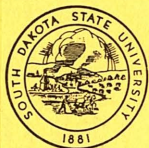




COLLEGE OF
PHARMACY
1969-1970

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E UNIVERSITY, BROOKINGS, SOUTH DAKOTA 57006



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UNIVERSITY CALENDAR — 1969-70

The regular University Year is Divided into Fall and Spring Semesters of approximately seventeen weeks each. The Summer Session is eight weeks.

1969 FIRST SEMESTER

Sept. 7, 8, 9, Sun., Mon., Tues.—New Student Days.
 Sept. 10, 11, Wed., Thurs.—Registration.
 Sept. 12, Fri.—Beginning of Classes.
 Sept. 19, Fri.—Last day to initiate registration.
 Sept. 26, Fri.—Last day to add a course.
 Oct. 14, Tues.—Last day to submit a graduation card.
 Oct. 14, Tues.—Last day for make-up exams to remove undergraduate incompletes. Grades due for removal of incompletes in Admissions and Records Office on Oct. 16, Thursday.
 Oct. 18, Sat.—Hobo Day, University of South Dakota.
 Oct. 20, Mon.—No Classes.
 Nov. 5, Wed.—Fall term deficiency reports due.
 Nov. 11, Tues.—A holiday—Veterans Day.
 Nov. 19, Wed.—Last day course may be dropped without a grade.
 Nov. 26, Wed.—Classes close at 12:30, Thanksgiving Recess.
 Dec. 1, Mon.—Classes resume.
 Dec. 19, Fri.—Classes close at 12:30, Christmas Recess.

1970 SECOND SEMESTER

Jan. 26, 27, Mon., Tues.—Registration.
 Jan. 28, Wed.—Beginning of Classes.
 Feb. 4, Wed.—Last day to initiate registration.
 Feb. 11, Wed.—Last day to add a course.
 Feb. 27, Fri.—Last day to submit graduation cards.
 Feb. 27, Fri.—Last day for make-up exams to remove undergraduate incompletes. Grades due for removal of incompletes in Admissions and Records Office on March 3, Tuesday.
 Mar. 20, Fri.—Spring term deficiency reports due.
 Mar. 25, Wed.—Last day of classes—Easter Recess.
 Mar. 31, Tues.—Classes resume.
 April 3, Fri.—Last day course may be dropped without a grade.
 May 22, 23, 25, 26, 27, Fri., Sat., Mon., Tues., Wed.—Semester Exams.
 May 29, Fri.—Grades due at 10:00 a.m.
 May 31, Sun.—Eighty-fourth annual commencement, 7:30 p.m.

1970 SUMMER SESSION

June 8, Mon.—Registration.
 June 8, Mon.—Beginning of Classes at 1:00 p.m.
 July 31, Fri.—Summer Session closes.
 Aug. 1, Sat.—Graduation at 7:30 p.m.

1969-70 CALENDAR

June, 1969

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July, 1969

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August, 1969

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September, 1969

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October, 1969

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November, 1969

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December, 1969

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January 1970

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February, 1970

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March, 1970

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April, 1970

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June, 1970

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July, 1970

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August, 1970

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September, 1970

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BULLETIN

South Dakota State University

BROOKINGS, SOUTH DAKOTA 57006

ANNUAL CATALOG NUMBER 1969-70

COLLEGE OF P H A R M A C Y



Volume LXI, Number 2, April 1969

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 April
 1969
 Pharmacy
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Regents of Education

| | |
|--|---------------|
| HONORABLE CHARLES BURKE (Term Expires January 1, 1971) | Pierre |
| HONORABLE HARRY WITT (Term Expires January 1, 1971) | Butler |
| HONORABLE KENNETH L. ARTHUR (Term Expires January 1, 1973) | Belle Fourche |
| HONORABLE RICHARD H. BATTEY (Term Expires January 1, 1973) | Redfield |
| HONORABLE JAMES I. DEAM (Term Expires January 1, 1975) | Yankton |
| HONORABLE JOHN LARSON (Term Expires January 1, 1975) | Kennebec |
| HONORABLE LAUREN LEWIS (Term Expires January 1, 1975) | Sioux Falls |
| HONORABLE RICHARD GIBB, Commissioner | Pierre |

Officers of the Board

| | |
|-----------------------------|----------------|
| HONORABLE CHARLES BURKE | President |
| HONORABLE RICHARD H. BATTEY | Vice President |
| HONORABLE KENNETH L. ARTHUR | Secretary |

TIPS FOR INTERPRETING THE CATALOG

The catalog contains three important entries: A brief description of the department, an outline of the curriculum required of a student majoring in the department's field of study, and a detailed description of the courses offered by the department.

In the curriculum outline, the abbreviations FS refer to the two normal terms of the academic year—Fall and Spring. Entries in the FS columns refer to credit values assigned to respective courses. One credit is usually interpreted as one hour of class work per week or as three hours of lab work per week. The respective courses are identified by course name, department, and course number. For example.

| | | |
|----------------------------------|----------|----------|
| Course, Dept., Course No. | F | S |
| Biology, Bio 113, 123 | 3 | 3 |

Reference is to the biology courses in the Biology Department. The courses are numbered 113 and 123, and are normally taken in two semester sequence of Fall and Spring semesters. A detailed description of the courses can be found by looking for Biology 113 and 123 under

the Biology Department in the College of Agriculture and Biological Sciences catalog.

In this course description, using the same example, you will find "113 Biology 3(2,3)F." The "3" outside the parentheses is the credit value of the course. The first number inside the parentheses indicates the number of recitation hours per week and the second number, in this case "3", is the number of laboratory hours per week that the course requires. The "F" following the parentheses indicates that the course is offered during the Fall Semester. An "S" would indicate Spring Semester and an "Su" indicates Summer Session. This system holds true for all course descriptions in this catalog.

INVESTIGATE FURTHER

State University invites you to visit the campus. Maps are available from the Admissions and Records Office. Normal office hours are maintained Monday through Friday. Visits at other times may be arranged upon request. A campus visit will enable you to see facilities and discuss your plans with faculty members.

For further information regarding a campus visit or application for admission contact the Admissions and Records Office.

COLLEGE OF PHARMACY

RAYMOND E. HOPPONEN, Dean

As one of the health professions, pharmacy is vitally concerned with the public health and safety. Specifically, it is concerned with all of the activities associated with the preparation, distribution and control of drugs and medicines. The aim of the College of Pharmacy is to qualify its graduates to assume their professional responsibilities as members of the profession most directly concerned with these activities. As our society grows more complex, the problems of providing proper medical services also grow more complex. This requires that the pharmacy student must not only be provided with a sound scientific and professional training but that he also be given the opportunity to gain as much liberal education as possible in order that he may better understand the society which he serves.

Curriculum

The College of Pharmacy offers a five year plan of study leading to the degree of Bachelor of Science in Pharmacy. The plan of study is designed to prepare all students for the professional practice of pharmacy. In addition, by a proper selection of elective courses the student may also prepare himself for graduate study in pharmacy, pharmaceutical chemistry, pharmacognosy or pharmacology. Students who are considering graduate study should consult their adviser about a choice of electives. Such students may be allowed to substitute course work preparatory to graduate study for some of the required economics courses. Students interested in the retail or commercial fields of pharmacy may also better prepare themselves by electing additional work in the area of business administration.

Graduates of the College of Pharmacy are eligible to apply for licensure in any of the states. In general, licensure as a pharmacist requires graduation from an accredited College of Pharmacy, a certified period of supervised experience and the successful completion of a series of examinations administered by the Board of Pharmacy of the individual state. The details of these requirements vary slightly from state to state. Students interested in practicing in a particular state should contact the Board of Pharmacy of that state for information concerning requirements.

The College is accredited by the American Council on Pharmaceutical Education.

Regulations of the College of Pharmacy

Students in the College of Pharmacy are governed in large measure by the regulations which apply to all students at State. Therefore, each student should familiarize himself with the material in the general information section of the catalog. In addition to the all-university rules and regulations, the College of Pharmacy has some requirements which apply specifically to pharmacy students.

Overall university requirements for graduation stipulate that a student must obtain an average of two grade points for each credit hour passed. In addition, pharmacy students must earn at least two grade points for each credit hour in College of Pharmacy courses. A minimum of 164 credit hours of acceptable course work must be presented for graduation.

In order to earn the Bachelor's Degree in Pharmacy, students must be enrolled as full-time students in a College of Pharmacy for the final six semesters of the curriculum. A minimum of twelve credit hours per semester is considered full-time. The final year of study must be spent in residence at South Dakota State University. The first two years of the curriculum may be completed at any recognized junior college or four year college. However, course work should be selected carefully to insure that it will apply toward graduation from the College of Pharmacy. All students seeking admission to the work of the third year must present a minimum C average for the work of the first two years.

It may become necessary to limit enrollment in the third year class because of the limitations in available laboratory space. If the number of qualified applicants exceeds the available space, a limitation will be imposed. Selection will be based on scholastic records with preference being given to South Dakota residents.

Recognition of Scholarship

Outstanding scholarship by students in the College of Pharmacy is recognized in a number of ways. Students who do outstanding work each semester are listed on the Dean's Honor Roll which is published twice a year. Rho Chi, an honor society in pharmacy, gives recognition to students with outstanding scholastic records. Membership is by invitation to fourth and fifth year students who have distinguished themselves academically. The Lilly Gold Medal is awarded to the fifth year student who has achieved the most outstanding scholastic record in his class. The Bristol Award recognizes an outstanding student in pharmacology, the Johnson and Johnson Award an outstanding student in pharmacy administration, and the Merck Award an outstanding student in pharmacy subjects. Scholarships available to pharmacy students are

listed in the Information section of this catalog.

Graduate Study

Pharmacy offers a great many challenging and rewarding careers which require additional study at the graduate level. Students who feel they might be interested in teaching or research in pharmacy should discuss their plans with an adviser. The College of Pharmacy offers graduate study leading to the Master's Degree in pharmacy, pharmaceutical chemistry, pharmacology and pharmacognosy.

Professional Organizations

Membership in the student branch of the American Pharmaceutical Association is open to all students in the College of Pharmacy. The purpose of the organization is to give pharmacy students a better appreciation of the scope and aims of their profession. It also provides an opportunity for the student to develop his leadership potential.

Kappa Psi is a professional fraternity open to male students in pharmacy. It strives to promote fellowship and scholarship among its members.

Kappa Epsilon is a national professional society for women in pharmacy which fosters scholarship, professional understanding and friendship among the members.

Curriculum in Pharmacy

| First Year | | F | S | Third Year | | F | S |
|--------------------------------------|-------|----------|----------|---------------------------------------|-------|----------|----------|
| Physical Education, HPER 101 or 121 | ..... | 1 | 1 | Pharmacy I, Pha 325 | ..... | 5 | — |
| Introduction to Pharmacy I, Pha 101 | ..... | 1 | — | Physical Pharmacy, Pha 354 | ..... | — | 4 |
| Freshman Composition, Engl 103, 113 | ..... | — | — | Anatomy, Z 203 | ..... | 3 | — |
| or 143 | ..... | 3 | — | Mammalian Physiology, Z 304 | ..... | — | 4 |
| General Chemistry, Ch 164 | ..... | 4 | — | Pharmacognosy I, Pha 304 | ..... | 4 | — |
| General Chemistry, Ch 173 | ..... | — | 3 | Pharmacognosy II, Pha 314 | ..... | — | 4 |
| General Chemistry Lab, Ch 171 | ..... | — | 1 | General Bacteriology, Bac 204 | ..... | 4 | — |
| Biology, Bio 113-123 | ..... | 3 | 3 | Immunology, Bac 403 | ..... | — | 3 |
| *Algebra and Trigonometry, Math 145 | ..... | — | 5 | †Electives | ..... | — | 0-3 |
| Fundamentals of Speech, Sp 103 | ..... | 3 | — | | | 16 | 15-18 |
| †Electives | ..... | — | 4 | | | | |
| | | 15 | 17 | Fourth Year | | F | S |
| Second Year | | F | S | Pharmacy II, Pha 454 | ..... | — | 4 |
| Elementary Physics I-II, Phy 114-124 | ..... | 4 | 4 | Quantitative Pharmaceutical Analysis, | | | |
| Organic Chemistry, Ch 224-234 | ..... | 4 | 4 | Pha 413-423 | ..... | 3 | 3 |
| Introduction to Pharmacy II, Pha 201 | ..... | — | 1 | Chemistry and Pharmacy of Organic | | | |
| Principles of Economics I, Econ 203 | ..... | 3 | — | Medicinals, Pha 414-424 | ..... | 4 | 4 |
| Principles of Accounting I, Econ 223 | ..... | — | 3 | Pharmaceutical Biochemistry, Pha 435 | ..... | 5 | — |
| †Electives | ..... | 4-5 | 3-5 | Pharmacology, Pha 524 | ..... | — | 4 |
| | | — | — | Junior Composition, Engl 303 | ..... | 3 | — |
| | | 15-16 | 15-17 | | | — | 15 |
| | | | | | | 15 | 15 |

*Mathematics 145, Algebra and Trigonometry, is required as a minimum. Students exempt from Math 145 by examination need not choose any other mathematics but are encouraged to elect additional mathematics.

†Electives are to be chosen subject to the approval of the student's adviser. At least nine hours must be selected from the approved list of social science and humanities subjects or their equivalents. This list may be found in the general catalog section.

| | | | | |
|--------------------------------|----------|----------|---------------------------------------|-------|
| Fifth Year | F | S | Pharmaceutical Jurisprudence, Pha 532 | 2 |
| Clinical Pharmacy, Pha 504-514 | 4 | 4 | Public Health Science, HSc 433 | 3 |
| Pharmacology, Pha 534 | 4 | | Business Law, Econ 303 | 3 |
| Toxicology, Pha 552 | 2 | | †Electives | 5 |
| Pharmacy Management, Pha 522 | 2 | | | |
| Agricultural Pharmacy, Pha 544 | 4 | | | |
| | | | | 16 17 |

Departments of Instruction

Pharmacy (Pha)

Professors Gross, Hopponen; Assistant Professor Rao

UNDERGRADUATE COURSES

101 Introduction to Pharmacy I 1(1,0) F
The development of pharmacy from ancient times to the present. The growth of pharmaceutical industry, education, literature and ethics. Establishment of pharmaceutical organizations and the regulation of the practice of pharmacy.

201 Introduction to Pharmacy II 1(1,0) S
A continuation of Pharmacy 101.

325 Pharmacy I 5(4,3) F
The systems of weights and measures used in pharmacy. Fundamental principles and processes used in the preparation of pharmaceuticals. Study of the simple classes of pharmaceutical preparations. P, Chemistry 234.

354 Physical Pharmacy 4(3,3) S
Physiochemical principles and laws as applied to pharmaceutical systems. P, 325; Phy 124.

454 Pharmacy II 4(3,3) S
A continuation of the study of the various classes of pharmaceuticals and the materials used in their preparation. P, Pharmacy 325.

501 Hospital Pharmacy 1(1,0)
Problems and procedures for dispensing and controlling drugs in hospitals and nursing homes.

504-514 Clinical Pharmacy 4(2,4) FS
A study of prescription practice, the compounding of prescriptions, dosage forms, incompatibilities. P, 424, 354, 454.

522 Pharmacy Management 2(2,0) F

A study of the economic, professional and social factors affecting the management of a pharmacy. P, fifth year standing.

532 Pharmaceutical Jurisprudence 2(2,0) S

State and Federal laws and regulations concerned with practice of pharmacy. P, 504.

570 Pharmaceutical Research 1-3(0,3 per credit)

Undergraduate students of superior ability may elect research problems in any of the following areas: manufacturing pharmacy, dispensing pharmacy, development of new products, improvement of existing products, and stabilization and preservation of medicinal items.

GRADUATE COURSES

612 Manufacturing Pharmacy 2(1,3) FS

A study of the procedures and problems involved in the quantity production of pharmaceuticals. P, consent of instructor.

733 Product Formulation 3(0,9) F or S

All dosage forms of medication with emphasis on formulation of preparations suitable for quantity production in Manufacturing Pharmacy 612. P, 612.

741-751 Seminar 1(1,0) FS

Required of all graduate students taking majors in the College of Pharmacy. Offered on alternate years as required.

790 Thesis in Pharmacy 5-7 as arranged.

Pharmaceutical Chemistry (Pha)

Professor Omodt; Assistant Professor Gilbertson

UNDERGRADUATE COURSES

413-423 Quantitative Pharmaceutical Analysis 3(2,3) FS
Quantitative analyses and their application to analysis of drugs and pharmaceutical preparations. P, Ch 234.

414-424 Chemistry and Pharmacy of Organic Medicinals 4(4,0) FS
Classes of organic compounds having pharmaceutical or medicinal value stressing synthesis, chemical properties, structure-activity relationships, physical properties, incompatibilities, use and dose. P, Ch 234.

435 Pharmaceutical Biochemistry 5(4,3) S
Chemistry of living organisms as basis for under-

standing metabolism and pharmacological action of medicinal preparations. P, Ch 234.

570 Pharmaceutical Research 1-3(0,3 per credit)

Undergraduate students of superior ability may elect research problems in any of the following areas: pharmaceutical analysis, organic medicinal chemistry, pharmaceutical biochemistry or bionucleonics.

GRADUATE COURSES

602 Health Physics 2(2,0)

Theoretical and practical aspects of radiation protection, hygiene, control, and safety. Production, detection, monitoring, and control of radiation exposure in medical and research applications.

603 Bionucleonics 3(3,0) FS

Theory and techniques for application of radioactive and stable isotopes to biological research.

611 Bionucleonics Laboratory 1(0,3) FS

Laboratory application of isotope technique to biological research. P, 603 or taken concurrently.

704 Advanced Drug Analysis 4(2,6) F

Drug analysis employing types of industrial laboratory apparatus. Offered on sufficient demand.

712 Advanced Drug Analysis 2(1,3) S

Continuation of 704. On sufficient demand.

714 Advanced Pharmaceutical Chemistry 4(3,3) F

Chemistry of organic compounds used as therapeutic agents with emphasis on synthesis and structure-activity relationships. Laboratory synthesis of organic medicinals. Offered on sufficient demand.

715 Advanced Pharmaceutical Chemistry 5(3,6) S

Continuation of 714. On sufficient demand.

741-751 Seminar 1(1,0) FS

Required of all graduate students taking majors in the College of Pharmacy. (Alternate years.)

790 Thesis in Pharmaceutical Chemistry 5-7

Pharmacology (Pha)

Associate Professor Hietbrink

UNDERGRADUATE COURSES

203 Pharmacology 3(3,0) F

Basic principles of pharmacology and therapeutics for students in Nursing. P, Ch 134 or 154, current enrollment in Z 304.

524 Pharmacology 4(4,0) F

Basic principles of pharmacology and therapeutics for students in Pharmacy. P, Z 304; Pha 435.

534 Pharmacology 4(3,3) S

Continuation of 524. Laboratory illustration of drug action. P, 524.

552 Toxicology 2(2,0) F

Toxicology and medicolegal aspects of poisonings. Common poisons with emphasis on antidotal measures. P, fifth year standing.

562 Toxicology 2(1,3) S

Lecture and laboratory work designed to acquaint the student with standard and special techniques

used for toxicity measurements and the detection and quantitative measurement of poisons. P, 552.

570 Pharmaceutical Research 1-3(0,3 per credit)

Undergraduate students of superior ability may elect a research problem in pharmacology or toxicology.

GRADUATE COURSES

713-723 Pharmacology 3(1,6)

Theories of drug action and techniques used in pharmacological research and testing. P, 534. Offered on sufficient demand.

741-751 Seminar 1(1,0) FS

Required of all graduate students taking majors in the College of Pharmacy. Offered on alternate years as required.

790 Thesis in Pharmacology 5-7 as arranged.

Pharmacognosy (Pha)

Professor Redman

UNDERGRADUATE COURSES

304 Pharmacognosy I 4(3,3) F

Source, characteristics, chemistry of constituents and uses of crude plant and animal drugs. P, Ch 224 or concurrent registration.

314 Pharmacognosy II 4(3,2) S

Continuation of 304. P, 304 and Ch 234 or concurrent registration in Ch 234.

322 Cultivation of Medicinal Plants 2(0,6) SSu

Cultivation of medicinal and poisonous plants with emphasis on plants adapted to South Dakota.

544 Agricultural Pharmacy 4(3,2) F

Biologicals, rodenticides, fungicides, weedicides, insecticides, fumigants, local and systemic anti-infectives. P, 314.

570 Pharmaceutical Research 1-3(0,3 per credit)

Undergraduate students of superior ability may elect a research problem on products from the medicinal and poisonous plant garden or on other drugs from natural sources.

GRADUATE COURSES

703 Microscopy of Foods and Drugs 3(2,3)

Microscopic structure and characteristics of powdered drugs and foods with methods of identification of adulterants. Offered on sufficient demand.

741-751 Seminar 1(1,0) FS

Required of all graduate students taking majors in the College of Pharmacy. Offered on alternate years as required.

790 Thesis in Pharmacognosy 5-7 as arranged.

List of Courses for Humanities, Social Science, and Natural Science Requirements for the University

The following list of courses, divided into "Humanities," "Social Sciences," and "Natural Sciences," has been approved by the faculty. Courses appearing below may be used to meet College Core Requirements in these areas for the Bachelor's Degrees.

Most upper level courses and some lower level courses have prerequisites that must be recognized.

Some colleges and/or departments require courses in these areas. Such courses are spelled out under College or Departmental Information.

HUMANITIES

Art

- 212 Visual Arts in Society
- 232 History of American Art
- 343, 353 History of Art
- 463 Art in the 20th Century

English

- All 100-400 level courses except the communications type courses (103, 113, 143, 350, 362 and 412)

Foreign Language

- All 100-400 level courses—the same courses may not be used to meet both the Humanities requirement and the Foreign Language requirement for B.A.

General Studies

- 253 Humanities

History

- All 100-400 level courses.

Management, Housing and Equipment

- 383 Family Housing

Music

- 102 Music Appreciation

- 203, 213 Advanced Music Theory

- 303, 313 Music History

- A maximum of 4 credits in Music participation —110, 120, 130, 140, 150, or 160

Nutrition and Food Science

- 102 Nutrition for Health

Philosophy

- 202 Elementary Logic

- 204 Introduction to Philosophy

- 213 Introduction to Ethics

- 313 History of Modern Philosophy

- 462 Philosophy of Science

Religion

- All 100-400 level courses

Speech

- 123 Introduction to Theatre

- 143 Stagecraft

- 193 Introduction to Film

- 353 Oral Interpretation

- 472 Playwriting

- 482 Development of Theatre

- A maximum of 4 credits in Speech Activities (251)

Textiles and Clothing

- 342 History of Costume

SOCIAL SCIENCE

Child Development and Family Relations

- 122 Individual and the Family
- 223 Human Development and Personality
- 322 Dynamics of Family Development

Economics

- 203, 213 Principles of Economics
- 333 Money and Banking
- 393 Consumers and the Market
- 413 Public Finance
- 423 Intermediate Macroeconomics
- 433 Intermediate Economic Analysis
- 453 Agricultural Policy
- 483 Market Prices

Geography

- All 100-400 level courses but 104 and 114.

History

- All 100-400 level courses

Home Economics

- 212 Introduction to Family Living

Management, Housing and Equipment

- 273 Management in Family and Personal Living

Political Science

- All 100-400 level courses

Psychology

- All 100-400 level courses

Rural Sociology

- All 100-400 level courses

Textiles and Clothing

- 102 Costume Selection

Health Science

- 202 Contemporary Health Problems

(Continued next page)

NATURAL SCIENCE COURSES
(Suggested Electives for Non Science Majors)

Bacteriology

- 204 General Bacteriology
- 304 Cytology and Nutrition

Biology

- 113, 123 Biology
- 283 Organismic & Population Biology
- 293 Molecular & Cellular Biology
- 303 Genetics

Botany

- 203 Plant Kingdom
- 204 Basic Taxonomy

Chemistry

- All 100-400 level courses

Entomology

- 103 Introduction to Entomology

Geography

- 104, 114 Physical Geography

Mathematics

- 113 Algebra

- 133 Plane Trigonometry
- 143 Analytic Geometry
- 145 Algebra and Trigonometry
- 155, 165, 254 Math Analysis
- 213 Descriptive Astronomy
- 225 Mathematics for Social Science
- 323 Math for Finance

Nutrition and Food Science

- 303 Human Nutrition

Physics

- All 100-400 level courses

Plant Science

- 102 Plant Pathology in Human Affairs
- 243 Geology

Wildlife and Fisheries Sciences

- 202 Conservation of Natural Resources

Zoology

- 113 Survey of Anatomy and Physiology
- 203 Anatomy
- 304 Mammalian Physiology
- 442 Principles of Animal Taxonomy

COLLEGES AND DEPARTMENTAL ABBREVIATIONS

| | | |
|--|---|---|
| AE , Agricultural Engineering | Fr , French | Mus , Music |
| Ag , Agriculture and Biological Science | GC , Guidance and Counseling | N , Nursing |
| AgEd , Agricultural Education | GE , General Engineering | NFS , Nutrition and Food Science |
| AgExt , Agricultural Extension | Geo , Geography | Pha , Pharmacy |
| AS , Animal Science | Ger , German | Phil , Philosophy |
| Bac , Bacteriology | GR , General Registration | Phy , Physics |
| Bio , Biology | GS , General Studies | PJ , Printing and Journalism |
| Bot , Botany | HE , Home Economics | PM , Printing Management |
| CD , Child Development | Hed , Home Econ. Education | PolS , Political Science |
| CE , Civil Engineering | HPER , Health, Physical Education and Recreation | PS , Plant Science |
| Ch , Chemistry | Hist , History | Psy , Psychology |
| DS , Dairy Science | Ho , Horticulture | Rel , Religion |
| Econ , Economics | HSc , Health Science | RS , Rural Sociology |
| Ed , Education | IAE , Industrial Arts Education | Rus , Russian |
| EE , Electrical Engineering | J , Journalism | A&S , Arts and Science |
| EG , Engineering Graphics | Lib , Library | SecS , Secretarial Science |
| EM , Engineering Mechanics | MA , Mechanized Agriculture | Sp , Speech |
| Engl , English | Math , Mathematics | Span , Spanish |
| Ent , Entomology | ME , Mechanical Engineering | TC , Textiles and Clothing |
| ES , Engineering Shops | Mil , Military | Vet , Veterinary Science |
| FL , Foreign Languages | MHE , Management, Housing, and Equipment | WL , Wildlife |
| | | Z , Zoology |

MISCELLANEOUS ABBREVIATIONS

| | | |
|------------------------------|-------------------------------|---------------------------------|
| *Time and/or credit arranged | L , Laboratory | R , Recitation (Lecture) |
| Cr , Credit | MTWTFSS , Days of Week | S , Spring Semester |
| F , Fall Semester | P , Prerequisite | Su , Summer Term |

Course Numbering System

In the departmental description of subjects, the following numbering system is used:

1. Non-credit courses

1-99 Pre-college or remedial level

2. Courses for Undergraduates (carry undergraduate credit only)

100-199 Freshman level

200-299 Sophomore level

3. Courses primarily for Undergraduates (open to graduate students for credit under restricted conditions with approval of graduate dean—see graduate catalog)

300-399 Junior level

400-499 Senior level

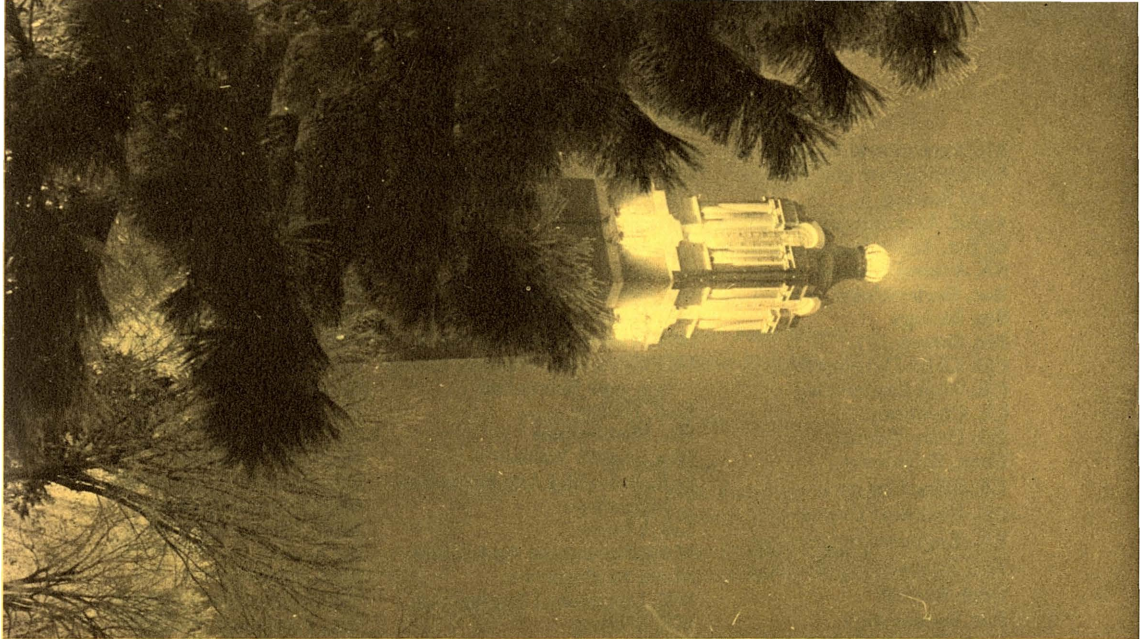
500-599 Fifth year pharmacy level

4. Courses primarily for graduate students (open to selected Junior and Senior undergraduate students on an elective basis only). Not open to Freshmen and Sophomores.

600-699 Graduate level

5. Courses for graduate students (graduate credit only)

700-799 Graduate level



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