology.*
- Shen Shou-ch'uan, M.S. *Visiting Professor of Agriculture University of Nanking.*
-
- Miss Ethel M. Hancock, B. Sc. *Assistant Professor of Mathematics*
- 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 1934-35

- Lin Chi-tsun, B. Cer. E. *Honorary Adviser in Ceramics, Department of Chemistry.*
-
- *Miss Ch'en I, C., M.A. *Lecturer in Home Economics.*
- Ts'ai Liu Sheng, Ph. D. *Lecturer in Chemistry.*
- Miss Kung Lan-chen, Ph. D. *Lecturer and Chairman of the Department of Home Economics.*
- Hsu Tien-ssu, B. S. *Visiting Associate in Agriculture. University of Nanking.*
- Chin Tzu-chung, B. S. *Visiting Associate in Agriculture. University of Nanking.*
-
- 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.*
- Chang Wen-Yü, M.S. *Instructor in Physics.*
- Miss Wu Sung-chen, B. S. *Instructor in Home Economics.*
-
- Tsui Yu-lin, B. S. *Assistant in Biology.*
- Chang Tso-kan, B. S. *Assistant in Biology.*
- Meng Chao-wei, B. S. *Assistant in Biology.*
- Miss Ting Ju-nan, B. S. *Assistant in Biology.*
- Miss Sun Elizabeth K. S., M. S. *Assistant in Biology.*
- Sun Ling-hsien, M. S. *Assistant in Chemistry.*
- Hsü P'eng-ch'eng, B. S. *Assistant in Chemistry.*
- Lo Tsung-shih, B. S. *Assistant in Chemistry.*
- P'eng Shu-lin, B. S. *Assistant in Chemistry.*
- Miss Chang Chen-ta, B. S. *Assistant in Chemistry.*
- Hsü Hsien Yü, M. S. *Assistant in Mathematics.*

Absent on leave 1934-35.

Pi Te-hsien, M. S. *Assistant in Physics,*
 Ch'en Jen-lieh, B. S. *Assistant in Physics,*
 Tu Lien-yüeh, B. S. *Assistant in Physics,*
 Miss Wang Ch'eng-shu, B. S. *Assistant in Physics,*
 Hsü Yün-kuei, B. S. *Assistant in Physics,*
 Lin Cho-Yüan, M. S. *Research Assistant in Chemistry.*
 Lin Feng, B. S. *Research Assistant in Chemistry.*

EXECUTIVE COMMITTEE OF THE COLLEGE

S. D. Wilson, Ph. D. *Dean.*
 Li Ju-chi, Ph. D. *Biology.*
 Wm. H. Adolph, Ph. D. *Chemistry.*
 Walter W. Davis, M.S. *Geography and Geology.*
 Miss Kung Lan-chen, Ph. D. *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*
 Miss Kung Lan-chen, Ph. D. *Pre-nursing.*
 *Earl O. Wilson, S. M. *Leather Short Course*

* Absent on leave 1934-35

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THE COLLEGE OF NATURAL SCIENCES.

REGULATIONS.

Major and Minor. A regular student in this college must select one major and one minor department. The major must be selected from one of the following departments: Biology, Chemistry, Geography and Geology, Home Economics, Mathematics, Physics or Psychology. The minor will usually be selected from the other departments of this college not chosen as a major. In certain cases the minor may be selected from the departments of another college of the university. The major shall consist of from thirty-two to fifty credits and the minor of from twelve to twenty credits. The sum of the major and the minor is to total not less than fifty credits.

Note. Freshmen students are expected to consult with the freshman doyens and the chairmen of those departments in which they have the most interest before they select their major and minor subjects. The final selection of the major and minor departments should be made late in the freshman year or just at the beginning of the sophomore year. At this time a tentative program of study for the remainder of the college course should be planned in consultation between the student and the doyen or the chairman of the major department.

Graduation. A regular student on fulfilling the prescribed curriculum of one of the major departments in this college and passing all examinations will be graduated with the degree of Bachelor of Science.

Independent Study. Students who give evidence of special ability will be encouraged to undertake programs of independent study during their junior and senior years. Detailed regulations may be obtained by consulting the chairman of the major department.

OTHER REGULATIONS.

For information concerning entrance requirements, tuition, laboratory fees and other expenses, scholarships, credits required for graduation, grade ratio, transfer regulations etc. the student should consult the, "Guidebook for Students", issued by the office of the Director of Studies.

PROGRAM OF STUDY.

(A) Plan for the Freshman Year for the College of Natural Sciences.

<i>Group A</i>			
English			4 - 4
<i>Group B</i>			
A Natural Science	{ Bio., Chem., Phys., or Calculus }		4 - 4
A Natural Science			4 - 4
<i>Group C</i>			
Mathematics			3 - 3
<i>Group D</i>			
(1) Sociology	3 or 3	}	
Economics	3 or 3		
Political Science	3 or 3		
	or		3 - 3
(2) Education	3 or 3	}	
History	3 or 3		
Geography	3 - 3		
Reflective Thinking	3 or 3		
Mental Hygiene	3 or 3		
Psychology	3 - 3		
Total			18-18

- NOTE:— (1) Freshmen intending to major in Psychology will take psychology instead of one of the subjects specified in Group B.
- (2) In Group D, the student will select either 6 credits from Sub-group (1) or 6 credits from Sub-group (2).
- (3) Women students may take the 1-Cr. required course in hygiene as an additional course in the second semester of Freshman year, or they must take it in the Sophomore year.

DEPARTMENT OF BIOLOGY

Li Ju-ch'i, Ph. D.	<i>Professor and Chairman</i>
Miss Alice M. Boring, Ph. D.	<i>Professor</i>
Wu Chenfu F., Ph. D.	<i>Professor</i>
Tsui Yu-lin, B. S.	<i>Assistant</i>
Chang Tso-kan, B. S.	<i>Assistant</i>
Meng Chao-wei, B. S.	<i>Assistant</i>
Miss Ting Ju-nan, B. S.	<i>Assistant</i>
Miss Sun Elizabeth K. S., M. A.	<i>Assistant</i>

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 Sciences, (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	6 credits
English	16 credits
Mathematics	6 "
Major	40 "
Minor	12 "
Electives (Minors and Social Sciences)	56 "
Total	136 credits

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

Biology 1-2	8 credits
Biology 51, 52	8 "
Biology 101, 102	6 "
Biology 103, 104	4 "
Biology 199, 200	4 "
Biology 153, 154	2 "
Biology Electives	8 "

- (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.

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 48 Students

Lecture: T Th 10:20

Laboratory: Section A—MW 1:10-4:00 (24 Students)

Section B—TTh 1:10-4:00 (24 Students)

Miss Boring

Biology 101

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: W, F, 8:00

Laboratory: F 1:10-4:00

Mr. Li

Biology 102

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. Two lectures and three laboratory hours.

Prerequisite: Biology 51,52

Required: Major and Premedical students

Elective: 3,4,5

Lecture: W, F, 8:00

Laboratory: F 1:10-4:00

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: TTh 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: TTh 1:10-4:00

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 10:20

Laboratory: MW 1:10-4:00

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 8:00

Laboratory: MW 1:10-4:00

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: Time to be arranged

Miss Boring

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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 10:20
 Laboratory: W 1:10-4:00

Mr. Li

Biology 160 Experymental 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 165 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

Biology 165 B Special Problems 2 Credits

For description see 165 A.

Biology 166 A Special Problems 4 Credits

For description see 165 A.

Biology 166 B Special Problems 2 Credits

For description see 165 A.

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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
 Laboratory: Time to be arranged

Biology Staff

Biology 200 Senior Thesis 2 Credits

Same as Biology 199

Biology Staff

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DEPARTMENT OF CHEMISTRY

Wm. H. Adolph, Ph. D.	<i>Professor and Chairman</i>
*E. O. Wilson, S.M.	<i>Professor</i>
Stanley D. Wilson, Ph. D.	<i>Professor</i>
Ts'ai Liu-sheng, M.S., Ph. D.	<i>Lecturer</i>
Ts'ao Ching-p'an; B.A.	<i>Instructor</i>
Chang Ch'üan P., B.S.	<i>Instructor</i>
Sun Ling-hsien, M.S.	<i>Assistant</i>
Hsu P'eng-ch'eng, B.S.	<i>Assistant</i>
Lo Tsung-shih, B.S.	<i>Assistant</i>
P'eng Shu-lin, B.S.	<i>Assistant</i>
Chang Chen-ta, B.S. (Miss)	<i>Assistant</i>
Lin Chi-tsun, B. Cer. E.	<i>Honorary Adviser in Ceramics</i>
Lin Cho-yuan, M.S.	<i>Research Assistant</i>
Lin Feng, B.S.	<i>Research Assistant</i>

The Department of Chemistry undertakes: (1) to provide the fundamental required courses in the curricula in Pre-medicine, Prenursing, and Home Economics; (2) to offer students in the College of Natural Science and also students specialising in other fields a fundamental training in chemical thought and the scientific method; (3) to train teachers of chemistry; (4) to train practical chemists and tanners; and (5) to offer to properly qualified college graduates a training in methods of chemical research.

DEPARTMENTAL REGULATIONS

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

* Absent on leave 1934-35

requirements for graduation listed in section B below. In addition to the major (chemistry), each student will choose a minor field or study in some closely related subject (see below). Students need not choose their major and minor departments till the close of the Freshman year.

A. 1. Chinese	6 credits
English	16 credits
Physics	12 credits
Mathematics	14 credits
Social Sciences (Econ. Educ., Hist., Philos. Psy., Pol. Sc., Sociol.)	6 credits
Major (Chemistry)	40 credits
including:	
Chemistry 3-4	8 credits
Chemistry 5-6	8 credits
Chemistry 9-10	8 credits
Chemistry 131-2	8 credits
Chemistry 199 and/or 200	2-4 credits
Minor*	12-20 credits
Electives**	22-30 credits

Total 136 credits

- In Chemistry 199 or 200 the student must complete a satisfactory thesis on an experimental problem, under the direction of a 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.
- B. 1. In addition to the subjects listed above under A. 1., students taking the option in Leather Tanning must elect the following courses:—

* It is advised that students Majoring in chemistry take a minor in either physics or biology.

** Hygiene (1 credit) is required of all women Students,

- Biology 1-2, 105 12 credits
 Chemistry 73-74 (Leather) 8 credits
 Chemistry 75-76 (Leather) 8 credits
 Chemistry 119-120 6 credits
 Chemistry 121-122 6 credits
 Chemistry 131-132 8 credits
- In Chemistry 199 or 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 CHEMISTRY

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
English 1 4		English 2 4	
Chemistry 3 4		Chemistry 4 4	
Physics 1 and 51 3		Physics 2 and 52 3	
Mathematics 1 3		Mathematics 2 3	
Social Science 3		Social Science 3	
	17		17
<i>Second Year</i>			
Chinese 3		Chinese 3	
English 5 4		English 6 4	
Chemistry 5 4		Chemistry 6 4	
Physics 3 and 53 3		Physics 4 and 54 3	
Mathematics 27 4		Mathematics 28 4	
	18		18
<i>Third Year</i>			
Chemistry 9 4		Chemistry 10 4	
Chemistry 131 4		Chemistry 132 4	
Minor or Correlated science 4		Minor or Correlated science 4	
Non - science elective .. 5		Non - science elective .. 5	
	17		17
<i>Fourth Year</i>			

The work of the senior year in chemistry is largely tutorial in character. The student's course of study for this year will largely group itself around the subject of his thesis work and will be largely arranged to fill his own individual needs.

**MAJOR CURRICULUM IN CHEMISTRY WITH
AN OPTION IN LEATHER TANNING**

Students specializing in Leather Tanning will follow the curriculum outlined above for the first two years. Beginning with the Junior year they will arrange their work as follows:

<i>Third Year</i>	<i>Credits</i>		<i>Credits</i>
Chemistry 9	4	Chemistry 10	4
Chemistry 73 (Leather) ...	4	Chemistry 74 (Leather) ...	4
Chemistry 119	3	Chemistry 120	3
Biology 1	4	Biology 2	4
Social Science	3	Social Science	3
	18		18

<i>Fourth Year</i>			
Chemistry 75 (Leather) ...	4	Chemistry 76 (Leather) ...	4
Chemistry 121	3	Chemistry 122	3
Chemistry 131	4	Chemistry 132	4
Biology 105	4	Chemistry 200	2
		Elective	2
	15		15

DESCRIPTION OF COURSES

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 pre-nursing course
Lecture: TTh 8:00
Laboratory: TTh 1:10-4:00 Miss Kung

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: Middle school Physics or equivalent.

Lecture: A—TTh 9:20

B—WF 9:20

Laboratory: Any two of the following periods Mr. S. D. Wilson

MW 1:10-4:00; TTh 1:10-4:00, F 1:10-4:00, S 9:20-12:10. Mr. Tsao

Elective: 1,2,3,4

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 1-2; 51-52 or equivalent

Sections: A—TTh 8:00 MW 1:10-4:00

B—WF 8:00 TTh 1:10-4:00

C—TTh 9:20 F 1:10-4:00 S 9:20-12:10

Mr. Adolph

Elective: 2, 3, 4

Chemistry 6 **Quantitative Analysis** **4 Credits**

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

Prerequisite: Chemistry 5

Sections: A—Th 9:20; MWF 1:10-4:40

B—Th 10:20; TTh 1:10-4:00, S 9:20-12:10

Mr. Adolph

Elective: 2, 3, 4

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 6

Lecture: T 10:20

Laboratory: MF 1:10-4:00, S 9:20-12:10

Mr. E. O. Wilson

Elective: 3,4

Chemistry 9-10 **Organic Chemistry** **4-4 Credits**

A course in the elements of organic chemistry for those beginning the subject: aliphatic and aromatic series. The emphasis is placed on general

* Not offered 1934-35.

principles. (Students in Home Economics who elect Chemistry 117 and also pre-medical students may receive credit for Chemistry 9 without taking Chemistry 10). 2 lectures and 6 laboratory hours.

Prerequisite: Chemistry 6

Lecture: TTh 10:20

Laboratory: TTh 1:10-4:00

Elective: 2, 3, 4

Mr. S. D. Wilson
and Mr. Sun.

Chemistry 117 General Biochemistry 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. 1:10-4:00

Conference and Seminar: WF 9:20

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 8:00 1st semester

Laboratory: Time to be arranged

Offered 1935-36 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. 8:00; 2nd semester

Laboratory: Time to be arranged

Elective: 3, 4, 5

Mr. E. O. Wilson

* Not offered 1934-35

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 11:20

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. Adolph

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

* Not offered 1934-35.

Chemistry 127 * Qualitative Organic Analysis 4 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

Elective: 4, 5

Mr. Sun

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

Elective: 4, 5

Mr. Sun

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 half credit for this course.

Prerequisite: Chemistry 6, 10 and Mathematics 27-28.

Time to be arranged

Elective: 3, 4, 5

Mr. 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 10:20 1st semester

Elective: 4, 5

Mr. Sun

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 10:20 2nd semester

Elective: 4, 5

Mr. S. D. Wilson

Not offered 1934-35

Chemistry 134 * Organic Preparations 2 Credits

Organic preparations of a more advanced type than those offered in chemistry 9-10. As far as A possible the type of preparations will be adapted to the needs of the individual students. Six laboratory hours.

Prerequisite: Chemistry 10

Laboratory: Time to be arranged 1st semester

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 2nd semester

Elective: 4, 5

Mr. S. D. Wilson

Chemistry 139 Seminar in Biochemistry 1 Credit

For students specializing in biochemistry

Prerequisite: Chemistry 117

Time to be arranged

Elective: 4, 5

Mr. Adolph

Chemistry 140 Seminar in Biochemistry 1 Credit

For students specializing in biochemistry

Prerequisite: Chemistry 117

Time to be arranged

Elective: 4, 5

Mr. Adolph

Chemistry 142 Metabolism 4 Credits

Physiological chemistry as applied to problems of human nutrition. Conferences; individual projects; simple metabolism experiments and laboratory study of metabolic processes. Six laboratory hours.

Prerequisite: Chemistry 117

Conferences: to be arranged

Laboratory: to be arranged

Elective: 3, 4, 5

Mr. Adolph

* Not offered 1934-35.

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

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 advanced 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 199 Senior Thesis 2 Credits

This course involves a simple original laboratory problem in some field of chemistry. The field of investigation is decided in conference with the head of the department.

Time to be arranged.

Staff

* Not offered 1934-35.

Chemistry 200 Senior Thesis 2 Credits

For description see 199

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

Chemistry 71-72 Elements of Tanning 2-2 Credits

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

Lecture: MF 9:20

Mr. Chang

Chemistry 73-74 Leather Manufacture 4-4 Credits

The lectures deal with the principles of Chrome, Aulm, 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: students with option in Leather Tanning

Lecture: WF 11-20

Laboratory: MS 9:20-12:10

Mr. Chang

Chemistry 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: students with option in Leather Tanning

Lecture: T 10:20

Laboratory: Hours to be arranged

Mr. Chang

MASTER'S THESIS

Suitably prepared students may elect research work for the Master's thesis in the following fields; inorganic chemistry, organic chemistry, physical 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 hours. 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.

DEPARTMENT OF GEOGRAPHY AND GEOLOGY

W. W. DAVIS, M.S. *Professor and Chairman.*

The functions of the Department are (1) to train students for teaching work in Geography, (2) 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	6 Credits
English	16 "
Geology 1-2	8 "
Second Natural Science (Biology, Chemistry	
Third " " (or Physics or Calculus)	16 "
Mathematics	6 "
Group D (Sociology, Economics Political Science,	
Education, History, Geography, Reflective Thinking,	
Mental Hygiene, Psychology)	6 "
Major	32 to 50 "
Minor	12 to 20 "
History and Education are especially recommended	
but a student may also take Biology, Chemistry, Phy-	
sics, Home Economics, Economics, Political Science,	
Sociology English, European Languages or Chinese)	
Electives	38 Credits
Total	136 "

- (2) A student must under the supervision of the 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.

MAJOR CURRICULUM IN GEOGRAPHY AND GEOLOGY.

FIRST SEMESTER		SECOND SEMESTER	
<i>First Year</i>	<i>Credits</i>		<i>Credits</i>
English 1	4	English 2	4
Geology 1	4	Geology 2	4
Second Nat. Science	4	Second Nat. Science	4
Mathematics 1	3	Mathematics 2	3
Group D.	3	Group D.	3
	18		18
<i>Second Year</i>			
English 5	4	English 6	4
Chinese	3	Chinese	3
Third Nat. Science	4	Third Nat. Science	4
Major	3	Major	3
Electives	4	Electives	4
	18		18
<i>Third Year</i>			
Major	3 to 6	Major	3 to 6
Minor	3 to 6	Minor	3 to 6
Electives	10 to 4	Electives	10 to 4
	16		16
<i>Fourth Year</i>			
Major (Thesis)	2	Major (Thesis)	2
Major	3	Major	3
Minor	3 to 6	Minor	3 to 6
Electives	8 to 5	Electives.....	8 to 5
	16		16

DESCRIPTION OF COURSES

- Geography 1-2. Fundamentals of Geography 3-3 Credits
- A study of the geographical factors of environment and how they affect life.
 Required: Major Students in Geography.
 Elective: 1, 2.
 Lectures:
 Not Offered 1934-5 Mr. Davis.
- Geography 5 China 3 Credits
- The physical, human and economic geography of China.
 Elective 2, 3, 4.
 Lectures TThS 10:20 Mr. Davis.
- Geography 6 Asia 3 Credits
- The physical, human, economic and political geography of non-Chinese non-Japanese Asia.
 Elective 2, 3, 4.
 Lectures TThS 10:20
- Geography 7 Europe 3 Credits
- The political and economic Geography of Europe.
 Elective 2, 3, 4.
 Lectures TThS 10:20
 Not offered 1934-5 Mr. Davis
- Geography 8 North and South America. 3 Credits
- The political and Economic Geography of North and South America
 Elective 2, 3, 4.
 Lectures TThS 10:20
- Geography 13 Japan. 2 Credits
- The physical, human, economic and political geography of Japan
 Elective 2, 3, 4.
 Lectures ThS 11:20

- Geography 14 Malaya 2 Credits
- The physical, human, economic and political geography of the
 Malayan Lands.
 Elective 2, 3, 4.
 Lectures ThS 11:20
- Geography 59 Special Problems in Geography 3 Credits
- The students to make a special study and present a report on some special
 problem in geography. The work is done on the tutorial basis and is open only
 to those who have had at least 12 credits, including Geology 1-2, in the depart-
 ment. Mr. Davis.
- Geography 60 Special Problems in Geography 3 Credits
- Like Geog. 59 Mr. Davis.
 N.B. Students majoring in Geography and Geology may repeat Geog. 59 and
 60, or double in any given semester, provided their studies are in new and in-
 dependent problems.
- Geography 61-62 Thesis 2-2 Credits
- Required of majors in the department. Mr. Davis.
- Geology 1-2 General Geology 3-3 Credits.*
- An introduction to 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; a brief outline of Earth
 History.
 Required; Majors in the Department.
 Elective 1, 2, 3, 4.
 May be taken as a Required Science by Freshman.
 Lectures: TS, 9:20
 Laboratory-A weekly 2-hour period Wed. and Th. afternoons Mr. Davis.

*Geology 1-2a.

A student majoring in this department must take Geology 1-2 for 4-4 Credits
 by doing extra work under the direct supervision of the instructor.

DEPARTMENT OF HOME ECONOMICS

Miss Kung Lan-chen, Ph. D. *Lecturer and Chairman*
 *Miss Caroline I. Chen, M. A. *Lecturer*
 Miss Wu Sung-chen, B. S. *Instructor*

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

DEPARTMENTAL REGULATIONS

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

- 1 Chinese 6 credits
- English 16 "
- Soc. Sci. (Econ., Psy., Soc., Edu.) 12 "
- Math. 6 "
- Major 32 to 50 "
- Minor 12 to 24 "
- Electives To a total of 136 credits.

- 2. Major Curriculum. The department offers two different sequences of courses.

COURSE I.—MAJOR CURRICULUM

First year

First Semester	Credits	Second Semester	Credits
Eng. 1	4	Eng. 2	4
Chem. 3	4	Chem. 4	4
Biol. 1	4	Biol. 2	4
Math. 1	3	Math. 2	3
Soc. Sci.	3	Soc. Sci.	3
	<u>18</u>		<u>18</u>

*Absent on leave 1934-35

Second year

Chin. 3	3	Chin. 4	3
Eng. 5	4	Eng. 6	4
H. Ec. 23	3	H. Ec. 4	3
Minor	6	Chem. 2	4
Electives	2	Minor	3
		Hygiene	1
	<u>18</u>		<u>18</u>

Third Year

First Semester	Credits	Second Semester	Credits
H. Ec. 37	3	H. Ec. 6	3
H. Ec. 31	2	H. Ec. 32	2
H. Ec. 5	2	H. Ec. 26	3
H. Ec. 11	3	H. Ec. 24	2
Minor	3	Minor	3
Soc. Sci.	3	Soc. Sci.	3
	<u>16</u>		<u>16</u>

Fourth Year

H. Ec. 15	3	H. Ec. 16	3
H. Ec.	3	H. Ec. 92	3
H. Ec.	3	H. Ec. 102	3
Thesis	1	Thesis	1
Electives	6	Electives	6
	<u>16</u>		<u>16</u>

COURSE II.—MAJOR CURRICULUM

First Year

First Semester	Credits	Second Semester	Credits
Same as Course I.			

Second Year

Phys. 1 & 51	3	Phys. 2 & 52	3
Chem. 5	4	Chem. 6	4
Eng. 5	4	Eng. 6	4
Chin. 3	3	Chin. 4	3
Electives	4	H. Eco. 4	3
		Hygiene	1
	<hr/> 18		<hr/> 18

Third Year

Chem. 9	4	H. Ec. 6	4
Chem. 117	4	H. Ec. 26	3
H. Ec. 37	3		
H. Ec. 31	2	Electives	
Soc. Sci.	3	Soc. Sci.	3
	<hr/> 16		<hr/> 16

Fourth Year

H. Ec. 15	3	H. Ec. 92	3
H. Ec.	3	H. Ec. 112	4
H. Ec. 7	2		
Thesis	2	Thesis	2
Electives	6	Electives	7
	<hr/> 16		<hr/> 15

DESCRIPTION OF COURSES

- Home Economics 1 Principles of Dietetics. 2 Credits**
The essentials of an adequate diet. The food requirement of individuals, and the proper selection of foods to meet such needs.
Elective: Non-Majors 2, 3, 4.
Lecture: TTh 10:20
- Home Economics 4 Food Selection and Preparation. 3 Credits**
An introduction to the subject of foods; selection, marketing, preparation, and service; and the fundamental principles of nutrition.

Prerequisite: Chem. 4

Required: Major students in Home Economics.

Elective: 2, 3.

Lecture: MW 10:20

Laboratory: F 1:10-4:00

Miss Kung

Home Economics 5 Food Preparation, Advanced 2 Credits

A course planned to give a broad view of the field of food preparation. Different types of dishes used for specific purposes and various situations are studied.

Elective: 3, 4

Laboratory: WF 1:10-4:00

Miss Wu

Home Economics 6 Nutrition and Dietetics 3 or 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 in meals.

Prerequisite: Course I H. Ec. 4, Chem. 2

Course II H. Ec. 4, Chem. 9, 117

Required: Major students in Home Economics.

Lecture: WF 11:20

Laboratory: MW 1:10-4:00

Miss Kung

Home Economics 7 Diet in Disease 2 Credits

A study of diets for abnormal conditions, a preliminary for students who wish to become hospital dietitians or nutrition specialists.

Prerequisite: H. Ec. 6

Elective: 4

Lecture: F 2:10-4:00

Miss Nesbitt.

Home Economics 11 Clothing Problems 3 Credits

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

Elective: 3, 4

Lecture: MWF 9:20

Miss Chen

Home Economics 15 Home Decoration 3 Credits

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

Required: major students in Home Economics.

Elective: 3, 4
Lecture: TTh 8:00
Laboratory: T 1:10-4:00

Miss Chen

Home Economics 16

Applied Design

3 Credits

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

Prerequisite: one art course.

Elective: 2, 3, 4
Lecture: TTh 8:00

Laboratory: T 1:10-4:00

Miss Chen

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. Course I

Elective: 2, 3, 4
Lecture: WF 8:00

Laboratory: M 1:10-4:00

Miss Wu

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 disease.

Elective: 2, 3, 4

Lecture: Th 2:10-4:10

Miss Wu

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: 3, 4

Lecture: MWF 9:10

Miss Chen

Home Economics 31

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, fear, etc.

Prerequisite: Psy, 1-2 or Ed. 15

Elective: 3, 4

Lecture: F 2:10-4:00

Mrs. Sweet

Home Economics 32

The Nursery School

2 Credits

A study of the aim and organization of the nursery school, equipment and play material 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.

Elective: 3, 4

Lecture: Th. 11:20

Practice hours to be arranged.

Mrs. Ritter

Home Economics 37

Child Care and Development

3 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: MWF 10:20

Miss Kung

Home Economics 51-52

Field Work

2-2

A course dealing with special problems in different fields. Students will do practical work under supervision of staff members.

Prerequisite: At least 16 credits in Home Economics

Elective: 3, 4

Lecture: Th 2:10-4:00

Staff

Home Economics 92

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. 6, 15, 26

Required: Major students in Home Economics

Miss Wu

Note:—Students electing this course are advised to reserve 11:20 free.

Home Economics 102 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

Miss Chen

Home Economics 111 or 112 Advanced Nutrition 4 Credits

Further study of the problems of nutrition with special attention of the recent advances in this science.

Prerequisite: H. Ec. 6, Chem. 117

Elective: 4

Lecture: TTh 9:20

Laboratory: W 1:10-4:00

Miss Kung

Another laboratory period to be arranged.

Home Economics 199-200 Senior Thesis 1-1 or 2-2 Credits

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

Staff

DEPARTMENT OF MATHEMATICS

Ch'en Tsai-hsin, Ph. D. Professor and Chairman

Miss E. L. Konantz, M.A. Professor

Miss E. M. Hancock, B. Ss. Assistant Professor

Hsü Hsien Yü, M.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 for the teaching of mathematics.

DEPARTMENTAL REGULATIONS

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

Chinese 6 Credits

English 16 Credits

Physics 1-2 and 51-52 6 Credits

Social Sciences 6 Credits

Major 40 Credits

(Of the credits of major) the following courses are required.

Mathematics 21-22 6 Credits

Mathematics 23-24 6 Credits

Mathematics 27-28 6 Credits

Mathematics 55-56 8 Credits

Minor Subjects (Physics, Chemistry

or Biology) 16 Credits

Electives to make a total of 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>			
English 1	4	English 2	4
Nat. Sc. Mathematics 21	3	Nat. Sc. Mathematics 22	3
Nat. Sc. Physics	3	Nat. Sc. Physics	3
Soc. Sc.	3	Soc. Sc.	3
Electives	5	Electives	5
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
Minor	4	Minor	4
Science	2	Science	2
Chinese 3	4	Chinese 4	4
	18		18
<i>Third Year</i>			
Major Mathematics 27	4	Major Mathematics 28	4
Major Mathematics	3	Major Mathematics	3
Minor	4	Minor	4
Electives	5	Electives	5
	16		16
<i>Fourth Year</i>			
Major Mathematics 55	4	Major Mathematics 56	4
Mathematics	3	Mathematics	3
Thesis	2	Thesis	2
Electives	7	Electives	9
	16		16

NOTES ON CURRICULUM

I. *Correlated Subject*

While the Mathematics Department does not wish to make Physics the Minor 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. Students who are intending to teach are advised to take some of their elective courses in Education and Psychology.

DESCRIPTION OF COURSES

Mathematics 0-00 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 3-3 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, for those not majoring in mathematics.

Lecture: Sections A. B. MWF 8:00

Lecture: Sections C. D. TThs 8:00

Each section to contain not more than 20 students

Sections B and C for Premedical students only

Miss Konantz

Miss Hancock

Mathematics 21-22 Algebra, Trigonometry 3-3 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)

Miss Konantz

Lecture: MWF 8:00

Mathematics 23-24 Analytic Geometry 3-3 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: MWF 10:20

Miss Hancock

Mathematics 27-28 Calculus 3-3 Credits

An elementary course in differential and integral calculus.

Prerequisite: 23-24 or 1-2

Required: Major Students in mathematics

Lecture: Section A. MWF 10.10

Section B. TThS 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 10:20

Miss Hancock

Mathematics 31-32 Differential Equations 2-2 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: TTh 9:20

Miss Konantz

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 10:20

Mr Hsü

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: Time to be arranged.

Miss Hancock

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 3-3 Credits

A Course on theory functions and infinite series.

Elective: 3, 4.

Lecture MWF 10.20

Mr. T. H. Ch'en

Mathematics 199-200 Senior Thesis. 2, 3 or 4 Credits

DEPARTMENT OF PHYSICS

William Band, M.Sc.	<i>Assistant Professor and Chairman</i>
.....	
Hsieh Yu-ming, Ph. D.	<i>Professor</i>
*Meng Chao-Ying, M.S.	<i>Instructor</i>
Chang Wen-yü, M.S.	<i>Instructor</i>
Pi Te-hsien, M.S.	<i>Assistant</i>
Ch'en Jen-lien, B.S.	<i>Assistant</i>
Tu Lien-yüeh, B.S.	<i>Assistant</i>
Miss Wang Ch'eng-shu, B.S.	<i>Assistant</i>
Hsü Yün-kwei, B.S.	<i>Assistant</i>

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:

- Satisfy all requirements in the Freshman Plan for the College of Natural Sciences.
- Select one minor subject with a total of from 12 to 20 credits. The sum of major and minor credits must total not less than 50. credits.
- Complete Block (a) "required lecture courses" in the Department totalling 26 credits.
- Complete not more than 16 credits "elective courses" in blocks (d) and (e) in the Department.

* Absent on leave 1934-35

(f) At least 8 credits in Mathematics and 8 credits in Chemistry must be taken.

(g) No student can major in physics unless calculus is taken during the sophomore year at the latest.

Note.

Required courses are run on definite schedules. The times for College Physics are fixed by the general Freshman schedule, all other times are to be arranged with individual classes after registration is completed.

DESCRIPTION OF COURSES

Block (a) Required Lecture Courses. Years 1, 2, 3.

Phys. 1-2	College Physics I.	2-2 Credits
	Mechanics, Heat and Sound, fundamentals.	
	Prerequisites: Middle-School Physics, Algebra, Geometry and Trigonometry.	
	Required: Of all physics majors and minors, premedicals.	
	Elective.: Students of other colleges.	
	Lecture: Section A. TTh 9:20	Mr. Band
	Section B. WF 9:20	Mr. Band
Phys. 3-4.	College Physics II.	2-2 Credits
	Optics, Electricity & Magnetism—fundamentals.	
	Prerequisite: Phys. 1-2, or together with Phys. 1-2.	Mr. Hsieh
	Lecture: Section A. WF 9:20	Mr. Hsieh
	Section B. WF 10:20	
Phys. 5-6	Statics and Dynamics	3-3 Credits.
	Text: Loney "Statics and Dynamics," or equivalent.	
	Prerequisites: Phys. 1-2.	
	Required: All physics majors.	Mr. Chang
	3 lectures with occasional laboratory work	
Phys. 7-8.	Heat and Optics.	3-3 Credits
	Text: Edser "Heat" and "Light" or equivalent.	
	Prerequisites: Phy. 3-4.	
	Required: All physics majors.	Mr. Pi
	3 lectures with occasional laboratory work	

- Pys. 9-10. Electricity and Magnetism 3-3 Credits
 Text: Starling "Electricity and Magnetism",
 Prerequisites: Phy. 3-4.
 Required: All physics majors.
 3 lectures with occasional laboratory work Mr. Chang
- Block (b) Required Laboratory Courses, Years 1, 2, 3.*
- Phys. 51-52. College Physics Lab. I. 1-1 Credits
 Mr. Band and Mr. Chang.
- Phys. 53-54. College Physics Lab. II. 1-1 Credits
 Mr. Band and Mr. Chang.
- Phys. 91-92. Journal Club. 1-1 Credits
 Staff
- Phys. 199-200. Senior Thesis. 1 or 2 Credits.
 Staff
- Block (c) Elective Courses, Years 2, 3, 4.*
- Phys. 21 or 22. Radio. 4 or 4 Credits
 Text: Morecroft, "Radio Engineering."
 Prerequisites: Phy. 3-4.
 Lectures: Three per week.
 Laboratory: 1 period. Mr. Pi & Mr. Chang.
- Phys. 25 or 26 Astrophysics. 3 or 3 Credits
 Text: To be arranged. Mr. Band
- Phys. 50. Premedical Laboratory 1 Credit
 Mr. Band.
- Block (d) Elective Theoretical Conferences, Years 3, 4, 5.*
- Phys. 101-2. Advanced Mechanics. 3-3 Credits
 Text: Lamb, "Statics and Dynamics" or equivalent.
 Prerequisites: Phys. 5-6, Calculus. Mr. Chang
- Phys. 103-4. Heat and Thermodynamics. 3-3 Credits
 Text: Roberts "Heat and Thermodynamics."
 Prerequisite: Phys. 5-6, 7-8 and Calculus. Mr. Pi
- Phys. 105-6. Advanced Optics. 3-3 Credits
 Text: Houston "Treatise on Light."
 Prerequisites: Phys. 7-8, Calculus. Mr. Hsieh

- Phys. 121-2. Electricity and Magnetism. 3-3 Credits
 Text: Jeans, "Mathematical Electricity and Magnetism."
 Prerequisites: Phys. 9-10, Advanced Calculus. Mr. Chang
- Phys. 123. Atomic Physics. 3 Credits
 Text: Crowther "Ions, Electrons Etc.,"
 Prerequisite: Phys. Block (a), Calculus.
- Phys. 126. Kinetic Theory of Gases. 3 Credits
 Prerequisite: Phys. 103-4. Mr. Hsieh
- Phys. 127-8. Philosophy of Physics. 2-2 Credits
 Prerequisite: Phys. Block (a). Mr. Band
 Text: Various.
- Block (e) Elective Laboratory Problems, Years 3, 4, 5.*
- Phys. 153 or 4. Heat and Properties of Matter 1 or 1 Credits
 Lab. Problems to run with Phys. 103-4. Mr. Pi
- Phys. 155 or 6. Optics. 3 or 3 Credits
 Lab. Problems to run with Phys. 105-6. Mr. Hsieh
- Phys. 157 or 8. Meteorological Physics. 1 or 1 Credits
 Recording Apparatus and Observations on
 Solar Radiation etc. Mr. Band & Mr. Chang
- Phys. 173 or 4. Electrical Measurements. 3 or 3 Credits
 Text: Smith, "Electrical Measures."
 Prerequisite: Phys. 9-10. Mr. Chang & Mr. Pi
- Phys. 175 or 6 Electron Physics. 1 or 1 Credit
 Text: Hoag, "Electron Physics."
 Prerequisite: runs with Phys. 123-4. Mr. Hsieh
- Block (f) Required for Graduates. (see Bulletin for Graduate Division)*
- Block (g) Elective Conferences for Graduates. (see Bulletin for Graduate Division).*

SPECIMEN MAJOR CURRICULUM

First Year

<i>1st Semester</i>	<i>Credits</i>	<i>2nd Semester</i>	<i>Credits</i>
English 1	4	English 2	4
Math. 21	4	Math. 22	4
Chem. 3	4	Chem. 4	4
Physics 1	2	Physics 2	2
Physics 51	1	Physics 52	1
Group D Soc. Sci.	3	Group D Soc. Sci.	3
<hr/>		<hr/>	
Total	18	Total	18

Second Year

English 5	4	English 6	4
Chinese 3	3	Chinese 4	3
Math. 27	4	Math. 28	4
Physics 3	2	Physics 4	2
Physics 53	1	Physics 54	1
Minor	4	Minor	4
<hr/>		<hr/>	
Total	18	Total	18

Third Year

Physics 5	3	Physics 6	3
Physics 7	3	Physics 8	3
Elective.	4	Elective.	4
(Math. or Chemistry)		(Math. or Chemistry)	
Elective	3	Elective	3
(Biology or Geology etc.)		(Biology or Geology etc.)	
Elective	3	Elective	3
(Sociology or Education)		(Sociology or Education)	
<hr/>		<hr/>	
Total	16	Total	16

Fourth Year

Physics 9	4	Physics 10	4
Physics 91	1	Physics 92	1
Physics 199	1	Physics 200	1
Elective Major	6	Elective Major	6
(lectures)		(lectures)	
Elective Major... ..	2	Elective Major... ..	2
(laboratory)		(laboratory)	
Elective.	2	Elective.	2
<hr/>		<hr/>	
Total	16	Total	16

DEPARTMENT OF PSYCHOLOGY

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

... THE AIM OF THE DEPARTMENT OF PSYCHOLOGY IS TWO-FOLD

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 psychotechnique can be given on a more extensive basis.

DEPARTMENTAL REGULATIONS

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 32-50 credits in which the following courses must be included: Psychology 1-2, 5, 6, 105-106, 117, 151-2 or 153-4, 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.

A suitable curriculum will be worked out for each major student.

DESCRIPTION OF COURSES

Psychology 1-2 General Psychology 3-3 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—MWF 8:00

Section B—TThs 8:00

Mr. Luh

Psychology 5-6. Experimental Psychology 3-3 Credits

Introduction to the data of experimental psychology and the application of experimental methods to the study of psychological problems.

Prerequisite: Psy. 1-2 or equivalent

Elective: 2, 3, 4

Lecture: WF 2:10

Lab: M 1:10-4

Mr. Hsia

Psychology 9 or 10 Mental Hygiene 3 Credits

A study of common personal problems and difficulties viewed as maladjustments in the development of personality. Repeated second semester.

Elective: 1, 2, 3

Lecture: TTh 8:00

Group conference to be arranged.

Mr. Sailer

- Psychology 105-6 Systematic Psychology 2-2 Credits
 Systematic study of the theoretical basis of some representative schools.
 Prerequisite: 10 credits of psychology. For students of philosophy, Psy. 1-2 only.
 Elective: 3, 4, 5
 Lecture: MW 9:20 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: Psy. 5-6
 Elective: 3, 4, 5
 (Not given 1934-1935) Mr. Luh
- Psychology 112 Advanced Experimental Psychology 3 Credits
 Congenital behavior, emotions and related topics.
 Prerequisite: Psychology 5-6
 Elective: 3, 4, 5
 (Not given 1934-35) Mr. Luh
- Psychology 113 Advanced Experimental Psychology 2 Credits
 Perception and Judgment
 Prerequisite: Psychology 5-6
 Elective: 3, 4, 5
 (Not given 1934-1935) Li. Luh
- Psychology 114 Advanced Experimental Psychology 2 Credits
 The sensory processes
 Prerequisite: Psychology 5-6
 Elective: 3, 4, 5
 (Not given 1934-1935) Mr. Luh
- Psychology 117 Statistical Methods Applied to Psychology 3 Credits
 Garrett's: Statistics in Psychology and Education is used as text-book.
 Prerequisite: Psychology 1-2
 Elective: 2, 3, 4
 Lecture and laboratory: TTh 2:10-4 Mr. Sailer

- Psychology 119 The Measurement of Intelligence and Personality Traits 3 Credits
 The simpler techniques of personality measurement, with emphasis on practical applications.
 Prerequisite: Psychology 1-2 or Education 15
 Lecture: MWF 11:20
 Elective: 3,4 Mr. Sailer
- Psychology 132 Abnormal Psychology 3 Credits
 The abnormal in relation to the normal. The insanities and their treatment. Feeble-mindedness.
 Prerequisite: Psychology 1-2 or Psy. 9 or 10
 Elective: 2, 3, 4
 Lecture: MWF 11:20 Mr. Sailer
- Psychology 141-2 Social Psychology 2-2 Credits
 A study of the general features and psychological foundations of social behavior. Problems of personality and social behavior, social attitudes and the subjective environment, leadership and prestige, public opinion and propaganda.
 Prerequisite: Psy. 1-2
 Elective: 2, 3, 4
 Lecture: TTh 10:20 Mr. Lew
- 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.
 Elective: 2, 3, 4
 Lecture: TTh 10:20 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 153-4 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 9:10

Mr. Lew

Psychology 191 or 192 Journal Club 1 Credit
each semester

The staff and students will give reports on current literature.

Prerequisite: A major, or at least ten credits, in Psychology

Elective: 3, 4, 5

Time: M 7:30

Psychology Staff

Psychology 199 or 200 Psychology Problems 1 to 3 credits

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.

Time To be arranged

Psychology Staff

PREMEDICAL AND PRENURSING TRAINING.

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

Advisor To Prenursing Students—Miss Kung Lan-chen, 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.

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, M. S. *Professor and Director of Experimental Projects.*

Hsü Tien-ssu, B. S. *Associate.*

Chin Tzu-chung, B.S. *Associate.*

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

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.



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Appendix II 1942-3 + 1943-4.
See - Budgets - Yenching

YENCHING UNIVERSITY
COLLEGE OF SCIENCE

31.12.42

REPORT AND PLAN

Record of the Past Year

When the Japanese ~~occupied~~ occupied Yenching in Peking on December 8th, 1941, the College of Science was completely disrupted. With the exception of Mr. W. Band, head of the Department of Physics, who escaped into guerilla regions, all the foreign staff members were interned, and Chinese staff members were scattered, some of them to be subsequently arrested. After a time apparatus and books were removed from the College.

When the idea of restarting Yenching University in free China was first discussed, alumni everywhere, seeing the national need ~~xxx~~ for science, pled strongly for the inclusion of the College of Science among resurrectived units, in spite of the manifest and immense difficulties in getting suitable buildings, books and periodicals, or apparatus. These difficulties proved all the greater when it became clear that practically no staff members of the whole College of Science had been able to escape from Peking.

Nevertheless, in the conviction that China now needs ~~scientific~~ scientific research and training more urgently than ever, it was determined to restart the College of Science, depending largely at first on help from the Science College faculty of West China Union University, among whom are many Yenching alumni.

The Ministry of Education authorised the immediate establishment of the Departments of Mathematics and Home Economics, but registration of the Departments of Physics, Chemistry, and Biology was deferred. At the Entrance Examination, however, many students expressed their desire to study Natural Science and were allowed to enter as Science students. Moreover so many Science students have escaped from Peking that the College now has nearly thirty students in sophomore, junior, and senior years, most of whom desire to major in Chemistry, Physics, or Premedical work.

Thus we now give courses in Mathematics, Physics, Biology, and Home Economics, and for advanced work, or courses which we cannot offer, our students join the 5-University joint Science curriculum, or the W.C.U.U. courses. We also contribute as we are able to the joint 5-University teaching plan.

The Department of Home Economics is comparatively well provided, and has begun in addition to all regular courses a Nursery School as community service and laboratory in Child Welfare training.

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31.12.42

But at present our work is weak and unbalanced. For a minimum efficient program we need immediate revitalising of the Departments of Physics, Chemistry, and Biology, and to make a real contribution to China's reconstruction we need all-round strengthening of the whole College.

It is the declared and universally approved policy of the University that this should be attempted. China needs, in every part of the ~~xxx~~ country, statisticians and surveyors, chemical, mechanical, electrical, and radio engineers, doctors and nurses, dieticians and child welfare workers, whom we can provide, and needs them more urgently now than ever before.

More than that, the indirect contribution of fostering the scientific attitude throughout society in China, of increasing the stock of common information and intelligence on scientific and related questions, is part of the responsibility of every University.

In the realisation of this need and responsibility, we set out the plan for the development of our work in the Sciences.

Policy

The double challenge of war and reconstruction forces us to plan our work for immediate usefulness. And Science itself needs constant contact with the life of the people for its best development. But to be fitted to work out applications of science in the service of society, men must be trained vigorously to a grasp of the fundamental facts and principles of science and scientific thinking. ~~xx~~

We therefore plan in each branch of science to emphasise together high quality teaching of basic courses, and extension work in applied science.

Science progresses fastest under a blend of competition and cooperation. So we plan to work closely with the other four ~~xxxx~~ Christian Universities of Chungtu, but not to lose our identity. In general, we expect to give all freshman and sophomore courses in Yenching for our own students, but to plan junior and senior courses as part of a joint 5-University plan of Science teaching, avoiding overlapping and filling gaps in the total program. These junior and senior courses will be given for students of all universities.

The existing Departments - Mathematics and Home Economics, can be immediately developed and must be continually strengthened. In addition we must sooner or later have proper Departments in Physics, Chemistry, and Biology. With those departments we can give the usual types of scientific

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training, and also with out further resources can take Premedical students, and Prenursing students.

The question of registration of Physics, Chemistry, and Biology Departments with the Ministry of Education does not seem to us the fundamental one. We will first build up actual work, under whatever title, and when our strength justifies it, we shall have a strong case for registration.

In line with the general policy thus outlined, the five Departments have formulated plans of development; present changes and additions in our work are decided by reference to these plans, which are set down in Appendix I.

Beyond academic plans, we expect to make contact with organisations and factories in free China so that our students may work there in vacations and in a special year of supervised practical experience, which would be inserted before either junior or senior year. Mathematics majors would work in statistics, physics majors in powerhouses, machinshops, radio or electrical equipment plants, Chemistry majors in chemical industry (tanning, papermaking, etc.,). Thus students will acquire that understanding of the real problems of industry and society which will give true meaning ~~to~~ and perspective to their University courses.

Immediate Steps

1. Strengthening of staff

- a. Make arrangements for staff members in Peking to come through the lines.
- b. Obtain the services of other refugee teachers.
- c. Endeavour to obtain help from Missions, Cultural organisations, and especially Yenching faculty evacuated from Peking.
- d. Engage Yenching alumni and other teachers on their return from studies abroad.

2. Accomodation

- a. We have already received much help from W.C.U.U., and we expect that with their continued help this problem may be solved at moderate expense.

3. Equipment

- a. We are purchasing and making equipment for most of the freshman and sophomore work in Chengtu.
- b. For advanced work and research we have the privilege of use of W.C.U.C. apparatus.
- c. We continue to explore all methods ~~to~~ of procuring apparatus and books smuggled in from occupied China or imported via India.

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4. Special Projects

- a. Industrial Chemistry. For industrial research work we need

Leather work	¥ 100,000
Ceramics	100,000
Paper	50,000

- b. Child Welfare Work. Extension of this work, including the starting of a kindergarten and a shortterm course, needs a further ¥ 250,000 for which appeal has been made to the U.C.R.
- c. Premedical Course. Provided that our staff is augmented as it should be, we shall be able to start receiving first-year students in fall 1943 for the Premedical Course.

Budgets

Copies of the College Budget for 1942-3 and the proposed College Budget for 1943-4 are given in Appendix II. The 1943-4 Budget represents what we believe to be the minimum for efficient work and healthy development.

Expenses for equipment have also been budgeted, but the prices vary so much with changes in war and local economic situations that the budget cannot be regarded as reliable.

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DEPARTMENT DEVELOPMENT PLANS

Mathematics

(a) Provision of strong teaching of fundamental mathematical skills (Differential and Integral Calculus, Differential Equations, standards of accuracy and style, etc.) which are needed by all students of sciences.

(b) Training statisticians with a knowledge of techniques and a grasp of the mathematical basis of elementary and advanced statistics, working towards the setting up of a 'Statistics Consulting Staff' to which can be referred those problems of significance and method where the non-mathematical statistician feels in need of technical consultation.

(c) Emphasis on Mathematical Physics, looking forward to fruitful cooperation with the Physics Department in advanced teaching and research. Geophysics as a subject of special attention.

Physics

(a) Provision rigorous training in Physical principles and experimental technique.

(b) Development of advanced teaching and research in Radio, in view of the great need for this in modern China, the comparative availability of materials, and the experience of our staff.

(c) Emphasis on Mathematical Physics, in line with the work begun in the Department in Peking, and looking forward to cooperation with the Mathematics Department in this line where many Universities are weak, and yet which is essential if physics itself is to be thoroughly taught.

Chemistry

(a) Full and careful training in basic courses - General, Organic, Inorganic Chemistry, Qualitative and Quantitative Analysis.

(b) Development of work in Industrial Chemistry, with research work in special lines which will be determined by the experience of the staff. Leathertanning, paper, and ceramics are likely lines of work in which financial and other help may be expected from local sources and the Chinese Industrial Cooperatives. This research will be closely connected with local resources and local need, in the light of wartime conditions.

Biology

(a) Strong training in fundamental courses. Good courses provided for premedical students and ~~xxxx~~ Arts and P.A. students.

(b) Utilisation of our chance of being in Szechuan to make as extensive a collection as possible of local flora and fauna, especially vertebrates. Szechuan is worldfamous for the abundance and variety of its plant and animal life.

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June 21, 1949

Industrial Training Program
College of Natural Science
Yenching University

The Industrial Training Program is fully as old as Yenching University. It started under Dr. Vincent as the Leather Tanning Department of the department of Chemistry. The first Tannery was erected in the S.E. corner of Peiping and the work was moved to the new tannery on the S.W. corner of the present campus when the University finally moved to this location. British Boxer Indemnity Returned Funds were used to carry on the "Leather Tanning" and "Ceramics" courses and research under the able leadership of Dr. E.O. Wilson. Still later on Mr. S.M. Dean, Mr. Liu Mao Lin and Dr. Huang were added to the engineering staff. Just prior to America's entering the recent war; Applied Physics Majors were taking so many engineering courses that General Engineering was being offered in fact; though not in name.

The end of the war was greeted with great enthusiasm by North China Industrialists and Yenching's staff alike. Leading industrialists pledged substantial support to the building up of an Engineering College at Yenching University. Their engineers formed a committee which worked out definite proposals for the new Engineering College to follow.

The American Office of the Associated Boards of Christian Colleges in China believed that Chinese support would fail to be continuous and would leave the burden of the new College on their hands so they refused to sanction it. They only wished to under-write one China, Union Mission, Engineering College to be at Shanghai. However, they did agree to a China supported Industrial Training Program to be within the College of Natural Science and to give courses in "Applied Chemistry" and "Applied Physics", closely approaching "Chemical Engineering" and "Mechanical Engineering" in content.

The course, as worked out with the Chinese industrialists, gave two years to foundational courses similar to those taken by regular Chemistry and Physics Majors; one year of basic technical subjects; one year of practice in cooperating industries and one year of specialized technical study. This has been some what modified to fit changed conditions by giving ~~more~~ specialization to "Ceramics or Leather Tanning" in Chemical Engineering and "Power Plants or Machine shop Production" or Textile Machinery in Mechanical Engineering.

Freshmen were entered for the Industrial Training Program in September 1945

However, the available engineering staff spent their full energy during the years 1945/46/47 in repairing the great destruction caused by the Japanese occupation. Buildings, Central Heating, Power, Water Sewage etc system were all badly broken. In the summer of 1947 serious work commenced in erecting engineering buildings and getting laboratories, shops and classrooms ready for engineering classes. Funds for this work were furnished by the North China Industries.

A great deal of the work of preparing the shops, laboratories and equipment was done by our students under faculty leadership and student foremen.

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June 21, 1949

Industrial Training Program
College of Natural Science
Yenching University

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Some new equipment was obtained from America and from England, partially by purchase with China raised funds and partially thru gifts. However, the majority of the equipment was obtained cheaply from war damaged motors, generators, machine tools scrap metal etc. which we rebuilt and installed in our shops and laboratories.

(Restoration Servicing Equipment was bought with American Funds)

To the present the following shops, class rooms and laboratories are in use:-

1. Engineering Classroom Building

- a. One drafting room equipt for fifty students.
- b. Two Class rooms equipt for thirty students each.
- c. One Class room (now equipt as flour mill) (temporarily)
- d. One Combined Departmental Library and Class room (handles 20 students at a time)

2. Engineering Laboratories

a. Calibration and Heat Power Laboratory

Contains equipment for carrying out the usual experiments in calibration and operation of steam, Internal Combustion and Compressed Air Equipment. Such as condensing and Non Condensing and Una flow steam engines, Steam turbines; Solid and Air Injection Diesel Engines; Gasoline and Automotive Engines; Air Compressor; Central Heating System; Water supply system and Pumps; Fire Tube and Water Tube Boilers.

b. Direct and Alternating Current Power Laboratory

Contains the usual standard D.C. and A.C. Motor generator test sets of various type motors and generators, Trans formers induction coils, condenser and resistance racks etc. together with two 125K.V.A., A.C. generators and one each 150 K.W., 100K.W., 75K.W. and 15K.W. D.C. generators.

c. Testing Materials Laboratory

Contains a 60,000# Universal (Tension, Compression, Shear) Reihle Hydraulic Testing Machine, a 24,000# Hydraulic Testing Machine and a Torsion testing machine.

d. Surveying

Contains adequate modern equipment with which to give advanced ~~and~~ courses in surveying thru the use of Transit, Level, Plane Table, Current Meter etc.

3. Engineering Shops

a. Machine Shop:

Contains eighteen screw cutting machine tool lathes of various sizes, three shapers, three milling machines, three drill presses, metal saw, Universal Grinder, two tool grinders and two planers.

b. Bench work, Forging and Welding Shop

Contains three 200 ampere A.C. welders and one 300 ampere D.C. welder. -Forges, anvils, benches and Vises.

c. Foundry

Contains large and small cupolas for cast~~ion~~ together with a tilting cupola, brass furnace, flasks, molding floor, core oven etc.

d. Carpentry and Pattern Shop

Contains Wood drilling and mortising machine, Universal Circular saw, Band saw, Jointer, High speed Wood Turning Lathes and Carpentry Benches.

e. Textile Shop

Contains remnants of our woolen mill ruined by Japanese occupation

and not yet renovated together with hand spinning weaving, dyeing and warping apparatus which we have been using. Needs considerable more equipment.

f. The University Garage and Flour Mill are in operation.

Chemical Engineering Laboratories

a. Ceramic Laboratory

This is now set up and in operation with tumblers, jigger, press, moulds and small oil and gas fired kilns as well as various types of grinding machinery. A large coal fired high temperature kiln and a native type brick kiln are being erected. A new grinding building has nearly been finished. Grinding machinery is being constructed.

b. Leather Tanning Laboratory

The leather tanning laboratory is being taken down and moved to the engineering area. It was previously built at the opposite end of the campus from the Power Plant so steam and gas were not available in Pre-War Years. It will consist of two one story buildings each 69'x34'. Much leather tanning equipment must be made or purchased.

c. Chemical Engineering Laboratory

This building has been completed and is 100'x40'. It contains nothing at present since expected funds to equip it have not yet materialized.

Staff of The Industrial Training Program

(Financed by Tientsin Industrialists to present)

Many courses taken by the I.T.P. students are given by the staff of other departments in the University. The technical staff to present consists of three full time and six part time professors, three full time and three part time assistants and part time of several technicians. It is planned to materially strengthen this staff next semester.

Foreman Training Apprentices

(Financed By You (S. D. Gamble) funds)

The present courses contain one fourth year and one first year class of trade school grade. These boys have spent four hours per day in class work and four hours a day in shop work. In the past they were of Junior and Senior Middle Grade in a total course of five years. The course is now being raised in standard to give three years of Senior Middle Trade School work together with two years of Junior College grade work in specialized Technical courses.

Two Year Courses For Technicians

(Funds have been asked of the government)

Two year courses of Junior College grade are planned for various specializations should funds become available.