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LOUISIANA TECH UNIVERSITY BULLETIN

APR 16 1975

1975-76





LOUISIANA TECH UNIVERSITY

F. Jay Taylor, President

BULLETIN

1975-76

LOUISIANA TECH UNIVERSITY SUBSCRIBES
TO THE POLICY OF EQUAL OPPORTUNITY

VOL. LXXIII

MARCH, 1975

NUMBER 1

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State Board of Education *

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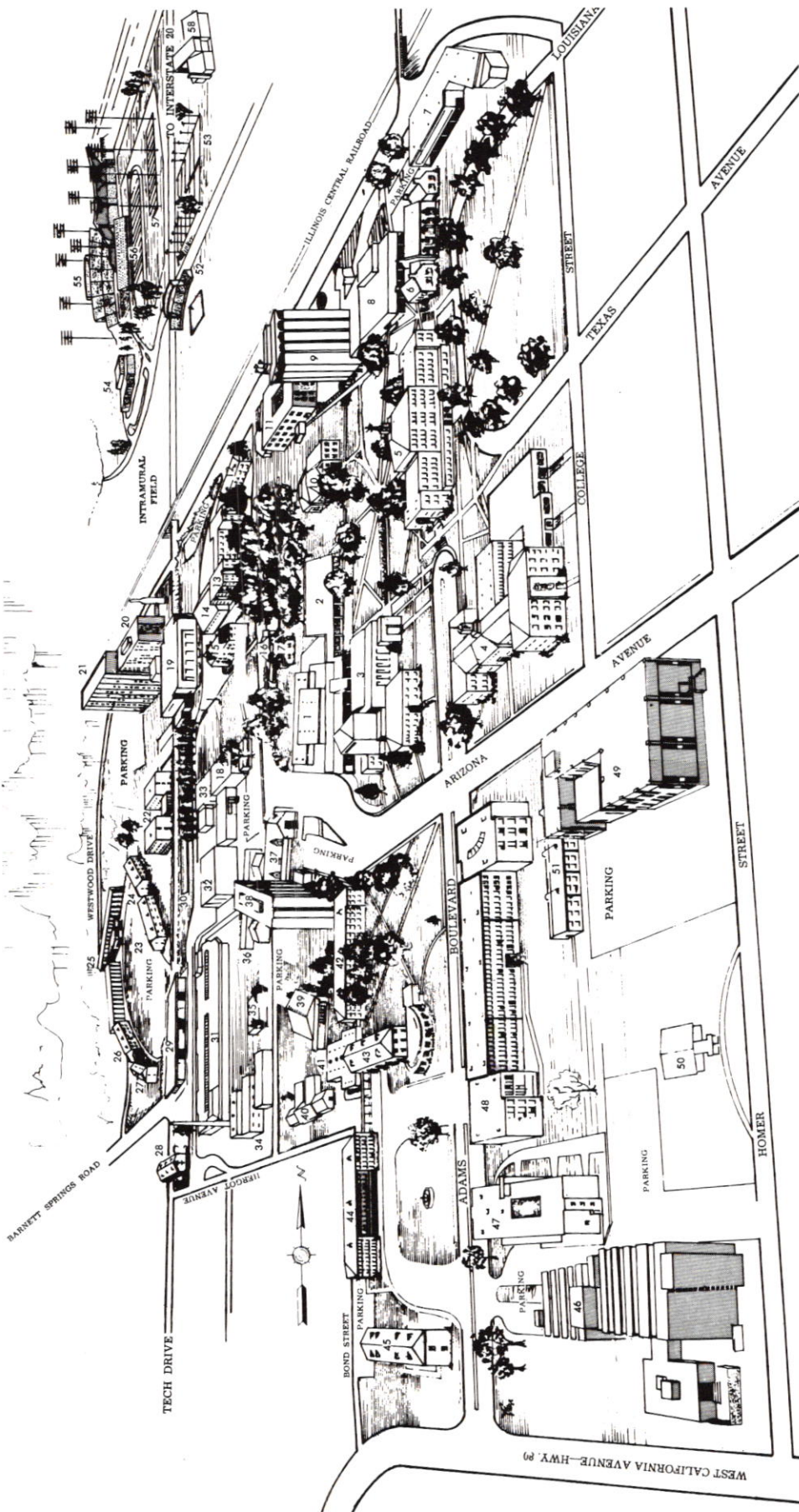
Harvey A. Peltier, Jr., *Vice President* Thibodaux

Louis J. Michot, *Secretary* Lafayette

* Beginning January 1, 1975 a new constitution will begin to take effect and the structure for the Board of Education will be changed.

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FACILITIES

- 1 Student Center
- 2 Louisiana Tech Bookstore
- 3 Howard Auditorium
- 4 Bogard Hall (Engineering)
- 5 Keeny Hall (Administration)
- 6 Visual Arts Building
- 7 Business Administration Building
- 8 Prescott Library
- 9 Wylie Tower of Learning
- 10 English Building
- 11 Madison Hall (Arts and Sciences)
- 12 Thatcher Hall
- 13 Hale Hall
- 14 Men's Old Gymnasium
- 15 Robinson (Speech & Hearing Clinic)
- 16 Home Management House
- 17 Anna Idtse (Home Management)
- 18 Woodard Hall (Education)
- 19 Memorial Gymnasium
- 20 Caruthers Hall (Men's Resident Hall)
- 21 Neilson Hall (Men's Resident Hall)
- 22 Mitchell Hall (Men's Resident Hall)
- 23 Cottingham (Men's Resident Hall)
- 24 Richardson Hall (Men's Resident Hall)
- 25 Hutchison Hall (Men's Resident Hall)
- 26 Jenkins Hall (Men's Resident Hall)
- 27 McFarland (Men's Resident Hall)
- 28 South Hall
- 29 Wilson Cafeteria
- 30 Swimming Pool & Accessory Building
- 31 A. E. Phillips Laboratory School
- 32 The Band Building
- 33 Education Laboratory
- 34 Power Plant and Laundry
- 35 Garage (Buildings and Grounds)
- 36 Buildings and Grounds (Office & Service Shops)
- 37 Tolliver Dining Hall
- 38 Harper Hall (Women's Resident Hall)
- 39 Women's Gymnasium
- 40 T. H. Harris
- 41 Adams Cafeteria
- 42 Aswell Hall (Women's Resident Hall)
- 43 Adams Hall (Women's Resident Hall)
- 44 Dudley Hall (Women's Resident Hall)
- 45 Pearce Hall (Women's Resident Hall)
- 46 Kidd Hall (Women's Resident Hall)
- 47 Graham Hall (Women's Resident Hall)
- 48 Carson-Taylor Hall (Home Economics & Sciences)
- 49 Nethken Hall (Engineering)
- 50 Nursery School (Home Economics)
- 51 Engineering Annex
- 52 Baseball Grandstand
- 53 Tennis Courts
- 54 Joe Aillet Field House
- 55 Joe Aillet Stadium
- 56 Track
- 57 Practice Field
- 58 Alumni House and Campus Information Center

STATE BOARD OF EDUCATION

PRESIDENT

ITCA DIRECTOR

ITCA FACULTY COMMITTEE

ATHLETIC COUNCIL

ATHLETIC DIRECTOR

STUDENT AFFAIRS

ACADEMIC AFFAIRS

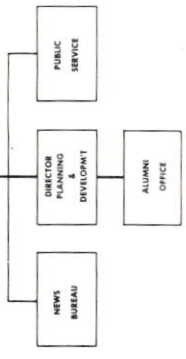
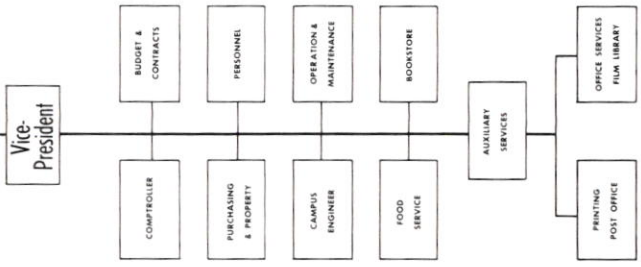
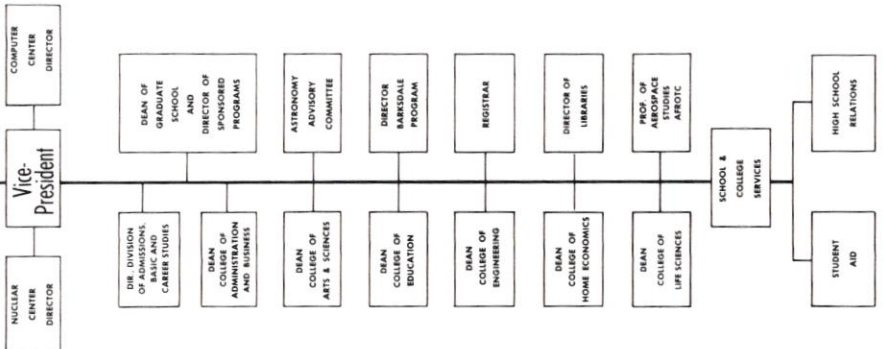
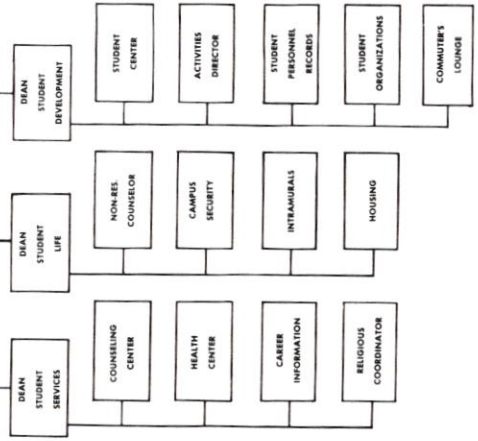
ADMINISTRATIVE AFFAIRS

SPECIAL SERVICES

Vice-President

Vice-President

Vice-President



ORGANIZATION CHART FOR LOUISIANA TECH UNIVERSITY

University Calendar

ACADEMIC YEAR, 1975-76

SUMMER QUARTER 1975-76

Completed applications and transcripts for new Graduate	
School applicants due in Admissions Office	May 20 (Tues.)
Application for undergraduate admission or readmission due	May 27 (Tues.)
Residence Halls open	1:00 p.m., June 1 (Sun.)
Food Service opens, night meal	June 1 (Sun.)
Summer Quarter begins	June 3 (Tues.)
Registration (alphabetical order) For All Sessions	June 3 (Tues. noon) - June 4 (Wed. noon)
Classes begin. Late registration fee applies	June 5 (Thurs.)
Fourth of July holiday for students begins	End of classes, July 3 (Thurs.)
Food Service closes, after noon meal	July 3 (Thurs.)
Food Service opens, night meal	July 6 (Sun.)
Fourth of July holiday for students ends	8:00 a.m., July 7 (Mon.)
First Session Ends	July 11 (Fri.)
Second Session Begins, Late registration fee applies	July 14 (Mon.)
End of Classes	Aug. 15 (Fri.)
Commencement exercises	8:00 p.m., Aug. 21 (Thurs.) Howard Auditorium
Summer Quarter ends	Aug. 21 (Thurs.)
Food Service closes, after night meal	Aug. 21 (Thurs.)
Residence Halls close	Noon, Aug. 22 (Fri.)
Courses offered first session only	June 3 - July 11
Courses offered second session only	July 14 - Aug. 21

FALL QUARTER 1975-76

Completed applications and transcripts for new Graduate	
School applicants due Admissions Office	Aug. 19 (Tues.)
Application for undergraduate admission or readmission due	Aug. 26 (Tues.)
Residence Halls open	1:00 p.m., Sept. 2 (Tues.)
Food Service opens, night meal	Sept. 2 (Tues.)
Fall Quarter begins	Sept. 3 (Wed.)
Registration (alphabetical order)	Sept. 3, 4 (Wed. & Thurs.)
Classes begin. Late registration fee applies	Sept. 5 (Fri.)
Registration for evening and special classes	8:00 a.m.-10:30 a.m., Sept. 6 (Sat.)
Last day of classes	Nov. 21 (Fri.)
Commencement exercises	10:00 a.m., Nov. 25 (Tues.) Howard Auditorium
Fall Quarter ends	Nov. 25 (Tues.)
Food Service Closes, after noon meal	Nov. 25 (Tues.)
Residence Halls close	5:00 p.m., Nov. 25 (Tues.)

WINTER QUARTER 1975-76

Completed applications and transcripts for new Graduate	
School applicants due in Admissions Office	Nov. 18 (Tues.)
Application for undergraduate admission or readmission due	Nov. 25 (Tues.)
Residence Halls open	1:00 p.m., Dec. 1 (Mon.)
Food Service opens, night meal	Dec. 1 (Mon.)
Winter Quarter begins	Dec. 2 (Tues.)
Registration (alphabetical order)	Dec. 2 (Tues.) - Dec. 3 (Wed. noon)
Classes begin. Late registration fee applies	Dec. 4 (Thurs.)
Registration for evening and special classes	8:00 a.m.-10:30 a.m. Dec. 6 (Sat.)
Christmas recess for students begins	End of classes, Dec. 19 (Fri.)
Food Service closes, after night meal	Dec. 19 (Fri.)
Residence Halls close	7:00 p.m., Dec. 19 (Fri.)
Residence Halls open	1:00 p.m., Jan. 4 (Sun.)
Food Service opens, night meal	Jan. 4 (Sun.)
Christmas recess for students ends	8:00 a.m., Jan. 5 (Mon.)
Last day of classes	Feb. 27 (Fri.)
Commencement exercises	10:00 a.m., March 4 (Thurs.) Howard Auditorium
Winter Quarter ends	March 4 (Thurs.)
Food Service closes, after noon meal	March 4 (Thurs.)
Residence Halls close	5:00 p.m., March 4 (Thurs.)
Mardi Gras	March 2

SPRING QUARTER 1975-76

Completed applications and transcripts for new Graduate	
School applicants due in Admissions Office	Feb. 24 (Tues.)
Application for undergraduate admission or readmission due	March 2 (Tues.)
Residence Halls open	1:00 p.m., March 8 (Mon.)
Food Service opens, night meal	March 8 (Mon.)
Spring Quarter begins	March 9 (Tues.)
Registration (alphabetical order)	March 9 (Tues.) - March 10 (Wed. noon)
Classes begin. Late registration fee applies	March 11 (Thurs.)
Registration for evening and special classes	8:00 a.m.-10:30 a.m., March 13 (Sat.)
Easter Recess for students begins	End of classes, April 15 (Thurs.)
Food Service closes, after night meal	April 15 (Thurs.)
Residence Halls close	7:00 p.m., April 15 (Thurs.)
Residence Halls open	1:00 p.m., April 19 (Mon.)
Food Service opens, night meal	April 19 (Mon.)
Easter Recess for students ends	7:30 a.m., April 20 (Tues.)
Last day of classes	May 21 (Fri.)
Commencement exercises	8:00 p.m., May 27 (Thurs.) Stadium
Spring Quarter ends	May 27 (Thurs.)
Food Service closes, after night meal	May 27 (Thurs.)
Residence Halls close	Noon, May 28 (Fri.)

ACADEMIC YEAR, 1976-77

SUMMER QUARTER 1976-77

Completed applications and transcripts for new Graduate	
School applicants due in Admissions Office	May 18 (Tues.)
Application for undergraduate admission or readmission due	May 25 (Tues.)
Residence Halls open	1:00 p.m., May 30 (Sun.)
Food Service opens, night meal	May 30 (Sun.)
Orientation (all new students)	May 31 (Mon.)
Summer Quarter begins	June 1 (Tues.)
Registration (alphabetical order) for all sessions	June 1 (Tues. noon) - June 2 (Wed. noon)
Classes begin. Late registration fee applies	June 3 (Thurs.)
Fourth of July holiday for students begins	End of classes, July 2 (Fri.)
Food Service closes, after noon meal	July 2 (Fri.)
Food Service opens, night meal	July 5 (Mon.)
Fourth of July holiday for students ends	8:00 a.m., July 6 (Tues.)
First Session Ends	July 9 (Fri.)
Second Session Begins. Late Registration fee applies	July 12 (Mon.)
End of Classes	Aug. 13 (Fri.)
Food Service closes, after night meal	Aug. 13 (Fri.)
Residence Halls close	12:00 Noon, Aug. 14 (Sat.)
Commencement Exercises	8:00 p.m., Aug. 19 (Thurs.) Howard Auditorium
Summer Quarter Ends	Aug. 19 (Thurs.)
Courses offered first session only	June 1 - July 9
Courses offered second session only	July 12 - Aug. 19

FALL QUARTER 1976-77

Completed applications and transcripts for new Graduate	
School applicants due in Admissions Office	Aug. 24 (Tues.)
Application for undergraduate admission or readmission due	Aug. 31 (Tues.)
Residence Halls open	1:00 p.m., Sept. 7 (Tues.)
Food Service opens, night meal	Sept. 7 (Tues.)
Fall Quarter begins	Sept. 8 (Wed.)
Registration (alphabetical order)	Sept. 8, 9 (Wed. & Thurs.)
Classes begin. Late registration fee applies	Sept. 10 (Fri.)
Registration for evening and special classes	8:00 a.m. - 10:30 a.m. Sept. 11 (Sat.)
Last day of classes	Nov. 19 (Fri.)
Food Service closes, after night meal	Nov. 19 (Fri.)
Residence Halls close	12:00 Noon, Nov. 20 (Sat.)
Commencement exercises	10:00 a.m., Nov. 23 (Tues.) Howard Auditorium
Fall Quarter ends	Nov. 23 (Tues.)

WINTER QUARTER 1976-77

Completed applications and transcripts for new Graduate	
School applicants due in Admissions Office	Nov. 16 (Tues.)
Application for undergraduate admission or readmission due	Nov. 23 (Tues.)
Residence Halls open	1:00 p.m., Nov. 29 (Mon.)
Food Service opens, night meal	Nov. 29 (Mon.)
Winter Quarter begins	Nov. 30 (Tues.)
Registration (alphabetical order)	Nov. 30 (Tues.) - Dec. 1 (Wed. noon)
Classes begin. Late registration fee applies	Dec. 2 (Thurs.)
Registration for evening and special classes	8:00 a.m. - 10:30 a.m. Dec. 4 (Sat.)
Christmas recess for Students begins	End of classes, Dec. 17 (Fri.)
Residence Halls close	7:00 p.m., Dec. 17 (Fri.)
Food Service closes, after night meal	Dec. 17 (Fri.)
Residence Halls open	1:00 p.m., Jan. 2 (Sun.)
Food Service opens, night meal	Jan. 2 (Sun.)
Christmas recess for students ends	8:00 a.m., Jan. 3 (Mon.)
Mardi Gras Holidays for Students begin	End of classes, Feb. 18 (Fri.)
Food Service closes, after night meal	Feb. 18 (Fri.)
Food Service opens, night meal	Feb. 22 (Tues.)
Mardi Gras Holidays for Students end	8:00 a.m., Feb. 23 (Wed.)
Last day of classes	March 4 (Fri.)
Food Service closes, after night meal	March 4 (Fri.)
Residence Halls close, after noon meal	March 5 (Sat.)
Commencement exercises	10:00 a.m., March 10 (Thurs.) Howard Auditorium
Winter Quarter ends	March 10 (Thurs.)

SPRING QUARTER 1976-77

Completed applications and transcripts for new Graduate	
School applicants due in Admissions Office	March 1 (Tues.)
Application for undergraduate admission or readmission due	March 8 (Tues.)
Residence Halls open	1:00 p.m., March 14 (Mon.)
Food Service opens, night meal	March 14 (Mon.)
Spring Quarter begins	March 15 (Tues.)
Registration (alphabetical order)	March 15 (Tues.)- March 16 (Wed. noon)
Classes begin. Late registration fee applies	March 17 (Thurs.)
Registration for evening and special classes	8:00 a.m. - 10:30 a.m., March 19 (Sat.)
Easter Recess for Students begins	End of classes, April 7 (Thurs.)
Residence Halls close	7:00 p.m., April 7 (Thurs.)
Food Service closes, after night meal	April 7 (Thurs.)
Residence Halls open	1:00 p.m., April 11 (Mon.)
Food Service opens, night meal	April 11 (Mon.)
Easter Recess for Students ends	8:00 a.m., April 12 (Tues.)
Last day of classes	May 27 (Fri.)
Food Service closes, after night meal	May 27 (Fri.)
Residence Halls close	12:00 Noon, May 28 (Sat.)
Commencement exercises	8:00 p.m., June 2 (Thurs.) Stadium
Spring Quarter ends	June 2 (Thurs.)

Directory

OFFICERS OF THE ADMINISTRATION

F. Jay Taylor, B.A., M.A., Ph.D. (1962) President

Virgil Orr, B.S., M.S., Ph.D. (1952) Vice President for Academic Affairs
 S. X. Lewis, B.A., M.S. (1938) Vice President for Student Affairs
 George W. Byrnside, B.S. (1960) Vice President for Administrative Affairs

Burton R. Risinger, B.A., M.B.A. (1945) Dean, College of Administration and Business
 Paul J. Pennington, B.A., M.A., Ph.D. (1952) Dean, College of Arts and Sciences
 B. J. Collinsworth, B.S., M.S., Ed.D. (1962) Dean, College of Education
 Ben T. Bogard, B.S., M.S. (1937) Dean, College of Engineering
 Agnes C. Miller, B.S., M.S., Ph.D. (1955) Dean, College of Home Economics
 Hal B. Barker, B.S., M.S., Ph.D. (1949) Dean, College of Life Sciences
 James L. Hester, B.S., M.B.A., Ph.D. (1966) Dean, Graduate School and Director of Sponsored Programs
 Patsy Lewis, B.A., M.A. (1965) Director, Division of Admissions, Basic and Career Studies

June W. Dyson, B.S., M.A. (1962) Dean of Student Development; Director of Research, Student Affairs
 E. S. Foster, Jr., B.S., M.S. (1960) Dean of Student Life

OTHER ADMINISTRATORS

Thomas D. Allen, B.S. (1962) Director of Personnel
 M. Glynn Aycock, B.S., M.S. (1970) Guidance Counselor
 Wilbur L. Bergeron, B.S., M.A., Ed.D. (1953) Associate Dean, College of Education;
 Director, Division of Education Research and Services;
 Acting Director, Special Education Center
 Alex Boyd (1954) Manager, Bookstore
 Danny L. Carroll, B.S., M.S. (1974) High School Services Officer
 Elenora A. Cawthon, B.S., M.Ed., Ed.D. (1955) Dean of Student Services, Director of Placement
 Ross E. Dobbs, B.S., M.B.A. (1969) Coordinator, Barksdale Program
 Jerry S. Drewett, B.S. (1972) Budget and Contract Officer
 Sam A. Dyson, B.S., M.S., (L.S.) (1960) Director of Libraries
 Donald E. Edwards, B.B.A., M.B.A., Ph.D. (1967) Director of Graduate Studies,
 College of Administration and Business
 J. Harold Gilbert, B.A., B.M.E., M.M. (1966) Director, Louisiana Tech Concert Association
 Elizabeth G. Haley, B.S., M.S., Ph.D. (1969) Associate Dean, College of Home Economics
 Reggie Hanchey, B.A., M.R.E. (1974) Assistant to Director of Planning and Development
 Harold G. Hedrick, B.A., M.A., Ph.D. (1969) Director of Graduate Studies, College of Life Sciences
 Wallace Herbert, B.S., M.S., Ed.D. (1942) Director, Planetarium
 Wiley W. Hilburn, Jr., B.A., M.A. (1968) Director of News Bureau
 Berry Hinton, B.A., M.S. (1943) Alumni Secretary
 J. J. Hinton, B.S., M.A., Ed.D. (1966) Associate Dean, College of Education,
 Division of Curriculum and Instruction
 Houston K. Huckabay, B.S., M.S., Ph.D. (1964) Director of Graduate Studies, College of Engineering
 Edward R. Janway, B.S. (1969) Director of Physical Plant
 Charles A. Killgore, B.S., M.S. (1959) Associate Dean and Director of Engineering Research,
 College of Engineering; Director, Nuclear Center
 Maxie T. Lambricht, B.S. (1967) Director of Athletics
 F. Eugene Lueg, B.A. (1971) Superintendent of Printing
 Albert G. McKee, B.S., M.S. (1957) Director, Computing Center
 O. M. Merriott, B.S. (1964) Director, Student Center
 G. Clint Miller, B.S., M.S., Ed.D. (1969) Director of Graduate Studies, College of Education
 P. B. Moseley, B.S., M.S., Ph.D. (1964) Associate Dean and Director, Division of Research,
 College of Arts and Sciences; Director, Division of Allied Health
 John L. Murad, B.A., M.A., Ph.D. (1965) Director, Division of Life Sciences Research
 Jack A. Murphy, B.A. (1965) Coordinator of Federal Programs
 Bob R. Owens, B.B.A., M.B.A., Ph.D. (1965) Associate Dean, College of Administration and Business
 John B. Parker, B.G.E., M.Ed. (1974) Director, Planning and Development
 Bobby E. Price, B.S., M.S., Ph.D. (1967) Director, Water Resources Center
 M. Richard Ringheim, B.S. (1964) Comptroller
 Eleanor S. Rockett, B.S., M.S. (1959) Registrar
 R. G. Russell, III, B.A. (1970) Director, High School Relations
 J. C. Seaman, Jr., B.A., L.L.B. (1966) Director, School and College Services
 Joe Thomas, B.S., M.B.A. (1973) Director of Systems and Procedures
 Nancy Tolman, B.S., M.S., Ph.D. (1971) Director of Graduate Studies and Director of Research,
 College of Home Economics
 John C. Trisler, B.S., Ph.D. (1959) Director of Graduate Studies, College of Arts and Sciences
 Weldon R. Walker, B.S. (1965) Purchasing Officer
 Phillip N. Washington, B.S., M.B.A. (1967) Assistant Registrar
 Ronnie S. Washington, B.A., (1972) Director, Student Financial Aid
 Donald C. Wilcox, B.S., M.A., D.B.A. (1962) Director, Division of Administration and Business Research
 John A. Wright, B.S., M.S., Ph.D. (1953) Associate Dean, College of Life Sciences

DIRECTORS OF SCHOOLS, HEADS OF ACADEMIC DEPARTMENTS AND PROGRAM COORDINATORS

COLLEGE OF ADMINISTRATION AND BUSINESS

Accounting: Harold J. Smolinski
 Business: Jarrett Hudnall, Jr.
 Economics and Finance: Tom S. Sale, III
 Office Administration: Reba Neel Huckabay

COLLEGE OF ARTS AND SCIENCES

Art and Architecture: Jack Beard, Acting Director
 Chemistry: Charles Hooper Smith
 English: Robert C. Snyder
 Foreign Languages: Richard L. Ezell
 History: William Y. Thompson
 Journalism: Wiley W. Hilburn, Jr.
 Mathematics: W. B. Temple
 Music: Raymond G. Young
 Nursing: Virginia R. Pennington
 Physics: William H. Brumage
 Professional Aviation: Alfred L. Miller
 Social Sciences: William Conway
 Speech: Paul J. Pennington

COLLEGE OF EDUCATION

Teacher Education: Donald R. Nelson
 Health and Physical Education: A. Huey Williamson
 Laboratory School: Robert E. Hearn
 Psychology and Counseling: James M. Williams
 Special Education Center: Wilbur L. Bergeron, Acting Director

COLLEGE OF ENGINEERING

Biomedical Engineering: Daniel D. Reneau
 Chemical Engineering: Woodrow W. Chew
 Civil Engineering: Richard A. Smith
 Electrical Engineering: David L. Johnson
 Geosciences: Leo A. Herrmann
 Industrial Engineering and Computer Science: H. L. Henry, Jr.
 Mechanical Engineering: J. J. Thigpen
 Petroleum Engineering: R. M. Caruthers

COLLEGE OF HOME ECONOMICS: Agnes C. Miller

COLLEGE OF LIFE SCIENCES

Agricultural Engineering: Jackie W. D. Robbins
 Agronomy and Horticulture: Charles Winstead
 Animal Industry: C. Reid McLellan, Jr.
 Botany and Bacteriology: Dallas D. Lutes
 Forestry: Lloyd P. Blackwell
 Vocational Agricultural Education: J. Y. Terry
 Zoology: Roland R. Abegg

ADMISSIONS, BASIC AND CAREER STUDIES: Patsy B. Lewis

AIR FORCE AEROSPACE STUDIES: Col. Leon G. Mark

BARKSDALE PROGRAM: Ross E. Dobbs

GRADUATE SCHOOL: James L. Hester

ATHLETIC PERSONNEL

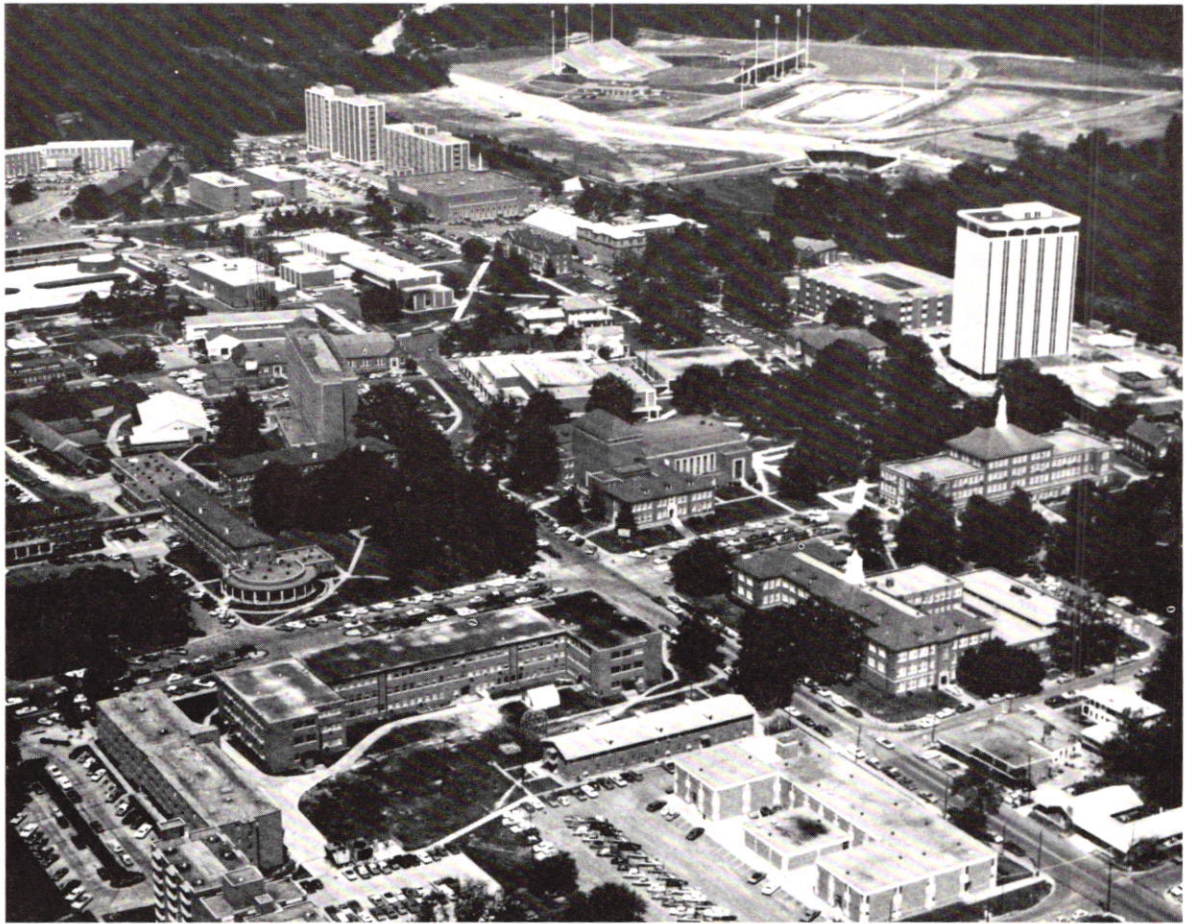
Maxie Lambricht — Athletic Director and Head Football Coach
 J. P. (Pat) Collins — Assistant Football Coach and Tennis Coach
 E. J. Lewis — Assistant Football Coach
 Wallace Martin — Assistant Football Coach and Golf Coach
 J. E. (Pat) Patterson — Assistant Football Coach and Baseball Coach
 M. E. (Mickey) Slaughter — Assistant Football Coach

James W. Mize — Assistant Athletic Director and Track Coach

Emmett Hendricks — Head Basketball Coach
 Tommy R. Vardeman — Assistant Basketball Coach

William Keith Prince — Sports Information Director

Billy Belding — Athletic Trainer



General Information

General Information

HISTORY

Tech's formal name is Louisiana Tech University, but when it was founded (in 1894) by Act 68 of the General Assembly, it was called Industrial Institute and College of Louisiana. Act 68, which specified that the school be located in Ruston, provided for the establishment of "a first-class" institution designed to educate citizens of the state in the arts and sciences and in "the practical industries of the age." The school was located on 20 acres of land and in a single building, both donated by the city of Ruston. By September, 1895, with its president and faculty of six in residence, Tech opened its door to 202 students.

The first degree offered by the school was a "Bachelor of Industry." This degree was granted in fields as broadly diverse as music and telegraphy. The first student to receive the degree was Harry Howard, Class of 1897. Mr. Howard was not required to go through a formal graduation program. After his qualifications were examined, Col. A. T. Prescott, the school's first president, awarded the degree. The first graduation exercises were not held until the following year, 1898, when ten degrees were awarded in a ceremony at the Ruston Opera House. In all, there were 1,346 Bachelor of Industry degrees awarded.

Since 1894, the institution's name, purpose and functions have been modified as the needs of those whom it served have changed. In 1921, the school's name was changed to Louisiana Polytechnic Institute. The Bachelor of Industry degree was discarded and the degrees standard to American education were granted. As the college increased in enrollment and offerings, constant changes were made to meet these additional responsibilities; in 1970, the school's name was changed to Louisiana Tech University.

Since 1921, the University has prospered: there are 227 acres on the main campus, 472 at the demonstration farm, 94 acres of forest land in Webster Parish, 150 acres a few miles west of Ruston, and 5 acres on Lake D'Arbonne. In addition, Tech leases 4

acres for a Forestry Camp on Corney Lake and 352 acres of farm and pasture land for the animal production units. There are about 90 buildings on the main campus and a majority are air conditioned.

The central portions of the campus are arranged on a "quadrangle" basis, the center of which is a statue-fountain called "Our Lady of the Mist." Prescott Library (named for the school's first president), Wyly Tower of Learning, and Madison Hall are at the north end of the Quadrangle. Keeny Hall (after the school's sixth president) is at the east side, Howard Auditorium (for Tech's first graduate) is at the south side. The west side is the English Building and the Student Center. The remaining buildings surround this Quadrangle.

ACCREDITATION

Louisiana Tech University is accredited by the Southern Association of Colleges and Secondary Schools. It is also a member of the American Association of State Colleges and Universities, the American Council on Education, the Council of Graduate Schools in the United States, the Conference of Southern Graduate Schools, and the American Association of Collegiate Registrars and Admissions Officers and is affiliated with the National Commission on Accrediting and the National Council of University Research Administrators. Certain departments and colleges of the University are approved by professional accrediting organizations in specific fields: the Accreditation Council of the American Assembly of Collegiate Schools of Business, the American Boards of Examiners in Speech Pathology of the American Speech and Hearing Association, the American Chemical Society, the American Society of Clinical Pathology, the Association for University Business and Economic Research, the Engineers' Council for Professional Development, the National Association of Schools of Music, and the National Council for Accreditation of Teacher Education.



EQUAL OPPORTUNITY POLICIES

Louisiana Tech University provides equal educational opportunities for all and this policy of equal opportunity is fully implemented in all programs.

ADMISSIONS

Louisiana Tech University has an open admissions policy as established by the State Board of Education. All high school graduates or students with equivalency diplomas are eligible for admission. There is no discrimination in admissions because of race, creed, sex or color.

EMPLOYMENT

It is the declared policy of Louisiana Tech University to insure that the best qualified U. S. citizens are recruited, selected, employed, and promoted without regard to race, sex, creed, color, or national origin, except where sex is a bona fide occupational qualification. In addition, all other employment practices such as compensation, promotion, personal and professional development, fringe benefits and facilities of the University are provided without regard to race, sex, creed, color or national origin.

The President of the University has established the policy that all employment practices will be supervised on a continuous basis to be sure that all University administrators, deans, directors, department heads, and other budget unit heads take positive affirmative action in complying with the goals of equal employment opportunity.

SCHOOL AND COLLEGE SERVICES

The two areas within the Division of School and College Services, High School Relations and Student Financial Aid, are both directly connected with recruiting students to Louisiana Tech and in making every reasonable effort to assist all students who need financial assistance to obtain that type aid. In none of these endeavors is any discrimination against any person because of race, creed, color, national origin, etc. practiced.

ADMISSIONS

A HIGH SCHOOL GRADUATE who is an applicant for admission to the freshman class must have been graduated from a four-year course in an accredited secondary school. Completed application forms and a transcript of high school credits are required in the Admissions Office at least two weeks before the beginning of the quarter. For unconditional admission to any of the curricula the applicant must present, as a part of his high school credit, the specific units indicated for admission to his chosen course of study.

ADMISSION BY TRANSFER is permissible if the transfer student is eligible to re-enter the institution from which he is transferring. Transfer students are reminded that they must meet Louisiana Tech's entrance requirements.

THE AMERICAN COLLEGE TEST is required of all new students—freshmen and transfers. A prospective student should arrange to take the ACT well in advance of the date he expects to enroll and have the results forwarded to Louisiana Tech University. These test scores are required as a step in the admissions process and will be used for placement purposes.

ADMISSION TO THE GRADUATE SCHOOL requires that all transcripts and admission application forms be submitted to the Admissions Office at least two (2) weeks in advance of registration for the session in which the student expects to enroll. (See the *Graduate School Bulletin* for specific details.)

AN EARLY ADMISSION POLICY for high ability students was adopted by the State Board of Education in 1971. To be eligible for consideration for this program the following requirements must be met: (1) A student must have maintained a "B" or better average on all work pursued during three years (six semesters) of high school; (2) A minimum ACT composite score of 24 must be made and this score submitted to the college prior to June 1; (3) The student must be recommended by his high school principal; (4) Upon earning a minimum of 24 semester hours at the college, the student will be issued a diploma by the high school last attended.

For additional information please write to: Admissions Office, Louisiana Tech University, Ruston Louisiana 71270.

A SUMMER ENRICHMENT PROGRAM FOR HIGH SCHOOL STUDENTS designed to enable capable high school juniors to invest the summer between their junior and senior years wisely has been in effect since 1964 with outstanding success. The participants receive no special treatment other than counseling and are treated as any regular student. Special effort is exerted to choose courses that will not conflict with twelfth grade high school courses.

Grades and credits will be recorded by the Registrar but will be validated to the student's transcript only after completion of high school and application for validation of the credits. High school students who complete the Summer Music Camp at Louisiana Tech and who are eligible for the Summer Enrichment Program are permitted one semester hour credit of applied music. This credit will be validated on the student's transcript by the Registrar only after completion of high school and after application for validation of the credit.

Anyone interested should write to: Summer Enrichment Program for High School Students, Louisiana Tech University, Ruston, Louisiana 71270.

SUMMER ORIENTATION

An orientation and registration program for all new freshmen is held each summer preceding Fall registration. The summer sessions, conducted by the Division of Admissions, Basic and Career Studies, are open to all freshmen who have received official notice of acceptance to Louisiana Tech University.

The purpose of the orientation and registration program is to enable the entering student to become familiar with the University, its academic programs and major courses of study, and to explore his own educational and vocational interests and goals.

Each student will select courses for the Fall quarter and complete registration, except for payment of fees.

The objectives of the program are: (1) to introduce the student to Louisiana Tech University and make the transition from high school a smooth and orderly process; (2) to provide the student with academic direction and more personal attention through faculty advising and counseling; (3) to acquaint the student with opportunities, responsibilities, and regulations of the University; (4) to register the student for classes with the exception of payment of fees; (fees will be paid in September), and (5) to acquaint parents with University standards for students and provide an overview of Louisiana Tech University.

CREDIT BY EXAMINATION

TWO YEARS OF DEGREE

CREDIT BY EXAMINATION

While students are already benefiting from more rapid degree completion in Louisiana Tech University's year-round quarter system, there is also available an avenue through which the more capable student can earn up to two-years' baccalaureate degree credit.

The University subscribes to the concept that individuals possessing knowledge equivalent to that attained in a specific course should be advanced in level in order that a continuous challenge is met. There is no regard for where and how the knowledge was acquired. Certain policies and procedures have been adopted by the University in fulfillment of this philosophy. Unsuccessful attempts will not be recorded against the student. Application of credits toward a degree are determined by the student's curriculum.

The University provides for credit through Military Experience, for Advanced Placement, and for Credit by Examination as follows:

CREDITS THROUGH COLLEGE

ENTRANCE EXAMINATION BOARD

A. THE ADVANCED PLACEMENT PROGRAM

The University recognizes college level courses taken in secondary schools under the College Entrance Examination Board (CEEB) Advanced Placement Program. Students who have completed these tests should have their scores sent to the registrar.

The Advanced Placement Examinations are administered each May in high schools which have accelerated programs. Information concerning the program may be obtained from Educational Testing Service, Princeton, N.J., an agency that administers the testing program for the College Entrance Examination Board.

B. THE COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

1. General Examinations

A student who submits a score at the 25th percentile or higher on the General Examination of the College Level Examination Program (CLEP), developed by the College Entrance Examination Board (CEEB) and administered nationally by the Educational Testing Service (ETS) and on military bases around the world by the United States Armed Forces Institute (USAFI), may gain college credit on subjects related to those portions of test on which the 25th percentile score is reached, but not to exceed 30 semester hours credit. Whether or not this credit is applicable to a student's degree program will be determined by those responsible for his academic program. Total degree credit by all the types of examinations may not exceed 60 semester hours. The examinations may be taken the third Thursday of each month at Louisiana Tech University upon application to the Director of the Counseling Center or any national CLEP center. Registration should be filed three weeks prior to that date.

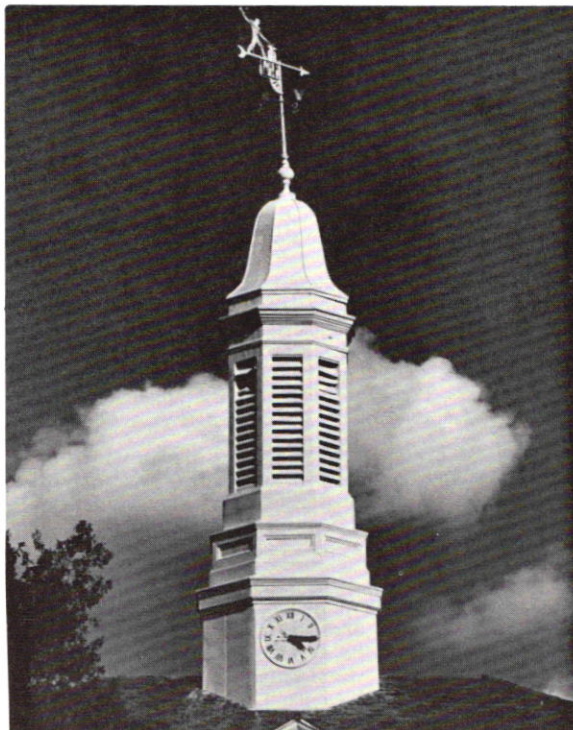
CLEP General Exam	Hours Credit	La. Tech Subject Equivalent
English General Exam	6	English 101 and 102
Natural Sciences General Exam		
Biological	3	Biological Science
Physical	3	Physical Science
Mathematics General Exam	6	Math 107, 108, 109
Humanities General Exam	6	English 201 and 202
Social Sciences General Exam	6	History 101 and 102

Students pursuing pre-professional courses e.g. law, medicine, dentistry, veterinary science, or the forestry curriculum, are advised that the professional schools may require actual grades as demonstrated through performance in a regular classroom setting as opposed to credit by examination.

2. Subject Examinations

A student may gain college credit in a number of subjects by scoring at the percentile level recommended by College Level Examination Program (CLEP), administered nationally by Educational Testing Service (ETS), for the College Entrance Examination Board (CEEB). The examination may be taken the third Wednesday of each month at Louisiana Tech University upon application to the Director of the Counseling Center or at any national CLEP center. Registration should be filed **three weeks** prior to test date. Scores are provided by ETS through their transcript service. It is recommended by CLEP that credit be given in subjects when the student taking the test scores above the 25th percentile. In most subjects, the recommended score is nearer the 50th percentile.

Subjects are being added annually. Those presently available and approved for Louisiana Tech University and the course for which they will substitute are listed following this text. Credit by means of this type subject examinations is limited to 30 semester hours and total degree credit by all types of examinations may not exceed 60 semester hours. Application for CLEP subject and general examinations may be obtained from any test center participating in the program.



CLEP Subject Examination	Serial Number	Hours Credit	La. Tech Subject Equivalent
Accounting	0007	6 or 7	Accounting 203, 204, 205, or Accounting 203, 204, 310
American Government	013R4	3	Political Science 201
American History	003	6	History 201 & 202
Biology	0255	8	Botany 101, Zoology 111 & 112
Business Law	0002	2	Business Law 351
Business Management	0882	3	Management 105
Clinical Chemistry	6101	3	Medical Technology 245
College Algebra	013	3	Mathematics 111
Computer & Data Processing	0043	3	Quantitative Analysis 220
Economics	1098R1	6	Economics 203, 204, & 205
General Chemistry	136476R2	4	Chemistry 101 & 103
General Psychology	011R4	3	Psychology 102
Geology	4014R1	6	Physical Geology 111; Historical Geology 112
Hematology	6103	3	Medical Technology 341
Human Growth & Development	003	3	Psychology 408
Marketing	1345	3	Marketing 300
Microbiology	002R1	3	Bacteriology 210
Money and Banking	018R2	3	Economics 312
Sociology	7562R2	3	Sociology 201
Statistics	010	2	Quantitative Analysis 335
Tests & Measurements	003R1	2	Education 402
Trigonometry	0064	3	Mathematics 112
Western Civilization	016R1	6	History 101 and 102

LOUISIANA TECH CREDIT EXAMINATIONS

Credit examinations in many subjects are administered on the campus for the benefit of students.

Individual credit examinations may be arranged in any subject. The procedure for registering for credit by examination is as follows:

1. Students will register for credit by exam for any given course only during regular registration periods. No examination can be taken for credit unless a stu-

dent has properly registered for the exam. The advisor's signature will render approval for a student to attempt the exam.

2. Exams will be given and reports submitted during the period prior to the final "drop and add" day. Regular University fees will apply.

3. Department heads will have available for the student a class card for "credit by exam" courses to be issued at registration.

4. Each credit exam will have a section number of "00".

5. The student's white registration card will reflect the "credit by exam" courses for which the student registers; these courses will **not**, however, be added into the total semester-hour load of the student.

6. Should a student attempt an exam and fail it, there will be no entry on his permanent record.

7. Successful completion of credit examinations are recorded on the student's record as "credit by examination" and assigned a grade "S." Grades of "S" are not used to compute a grade point average.

8. Credit through this type examination is limited to 30 semester hours of degree credit and credit by all types collectively may not exceed 60 semester hours.

9. Permission to take a credit examination in a given course will be denied a student in the following categories:

- Those who have completed the course for credit previously with an unsatisfactory grade.
- Those who have earned credit in a course higher in the same sequence.

ADVANCED PLACEMENT

Students interested in placement in more advanced courses based upon demonstrated aptitude and achievement are advised to consult the departmental section of the catalog dealing with the subject of interest or to consult the department head administering that subject. Advanced Placement merely allows the student to omit a specific course in order to proceed to a more advanced one. No credit is granted for the course omitted although credit may be gained by examination, and the student is required to add a more advanced course to his program of study in order to fulfill requirements for graduation.

MILITARY EXPERIENCE

Honorably discharged veterans of the United States Armed Forces may be allowed credit for physical education and certain other courses upon presentation of a copy of their discharge (DD 214) to the Admissions Office.

Additional credit may be granted for service schools where equivalence in terms of college courses has been recommended for college credit in the "Guide to the Evaluation of Educational Experience in the Armed Services," published by the American Council on Education. Official documents must be submitted to the Admissions Office for an evaluation of these experiences.

UNITED STATES ARMED FORCES INSTITUTE (USAFI) COURSES

Louisiana Tech University is a participating institution with the USAFI program. Credits earned are recognized by a division of Louisiana Tech University in accordance with the recommendations of the American Council on Education. The credits must be acceptable to the curriculum in which the student enrolls and must not duplicate other college credits earned.

REGISTRATION

REGISTRATION days are announced through the medium of the University Calendar. Late registration is allowed for six regular class days following the last day of scheduled registration. Those who register late are required to pay a special fee of \$10.00.

Department heads or appointed counselors act as advisers during registration but the student is expected to be acquainted with requirements for his particular graduation. His curriculum may be found in this catalog; he should know that curriculum, and he should know how to register according to its requirements.

THE SEMESTER HOUR is the unit of credit. Most courses carry a credit of three semester hours and meet three times a week for a quarter. Credit for each course is indicated by the numerical description, as 0-3-3; first number indicates laboratory contact hours per week; second, lecture periods per week (90-minute periods with break between classes included); third, credit in semester hours.

COURSE NUMBERS have been standardized, freshman courses are numbered in the 100 series and senior courses are numbered in the 400 series. In some cases, courses in the 200 series are accepted for junior-senior credit and 300 courses are accepted for graduate credit. In cases where there is a specified prerequisite of the junior course, or when the course is open to seniors only, or when it is open to seniors and graduate students only, the courses are numbered in the 400 series. Courses numbered 500 are open only to graduate students.

TO AUDIT A COURSE, the applicant must be eligible to enter the University either as a regular student, as a visiting student, or as a special student. He must also obtain the approval of the instructor of the course. A student auditing one or more classes must follow the regular registration procedure after he gains the approval of the instructor and he will be charged the general registration fee of the period for which he audits. This fee is not refundable. The auditing student is not required to do the work required of regular students in the course, nor will he be allowed to receive credit for the course he audits. An audit may not be changed to credit after registration closes. Audits are permitted only when a student's schedule affords the time.

TO REPEAT A COURSE in which he has a passing grade, the student must have the consent of his department head. All courses attempted will be recorded and computed in the overall average.

TO ADD A COURSE after the close of registration a student must have approval of the dean of his college, the head of his department and the registrar. No course may be added after the sixth working day of the quarter except forensics, band, choir, chorus and orchestra. These courses may be added during the first four weeks.

TO DROP A COURSE a student must be in good standing and have the consent of his department head and the dean of his college. A student may be dropped from a class, or more than one class, or from the rolls of the College if his Dean considers such action to be in the interests of the class or the University. In such a case, the Dean will decide whether the student will be given a "W" or an "F." The "W" grade is given when a student withdraws from a class or resigns after the final date for registration has passed and before the end of the first six weeks of a quarter. The "W" grade is not included in computing the student's average. However, if a student resigns

from school after the first six weeks, his instructor will submit grades of "W" plus the student's average grade at the time of withdrawal, except if the student resigns within two weeks of the end of classes he will be given an "F." These grades ("W" plus average) will be recorded on the student's permanent record but will be included in the computation of the average only when the student is being examined for probation or suspension. A student who withdraws from a class after the first six weeks of a quarter will receive an "F" in the course.

TO CHANGE FROM ONE COLLEGE TO ANOTHER a student must obtain the consent of the Dean of the College in which he desires enrollment.

ACADEMIC REGULATIONS

NOTICE: The regulations contained in this bulletin are based upon present conditions and the University reserves the right to modify any statement in accordance with unforeseen conditions.

GENERAL

Change of Address. At the time of registration, each quarter, a student is required to give his parent or guardian's home address and telephone number, his University residence address and telephone number, and his University mailing address. If any one of the addresses change during the quarter, he must immediately report, in writing, the new address to the registrar's office. The notice of change will be routed from the registrar's office to the Dean of Student Life.

The University will consider all correspondence mailed to a student at the address currently on file to have been received unless it is returned to the sender.

CLASSIFICATION OF STUDENTS

Freshman—1-29 semester hours
 Sophomore—30-59 semester hours
 Junior—60-91 semester hours
 Senior—92 semester hours—Graduation

DEFINITION OF STUDENTS

A Regular Student is one who has satisfied the entrance requirements and is qualified to pursue a curriculum leading to a degree and who is pursuing one of the prescribed curricula of the University. (See "A High School Graduate" in the "Admissions" section of this bulletin and "A Transfer Student" listed in this section for additional information on admission to regular student status.)

A Full-Time Undergraduate Student is one taking at least 8 semester hours a quarter.

A Part-Time Undergraduate Student is one taking less than 8 semester hours a quarter.

A Special Student (1) has not met Tech's entrance requirements for enrollment in a degree curriculum but is a mature person and has applied to take selected courses or (2) has met the University's entrance requirements but only wishes to take certain courses rather than pursue a formal curriculum. A special student must have the approval of the Dean of the College in which he wishes to register.

A Visiting Student is one who has not been regularly admitted to the University and is not approved to pursue a curriculum. This admission is for a particular program. No transcripts are required for this admission. Transferable credit will be awarded. If at a future date the student wishes to regularly enroll at the University, he must follow regular admission procedures.

A Transfer Student is one who has previously enrolled at another college or university and is presently pursuing a degree at Louisiana Tech University. Transfer students will not be admitted to the University if they are under scholastic or disciplinary suspension from another institution of higher learning. No individual transfer student will be considered for admission until such interval has elapsed that had he incurred his suspension at Tech he would become eligible. No transfer student will be admitted to the University unless his academic record meets the standards required of a student of the same classification at Tech.

All institutions under the Louisiana State Board of Education are required to issue transcripts for a student on scholastic probation or suspension. These transcripts are to show the effective dates of such probation or suspension. Thus Louisiana Tech cannot admit a transfer student from another college or university under control of the Louisiana State Board unless a transcript is presented which satisfies the Board's regulation as specified in this paragraph.

A transfer from a non-accredited institution will not be allowed credit toward graduation on any course which he has passed with the lowest passing grade, "D" or its equivalent. The grades, however, will be entered and counted in the computation of the earned average of "C" required for graduation from the University.

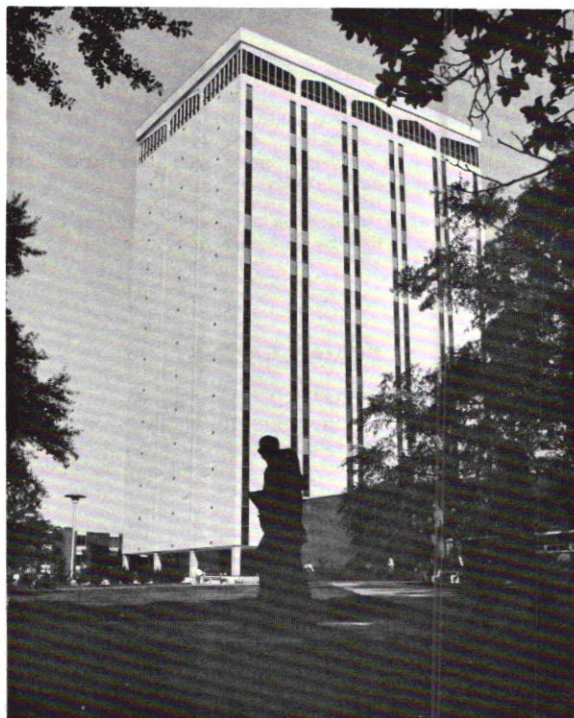
The maximum hours transferable from a junior college are 68. No credit from a junior college will be accepted toward a degree after the student has attained junior standing.

A Post-Baccalaureate Student holds at least one bachelor's degree but has not been admitted to the Graduate School and is not pursuing any prescribed curriculum. A post-baccalaureate student may not take courses for graduate credit and any course he takes to make up undergraduate deficiencies cannot be later transferred for graduate credit. (A student who holds a bachelor's degree and is pursuing a curriculum leading to another bachelor's degree is an undergraduate regular student and is classified as a senior.)

A Graduate Student holds at least a bachelor's degree from an accredited institution, has gained admission to the Graduate School, and is pursuing a prescribed graduate curriculum.

SEMESTER HOUR LOAD

A NORMAL STUDENT LOAD is that amount of course work required by the curriculum in which the student is registered. A graduating senior or a student having a "B" average (3.0) overall (and for the preceding quarter) may be permitted to carry a maximum of 14 hours during a quarter. Correspondence work pursued during these periods will be considered as a part of this load. In all cases where a student wishes to schedule in excess of 12 hours during a quarter or when a student wishes to pursue a course by correspondence, he must receive the written approval of his academic dean. Courses pursued in excess of these



limits will be invalidated upon discovery. Drive-in students and those students engaged in part-time employment should schedule proportionately fewer hours. As for **minimum load**, full-time students must be registered for 8 or more hours. Exception: a graduating senior may carry only the courses required for his graduation at the end of the quarter.

CLASS ATTENDANCE

Louisiana Tech has adopted CLASS ATTENDANCE procedures in consonance with the policy of the State Board of Education. This policy is as follows: (Effective Summer, 1970, applies to freshmen and sophomores.)

(1) Class attendance is regarded as an obligation as well as a privilege, and all students are expected to attend regularly and punctually all classes in which they are enrolled. Failure to do so may jeopardize a student's scholastic standing.

(2) When, in a given course, a freshman or sophomore receives a total of **three** unexcused absences, in the judgment of the faculty member, the student's academic dean will be notified that the student will receive a grade of "F" in the course. (An "Attendance Action Report" form is available for notifying the student's academic dean.)

(3) Each instructor is requested to check the roll at each class meeting and is requested to keep a permanent attendance record for each class.

(4) A student shall submit excuses for class absences to each teacher within three days after the student returns to his classes. Class absences, except when a student is away on official University business, may or may not be excused at the discretion of the teacher. Absences for official University business will be excused when the student presents a confirmation signed by the faculty member responsible for the University trip or business. The signature or initials of the faculty member on the excuse signifies his acceptance of that

excuse; the excuse is to be retained by the student as his record.

The only excuses other than official college business that will be accepted, and these at the discretion of the instructor, are those signed by doctors, nurses of the infirmary, and parents. Whenever an absence is excused, the student will be permitted to complete the work missed without penalty.

(5) Tardiness is treated as an absence unless an excuse is accepted by the teacher at the close of the period.

EXAMINATIONS

The term "EXAMINATION" is intended to include all examinations, regular and special, taken while the student is studying at Louisiana Tech. Any student who violates any of the regulations listed below may be denied credit by the University.

(1) Special examinations, including postponed examinations, must be taken within the first four weeks of the following quarter. If he does not re-enroll the following quarter, he still must take the examination within the first four weeks of the following quarter. If the student does not take the examination during the period specified above, he will receive automatically the grade of "F" in the course.

(2) A candidate for graduation who fails to pass the final examination in only one course in his last quarter's work may be permitted to take a deficiency examination in this course. If he fails the deficiency examination, he must repeat the course.

SYSTEM OF GRADING

The University's SYSTEM OF GRADING is traditional: An "A" is given for the highest degree of excellence that is reasonable to expect of students of exceptional ability and application. A "B" is superior. A "C" is average. A "D" is given for a quality of work that is considered the minimum for receiving credit for the course.

Some other grades given by the University need more explanation. An "F" is a failure and the work must be repeated to receive credit. The grade "I" plus the average letter grade on all the work completed is used to denote failure to complete assigned class work because of conditions beyond the student's control. If the grade "I" has not been removed by the end of the fourth week of the following quarter, a grade of "F" will be recorded, except on graduate research or thesis courses numbered 551, 590, and Education 580. A student may be placed on probation, continued on probation, or removed from probation at the time the "I" grade is cleared.

The "W" grade is given when a student withdraws from a class or resigns after the final date for registration has passed and before the end of the first six weeks of a quarter. The "W" grade is not included in computing the student's average. However, if a student resigns from school after the first six weeks, his instructor will submit grades of "W" plus the student's average letter grade at the time of withdrawal, except if the student resigns within two weeks of the end of classes he will be given an "F." These grades ("W" plus average) will be recorded on the student's permanent record but will be included in the computation of the average only when the student is being examined for probation or suspension. A student who withdraws from a class after the first six weeks of a quarter will receive an "F" in the course.

Grade reports are sent, by the Registrar, to the student at his home address at the end of each quarter.

Quality points indicate the quality of a student's work. An "A" receives four quality points per semester hour; a "B" receives three quality points per semester hour; a "C" receives two quality points per semester hour; a "D" receives one quality point per semester hour. An "F" receives none. A student, wishing to increase his quality points, may with the consent of the head of his department, repeat a course in which he has a passing grade. (See "Graduation Requirements" and "Scholastic Standards" for an explanation of the method by which quality points are used in determining averages for graduation and for probation and suspension.) The scholastic rating of a student (or of any group of students) is determined by the number of hours of academic work for which the student or group was registered.

PASS-FAIL OPTION

Courses outside of a student's curriculum may be taken for credit on "PASS-FAIL OPTION" basis at the rate of one course per quarter if a student has 30 semester hours and an overall 2.0 average on hours attempted. A grade of "S" will be given to indicate requirements met or exceeded for the course, and this grade will not be considered in computing a grade-point average, but will appear on a student's permanent record. A mark of "F" will be entered for failure and will be counted in hours attempted in computing grade-point average. Consult with adviser for full information.

ACADEMIC ACHIEVEMENT

HONOR FOR ACADEMIC ACHIEVEMENT of an undergraduate student shall be recognized by the University. The student is honored at graduation by a suitable inscription on his diploma and by recognition by his Dean. The following conditions determine such recognition: (A) An average on all hours attempted of 3.30 for cum laude, 3.55 for magna cum laude, and 3.80 for summa cum laude; (B) He must have earned at Louisiana Tech University a total of 30 semester hours.

The PRESIDENT'S HONOR LIST was inaugurated effective with the Fall Quarter, 1968, with the requirements for membership set at a grade point of 3.8, on a minimum of ten hours' work completed and no grade lower than a "C."

The DEAN'S HONOR LISTS are prepared at the end of each quarter. Students whose names are on the lists must be regularly enrolled undergraduates with an average of at least 3.5 with a minimum of ten hours completed and with no grade of "F." The Dean of each College determines the students who will be honored on these lists.

TRANSCRIPT

A TRANSCRIPT of work completed by a student at Tech will be furnished within three days following a request for this record, provided the student is not indebted to any department of the University. For each transcript, a fee of \$1.00 is charged. No transcripts are issued during the first ten days of any quarter.

SCHOLASTIC STANDARDS

SCHOLASTIC PROBATION, SUSPENSION, AND READMISSION are determined by the following regulations:

(1) A full- or part-time student who does not make a "D" average (1.0) on all hours attempted during a quarter will be dismissed for one quarter except a freshman student, who during his first two quarters will be placed on probation.

(2) A full- or part-time student who makes an average ranging from 1.0 to 1.5 on all hours attempted during a quarter will be placed on probation.

(3) A student on probation will be given one quarter to make a "C" average (2.0) on all hours attempted during that quarter which will remove him from probation; if he does not make a 2.0 average, he will be dismissed for one quarter.

(4) After the lapse of one quarter, a student may re-enter the University on probation, but he must make a "C" average (2.0) on all hours attempted during the quarter or he will be dismissed again.

(5) A student who resigns after six weeks of a quarter will receive at the time of withdrawal grades of "W" and the grade he was making at the time of withdrawal. These grades will be used to compute his academic status.

(6) A student dismissed (from Louisiana Tech University) at the end of the spring quarter may attend the summer quarter, but he must remain out during the fall quarter. Grades earned during a summer quarter (at Louisiana Tech University) do not change the probational or dismissal status of a student.

(7) A student, after having been dismissed the fourth time, may be allowed to appeal his case for readmittance for one more and final time, provided there has been a lapse of a reasonable period of time since the fourth dismissal.

(8) A student under suspension for scholastic reasons may not obtain credit toward a degree on credits earned at another institution during the period when he is ineligible to register in an institution under the jurisdiction of the State Board of Education.

READMISSION AFTER SUSPENSION is permissible under the following circumstances:

(A) Any student suspended for scholastic deficiencies may not re-enroll until the expiration of one quarter. When he is readmitted after suspension, he will be placed on probation and required to meet academic standards required of all probationary students. If a student has been suspended for scholastic deficiencies the third time and fails to earn a "C" average on all work attempted during a quarter following his readmission, he will be temporarily removed from the rolls of any institution under the jurisdiction of the State Board of Education until the lapse of a reasonable period of time.

(B) A student under suspension for scholastic reasons will be on probation when he returns to the University.

APPEAL of decisions concerning suspension may be made to the student's respective academic dean.

ACADEMIC MISCONDUCT at the University is determined by the faculty member under whom such misconduct occurs. The penalty for cheating and other forms of misconduct is also determined by the faculty member. This penalty may be an "F" in the course, but lesser penalties may be given at the discretion of the faculty member.

WITHDRAWALS

Any student who wishes TO WITHDRAW FROM THE UNIVERSITY for any reason must make arrangements with the registrar and the academic and personnel deans prior to the withdrawal. A grade of "F" for each course will be entered on the record of any student who leaves without proper arrangements. A student living in the dormitories or housing for married students who leaves without making arrangements for withdrawal will forfeit the unused portion of any payment or deposit made to the University.

GRADUATION REQUIREMENTS

GRADUATION REQUIREMENTS at the University are traditional, but the student should be thoroughly familiar with the following regulations if he is to become a candidate for a degree:

1. The candidate must complete one of the curricula of the six colleges.

2. He must make a "C" average on hours earned. A student who is short on an hours earned basis of more than nine quality points of a "C" average will not be allowed to register for graduation. A transfer student must also make a "C" average on all hours earned at the University.

3. If he is a transfer student, he must not have less than 36 weeks residence at Louisiana Tech, during which he has earned at least 30 semester hours and 60 quality points.

4. He must spend his senior year in residence. Exception: a student who has fulfilled the minimum residence requirements may be permitted to earn nine of the last 36 semester hours out of residence.

5. He must report his candidacy to his Dean and to the Registrar within the first four weeks of the quarter in which he expects to graduate.

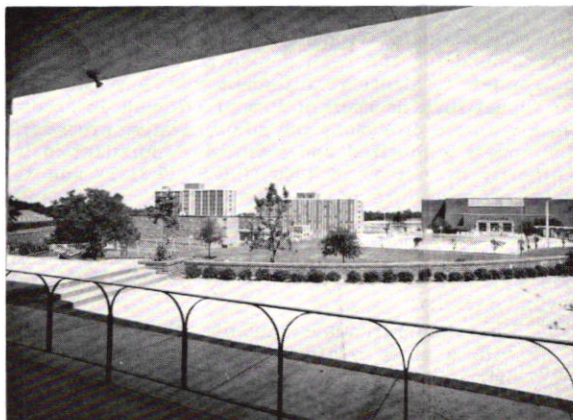
6. He must have completed three-fourths of the hours required for graduation in residence. Louisiana Tech does not permit a student to apply for more than six hours of correspondence study toward the pursuit of a degree.

7. He must be present for commencement. If a candidate absents himself from commencement without the approval of the President of the University, he will be assessed an absentee fee of \$5.00.

8. He must be registered at Louisiana Tech University.

9. He is required to register in the Placement Office during the quarter preceding the one in which he expects to graduate.

10. If he wishes to earn a second undergraduate degree at the University, he must take at least 30 semester hours in addition to the number required for the first degree.



DIVISION OF STUDENT AFFAIRS

The Division of Student Affairs is organized for the purpose of assisting students to determine self direction and personal goals, and to encourage development of skills for the satisfactory attainment of those goals. For this purpose the services of the division are many and varied with emphasis on the individual student.

Thus, any prospective Tech student should become familiar with the services of the Division of Student Affairs: housing for all students; counseling center; placement and alumni services; intramural program; commuter's lounge; vehicle registration; student conduct; student activities and student organizations.

HOUSING

The Louisiana State Board of Education has adopted resolutions affecting the housing policy at Louisiana Tech University and all of the other colleges and universities under its jurisdiction. In compliance with the State Board resolutions, Louisiana Tech has adopted the following on-campus residency requirement: **ALL UNMARRIED FULL-TIME UNDERGRADUATE STUDENTS, REGARDLESS OF AGE OR WHETHER OR NOT EMANCIPATED, EXCEPT THOSE LIVING WITH PARENTS, ARE REQUIRED TO LIVE IN ON-CAMPUS RESIDENCE HALLS AS LONG AS SPACE IS AVAILABLE.**

The resolutions further define the on-campus residency requirement to include a framework within which the colleges and universities may grant exemptions to the general regulation according to the unique academic character, academic traditions, objectives and special qualities of each institution, keeping in mind the total objectives of higher education in the State of Louisiana. The philosophy of higher education in the State of Louisiana includes, in addition to the basic and primary educational pursuits, additional enrichment afforded by student life facilities and programs, all of which form an integral part of the total educational experience of the student.

In order to be fair and consistent in granting exemptions from the on-campus residency requirement, **ALL UNMARRIED FULL-TIME UNDERGRADUATE STUDENTS, REGARDLESS OF AGE OR WHETHER OR NOT EMANCIPATED, EXCEPT THOSE LIVING WITH PARENTS WILL BE REQUIRED TO MAKE APPLICATION IF THEY WISH TO BE CONSIDERED FOR AN EXEMPTION.**

Applications for exemption to the on-campus residence requirement must be made in writing to the Vice President for Student Affairs no later than two (2) weeks prior to the opening of the quarter. **The student will be notified in writing by the Vice President for Student Affairs of the decision rendered by the Committee.** (Forms are available in the office of the Vice President for Student Affairs.) Any student who has applied for and been denied an exemption to the on-campus residence requirement shall have the right to appeal such decision of Proper Officials in accordance with the provisions and administrative procedures for appeal authorized and established pursuant to the authority of Act 59 of 1969 (L.R.S. 17:3101) and the rules of procedure of the State Board supplemental thereto.

Exemptions to the requirement of on-campus residence hall living may be made according to the following priority:

1. First undergraduate students who wish to live with a close relative, defined as grandparents, married brother or married sister.
2. Second, undergraduate students who wish to live in social fraternity houses.

3. Third, Seniors.
4. Fourth, Juniors
5. Fifth, Sophomores.
6. Sixth, Freshmen.

Within each of the foregoing classifications, the following additional rules of priority shall be applied:

1. First, students who have resided in off-campus housing the longest period of time.
2. Second, date application was received.

In addition, an exemption may be applied for in a hardship case or by older student.

DEFINITIONS: The following words and phrases, in the absence of clearer indications, will be given the following interpretations:

"Living with parent" means any place of abode owned, rented or leased and OCCUPIED by the parent.

"Living with close relative" means any place of abode owned, rented or leased and OCCUPIED by the grandparent, married brother or married sister.

"Living in social fraternity houses" means living in any house owned, rented or leased by a University chartered social fraternity.

"Senior" means an undergraduate student who has earned a minimum of 92 semester hours and 180 quality points.

"Junior" means an undergraduate student who has earned a minimum of 60 semester hours and 120 quality points.

"Sophomore" means an undergraduate student who has earned a minimum of 30 semester hours and 60 quality points.

"Freshmen" means an undergraduate student who has not yet earned 30 semester hours and 60 quality points of college credit.

"Students who have resided in off-campus housing for the longest period of time" means the student who has lived off campus for the most quarters, other than with parents.

"Date application was received" means recording the date the applications for exemption are received in the office of the Vice President for Student Affairs. (Letters received on the same date will place individuals on the list in an alphabetical order.)

"Hardship case" means a person who will suffer significant hardship because of valid financial, medical, or other good and sound reasons. (Special diets are available in on-campus dining facilities.)

"Older student" means a person where a determination of fact that such individual is, by virtue of age and experience, incompatible with the residence hall age group.

Students found violating the policy as stated in the above paragraphs under the heading "HOUSING," will be required to move into the residence hall system and pay full room rent and associated fees for the quarter in which the violation occurred. Should the student refuse to move into the residence hall and pay the rent, he will be referred to the Social Standards Committee.

RESIDENCE HALL RESERVATIONS

Room reservation contracts may be secured at the office of the Director of Housing. Applications for residence hall reservations will be accepted beginning September 15 of each year for the following Winter, Spring, Summer and Fall quarters. Reservation contracts will not be confirmed until the following have been submitted to the appropriate office of the University: (1) Completed residence hall reservation contract with picture of applicant attached, and (2) a \$25.00 reservation deposit. (All residence hall students are required to pay for room, meals, and infirmary services.)

RESIDENCE HALL ACCOMMODATIONS

Specific room assignments for freshmen are made according to the date on which the Residence Hall Room Contracts are received. Upperclass students are assigned according to hours earned. It should be understood that such accommodations are made on a room-meals plan, and all students living in the residence halls must pay for these two services.



TERMS UNDER WHICH RESIDENCE HALL ROOMS ARE CONTRACTED

The University reserves all rights in connection with room assignments or termination of their occupancy. Occupants of residence hall rooms are held liable for damage to the University property within the room, the building, and all other University property they use or to which they have access.

Refrigerators may be rented from Louisiana Tech at a rate of \$10.00 per quarter. Privately owned refrigerators may not be used in the residence halls.

The reservation deposit will be refunded upon request not later than 30 days before the beginning date (date specified in catalog) of the quarter for which reservation was made. Failure to cancel a reservation before the 30-day period or failure to claim the room before close of registration will cause forfeiture of reservation deposit.

The student who does not plan to return to the residence hall the next quarter must claim the deposit by the close of the present quarter. If the student is leaving the residence hall and he wishes to leave his deposit on file in order to return to the residence hall at a later date, he must fill out a reservation card in the Housing Office by the close of the present quarter, stating the date he wishes to return.

The student who is suspended from the University for academic reasons will be given 30 days from the beginning of the quarter for which he was suspended to request a refund of his deposit or fill out a new reservation card in the Housing Office stating the date he

plans to return. If he does neither, his deposit will be forfeited.

The student who leaves the residence hall system, under authorization of the University and in compliance with University rules and regulations, and remains in school will forfeit the unexpended portion of room payments (rent) for the quarter. The \$25.00 reservation deposit, less any charges for damages, will be refunded upon the proper conclusion of the use of the room and completion of an official check-out from the residence hall system. "Official check-out" and "conclusion of the use of a room" is defined as having moved all personal effects out of the room and completely processed a move-out form through the Comptroller's Office. A student is considered living in the residence hall room until he has officially checked out of the residence hall system, concluded the use of the room, and completed the processing of the move-out form with the Comptroller's Office. A student will continue to pay for meals until he has completed all official check-out procedures. The check-out must occur within five (5) days after leaving the residence hall or by the close of the pay period involved, whichever comes first. If he wishes to continue using the food service, he may do so. To do so, he must notify the cashier in the Comptroller's Office of this decision when processing the move-out form. If he does not wish to continue using the food service he will forfeit the unexpended portion of payment for the pay period involved.

The student whose relationship with Louisiana Tech is severed (for whatever reason) during a quarter or term of enrollment will forfeit his reservation deposit and pay for (1) the services rendered him in the dormitory and food service on a daily basis and (2) any charges placed against his matriculation such as library fines, breakage, etc. The balance of funds prepaid by the student for these services will be refunded.

CHANGE OF ROOM RENT RATES MAY OCCUR WITHOUT NOTICE

MARRIED STUDENT HOUSING

The University owns 42 apartments located on the campus of the College of Life Sciences, approximately a mile from the main campus off U.S. Highway 80 West.

Letters of application for University owned apartments (married students only) are handled in the University Housing Office. Assignments are made according to the date on which applications are received. Students assigned University owned apartments must make a deposit of \$25.00. The \$25.00 deposit is not refundable until the student officially moves out of the apartment. Rent is as follows: Ninety dollars (\$90.00) per month payable in advance, plus cost of electrical power; the first rent payment being due the date the key to the apartment is issued. Payments thereafter are due on the first of each calendar month. Students are expected to accept the responsibility of making payments promptly; therefore, the school will not send a statement to the student of a payment due. (See heading "Late or Delinquent Payments" in "Expense" section of this bulletin.) Failure to pay in advance subjects the student to these penalties: Dismissal from the apartment, the University, or both. Non-students are not eligible to live in University owned apartments. Except for a heater, these apartments are unfurnished.

CHANGE OF APARTMENT RENT MAY OCCUR WITHOUT NOTICE

FIRST AID CENTER

A First Aid Center is maintained by the University for use by all students. A Registered Nurse is on duty from 8:00 a.m. to 6:00 p.m., Monday through Friday, during official school sessions. First aid services, within the limits of personnel and supplies which can be maintained in the Center, are provided to students at no charge other than the fee during registration. Medical expenses for services incurred outside the Center are the responsibility of the student.

ACCIDENT AND HOSPITALIZATION INSURANCE

Accident and hospitalization insurance coverage is provided to full-time students through the Student Government Association by a self-assessment paid at the time of registration.

COUNSELING CENTER SERVICES

The Counseling Center exists as a personnel service to the students of the University. The Center believes in the worth, dignity, and potentiality of each individual and strives to help young people become aware of these qualities within themselves. The Center endeavors to aid students in gaining more of the insight, learnings, and skills needed to cope intelligently and effectively with each phase of their lives. Counselors assist students in three major areas: PERSONAL COUNSELING, EDUCATIONAL COUNSELING, AND CAREER COUNSELING. These areas include such concerns as personal emotional adjustments, health, dating, marriage, home relationships, social relations, adjustments to college work, study skills, and plans for the future. Counseling is done in an atmosphere in which students may discuss problems freely and confidentially. The Center is located in 324 Keeny Hall.

PLACEMENT AND ALUMNI SERVICES

Placement and Alumni Services are provided to supplement and coordinate the programs of the various academic deans. Seniors provide data on their qualifications and occupational preferences so that they may be given help in securing the employment for which they are best equipped. Academic achievements and evaluations provided by faculty references are added to a confidential, cumulative file. The Placement Office also arranges interviews and acquaints students with various employment opportunities.

VEHICLE REGISTRATION

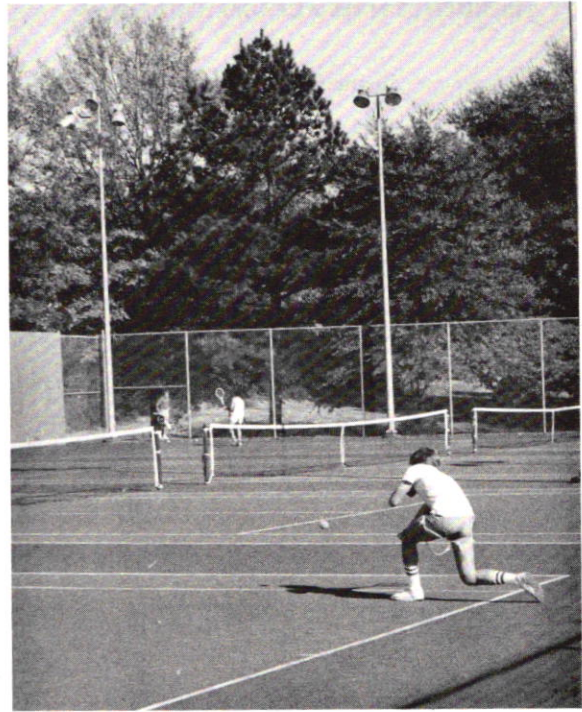
The University requires all faculty, staff, students and employees who are in any way connected with the school to register their vehicle or vehicles regardless of ownership and to secure and properly display a parking permit. All vehicles must be registered by the time classes begin for any quarter. Also, vehicles that are purchased or acquired during the quarter must be registered before parking on the campus.

Vehicles may be registered and decals obtained in the Security Office, located in Keeny Hall, during regular office hours.

Each registrant will need to present a valid driver's license and vehicle registration certificate. (Additional information may be found in the pamphlet "Louisiana Tech Vehicle Regulations.")

STUDENT CONDUCT

Generally speaking, students at Louisiana Tech are expected to conduct themselves in a manner that will not bring discredit but honor to themselves and the institution. Minimal standards of conduct are set out in the pamphlet entitled, "Standards of Student Conduct." Each student is required to become acquainted with the contents of this pamphlet.



A student under suspension or expulsion for non-academic reasons may not obtain credit toward a degree on credits earned at another institution during the period of ineligibility to register at Louisiana Tech.

STUDENT ACTIVITIES AND ORGANIZATIONS

Student activities and organizations are so numerous and diverse that it is impossible to list them here. University students are encouraged to find time for extra-curricular activities because they encompass a development toward a balanced maturity. The faculty advises and assists in these activities.

A Handbook for Student Organizations is provided each organization. Copies may be obtained in the office of the Dean of Student Development.



STUDENT FINANCIAL AID

Louisiana Tech provides equal educational opportunities for all students and this policy of equal opportunity is fully implemented in all programs of financial aid available to assist students to obtain an education at Louisiana Tech.

An extensive Financial Aid program encompassing employment, loans, grants, and scholarships is available to assist deserving students. Need, skills, and academic performance are carefully weighed to develop a "package" aid program for each individual.

Employment is available in a wide variety of forms to the student who is willing to work. Work in clerical capacities, maintenance, food service, laboratories, library, dormitories, and other areas provides educational and training opportunities as well as profitable remuneration. Pay rate are commensurate with the skill and experience required. Work is limited to avoid interference with academic pursuits. The University participates in the College Work Study Program designed to assist students with a need for financial assistance.

The student is advised to make inquiries at the Office of Student Financial Aid in person or by writing to the office at Tech Station, Ruston, Louisiana - 71270.

Loans of the following types are available to eligible students:

NATIONAL DIRECT STUDENT LOAN PROGRAM—These are loans of a long term nature, with a legal maximum that an undergraduate student may borrow up to a maximum of \$5,000 for his undergraduate career. A graduate student may borrow up to \$2,500 per academic year with an aggregate maximum for all years of \$10,000. A borrower has a nine-month "period of grace" after he leaves the University before repayment must begin.

GUARANTEED STUDENT LOAN PROGRAM—The State of Louisiana guarantees loans for full-time students who are Louisiana residents, and who meet certain academic qualifications. Loans are made up to \$1,500 for the academic year to undergraduate students, and up to \$2,000 per year to graduate students. After a student's application has been processed by the office of Student Financial Aid, the student then negotiates with a Louisiana bank, credit union or savings and loan association in his home town area. If the lender agrees to participate, the loan is guaranteed by LHEAC. Interest charges to the student and repayments begin after the student leaves school either upon graduation or for some other reason.

Students from states other than Louisiana should check with the same types of agencies and offices for information on the Guaranteed Loan Program available in their particular state. In some states this program will be available through a state agency similar to the Louisiana Higher Education Assistance Commission and in others it will be available through the Federally Insured Student Loan Program.

To apply, a student should contact the Financial Aid Office at Louisiana Tech for the Louisiana Higher Education Assistance Commission loan application form. Out-of-state students should contact the guarantee agency in their state or the lending institution from which they will seek the loan for the appropriate application which should then be submitted to the Financial Aid Office at Louisiana Tech.

Grants available include:

VOCATIONAL REHABILITATION GRANTS—Vocational Rehabilitation is a public service program for physically and mentally handicapped individuals. To be eligible, a person must have a permanent disability which constitutes a job handicap. The disability may be of varying degrees, it may affect only a part or parts of the applicant's body and it may have come

about at birth or at any time during the applicant's life. Students with disabilities are advised to contact the Department of Vocational Rehabilitation in their districts for a consideration of their cases.

BASIC EDUCATIONAL OPPORTUNITY GRANT—Authorized under the 1972 Higher Education Act, this program provides for grants to students of up to \$1,400 for each of a student's four undergraduate years. The grant cannot exceed one-half the costs of attending the institution of the student's choice or the difference between the amount a student and his family can contribute and the total allowable expenses of attending college, whichever is less. In those years when the amount of money made available by Congress is less than that needed to award maximum grants to all eligible students, a student will receive a percentage of his total grant. Applications are available through high school counselors and college financial aid offices.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT—This grant is a federal aid program that provides assistance for students with exceptional need. The grants range from \$200 to \$1,500 a year for a total of \$4,000 for a four year program of study and \$5,000 for a five year program. None may exceed 50 per cent of the college's estimate of the student's financial need nor may they exceed one-half the sum of the total amount of student financial aid made available through the institution to such student-whichever is the lesser. Grants are available to any student with need who is attending at least half-time and progressing normally toward a degree. They are not restricted to students who are expected to or who actually do maintain strong academic averages.

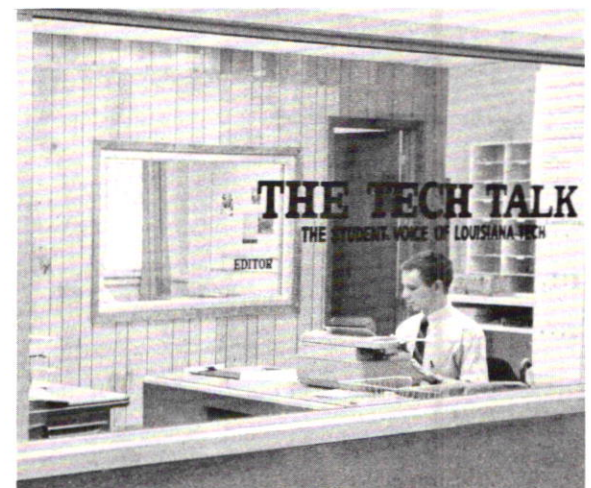
Scholarships are quite limited in number. They divide into categories:

(1) Academic Scholarships which are awarded on the basis of demonstrated ability—usually without regard to need. Typifying these are State Board of Education Academic Scholarships, Greater Tech Foundation Scholarships, T. H. Harris Scholarships, and Engineering Foundation Scholarships.

(2) Grant-in-aid and Service Awards. Frequently, these are awarded on the basis of special skills and require the student to render a service to the University. Included in this category are scholarships in athletics, music, band, and some academic department awards.

(3) The Air Force Reserve Officer's Training Corps program offers a number of competitive scholarships to both men and women participants. These include payment of all tuition and fees, a per quarter allowance for textbooks, and a \$100 per month tax free cash allowance.

VETERANS' ORPHANS SCHOLARSHIPS—Awarded to sons and daughters of deceased war veterans. Apply to the Department of Veterans' Affairs in your district.



EXPENSES

The printing of a catalog must begin well in advance of the date it will become available for distribution. Past experience has indicated that by the time the catalog is available for distribution fees may have changed. For this reason, the dollar costs are not included in the catalogs, but are available upon request. Please request a "Fee Schedule" from:

Admissions Office
Post Office Box 5226
Louisiana Tech Station
Ruston, LA 71270

Provided below are the current general regulations concerning fees, room and board. Any changes in these regulations can be determined by comparison with the "Fee Schedule" obtained from the Admissions Office.

FEE REFUND POLICY

FOR STUDENTS RESIGNING:

For those students who have registered and who completely resign prior to the close of offices on the first day of classes, there will be a refund of 90 percent of total fees.

For those students who have registered and who completely resign prior to the close of offices on the final date for late registration as indicated in the official University Calendar, there will be a refund of 75 percent of total fees.

For those students who are inducted into military service beyond their control prior to the mid-point of a term, there shall be a refund of 90 percent of total fees.

For a student who is deceased any time during a term of enrollment, there shall be a refund of 90 percent of total fees.

FOR STUDENTS DROPPING COURSES:

For those students who have registered and who drop a course(s) prior to the close of offices on the first day for schedule changes, there will be a refund of 100 percent of fees.

For those students who have registered and who drop a course(s) after the close of offices on the first day for schedule changes, there will be no refund.

RESIDENCE HALL

Residence hall space must be contracted on a quarterly basis payable at registration.

MEALS

Meal charges are established by the quarter but may be paid in two equal installments, the first due at registration and the second due on the Friday nearest the end of the fifth week of classes. (All residence hall students are required to pay for meals.) Students are expected to accept the responsibility of making payments promptly; therefore, the University will not send a statement to the student, parent or guardian of a payment due unless the payment is delinquent (see section on "LATE OR DELINQUENT PAYMENT").

Students leaving the residence hall system in compliance with regulations, but remaining in school, will not have to continue paying for meals if these services are discontinued at the end of a pay period. Students leaving the residence hall system before the end of a pay period will forfeit the unexpended portion of meals cost for that installment. (See Catalog for Residence Hall contract).

Students taking meals only who elect to discontinue payment for meals for the remainder of the a pay period and properly check out with the Director of Food Services and Comptroller, will not have to continue receiving meals, if they do so at the end of quarter.

NO INDIVIDUAL WILL BE PERMITTED TO USE THE MEAL TICKET OF ANOTHER STUDENT.

Meal tickets may be used either at Tolliver or Wilson Cafeteria. In addition, the meal ticket is good for a credit of \$.90 toward the noon meal at the Student Center Cafeteria and a special noon and evening meal at the Student Center Grill if used prior to 2 p.m. and 7 p.m. respectively. Those students utilizing the meal plan may choose the Sunday night meal in lieu of a Friday night meal if desired. Seconds will be allowed at Wilson Cafeteria only, but no carry-outs.

On occasion, official holidays other than those announced in the University Calendar of the official catalog will be designated. These special holidays will be announced by memorandum, posted notice, and notices in THE TECH TALK. The campus feeding facilities closing dates and times will be announced and published at the same time by the Director of Food Services.

GENERAL REGULATIONS

Each student will be required to have his identification card ready for presentation if requested to do so by the checkers in the dining hall and cashiers in the bookstore.

A student who is indebted to any department of the University will not receive a transcript to validate credit for academic work already done, nor will he be permitted to re-enroll until the indebtedness is cleared.

MEAL PAYMENT

Dates for payments for meals will be posted in each dormitory, dining hall, and in the cashiers' window in Keeny Hall. Students are expected to make these payments on or before the due dates.

LATE OR DELINQUENT PAYMENTS

The University does not send out bills at the time a payment is due. Handling financial arrangements is a part of each student's college experience, and he will be expected to make his own payments or other arrangements in person.

A late registration fee of \$10.00 will be assessed anyone who completes registration subsequent to the days set aside for registration.

The penalty for late payment of fees, assessments, second meal payments, etc., is \$1.00 per day for each calendar day with a maximum penalty of \$6.00. For second installment of meal payments, the penalty payment is to begin on the tenth calendar day of the period for which payment was due. For all other payments, the penalty is to begin on the tenth calendar day after notice has been mailed to the local address given by the student. If payment, plus penalty, is not made by the close of office hours six calendar days after the penalty period began, the student will be referred to the Vice President for Student Affairs.

RETURNED CHECKS

The penalty for a returned unpaid check is \$5.00. If redemption, plus penalty, is not made by the close of office hours twelve calendar days after notice was mailed, the student will be referred to the Vice President for Student Affairs. The University reserves the right to refuse to cash or accept checks from students who have had checks returned unpaid.

Auxiliary Programs and Facilities

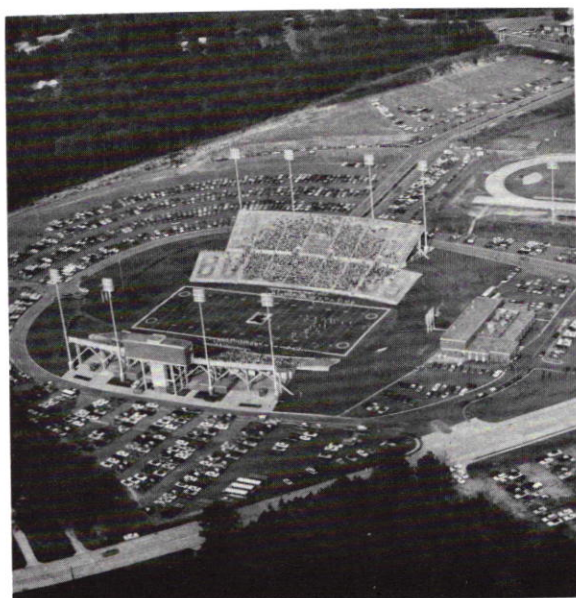
ATHLETICS

A member of the National Collegiate Athletic Association since 1951, the University is also a member of the Southland Conference which it joined at the beginning of the 1971-72 year. Tech competes in seven different sports including football, basketball, baseball, track, cross country, golf and tennis.

The University's first priority in athletics is to produce a well-rounded program with excellence in all areas.

Eligibility for intercollegiate competitors is determined by the rules and regulations established by the conference, the NCAA and by the state.

Tech is especially proud of its newly completed athletic complex which includes a 23,318-seat football stadium, 9-lane tartan track, 10 lighted tennis courts and a 2,500-seat baseball stadium.



BARKSDALE PROGRAM

Louisiana Tech has offered an on-base degree program at Barksdale Air Force Base since September, 1965. The program is designed for Air Force personnel whose military assignments make it impractical for them to earn college credit and complete a degree program in the traditional manner. On-base offices are maintained in the Base Education Center.

CONTINUING EDUCATION

Tech has for many years been active in sponsoring continuing education programs; these programs are offered in most fields of study. Year round, the institution attracts thousands of persons for events such as short courses, seminars, workshops, conferences, lectures, institutes, and other educational programs sponsored by each of the academic colleges.

The Continuing Education Center, located in the Wyly Tower of Learning, provides several classrooms, office space, a large auditorium, and modern audio visual equipment which are reserved especially for use in continuing education activities.

The College of Engineering offers graduate courses in the Shreveport area for the benefit of persons unable to attend courses on the main campus. Likewise, upon request, extension courses are offered by other academic colleges in various localities.

THE COOPERATIVE PROGRAM

The College of Engineering, in cooperation with certain industrial firms, provides for a program of alternate periods of work and university study for students in engineering. In addition to furnishing talent to industry, the cooperative program provides an outstanding method for integrating technical and practical industrial experience.

Cooperative arrangements are under development by the College of Home Economics to provide intern or work experience in community, school and hospital food services. Similarly, training programs have been developed for experience in metropolitan fashion merchandising.

The College of Life Sciences sponsors a cooperative work experience program with various agricultural businesses and agencies throughout the United States. Participating students are given the opportunity to apply the knowledge and skills they have acquired in college under practical world-of-work conditions.

INTER-INSTITUTIONAL COOPERATIVE PROGRAMS

Louisiana Tech University and Grambling University entered into a cooperative program, the Inter-Institutional Cooperative Program (ICP) effective the Fall of 1969. This program facilitates free undergraduate student exchange between the two institutions, making it possible for students to enroll for courses at both schools. Faculty exchange between the two institutions is also a part of the program.

Application for courses to be taken on the cooperating campuses must be made at the institution where admissions requirements have been met and degree programs are being pursued. Credits gained as a "visiting" student apply toward a degree at his home or matriculation school. The student's divisional dean or his authorized representative must approve the course or courses selected and the course load. A copy of the student's report card bearing the official seal will be furnished the home institution at reporting time by the visited institution.

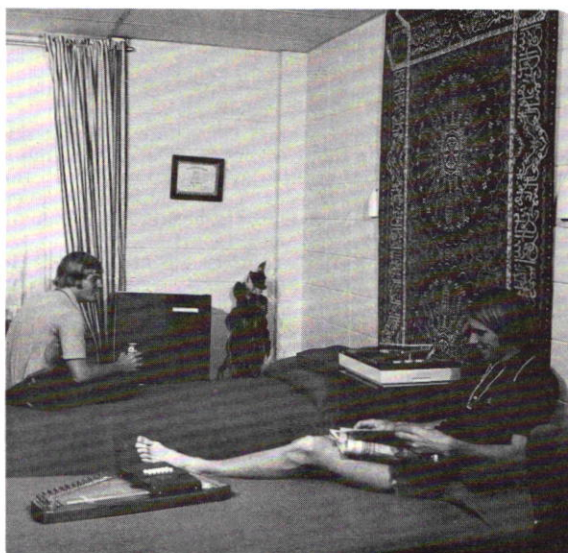
In 1971, Louisiana Tech University and Northwestern State University entered into a cooperative program whereby a student may complete at Louisiana Tech a portion of the course requirements for the Doctor of Education degree at Northwestern State University. This inter-institutional program is limited to the fields of elementary education and secondary education. For further information, contact the College of Education.

Effective October, 1971, Northwestern State University and Louisiana Tech University agreed to participate in an inter-institutional program for the Bachelor of Science Degree in Nursing. Students may enroll at Louisiana Tech University and follow the Northwestern State University program of studies prescribed for nursing majors. When the pre-requisites are complete, said students may transfer to Northwestern State University to complete the requirements for the baccalaureate degree in nursing. For further information, contact the Director of Division of Allied Health.

LOUISIANA TECH ASTRONOMY FACILITIES

The astronomy facilities of Louisiana Tech are used for classroom and laboratory instruction and also for instructional demonstrations to visiting school groups and interested public groups. The facilities at the present time include a Planetarium on the main campus and an Observatory at the Research Park located about eight miles west of the main campus.

The Planetarium seats 120 people under its 40-foot diameter dome. A modern Spitz A4-type instru-



ment projects the sun, moon, and planets as well as about 3,000 visible stars, giving a correct and realistic simulation of the celestial view. The apparent motion of the heavenly bodies is properly synchronized mechanically while speed and intensity are controlled by modern solid state electrical circuitry.

Through the efforts of the Astronomy Committee, a modern astronomical observatory facility has been erected in a remote area eight miles west of the main campus at the University's Research Park. The facility houses a twelve and one-half inch, equatorially mounted cross-axis reflecting telescope designed to permit visual observation of all points in the celestial hemisphere from a conveniently located stationary eyepiece. The instrument is adaptable to extended time photography of deep sky objects and can be arranged for spectrographic studies by the reflection of the coude beam to the floor level through the hollow equatorial axis.

These facilities have extended the effectiveness of instruction in the astronomy courses and are expected to aid greatly in the pursuit of space age and related areas of science.

LOUISIANA TECH COMPUTING CENTER

The Louisiana Tech Computing Center, an entity organizationally separate from the academic and administrative departments, provides computing facilities and services to the entire campus community.

Since its inception in 1957, the Computing Center has grown and kept pace with the advances in Computer Science and electronic data processing. In maintaining the capability of the Center to serve the needs of the University, every effort has been made to keep current with the latest computer equipment and techniques. The principal computer system in the Center is an IBM System 370, Model 145 with 256,000 bytes of core storage, six magnetic disks, two magnetic tapes, high speed printer, and a reader/punch. This computer is operated 24 hours a day 7 days a week on a closed-shop basis to process programs for undergraduate and graduate instruction, graduate student and faculty research, and all University administrative data processing. Also housed in the Center is a fully

augmented IBM 1620 computer system which is available to students and faculty 24 hours a day 7 days a week on a hands-on basis.

The Computing Center maintains a highly qualified and capable staff whose primary function is to be of assistance and service to the Center users. Systems and Programming Specialists and Research Analysts teach courses in programming languages and are available to consult with students and faculty in their needs for computer services and assistance. These efforts are coordinated with the various curricula on campus in which computer programming is taught and in advanced courses which use computers in the solution of problems and in research.

LOUISIANA TECH CONCERT ASSOCIATION

This unique organization provides a program of well known speakers, lecturers, writers and entertainers, as well as prominent ballet, music and drama groups.

LOUISIANA TECH NUCLEAR CENTER

The Nuclear Center is a centralized facility to promote and control the use of radiation and radioactive material on the Louisiana Tech campus. Its laboratories, equipment and supplies are available to all departments to conduct classes or research projects. In addition, the Nuclear Center staff is available for consultation on the design of experiments involving radioactive material or radiation produced by machines. At present, regularly scheduled courses are available in chemistry, physics, medical technology, zoology, and chemical engineering.

Operation of the Center is in accordance with licenses issued to Louisiana Tech by the Louisiana Board of Nuclear Energy, Division of Radiation Control. The Nuclear Center encompasses a radioisotopes laboratory with student and research counting stations, a radioisotope equipment and storage room, office space, a radiochemical laboratory equipped to handle radioisotopes in many forms, a subcritical nuclear reactor designed and built by the Curtiss-Wright Cor-

poration, a gamma irradiation facility, and an electron microscope facility. The gamma irradiation facility contains over 15,000 curies of Cobalt 60 and is capable of supporting numerous projects requiring high doses of radiation. A loan of 5000 pounds of natural uranium metal from the Atomic Energy Commission completed the subcritical reactor facility.

In the past, the Nuclear Center has been utilized for special instruction to students attending summer institutes sponsored by National Science Foundation, for research work, for radioactive fallout work, and for regularly scheduled classes. Equipment grants from the Atomic Energy Commission have provided additional specialized instrumentation and equipment for use by the Zoology Department, the Nuclear Center, and the Department of Chemistry. The Louisiana Tech Nuclear Center is fulfilling its obligation to provide nuclear training to the students of this area, and in addition, is aiding in Civil Defense planning and radioactive fallout contamination reporting. Contract research and special institutes are included in the responsibilities of the Nuclear Center.

LOUISIANA TECH SPEECH REHABILITATION CENTER

The Louisiana Tech Speech Rehabilitation Center occupies two floors of Robinson Hall near the center of the campus. This modern facility affords diagnostic, consultative and remedial services for Tech students and for children of Northeast Louisiana with speech or hearing difficulties. The testing and consultative service is provided by clinically competent faculty and remedial aid is given by student clinicians under supervision of clinic staff.

LOUISIANA TECH SUMMARY TAPE PROCESSING CENTER

The Center, which is housed in the Research Division of the College of Administration and Business, maintains and processes data from the 1970 Censuses of Population and Housing and personal income data furnished by the U. S. Bureau of Economic Analysis. Computer programs and projects have been developed to generate demographic and economic analyses for the State, regions in the State, and for selected areas of the Southeast. Short reports, articles, and research projects are prepared, both on an in-house basis and on a contractual basis for local, state, and regional organizations.

LOUISIANA TECH WATER RESOURCES CENTER

The Louisiana Tech Water Resources Center was established on June 12, 1968. The establishment of the Center disbanded the Louisiana Tech Water Resources Technical Advisory Committee which had operated since December 12, 1963. The purpose of the Water Resources Center is to:

1. Provide an interdisciplinary study of developments in the broad area of water resources and to interpret these developments to the best advantage of Louisiana Tech and the state and region as a whole;
2. Advise the administration of wise moves the University should make in its desired participation in these activities;
3. Encourage and promote the development of research programs and laboratories, and to formulate and recommend policy matters in the area of water research;
4. Identify research problems, encourage interested faculty members to engage in water resources research, and to coordinate an interdisciplinary approach to the solution of water research problems;
5. Provide liaison between the University, governmental agencies, municipalities, industry, and the public;



6. Expand the areas of continuing education and student involvement on the undergraduate and graduate levels.

To carry out the purposes listed above, the organization of the Water Resources Center consists of a Director, Executive Advisory Committee, and a Technical Advisory Committee. The Director is Chairman of the Committees.

The Director is responsible for coordinating and promoting the activities of the university in the area of water resources; encouraging faculty members, through the Executive Advisory Committee, to participate in water resources research, seminars, and continuing education programs; and encouraging student participation in water resources activities.

The Executive Advisory Committee consists of the Research Directors from the Colleges of Administration and Business, Arts and Sciences, Engineering, and Life Sciences. The Executive Advisory Committee is responsible for advising the Director on the size and direction of the water resources program.

The Technical Advisory Committee consists of faculty members interested in water resources. The Technical Advisory Committee informs the Director of and prepares proposals in areas of research that it deems of interest; assists in stimulating student interest in water resources through courses, research projects, and continuing education programs; and disseminates water resources information in general.

NORTH LOUISIANA DAIRY TESTING CENTER

Louisiana Tech has made available space and equipment in the Dairy Processing Plant to receive samples of milk from dairy cows in the North Louisiana area. Detailed accounting information is collected and computerized records are made available to the dairy farmers within the area.

PRESCOTT MEMORIAL LIBRARY

The Prescott Memorial Library is a modern ten-story structure. Features of the library include the Hardtner Memorial Forestry Library, the microprint library and the Electronic Program Learning Center.

Prescott Library houses a collection of more than one million items, including books, documents, microprints, pamphlets and other organized collections. The purposes of the library are to support in depth the curricular offerings of the University and to supply recreational and inspirational reading matter for the University faculty, staff and student body. Toward these ends the library is administered by a highly competent faculty and staff.

In 1964 the Documents Library of Louisiana Tech was designated a Regional Depository for United States government publications, and as such the library receives and retains at least one copy of all government publications made available to depositories. It is also a complete depository library for publications of the State of Louisiana.

Tech's library participates in numerous cooperative programs with both public and academic libraries. It is a member of the Trail Blazer Library System of Northeast Louisiana which is a cooperative program of 13 parish libraries and three academic libraries. This system makes the combined collections of the 16 libraries, as well as the State Library, rapidly available to anyone holding a Trail Blazer Library System card. The library also subscribes to the American Library Association's interlibrary loan code, a copy of which is kept on file at the interlibrary loan desk.

Tech is linked via TWX and Telex to all major libraries and businesses in the United States and overseas that also have TWX or Telex equipment. The library participates in the nationally significant Louisiana Numerical Register (LNR) which is a catalog

of holdings of all major libraries in Louisiana by Library of Congress card number. Other cooperative services are available and may be identified through the Director of Libraries' office.

THE RESEARCH DIVISIONS

The participation of both faculty and students in academic and contract research is strongly encouraged at Louisiana Tech University. Toward this end formally organized divisions of research associated with each college have been charged with the responsibility of coordinating and expediting research activities in their respective colleges. At the institutional level, the Director of Sponsored Programs is charged with the responsibility of coordinating research activities. Numerous graduate students perform research under the direction of members of the graduate faculty. Contract research for local, state, and national governments, industries, and foundations is effected regularly by faculty and staff, graduate students, and undergraduate students.

ROME PROGRAM

Louisiana Tech has offered study programs in Rome, Italy, since 1969. In 1971, Tech expanded its course offerings to include a year-round program in that city. Courses offered in Rome are designed as an integral part of the undergraduate and graduate program offered on the Ruston campus.

SOILS TESTING LABORATORY

The Soils Testing Laboratory facility contains all basic equipment necessary for analyzing soil for all mineral components. This service is available to all land owners and home owners in North Louisiana.

Academic Program

Academic Objectives

The purpose of Louisiana Tech University, a state university, is to provide without regard to race, religion, sex, or national origin, university level educational and cultural experiences which enable students to fulfill their potentialities as individuals at various instructional levels; to promote the acquisition and utilization of new knowledge through research; and as a publicly supported institution, to be concerned with the dissemination and use of knowledge.

ACADEMIC INSTRUCTION OBJECTIVES

To fulfill its educational and cultural purpose, the University offers to all qualified individuals diversified academic programs which are contemporary and innovative. By state law, every prospective beginning freshman who is a resident of Louisiana is eligible for admission to state supported colleges and universities. Instruction is available within the various colleges and schools of the University. Each of the various colleges and schools of the University has specific objectives consistent with the University's purposes. To provide for different student potentialities and objectives, studies are available at both the undergraduate and graduate levels with degree programs through the doctoral level.

In addition to offering classroom and laboratory instruction of a high caliber, the University is mindful of its concern with students' total educational experiences and to this end seeks:

- to provide programs of excellence, to promote the acquisition of knowledge and to encourage the formation of attitudes, understandings, and skills which may permit students to fulfill their potentialities and educational objectives;

- to provide programs which will take cognizance of contemporary career requirements and opportunities of university graduates and which utilize innovative and interdisciplinary concepts;

- to provide learning experiences which will further an understanding of the physical and social world so that students may adjust to, or help improve, the increasingly complex environment in which they live;

- to offer assistance to students in understanding and appreciating the political, social and economic aspects of our democracy and to encourage them to assume their roles as active and productive citizens;

- to encourage students to develop a set of values based on integrity and personal responsibilities which will serve as a guide for the optimum use of their education;

- to help students develop a mental discipline so that they may continue to mature as they cope with new challenges throughout life;

- to provide highly competent faculty and staff and to encourage their continued professional development.

RESEARCH OBJECTIVES

To realize its commitment to research by promoting the acquisition and utilization of knowledge, the University attempts:

- to encourage both pure and applied research activities by appropriately recognizing scholarly additions to knowledge and applications of knowledge;

- to promote the use of the University as a laboratory for the exploration of ideas at all instructional and professional levels;

- to facilitate research activities by supporting organized research units.

SERVICE OBJECTIVES

To fulfill its service obligation to the campus community and the people of the State, the University seeks;

- to assist in the education and development of the people it serves by engaging in various activities such as non-credit workshops and seminars, extension courses, limited evening programs for degree credit, contract research, advisory services, and testing services.

COLLATERAL OBJECTIVES

In order to accomplish the three aforementioned objectives, the University undertakes to pursue certain collateral objectives such as:

- a continuous program of attracting and retaining a skilled administration, faculty, and staff and encouraging their participation in professional activities;

- recruiting of qualified students and helping them, individually and in groups, to take advantage of the opportunities offered in the academic community. Emphasis will be on the students—their intellectual, psychological, social and physical growth, their present and anticipated needs and aspirations—in order that each student may acquire knowledge and develop the skills and attitudes necessary to achieve personal goals and the goals of today's society;

- developing effective facilities and services for the University, including learning resource centers such as the library and the computing center;

- securing adequate financial support for the activities of the University and maintaining efficient fiscal management;

- interpreting the role of the University to society.

ACADEMIC ORGANIZATION

Louisiana Tech is organized into the Division of Admissions, Basic and Career Studies, six colleges and three schools. The colleges are: Administration and Business, Arts and Sciences, Education, Engineering, Home Economics and Life Sciences. The schools include: Graduate School, School of Art and Architecture and School of Forestry.

The State Board of Education authorizes Louisiana Tech to grant twelve associate degrees, three undergraduate degrees and eight graduate degrees.

The Associate degrees are: Agricultural Technology, Business Technology, Environmental Technology, Food Service Supervision, Instrumentation Technology, Land Surveying Technology, Mechanical Technology, Nursing, Petroleum Technology, Pulp and Paper Technology, Secretarial Curriculum and Technical Drafting.

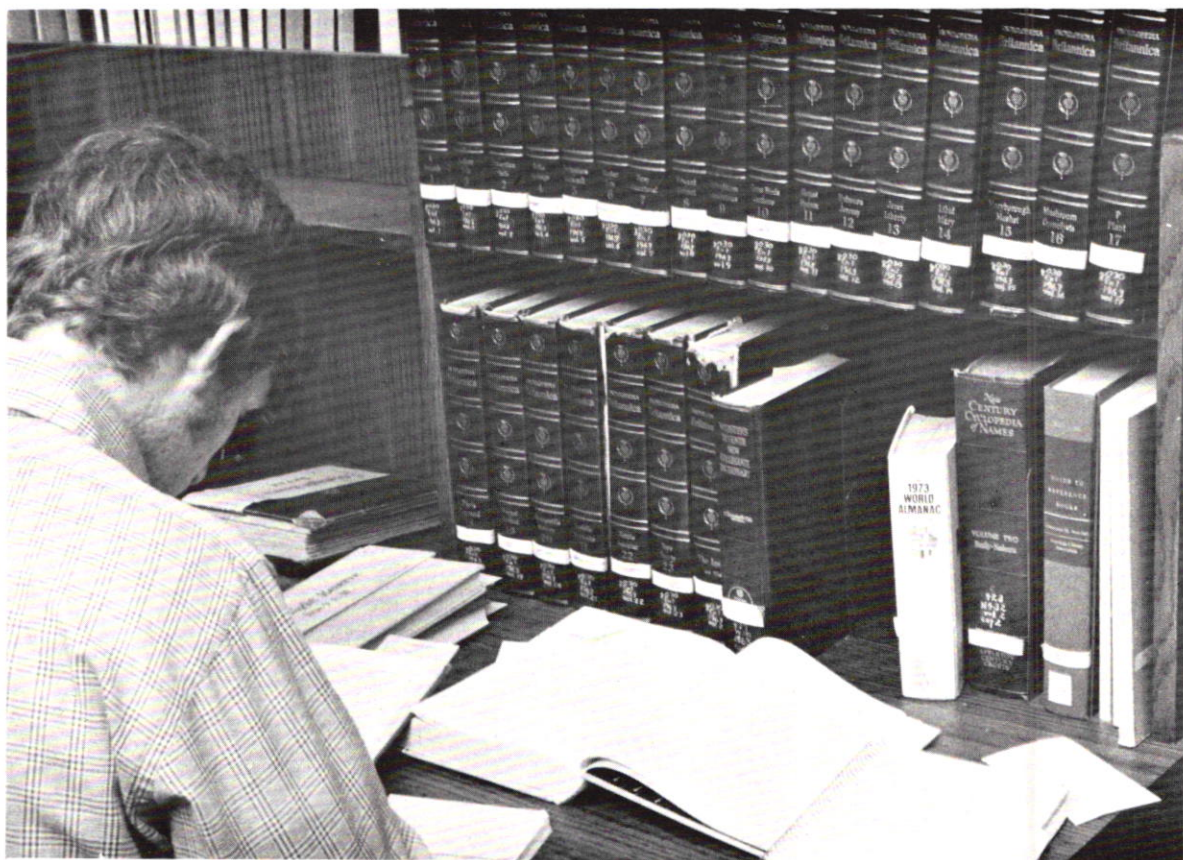
The undergraduate degrees are: Bachelor of Arts, Bachelor of Fine Arts and Bachelor of Science.

The graduate degrees are: Master of Architecture; Master of Arts (in Art Education, Counseling and Guidance, Elementary Education, English, English Education, History, Music, Music Education, Reading, Social Studies Education, Special Education, Speech, Speech Education, Speech Pathology, and Speech and Hearing

Therapy Education); Master of Business Administration (General and specialties in Accounting, Administration and Organizational Behavior, Business Education, Computer Applications, Economics, Finance, Hospital Administration, Industrial Management, International Business-Economics, Labor Economics, Management, Management Science, Marketing and Personnel Management); Master of Fine Arts; Master of Science (in Botany, Business Education, Chemistry, Engineering, General Home Economics, Geology, Health and Physical Education, Home Economics Education, Human Relations and Supervision, Institution Management, Mathematics, Mathematics Education, Microbiology, Physics, Science Education and Zoology). In April, 1967, the State Board of Education approved Louisiana Tech's offering a Specialist degree, a degree beyond the master's. Doctoral degrees in Business Administration (DBA), Engineering, Economics and Mathematics (Ph.D.) were authorized in December 1967.

Tech has adopted the uniform quarter system as its calendar. The quarters are twelve weeks in length.

Louisiana Tech offers evening classes on its campus at both the undergraduate and graduate levels. Extension classes are offered as a public service to the region.





Division of
Admissions,
Basic
and Career
Studies

Division of Admissions, Basic and Career Studies

PATSY B. LEWIS, Director

The Division of Admissions, Basic and Career Studies is the academic unit into which all first quarter freshmen enter.

In July, 1972, Basic and Career Studies was incorporated with Admissions to serve as a total service to entering freshmen. All beginning freshmen are in Basic Studies for one (1) quarter. If after the first quarter is completed and the student has earned a minimum of 3.0 on at least eight (8) hours pursued, he may elect to go into a senior college.

Following his second quarter of work with a minimum of sixteen (16) hours, and a 2.5 grade point average on all hours pursued, he may apply for admission to a specific college. After the third quarter, he must have a 2.0 on at least 24 hours to be eligible to move to upper division. Following the fourth quarter or any subsequent quarter, a student must have a 1.5, not be on academic probation, and have the approval of the senior college to gain admission. This regulation also applies to any student who would transfer to Louisiana Tech University.

At any given time, should a student fail to meet the specific requirements of a college, he is dropped into the Basic Studies curriculum.

SUMMER ORIENTATION

Beginning freshmen are invited to attend an orientation session prior to their first Fall registration at the University. Schedules for these programs are mailed to admitted students by the Division of Admissions, Basic and Career Studies. It is through a program of this type that the University is able to create a more personal experience for each student. Parents are encouraged to attend the special parents' programs during orientation.

CAREER STUDIES

(Two-Year Curricula)

Included in this division is the Career Studies program. All two-year curricula are administered from this division with counseling and supervision being coordinated with the senior colleges.

The objectives of two-year associate degree programs are: (1) to permit students to continue their educational development in a university-level climate; (2) to provide a curriculum of both general education and specific knowledge; (3) to provide a meaningful termination point for students desiring only two years of college; and (4) to facilitate the present or future continuation of the associate degree students' educations toward the baccalaureate degree.

The two-year associate degree programs which Louisiana Tech University is authorized to provide are listed as follows: Agricultural Technology, Business Technology, Environmental Technology, Food Service Supervision, Instrumentation Technology, Land Surveying Technology, Mechanical Technology, Nursing, Petroleum Technology, Pulp and Paper Technology, Secretarial Curriculum and Technical Drafting.

AGRICULTURAL TECHNOLOGY

JOHN A. WRIGHT, Adviser

(Administered by the College of Life Sciences)

The Agricultural Technology curriculum is a two-year program leading to the Associate of Science degree. There are seven options: Mechanization (Agricultural Engineering Department), Floral Design and Turfgrass Management (Agronomy-Horticulture De-

partment), Dairy Cattle Management, Dairy Plant Management, Meat Animal Management and Meats Processing (Animal Industry Department). All options require 62 semester hours for completion.

AGRICULTURAL TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

GENERAL CURRICULUM

(Required in all Options)

	Semester Hours
Agriculture 241, 242, 243	27
English 101, 102	6
Life Sciences 101	1
Speech 110	3
	37

MECHANIZATION OPTION

Agricultural Engineering 110, 206, 210, 211, 214, 215, 320	15
Mathematics 107, 108, 109	6
Electives	4

FLORAL DESIGN OPTION

Architecture 115, 116, 215, 216	12
Botany 101	4
Horticulture 103, 215, 231, 232, 233, 403	6
Mathematics 105	3

TURFGRASS MANAGEMENT OPTION

Agricultural Engineering 206, 210, 215	7
Agronomy 205, 312, 421	8
Botany 101	4
Horticulture 220, 231	3
Mathematics 105	3

DAIRY CATTLE MANAGEMENT OPTION

Agronomy 211	3
Animal Science 101, 301	6
Dairying 201, 307	6
Mathematics 105	3
Sociology 201	3
Electives	4

DAIRY PLANT MANAGEMENT OPTION

Bacteriology 210	3
Dairying 201, 301, 310, 318	12
Mathematics 105	3
Sociology 201	3
Electives	4

MEAT ANIMAL MANAGEMENT OPTION

Animal Science 101, 301, 303, 310, 318	15
Mathematics 105	3
Sociology 201	3
Electives	4

MEATS PROCESSING OPTION

Animal Science 101, 204, 303, 315	11
Bacteriology 212	4
Mathematics 105	3
Sociology 201	3
Electives	4

BUSINESS TECHNOLOGY

JAMES A. WEBB, Adviser

(Administered by the College of Administration and Business)

The primary objective of the program is to provide an educational alternative for the students who desire, and need for their intended careers, basic education beyond high school, but less than a four-year college program, and some practical knowledge to help prepare them for job entry and possible advancement opportunities. Students electing this two-year program may complete the curriculum by utilizing the technical electives to obtain a concentration field in insurance, sales or general business administration.

BUSINESS TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
English 101, 102	6
Liberal Education Elective*	3
Management 105	3
Mathematics 107, 108	4
Office Administration 202	2
Psychology 102	3
Science or Approved Elective*	3
Social Science Elective*	3
Speech 110 (or 377)	3

30

Sophomore Year	Semester Hours
Accounting 203, 204, 310	7
Economics 315	3
Management 305	3
Concentration Field	18

31

TOTAL SEMESTER HOURS.....61

* The electives are defined in the College of Administration and Business section.

CONCENTRATION FIELDS

INSURANCE: Finance 203, 205, 207, Management 201, Marketing 307, Approved Elective (3 semester hours).

SALES: Finance 201, Management 201, Marketing 201, 307, 320, Approved Elective (3 semester hours).

GENERAL BUSINESS ADMINISTRATION: Finance (3 semester hours), Management 201, Marketing (3 semester hours), Quantitative Analysis 220, Approved Electives (6 semester hours).

ENVIRONMENTAL TECHNOLOGY

(Administered by the Department of Civil Engineering)

JOE R. WILSON, Adviser

The objective of this curriculum is to train technicians capable of working with engineers and scientists in the diverse areas of applied environmental engineering which relate to control of pollution of the air, water and earth.

Graduates of this curriculum can expect to find many opportunities for employment in jobs such as: Regulatory technician for local, state or federal agency

Design technician or engineering aide

Operator or supervisor of pollution control facilities

Water or waste treatment plant operator or supervisor for industry or municipality

Sales and service technician for pollution control products

Research and development technician for pollution control products.

ENVIRONMENTAL TECHNOLOGY CURRICULUM

ENVIRONMENTAL CONTROL OPTION

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
Mathematics 111, 112, 220	9
English 101, 102	6
Chemistry 101, 102, 103, 104	8
Bacteriology 210	3
Civil Technology 102, 206	4
Engineering 151	2

32

Sophomore Year	Semester Hours
Zoology 111, 112	4
Civil Engineering 450B	2
Civil Technology 210, 220, 221, 222, 231, 232	19
Electives	6

31

TOTAL SEMESTER HOURS 63

Electives will be selected from Civil Technology 211, 432; Civil Engineering 254, 310, 414; Engineering 401, 431; Industrial Engineering 425 or other engineering, science, or business courses approved by the head of the Department of Civil Engineering.

ENVIRONMENTAL TECHNOLOGY CURRICULUM

WATER AND WASTEWATER OPTION

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
Mathematics 111, 112, 220	9
English 101, 102	6
Chemistry 101, 102, 103, 104	8
Bacteriology 210	3
Civil Technology 102, 206	4
Engineering 151	2

32

Sophomore Year	Semester Hours
Civil Engineering 254, 310, 450B	8
Civil Technology 210, 211, 220, 221, 222, 432	20
Elective	3

31

TOTAL SEMESTER HOURS 63

FOOD SERVICE SUPERVISION

(Administered by the College of Home Economics)

JANET B. WRIGHT, Adviser

This program is designed for those who wish to qualify for intermediate supervisory positions in the food service field. Positions are available for graduates in commercial, school and hospital food service organizations.

FOOD SERVICE SUPERVISION CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
Bacteriology 210	3
English 101, 102	6
Home Economics 112, 203, 212, 222	11
Mathematics 105	3
Psychology 102 or 204	3
Sociology 201	3
Speech 110 or 377	3

32

Sophomore Year

Home Economics 242, 342, and 272 or 282	13 or 16
Management 305 and 201 or 311	6
Technical Electives ¹	5
Free Electives	5 or 8

	32
TOTAL SEMESTER HOURS	64

¹Technical Electives: (to be chosen from courses listed below)

	Semester Hours
Accounting 203, 204	4
Economics 315	3
Home Economics 213	3
Management 105	3
Marketing 300	3

INSTRUMENTATION TECHNOLOGY

J. W. MALONE and
THOMAS WILLIAMS, Advisers
(Administered by the Department of
Chemical Engineering)

Instrumentation Technology is primarily concerned with the theory, design, operation and maintenance of the variety of instruments used by modern industry. The program trains students in the practical and theoretical aspects of this field through course work supplemented by a considerable amount of laboratory experience. Emphasis is placed on practical skill so that the graduate will be able to perform a variety of tasks in the area of fabrication, installations, checkout, calibration, trouble shooting, maintenance, and drafting for chemical, electrical or mechanical industrial firms.

INSTRUMENTATION TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
English 101, 102	6
Mathematics 111, 112 and 220	9
Mechanical Technology 101, 151, 231 and 251	10
*Non-Technical Electives	6

Sophomore Year	Semester Hours
Electro-Technology 160, 161, 182, 264, and 270	11
Management 105	3
Instrumentation Technology 201	3
Physics 209 and 210	8
*Technical Elective	3
Technical Drafting 101	3

31

TOTAL SEMESTER HOURS 62

*All electives for the program must be approved by the adviser of the program.

LAND SURVEYING TECHNOLOGY

(Administered by the Department of
Civil Engineering)
CALVIN A. LEMKE, Adviser

This two-year program of study is offered as an optional program of basic instruction in the Civil Engineering curriculum. Much of the course work is either required or acceptable as electives in the Civil Engineering curriculum, therefore, students completing the prescribed courses of study in Land Surveying may continue in the four-year curriculum of Civil Engineering or they may elect to accept immediate employment as land surveyors. Many job opportunities are to be

found with federal, state, parish, or municipal governments; with construction or engineering firms, and with registered Land Surveyors. After six years of experience, the graduate will be eligible to apply for registration as a Land Surveyor. This license will permit him to begin his own surveying practice.

LAND SURVEYING TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
English 101, 102	6
Mathematics 111, 112	6
Engineering 102, 151, 152	6
Civil Engineering 254	4
Accounting 203	2
Office Administration 201	2
Elective ¹	3

29

Sophomore Year	Semester Hours
Civil Engineering 232, 255, 256, 257, 304, 433	15
Speech 110	3
Business Law 441	3
Management 305	3
Electives	9

33

TOTAL SEMESTER HOURS 62

¹All electives must be approved by the Land Surveying Technology adviser.

MECHANICAL TECHNOLOGY

(Administered by the Department of
Mechanical Engineering)
J. J. THIGPEN, Adviser

The Mechanical Technology curriculum is a two-year program leading to an Associate of Science degree. The program is primarily concerned with the generation, transmission, and utilization of mechanical energy and heat as well as the design, application, and production of tools, machines, engines, instruments and other mechanical devices. The program will emphasize practical aspects through applied course work and a considerable amount of laboratory work. Persons will be trained to perform a variety of tasks in the areas of fabrication and installation, maintenance, testing, troubleshooting, operating, and even special areas such as drafting for commercial and industrial employers involved in any way with mechanical equipment and machines.

MECHANICAL TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
English 101, 102	6
Mathematics 111, 112	6
Mechanical Technology 101, 151, 201, 251, 252	11
Physics 209	4
Technical Drafting	5

32

Sophomore Year	Semester Hours
Civil Technology 206, 207	6
Electro-Technology 160, 161	4
Mathematics 220	3
Mechanical Technology 204, 206, 215, 221, 226, 231, 253	17
Physics	4

34

TOTAL SEMESTER HOURS 66

DEPARTMENT OF NURSING

(Administered by the College of Arts and Sciences)

VIRGINIA R. PENNINGTON, Adviser

The purpose of the Department of Nursing is to prepare graduates, with an Associate of Arts in Nursing Degree, to function as beginning practitioners under the supervision of qualified professional nursing and/or medical personnel; thus affording unique benefits to the physical and mental health program of the local community. The graduate will also, upon completion of the prescribed program be prepared to satisfactorily write the examination required for state licensure to become registered nurses.

The Department of Nursing is accredited by the Louisiana State Board of Nurse Examiners.

The facilities for clinical nursing experience are the Lincoln General Hospital, Ruston Area Mental Health Center and Longleaf Nursing Home, all of which are located in the Ruston area. E. A. Conway Memorial Hospital, Monroe, Louisiana, is utilized for clinical experience in Obstetrical and Pediatric Nursing with Central Louisiana State Hospital in Pineville providing experience in in-patient psychiatric nursing.

Residents of Lincoln, Jackson, Union, and Bienville Parishes who meet the scholastic requirements are eligible to apply for the Lincoln General Hospital Mary Jarrell Nursing Scholarship.

Admission to the Department of Nursing will be based upon the following criteria established by the Admission Committee, Department of Nursing:

- Acceptable scores on the ACT
- Acceptable scores on the NLN Pre-Nursing and Guidance Examination
- Grade point average of 2.6 or better from high school or acceptable score on the GED test.
- If applicable, acceptable score on the Louisiana State Board of Practical Nurse Examination.
- Indication of emotional stability, character, personality, maturity and interest in nursing as determined by personal interview.
- Applicants must furnish satisfactory evidence of good health on forms to be sent by the University. An annual physical examination including a chest X-ray is required.

Nursing students must be covered by professional liability insurance prior to registering for any nursing course.

In addition to the regular University fees, costs for uniforms, supplies and equipment including books required in the nursing program is approximately \$300.

Students must maintain a C average or better in nursing and nursing related courses to progress from one sequentially designed nursing course to the next.

Upon successful completion of all course requirements, the student is eligible for graduation with an Associate of Arts in Nursing Degree.

NURSING CURRICULUM

(Leading to the Degree of Associate of Arts)

Freshman Year	Semester Hours
Nursing 101, 102, 103, 104, 105, 106	16
Zoology 111, 112, 225, 226	8
Mathematics 107	2
Arts and Sciences 101	1
English 101	3
Bacteriology 212	4
Psychology 102	3
	37
Summer Quarter	
Nursing 107, 108	6
Elective	3
	9

Sophomore Year	
Nursing 201, 202, 203, 204, 205, 206	22
Psychology 205	3
Home Economics 203	3
English 102	3
	31

TOTAL SEMESTER HOURS 77

PETROLEUM TECHNOLOGY

(Administered by the Department of Petroleum Engineering)

R. M. CARUTHERS, Adviser

The Petroleum Technology curriculum is a two-year program leading to the Associate of Science Degree. The objective of the program is to train petroleum technicians who can work effectively with professional engineers in creating solutions to engineering problems. The program emphasizes practical aspects through applied course work and a considerable amount of coordinated laboratory and field work. Registrants will be trained to perform maintenance, carry out test operations, make measurements, provide engineering support and in general be capable of performing a variety of technical tasks proficiently. The graduate will have received training in report writing, documentation and general industrial practices so that one might fit rapidly into the typical industrial/technical organization.

PETROLEUM TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
English 101, 102	6
Mathematics 111, 112, 220	9
Mechanical Technology 101, 251	5
Petroleum Engineering 200	3
Petroleum Technology 101	3
Technical Drafting 101	3
	29
Sophomore Year	
Electives	6
Electro-Technology 160, 161	4
Petroleum Technology 102, 103, 104	10
Physics 209, 210	8
Speech 110	3
	31

TOTAL SEMESTER HOURS 60

Electives must be approved by the Head of the Department of Petroleum Engineering and are to be selected from humanities, social science or communications.

PULP AND PAPER TECHNOLOGY

(Administered by the Department of Chemical Engineering)

W. W. CHEW, Adviser

Pulp and Paper Technology is a two year program designed to train technologists for employment in the paper manufacturing industries in this region. Those trained in this field will assist engineers in conducting and supervising operations in the manufacturing of pulp and paper, pulp and paper testing and operating and maintaining processing equipment.

The paper industry in the South is a multi-million dollar industry, with thousands of persons employed in manufacturing plants. The demand for young men and women educated and trained as pulp and paper technologists is definitely present. This curriculum consisting of courses in science, mathematics, pulp and paper, and other technology areas will train the graduate to fulfill the recurring need for technicians in the paper industry.

PULP AND PAPER TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
Chemistry 120, 121, 122, 123, and 124	8
English 101, 102	6
Mathematics 111, 112, and 220	9
Non-Technical Elective	6
Pulp and Paper Technology 101	1
	30
Sophomore Year	
Electro-Technology 160, 161	4
Mechanical Technology 101	3
Physics 209, 210	8
Pulp and Paper Technology 201, 202, 203 and 220	12
Technical Drafting 101	3
	30
TOTAL SEMESTER HOURS	60

Electives must be approved by the Head of the Department of Chemical Engineering.

SECRETARIAL CURRICULUM

(Administered by the College of Administration and Business)

REBA N. HUCKABAY, Adviser

The two-year Associate of Science program has two options—shorthand option and the nonshorthand option—and is designed: (1) to prepare students who wish to qualify for beginning secretarial positions in large and small commercial and governmental offices; (2) to permit students to apply the credits earned on the Associate degree program toward the four-year office administration program should they choose to continue their education to prepare for more demanding and challenging career opportunities.

The Associate of Science degree in the Secretarial Curriculum with the shorthand option is designed for students who wish to qualify for office positions in which shorthand is a requisite for employment and future advancement. This program provides the student with skills and knowledge which, when complemented by work experience and additional study, may enable the student to attain an administrative secretarial position. Undoubtedly, students electing this option will qualify for a larger number of secretarial-type positions than will students following the nonshorthand option.

SECRETARIAL CURRICULUM

SHORTHAND OPTION

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
English 101, 102	6
Liberal Education or CAB Electives	6
Management 105	3
Mathematics 107	2
Office Administration 202, 203, 206, 207, 208	13
	30
Sophomore Year	
Accounting 203, 204	4
Economics 203, 204	4
English 201 or 202	3
Management 305	3
Office Administration 250, 303, 304, 307, 309, 310	17
	31
TOTAL SEMESTER HOURS	61

The nonshorthand option is designed for students who are interested in performing the various functions of secretarial work in an office except that of taking dictation. This position is often designated as a correspondence secretary. The curriculum has been structured to provide the student with a high-level skill in machine transcription and with business knowledge and understanding that will enable the student to attain employment in offices in which shorthand is not a required skill. With additional experience and study, the student following this curricular pattern can expect to advance to higher levels of work in the secretarial profession. The program provides a good foundation for those interested in working in word processing centers.

NON-SHORTHAND OPTION

(Leading to the Degree of Associate of Science)

Economics 315	3
Office Administration 209, 210, 211, 212	12
Mathematics 105	3
CAB Elective (depends on student's specialization)	3
	21

Note: These 21 semester hours replace the following courses in the secretarial curriculum: Office Administration 206, 207, 208, 303, 304; Economics 203, 204; and Mathematics 107. The total semester hours required in the curriculum for the nonshorthand option is 64.

TECHNICAL DRAFTING

(Administered by the Department of Industrial Engineering and Computer Science)

H. L. HENRY, Adviser

The curriculum in technical drafting is designed to prepare persons to perform the drafting tasks in a modern technically oriented system. The required courses provide comprehensive training in the preparation of design and working drawings for industry and construction.

TECHNICAL DRAFTING CURRICULUM

(Leading to the Degree of Associate of Science)

Freshman Year	Semester Hours
Electro Technology 160, 161	4
Engineering 152, 162	4
English 101, 102	6
Mathematics 111, 112	6
Speech 110	3
Technical Drafting 101, 102, 103	7
	30
Sophomore Year	
Architecture 226, 227	6
Civil Engineering 254	4
Computer Science 102	2
Electives	5
Electro Technology 390	2
Mechanical Technology 101, 251	5
Technical Drafting 201, 202, 203	6
	30
TOTAL SEMESTER HOURS	60

All electives must be approved by the Head of the Department of Industrial Engineering and Computer Science.

The Graduate School

JAMES L. HESTER

Dean

The offering of graduate degree programs at Louisiana Tech University was first authorized in January, 1958, when the Master of Science, Master of Science in Education, and Master of Arts in Education degree programs were approved by the State Board of Education. Since that date, the University has received approval to grant additional master's degrees, the Specialist in education degree (1967), and doctoral degrees in four areas (1967).

Graduate degrees granted by the University are:

MASTER OF ARCHITECTURE

MASTER OF ARTS

Art Education
Counseling and Guidance
Elementary Education
English
English Education
History
Human Relations and Supervision
Music
Music Education
Reading
Social Studies Education
Special Education
Speech
Speech Education
Speech Pathology
Speech Hearing Therapy Education

MASTER OF BUSINESS ADMINISTRATION

MASTER OF FINE ARTS

MASTER OF SCIENCE

Bacteriology (Microbiology)
Botany
Business Education
Chemistry
Engineering
General Home Economics

Geology
Health and Physical Education
Home Economics Education
Institution Management
Mathematics
Mathematics Education
Physics
Science Education
Zoology

SPECIALIST IN EDUCATION

DOCTOR OF BUSINESS ADMINISTRATION

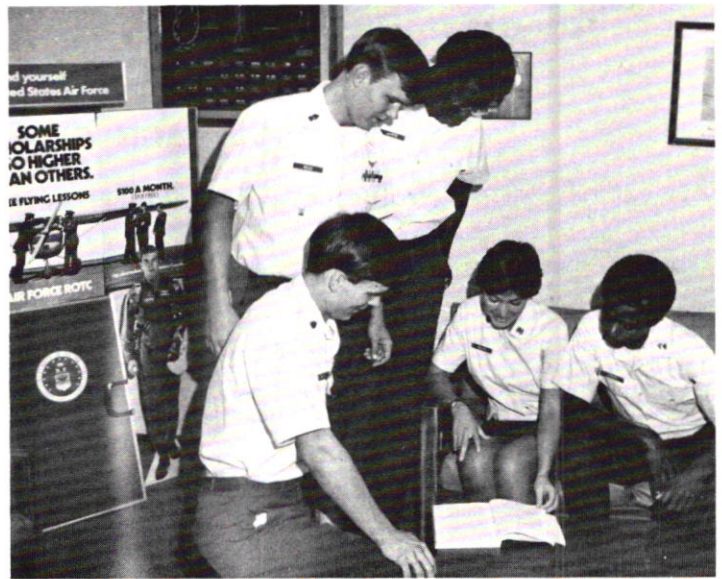
DOCTOR OF PHILOSOPHY

Economics
Engineering
Mathematics

Louisiana Tech University was accepted as a member of the Council of Graduate Schools in the United States in September, 1964. The Graduate School, as part of the entire University, is accredited by the Southern Association of Colleges and Secondary Schools.

The Dean of the Graduate School administers and coordinates the graduate programs of the University. Graduate instruction is supervised by the appropriate academic deans, directors of graduate studies, department heads, and graduate faculty under policies set forth by the Louisiana State Board of Education and the Graduate Council. Certain minimum standards are established by Graduate Council for the University. Each academic college has the prerogative to be more selective and establish higher standards for its respective graduate students.

For detailed information about the graduate program, prospective students should contact the Dean of the Graduate School and request a **Graduate Bulletin** and application form for admission.



Department of Air Force Aerospace Studies

Department of Air Force Aerospace Studies

COL. LEON G. MARK

Professor of Air Force Aerospace Studies

ASSISTANT PROFESSORS: MAJOR ROBERT L. MURPHY, MAJOR JESSE J. WALDON, JR., CAPTAIN JAMES L. SCHENCK, CAPTAIN EDWARD C. BOWEN.

ADMINISTRATIVE ASSISTANTS: MASTER SERGEANT ROBERT J. RICHARD, TECHNICAL SERGEANT BOBBY A. WILCOX, STAFF SERGEANT ALLEN D. DILLMAN, STAFF SERGEANT WILLIAM C. LANG, STAFF SERGEANT LINDA L. EVANS.

PURPOSE: The MISSION of the Air Force ROTC is to produce quality officers to meet Air Force requirements.

The AFROTC program is the major source of Air Force officer procurement.

OBJECTIVES: The objectives of the program are to select and commission men and women who will demonstrate dedication to their assignments; who willingly accept responsibility; who think critically and creatively; and who have the ability to communicate with clarity and precision.

Students have an option to complete the Air Force ROTC Program as a member of either the four- or two-year program.

FOUR-YEAR PROGRAM: This is divided into two parts - the General Military Course (GMC), for Freshmen and Sophomores, and the Professional Officer Course (POC), for Junior and Senior students. A four-week Field Training is conducted at an Air Force base during the summer months, normally between the Sophomore and Junior years.

TWO-YEAR PROGRAM: This is the Professional Officer Course for Juniors and Seniors. Cadets are normally selected from transferees from other colleges or from sophomore students who did not enroll in the General Military Course as freshmen. The basic requirement is that the student have two academic years remaining at either the undergraduate or graduate level, or a combination of both, upon entering the Professional Officer Course. A prerequisite for enrollment in the Professional Officer Course via the two-year program is the completion of a six-week summer Field Training course given at an Air Force base. Students in the two-year program must attend field training the summer before they enroll in the POC program. Since the processing procedure for the POC must be completed several months in advance of enrollment, students interested in the Two-Year Program should apply during the preceding fall and winter quarters.

REQUIREMENTS FOR ADMISSION: General Military Course (Freshmen and Sophomores): Enrollment requirements are as follows: (1) be a U. S. Citizen, (2) possess good moral character, (3) not be more than 30 years of age at graduation and commissioning; not more than 26½ years at graduation and commissioning if entering flight training, (4) be medically qualified (5) sign an oath of loyalty to the United States, and (6) be accepted by the University as a regular full-time student. Veterans will be phased into Air Force ROTC according to their college standing and at the discretion of the Professor of Air Force Aerospace Studies.

Professional Officer Course (Juniors and Seniors): Students are selected for the POC on a competitive basis. In addition to those requirements mentioned for the GMC, entrance into the POC requires that students be not less than 16 years of age; meet mental and physical requirements for commissioning; have satisfactorily completed approximately 60 semester hours toward his or her degree and be in good standing in the institution; be recommended by the Professor of Air Force Aerospace Studies.

ACADEMIC CREDIT: The classroom work in both the General Military and Professional Officer Courses is classified as elective work and is credited in varying amounts, depending on the student's program, toward degree requirements. Students should consult with the dean of their particular college to determine the amount of credit allowed.

FIELD TRAINING: All cadets must complete summer Field Training which consists of academic work, intensive orientation on Air Force environment and traditional military training. It also includes orientation flight in Air Force aircraft and a close look at the Air Force in operation. Cadets in the two-year program must, by law, attend six-week Field Training prior to POC entry. Four-year program cadets attend four week Field Training, normally between their sophomore and junior years. Field Training is conducted at an Air Force base, and all cadets receive approximately \$75 per week while in attendance. Round trip travel pay between their home and the Field Training base is provided to each cadet.

FLIGHT INSTRUCTION PROGRAM: Senior members planning to enter pilot training are required to complete the Flight Instruction Program, unless they are in possession of a valid FAA private (or higher) license. The program affords cadets the opportunity to solo in light aircraft, providing approximately 25 hours of total time at government expense.

CADET CORPS TRAINING: In addition to the academic training received, a part of each Aerospace Course is reserved for corps training. The Cadet Corps is comprised completely of cadets in the AFROTC program. The corps is cadet directed and operated and all plans and programs are developed and executed by cadets. Consequently, each potential Air Force officer has the opportunity to develop leadership abilities through directed and elected activities.

REQUIREMENTS FOR COMMISSION: Upon completion of AFROTC POC and receipt of a baccalaureate degree, cadets are eligible for a commission as a Second Lieutenant in the United States Air Force Reserve.

DISTINGUISHED AIR FORCE ROTC GRADUATES: Up to 20% of the seniors each year may be designated as Distinguished Graduates of the AFROTC program. Their superior performance earns them preferential consideration in job assignments and in opportunities for both Regular Air Force Commissions and graduate education at Air Force expense.

MONETARY ALLOWANCE WHILE PURSUING THE POC: All POC members receive a tax-free monthly allowance of \$100 or a total of \$2,000 during this two-year course.

COLLEGE SCHOLARSHIP PROGRAM: Each year the Air Force awards a number of four, three, and two year scholarships on a competitive basis, to the best qualified students. Scholarships include \$100 per month for 10 months for each year the scholarship is in effect, and also provide tuition, fees, books, laboratory expense, and out of state fees if applicable.

BOOKS AND UNIFORMS: All uniforms and textbooks required for the General Military Course and the Professional Officer Course are furnished by Louisiana Tech and the U. S. Air Force. Each member of AFROTC will make a refundable deposit of \$10.00 to cover possible uniform loss or damage. Each member of AFROTC is also assessed a \$10 annual activity fee, which is used for the military ball, squadron parties, and other cadet activities.

EXTRACURRICULAR ACTIVITIES: AFROTC sponsors a number of functions that provide avenues for further personal development for qualified cadets.

ARNOLD AIR SOCIETY: The Emmett O'Donnell Squadron of the Arnold Air Society is an organization dedicated to promoting a better understanding of the role of airpower in the Aerospace age. This is a national honorary society limited to selected cadets who demonstrate outstanding academic and leadership traits. An Auxiliary of the Arnold Air Society is the Angel Flight.

ANGEL FLIGHT: The O'Donnell Flight of the National Angel Flight is an honorary co-ed auxiliary of the Arnold Air Society. It is a service organization open to co-eds of sophomore, junior, and senior standing who meet the Flight's qualifications.

HONOR GUARD: A military group composed of outstanding cadets who perform a variety of ceremonial functions. Those include providing the personal escort guard for the University President, conducting flag ceremonies, providing a color guard for campus and civic activities, and giving precision drill exhibitions.

SPECIAL FORCES SQUADRON: This activity allows cadets to follow a more strenuous and demanding program associated with Air Force special operations and special forces training. Survival, weapons training, parachuting, and land navigation have been some of the activities pursued.

ORIENTATION FLIGHTS AND AIR BASE VISITATION: Members are afforded opportunities to fly in various types of military aircraft for purposes of orientation and familiarization. Air Force Base visitations are also offered and encouraged.

FORMAL MILITARY BALL: Cadets sponsor a formal Military Ball annually for the members of the Corps and their invited guests.

INTRAMURAL SPORTS: AFROTC sponsors teams and individuals in all campus sports events.





College
of
Administration
and
Business

College of Administration and Business

BURTON R. RISINGER, Dean

BOB R. OWENS, Associate Dean

Officers Of Instruction

DIRECTORS OF DIVISIONS

GRADUATE: Donald E. Edwards
RESEARCH: Donald C. Wilcox
UNDERGRADUATE: Bob R. Owens

HEADS OF DEPARTMENTS

ACCOUNTING: Harold J. Smolinski
BUSINESS: Jarrett Hudnall, Jr.
ECONOMICS AND FINANCE: Tom S. Sale, III.
OFFICE ADMINISTRATION: Reba Neel Huckabay

PROFESSORS

J. GALE CHUMLEY, Management; FRANK N. EDENS, Management; DONALD E. EDWARDS, Accounting; R. WAYNE GOBER, Quantitative Analysis; JAMES L. HESTER, Management; REBA NEEL HUCKABAY, Office Administration and Business Education; JARRETT HUDNALL, JR., Marketing; ARCHER W. HUNEYCUTT, Marketing; FLOYD LANGFORD, JR., Office Administration and Business Education; BOB R. OWENS, Management; HOMER G. PONDER, Economics; JOE M. PULLIS, Office Administration and Business Education; PHILIP F. RICE, Quantitative Analysis; BURTON R. RISINGER, Finance; WILLIAM R. RIVES, Accounting; HAROLD J. SMOLINSKI, Accounting; DON C. WILCOX, Economics and Research Associate; B. EARL WILLIAMSON, Economics.

ASSOCIATE PROFESSORS

FRANCIS J. BREWERTON, Management; FRANK M. BUSCH, Office Administration and Business Education; CHARLES E. CATO, Accounting; RUSSELL C. FERRINGTON, Accounting; PAUL K. GATONS, Economics; KENNETH R. GOESEN, Accounting; DOUGLAS T. GRIDER, JR., Management; BOBBY L. HAMM, Economics; CLAUDINE C. KENNEDY, Quantitative Analysis; JAMES N. MANGUM, Economics; DOUGLAS W. MELLOTT, JR., Marketing; BETTY L. ORR, Management and Office Administration; CARL D. PARKER, Economics; TOM S. SALE, III, Economics; LAWRENCE C. SMITH, Economics; JAMES E. TOWNSEND, Finance; FRED M. WRIGHTON, Economics and Research Associate.

ASSISTANT PROFESSORS

LARRY B. ARMSTRONG, Accounting; NORMAN F. BYERS, Economics; CLIFFO D. CRUMP, Office Administration; PHILLIP E. FINCHER, Economics; JOHN R. FOWLER, Quantitative Analysis; FRANK A. JEROME, Management; JOSEPH H. JONES, Finance and Economics; HELON M. LINDSEY, Management; J. WAYNE MEDLEY, Finance; JAMES R. MICHAEL, Accounting and Research Associate; LUTHER W. MOORE, Accounting; L. D. NAPPER, Business Law; PAUL G. SCHAUWECKER, Economics and Finance; WILLIAM L. SEAVER, Quantitative Analysis; JOHN E. SHAVER, Accounting; JAMES A. WEBB, JR., Management.

INSTRUCTORS

JANET G. CAMPBELL, Office Administration; SUSAN C. CORLEY, Office Administration; ROSS E. DOBBS, Management; MARTHA K. HOOD, Office Administration; JACK V. JONES, JR., Quantitative Analysis; RONALD C. KETTERING, Finance; WINSTON N. McVEA, Business Law.

SUPPORTIVE STAFF

BARBARA H. DENTON, Research Associate.
PATSY G. HILTON, Counselor and Records Director.
PATTI D. COWART, NELL T. DUNCAN, VIRGINIA G. RISER,
CONNIE SEIM, KAY SMITH, KAYLEEN P. SMITH, LIBBEY
M. WATKINS, MAZIE L. WILLIAMS, Secretarial-Clerical.

ACCREDITATION

The College of Administration and Business is accredited by the Accreditation Council of the American Assembly of Collegiate Schools of Business (AACSB). The accreditation covers all bachelor of science programs of the College. The Research Division of the College of Administration and Business is accredited by the Association for University Business and Economic Research (AUBER).

DEGREES AND CURRICULA

ASSOCIATE. The Associate of Science degree is awarded by the College of Administration and Business for satisfactory completion of either the Secretarial Curriculum or the Business Technology Curriculum. Other sections of the CAB portion of the Bulletin (e.g., Admissions, Electives Policies in the CAB) are pertinent to this program. However, the courses comprising the programs will be found in the Bulletin under Division of Admissions, Basic and Career Studies.

BACHELOR. The baccalaureate degrees offered by the College are Bachelor of Arts and Bachelor of Science. The curriculum in Economics leads to the Bachelor of Arts degree. The four-year curricula leading to the degree of Bachelor of Science are the Accounting Curriculum, the Office Administration Curriculum, the Business Economics Curriculum and the Business Administration Curriculum.

MASTER. The Master of Business Administration degree is offered. The curriculum emphasizes management decision making which is applicable to all specialties in business administration, as well as to general management responsibilities. A number of specialties are available.

DOCTOR. The Doctor of Business Administration (D.B.A.) and the Doctor of Philosophy (Ph.D.) degrees are offered.

See the University Graduate School Bulletin for additional information on graduate degrees.

ORGANIZATION

The College is divided into three divisions, each having a director, and four academic departments, each having a head. All of the directors and heads are responsible to the Dean of the College of Administration and Business.

The three divisions, which represent the primary areas of the College's endeavors are: Undergraduate Division, Graduate Division, and Research Division.

The four academic departments are Accounting, Business, Economics and Finance, and Office Administration. Within the framework of University and College of Administration and Business policies, each department: (1) includes faculty appropriate to the courses, curricula, and research undertaken by the departmental faculty members; (2) enrolls and directs the programs of CAB students who choose a program of study the department offers; and (3) functions within each of the three college divisions in fulfilling its multiple objectives relative to undergraduate, graduate, and research programs.

HISTORY

Among the purposes listed in the original act creating the University was to give instruction in business subjects and, indeed, Tech's first graduate, Harry Howard, graduated in 1897 in business and later be-

came head of the department. Business courses were thus an important part of the work of the University from its very inception. The Department of Commerce progressed steadily through the years in all of its branches, and in 1940, the School of Business Administration was created by the Louisiana State Board of Education. In 1970, Tech was designated a University and the School became a college and is now named the College of Administration and Business.

OBJECTIVES

It is the primary purpose of the College of Administration and Business to offer educational opportunities in administration and business at all degree levels. The word "administration" is used broadly to include education of governmental, educational, and non-profit organizations as well as the administration of business enterprises. The scope of the objective is primarily limited to the offering of formal degree programs as the state and University have not provided funding for the provision of education for administration and business through continuing educational activities.

It is also an objective of the College to operate a research division and engage in research and management development activities for the state and its political subdivisions, and for the general benefit of business and the economy of the state and nation.

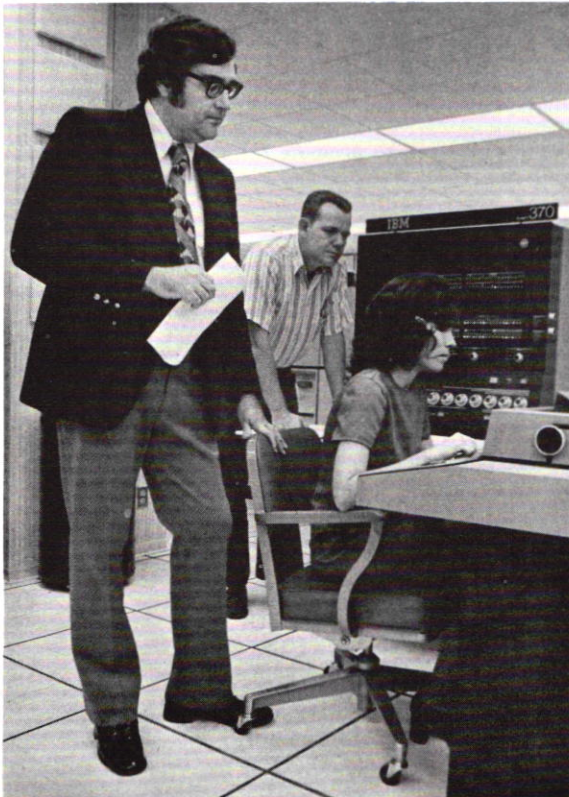
AWARDS AND RECOGNITIONS

BETA ALPHA PSI AWARD

Beta Alpha Psi annually awards a certificate in recognition of outstanding scholarship in the field of accounting to the graduating senior with the highest scholastic average.

BETA GAMMA SIGMA

Students with an outstanding scholastic record in the College of Administration and Business may be recognized by election to the honorary society of Beta Gamma Sigma.



CPA AWARD

The Society of Louisiana Certified Public Accountants makes an annual award to the graduating senior in accounting who has the highest scholastic record for the four years. It consists of a very attractive gold key.

DELTA SIGMA PI SCHOLARSHIP AWARD

The Delta Sigma Pi Scholarship Award key is awarded annually by the fraternity to the male senior, whether or not a member of the fraternity, who ranks the highest in scholarship in any one of the curricula in the College of Administration and Business.

OMICRON DELTA KAPPA

Outstanding leadership is recognized by the election to membership in Omicron Delta Kappa, the national leadership fraternity.

OUTSTANDING SENIORS

The faculty of the College of Administration and Business each year elects from among the seniors a group of students who are designated as outstanding seniors. The selection is made on the basis of scholarship, character and activities. The pictures and accomplishments of these students are placed in a lighted bulletin board for a year.

SCHOLARSHIPS

For information about scholarships available to all Louisiana Tech students, contact the Division of School and College Services. The following scholarships are available to CAB students only. Those administered by the CAB are awarded by faculty scholarship committees and information may be obtained by contacting the Office of the Dean, College of Administration and Business, P.O. Box 5796, Tech Station, Ruston, Louisiana, 71270. Most scholarships are awarded in the early spring for the following year and notices are posted when applications are being taken.

ALUMNI FOUNDATION

A portion of the Alumni Foundation scholarship money is allocated to the various Tech colleges so that the CAB has a varying amount of funds each year, depending on contributions, for scholarships.

CAB FOUNDATION

The College of Administration and Business Foundation, commonly referred to as the CAB Foundation, also has a scholarship fund into which is placed scholarship contributions from corporations and non-alumni who desire to help provide scholarship money for students in the College.

LOU-ARK PURCHASING MANAGEMENT ASSOCIATION

The Purchasing Management Association of Lou-Ark gives each year to a College of Administration and Business student who has achieved junior or senior standing, a cash award. Recipients must be enrolled in programs of study which could logically lead to later involvement in purchasing/management.

LOUISIANA POWER AND LIGHT COMPANY

Louisiana Power and Light Company has established twenty-seven scholarships in the state. One of these \$500 awards is made each year to a Tech College of Administration and Business accounting or business administration student of junior or senior standing. When two applicants are completely equal in all other qualifications and one is the child of an LP&L employee, the employee's child will be given preference.

Scholarships which are not administered by the CAB but which are available to CAB students are given below. Inquiry should be made with the organization awarding the scholarship for additional information.

DAVID L. GLOER SCHOLARSHIP

The Beta Psi Chapter of Delta Sigma Pi has established a scholarship award in memorial to one of its outstanding members killed in the Vietnam War. The "David L. Gloer Scholarship Award" (fifty-dollar minimum) is given annually to a male senior in any field of study in the College of Administration and Business. Selection of the recipient is based on academic standing, financial need, and other considerations.

FIRST NATIONAL BANK OF SHREVEPORT

The First National Bank of Shreveport has established several scholarships for students in business administration who are residents of Caddo, Bossier, DeSoto, Red River, Webster, Claiborne, Bienville, Lincoln, Natchitoches, or Sabine Parishes. Selection is made first on the basis of need and then on scholastic record, future promise, character, qualities of leadership, and seriousness of purpose.

MURPHY FOUNDATION

Several scholarships are available. Inquiries and requests for application forms should be addressed to the Murphy Foundation; Murphy Oil Corporation; El Dorado, Arkansas.

ORGANIZATIONS

ACCOUNTING CLUB

The Accounting Club was organized in December, 1953, as a professional organization for the purpose of encouraging higher standards of scholarship and developing a closer relationship among the accounting students, faculty, and businessmen. The group meets twice a month with one meeting being devoted to the business affairs of the club and the other meeting being devoted to professional development.

ALPHA KAPPA PSI

Eta Tau chapter of the professional national fraternity of Alpha Kappa Psi was chartered on February 12, 1967. Alpha Kappa Psi is the oldest professional fraternity in business, being founded in the School of Commerce, Accounts and Finance at New York University on October 5, 1904, because of the desire of ten students to aid their alma mater. The objects of Alpha Kappa Psi are "to further the individual welfare of its members; to foster scientific research in the fields of commerce, accounts, and finance; to educate the public to appreciate and demand higher ideals therein; and to promote and advance in institutions of college rank, courses leading to degrees in business administration."

BETA ALPHA PSI FRATERNITY

Alpha Chi chapter of the national fraternity of Beta Alpha Psi was established in May, 1956. Beta Alpha Psi is a national professional and honorary fraternity, the purpose of which is to encourage and foster the ideal of service as the basis of the accounting profession; to promote the study of accountancy and its highest ethical standards; to act as a medium between professional men, instructors, students, and others who are interested in the development of the study or profession of accountancy; to develop high moral, scholastic, and professional attainments in its members; and to encourage cordial relations among its members and the profession generally.

BETA GAMMA SIGMA

Beta Gamma Sigma is the national honorary scholastic society for students in all fields of business. It is the scholastic society recognized by the Accreditation Council of the American Assembly of Collegiate Schools of Business. A school or college of business administration must be a member of the Accreditation Council of the AACSB in order to have a chapter of Beta Gamma Sigma. Membership in the society is highly prized as a badge of merit recognized by leading business administrators everywhere.

BUSINESS STUDENTS ASSOCIATION

The official student body organization of the College is the Business Students Association. The president of this association is the president of the student body of the College of Administration and Business. Dues are fifty cents per quarter, and this is an official charge recognized by the College.

DATA PROCESSING MANAGEMENT ASSOCIATION

The Louisiana Tech University Data Processing Management Association is a student organization affiliated with the Data Processing Management Association; its charter was received on January 23, 1973. Membership is open to students interested in data processing. The organization's purposes are to encourage the interest of its members in data processing and to facilitate the exchange of information between students and professionals in data processing in their efforts to develop a better understanding of the data processing field, its requirements, and its functions.

DELTA SIGMA PI

Beta Psi chapter of the professional international fraternity of Delta Sigma Pi was chartered on May 15, 1948. Delta Sigma Pi was founded at New York University on November 7, 1907. The purpose of the fraternity is to foster the study of business in colleges and universities, to encourage scholarship and the association of students for their mutual advancement by research and practice, to promote closer affiliation between the commercial world and students of business, to further a high standard of business ethics and culture, and to promote the civic and commercial welfare of the community.

ECONOMICS AND FINANCE CLUB

Membership in the Economics and Finance Club is open to any student interested in the respective fields. Organized in 1969, the Club is devoted to the professional development of its members and to fostering a meaningful relationship among students, faculty, and professionals in the areas of Economics and Finance.

MARKETING CLUB

The Louisiana Tech Marketing Club was organized in 1956 and is affiliated with the American Marketing Association. Membership is open to any college student interested in marketing. Outstanding people in the field of marketing are frequent guest speakers at the regular meetings of the club. The purposes of the club are to develop sound thinking in marketing theory; to improve marketing personnel; to develop better public understanding and appreciation of marketing problems; to encourage and uphold sound, honest practices; and to promote friendly relations among students, faculty, and businessmen.

NATIONAL COLLEGIATE ASSOCIATION FOR SECRETARIES

The Louisiana Tech Chapter of the National Collegiate Association for Secretaries was established as a charter of the national organization in March, 1962. This association is a professional organization for degree-granting collegiate institutions offering secretarial programs on the undergraduate level and teacher training programs in the secretarial area.

The activities of the organization are designed to encourage exchange of ideas and experiences among those students planning secretarial careers; to provide an opportunity for teacher trainees in the secretarial area to expand their understanding of the secretarial profession; to promote a spirit of fellowship among those students planning secretarial or teaching careers; to provide opportunities for contacts between students and professional business men and women.

OMICRON DELTA EPSILON

Omicron Delta Epsilon is one of the nation's largest academic honor societies. It was established in January of 1963 as the result of the merger between two major honor societies, Omicron Delta Gamma, which was originally founded in 1915, and Omicron Chi Epsilon, which was originally founded in 1955. Omicron Delta Epsilon is member of the American Association of Collegiate Honor Societies and, thus, is fully recognized and accredited. It is open to students who have a 3.0 or better grade point average, graduate students in the field of Economics, and faculty members of the Economics and Finance Department.

PHI CHI THETA

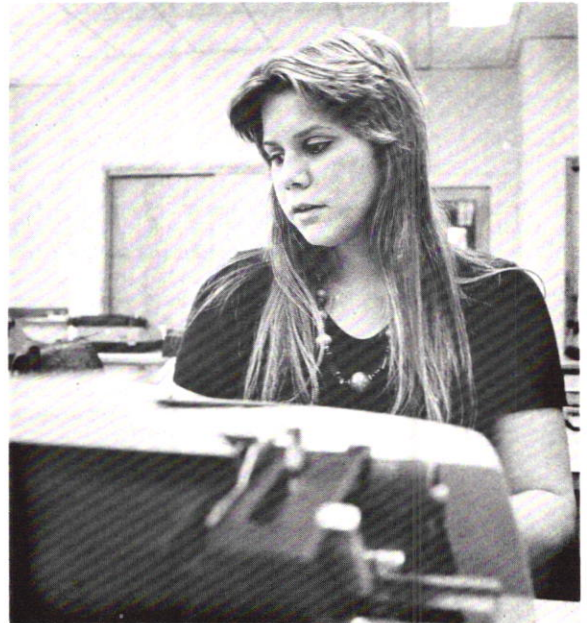
Phi Chi Theta, a national fraternity for women in business and economics, was first organized in 1924. Louisiana Tech's chapter, Delta Eta, was established in 1974. The purposes of the organization are to promote the cause of higher business education and training for all women; to foster high ideals for women in business careers; to encourage fraternity and cooperation among women preparing for such careers; to stimulate the spirit of sacrifice and unselfish devotion to the attainment of such ends.

SIGMA IOTA EPSILON

Zeta chapter of Sigma Iota Epsilon was organized at Louisiana Tech in 1949. Sigma Iota Epsilon is an honorary and professional fraternity in the management field. Its purpose is to provide stimulation and incentive to students of management, to recognize their scholastic merit, and to foster management as a profession and the development of the professional attitude toward it. The fraternity is the student division of the Academy of Management, which grants full membership to those who are interested and engaged in advancing the theory and philosophy of management through teaching, research, or publication.

SOCIETY FOR THE ADVANCEMENT OF MANAGEMENT

The local chapter of the Society for the Advancement of Management received its charter on January 24, 1948. The purpose of this society is to inspire students in business administration and to promote contact among men in the business world. Leading businessmen are obtained to speak at the regular meetings of the Society. The Society makes field trips to selected business and industrial firms of the area where valuable contacts are made as well as information obtained first-hand about the organization and operation of the firms visited.



COUNSELING PROGRAM

Each undergraduate student is assigned to a CAB faculty member who is the student's curricular adviser. This assignment is made early during the student's first term of enrollment in the CAB and the counselor designated is based on the curriculum or option the student enrolls in at registration. The same counselor assignment normally continues until a student is graduated, unless the student changes curricula or options. Counselors are assigned by the CAB undergraduate division director.

The CAB counselors advise students which courses to take in future quarters during established preregistration periods, and are available during posted conference hours to advise the students on academic and career matters. All CAB students are encouraged to use the services of the University's Counseling Center. The Center's counseling assistance services include personal problems, study habits improvement, and various tests such as vocational interest and aptitude.

UNDERGRADUATE ADMISSIONS AND TRANSFER POLICIES

ADMISSIONS POLICIES

Louisiana Tech's College of Administration and Business seeks to assist students in determining and achieving appropriate educational objectives. Part of the CAB's responsibility to present and potential students and to the general public is to admit to the CAB only those students who, by past educational preparation and demonstrated capability, are prepared to complete their intended curriculum at the CAB's required level of quality. Judgment is exercised since admission decisions involve consideration of qualitative as well as quantitative factors. Some of the considerations are: grades in specific college courses, total quality and quantity of prior college preparation, standardized test scores, apparent maturity and seriousness of purpose, record of academic probations and suspensions, and intended program of study.

In general, students who have an overall, attempted average of 2.0 or higher and are not on probation may be admitted. Admissions latitude may be exercised when the overall average is less than 2.0 but the trend in grades is upward, the student is not on probation, and other considerations are favorable.

The foregoing is a general statement on admissions policies. The complete current statement of admissions requirements may be obtained upon request to the CAB dean's office, which makes all admissions decisions and transfers students into the CAB during each registration period in accordance with policies in effect at that time. Tentative evaluations of transfer status are given by the CAB dean's office on request at most times during the year.

If a student does not meet the CAB admission requirements, he may enroll in the Division of Basic and Career Studies and attempt, normally for a maximum of three terms, to meet the requirements. All beginning freshmen enroll first in the Division. In that program students will have certain course limitations—for example, the number of semester hours in CAB courses is limited each term and no 400-level CAB courses may be taken. For additional information contact the CAB dean's office. (See also CAB sections on "Scholarship Standards" and "Graduation Requirements").

TRANSFER POLICIES

With some exceptions, the College of Administration and Business accepts for degree credit work such as that taken by examination and at other institutions in accordance with published policies of Louisiana Tech University as stated in the general information section of the University's Bulletin. The final determination of degree credit in any CAB curriculum, is, however, made by the CAB dean's office. A complete statement of current degree credit evaluation policies may be obtained upon request from the CAB dean's office; it is a more detailed statement than the general guidelines given below. Deviations from all requirements must have advance written approval by the CAB dean's office. (See also "CAB Graduation Requirements").

VALIDATION

Validation of knowledge gained in a non-traditional manner is possible as discussed under "Credit by Examination" below. Validation may also be required by the CAB dean's office before degree credit is allowed for other college-level work if deemed necessary to demonstrate competence comparable to other

CAB students. This is especially true in the case of some courses taken at the freshman/sophomore levels which the CAB requires at the junior/senior levels.

COLLEGE CREDITS

Courses taken in residence with other colleges are generally given degree credit in the CAB, if the courses are of comparable quality, content, level, and semester hours credit.

CREDIT EXAMINATIONS

The CAB normally allows credit, in accordance with general university policies for College Level Examination Program (CLEP) General and Subject examinations; College Entrance Examination Board (CEEB) Advanced Placement examinations; and LTU subject examinations.

Where duplicate credit exists on a student's record, the priority of selection to satisfy degree requirements will be residence college courses first, LTU subject examinations second, other subject examinations third, and general examinations last. Duplicated credits are counted as degree credit only once. Also, first priority is given to non-CAB courses when evaluating or approving credit examinations other than LTU examinations.

Subject examinations cannot exceed thirty semester hours and the subjects must be at comparable levels of comparable content, and semester hours credit to receive degree credit.

General examinations (CLEP) may be used up to a maximum of thirty semester hours degree credit only as follows, when equivalent other credits have not been earned: English for English 101 and 102; Social Sciences in lieu of any American or western civilization history course(s); Humanities for English 201 and 202; Natural Sciences in lieu of natural science electives, if not already satisfied (excluding Industrial Management Option); and Mathematics in lieu of Mathematics 107, 108 and 109, if 50 percentile or higher is made on the mathematics examination. A lower score requires that Mathematics 109, or some approved higher level mathematics course, be taken by course or subject examination to validate knowledge of the field.

CORRESPONDENCE

Prior written approval must be obtained from the CAB dean's office before taking a correspondence course for degree credit. Normally, only one such course per quarter is approved when the student is not enrolled for other college work. A maximum of six semester hours degree credit is permitted for this work.

NON-COLLEGE SCHOOLS AND EXPERIENCE

Up to six semester hours of degree credit, in lieu of liberal education electives (only as defined in "Electives System in CAB") may be earned for military service schools using the American Council on Education as the evaluative source. No additional degree credit is allowed for military, industrial, or similar schools, work, or experiences. However, if the student wishes to qualify such knowledge for degree credit, appropriate course content credit examinations can be arranged. See section above on "Credit Examinations."

SCHOLARSHIP STANDARDS

Students in the CAB may carry a normal course-load, as defined by the University, except when on probation, during which term(s) the student is placed on "limited load" and may schedule a maximum of nine semester hours.

Each time CAB students are suspended, their total academic status is subject to a review by the CAB Scholastic Standards Committee. In addition to acting on appeals for reinstatement from a suspension, the Committee may impose special conditions on suspended students—such as a maximum course load of six semester hours, requiring all courses taken to be repeats of courses previously taken, and so forth. The Committee may also disenroll a student from the CAB when the requirements for admission (see section on CAB "Admissions Policies") are not being met by the student in the quality of his work after his admission. Additionally, a student is normally "Dropped from the CAB" when an indefinite suspension, or the equivalent, has been received.

A student who is disenrolled from the CAB by the Committee is normally not eligible for readmission consideration until after an extended period and then only when exceptional total academic merit and progress have been exhibited.

CAB GRADUATION REQUIREMENTS

To receive a degree from the CAB a student must be admitted to and spend the senior year enrolled in the CAB. This is normally interpreted to refer to the courses specified in the senior year of the student's curriculum. The number of semester hours defined in the senior year and other graduation requirements are the same as for the University. CAB courses taken while enrolled in another college or division of the University do not satisfy any part of the CAB senior residence requirements.

Students entering their last quarter who are more than nine quality points short of the required earned average for graduation will not be permitted to register for all courses required (one will be withheld). Neither can they register for graduation.

If a student has completed all courses and is quality points short of the required average for graduation, it is required that CAB courses at the 400 and 300 levels in which "D" grades were made must be repeated before repeating lower level and non-CAB courses. This requirement is in accord with the requirement that the senior year must be in residence study in the CAB.

Students must have a 2.0 earned average on all additional courses required in their CAB curriculum to receive a second degree in the CAB, exclusive of the grade average for the courses in the first degree. The senior year residence requirements are applicable to the second degree.

CATALOG REQUIREMENTS AND CHANGES

All official notices affecting CAB undergraduate students are posted on the bulletin board directly across the hall from the dean's office (CAB 106). The notices placed thereon officially update the University bulletins and are binding on students pursuing programs offered by the College as if published in the bulletins. In addition to policy and requirements changes, informational items are posted such as planned course schedules for the next quarter(s), courses planned to be offered in future terms, available scholarships, etc. Students are advised to check the board at least once or twice during each quarter for any new information.

All CAB students enter the College under all University and CAB policies then in effect. Each student

is responsible for meeting all catalog requirements for graduation, including taking courses in the proper sequence as shown in each curriculum. Students are also responsible for scheduling infrequently offered courses when they are available. CAB counselors, during preregistration and registration, advise students how to meet graduation requirements but whether the advice is followed is the student's prerogative. However, all CAB policies, regulations, and requirements (e.g., course prerequisites, electives policies, semester hour load limits, etc.) must be adhered to or the student is subject to being discontinued from enrollment in the CAB.

When course requirements are changed in the curricula, they are to improve the education of students. Such changes are not retroactive on work already taken by admitted students but will apply on work yet to be taken, except that the total remaining hours required for graduation cannot be increased and a student is not required to take an added course not available prior to his graduation or for which the specified prerequisite course(s) will not have been required.

Each time a student changes curricula or options a reevaluation of all work already taken is done in terms of that particular program's requirements. Due to the rapid advancement in knowledge, a student is permitted five years from his first admission date to complete a four-year curriculum, after which time a reevaluation of all work previously taken may be required.

Any deviations from curricular and other CAB requirements must be approved in writing in advance of the deviation (e.g., substitution of courses). Such changes must normally be recommended by the student's assigned counselor and approved by the CAB undergraduate division director. The student is furnished a copy of approved program changes, courses approved to be taken elsewhere, etc., and is advised to retain such copies.

ELECTIVES SYSTEM IN CAB

Students are responsible for selecting courses which meet catalog requirements including electives. Certain electives are defined below. Any courses taken which are not specified in the student's program and are not specifically included in this electives policy section will be counted as non-degree courses. To be acceptable for degree credit any deviation in required or elective courses must be recommended in writing, in advance, by the student's counselor and have the written approval of the CAB undergraduate division director. In general, course substitutions are discouraged, including electives, and must have a sound justification to be approved.

CAB ELECTIVE

CAB electives may be satisfied by any course(s) offered by the College of Administration and Business approved by the student's counselor. It normally will be an advanced course (300 or 400). Some CAB electives are restricted as to choice of courses or subject areas.

CONCENTRATION FIELD ELECTIVE

Several CAB programs require or permit a concentration field in a subject area such as management or finance. A concentration field consists of a minimum of six semester hours of advanced study in a subject field beyond the introductory course(s). CAB and specified option elective courses as approved by the student's advisor may be used to obtain a concentration.



LIBERAL EDUCATION ELECTIVE

This type of elective may be satisfied by any course* offered in the College of Arts and Sciences or specified courses in other colleges as follows: Psychology (any course); Botany 101; Home Economics 100; Geology 111, 112; Life Sciences 456; Petroleum Engineering 200; and Zoology 111, 112.

*(Note: Special problems and advanced honors courses are not permitted unless the student has a minimum of 15 semester hours preparatory work in a discipline prior to taking such a course in that discipline.)

OPTION ELECTIVE

This refers to the election of a designated group of courses by students in the Business Administration or Economics curriculum. The requirements of the option chosen will govern the courses to be taken.

RESTRICTED ELECTIVE

This refers to a type of elective in which the curriculum or option designates the area from which the course must come or indicates that the choice must come from a group of listed courses.

SCIENCE ELECTIVE

A science elective may be satisfied by any one or a combination of the following specified courses: Physics 205; Zoology 111, 112; Botany 101; Chemistry 101 or 120, 123; Geology 111, 200; and Physics 207. While students will normally select science electives only from the foregoing list, advisors may also approve the following courses: Physics 206; Geology 112; Chemistry 121, 124. (Special problems and advanced honors will not satisfy this elective; the objective of these electives is a survey knowledge of the subject area(s).)

SOCIAL STUDIES ELECTIVE

This elective is normally satisfied by any course(s)* in the following fields: Geography, History, Political Science, Philosophy, Sociology. Those courses dealing with man, his cultural development and adaptation to changing environment, are encouraged.

*(Note: Special problems and advanced honors courses are not permitted unless the student has a minimum of 15 semester hours preparatory work in a discipline prior to taking such a course in that discipline.)

REQUIREMENTS FOR MINORS IN THE COLLEGE OF ADMINISTRATION AND BUSINESS

Students enrolled in other colleges may not take a major in any area in the College of Administration and Business. This statement means that no student of another college may take for degree credit any combination of courses in the College of Administration and Business whether called a minor or electives or a combination thereof, in excess of a total of 27 semester hours.

Business Foundation Minor. This minor is designed for those students in fields other than those offered in the College of Administration and Business who think that they may want to enter the graduate program to earn a Master of Business Administration (MBA) degree. (See the MBA program in the graduate catalog for a description of this degree program.)

There is a substantial demand for graduates with the MBA degree who specialized in another field in their undergraduate programs. These graduates have a specialized degree or a broad liberal arts degree outside of business and have also acquired a knowledge of business functions with emphasis on administration or management. The demand by industry is particularly heavy for MBA graduates with undergraduate programs in mathematics, science and engineering, but the demand is also great for MBA graduates having social sciences and other liberal arts undergraduate majors.

Students interested in this minor should elect 21 hours from among the following courses (more may be taken if desired up to a maximum of 27 hours of courses); Accounting 203, 204, 205, or 203, 204, 310; Business Law 350; Quantitative Analysis 335, 336, 337; Economics 203, 204, 205, or Economics 315, 408, Finance 318; Management 311, 312; Marketing 300.

Minor in Accounting. Accounting 203, 204, 205, 303, 318; Management 311, 312; Marketing 300. hours.

Minor in Business Data Processing. This minor combines some business statistics with data processing to prepare the student for work in his own field when such methodologies are applicable. It is particularly good for students in mathematics, the sciences, and other areas serving the business and industrial worlds where these methods are employed as analytical and research tools. The requirements of this minor are: Accounting 203, 204; Economics 315; Quantitative Analysis 220, 435, 335, 336, and two courses selected from Quantitative Analysis 310, 315, 426, and 428; total 21 semester hours.

Economics Minor. A student not registered in the College of Administration and Business must meet the following requirements: Economics 203, 204, 205; Economics 312; and 12 hours of Economics courses at the 300 or 400 level; total, 21 hours.

Minor in Finance, including Insurance and/or Real Estate. The following requirements must be met: Economics 203, 204, 205; and 15 hours of Finance courses at the 300-400 level; total 21 hours. Economics 312 may be used as part of the 15 hours even though it is not a Finance course.

General Business Minor. This minor is offered for the student who wants broad training in business to supplement his training in another area. The required courses are: Accounting 203, 204; Economics 315; Management 311. Marketing 300; Business Law 350; Quantitative Analysis 335, 336; and a two- or three-hour elective course (300-400 level) in the College of Administration and Business; total 22 or 23 semester hours.

Minor in Management. The following requirements must be met: Accounting 203, 204; Economics 315; Business Law 350; Marketing 300; Management 311; Management 312; and a three-semester hour (300-400 level) management course to complete 22 semester hours.

Minor in Marketing. The following requirements must be met: Accounting 203, 204; Economics 315; Business Law 350; Management 311; and nine hours of marketing courses (300-400 level) to complete 22 semester hours.

Office Administration Minor. Office Administration 201, 202, 203, 206, 207, 208, 303, 304, 307 and 309. If the student is exempt from 201, he would take a total of 25 hours rather than a total of 27 hours.

UNDERGRADUATE PROGRAMS

ASSOCIATE DEGREE PROGRAMS

The objectives of two-year associate degree programs are: (1) to permit students to continue their educational development in a university-level climate; (2) to provide a curriculum of both general education and general and specific business knowledge appropriate to persons planning to take functional and trainee positions in government and industry; (3) to provide a meaningful termination point for students desiring only two years of college; and (4) to facilitate the present or future continuation of the associate degree students' educations toward the baccalaureate degree.

SECRETARIAL CURRICULUM

(Leading to the Degree of Associate of Science)

There is a four-year bachelors degree office administration program discussed later. This two-year associate of science program seeks: (1) to prepare students who wish to qualify for office positions, at the stenographic level, in large and small commercial, governmental, and industrial organizations; (2) to permit students to apply the credits earned toward the four-year office administration program should they choose to continue their educations to prepare for additional, challenging career opportunities.

For the course requirements of the two-year Secretarial Curriculum, see the Division of Basic and Career Studies section of the bulletin where all the University's associate degree programs are described. Since this program is offered by the College of Administration and Business, students should become familiar with CAB admission, elective, scholarship standards, and other requirements sections of the CAB portion of the University's bulletin.

BUSINESS TECHNOLOGY CURRICULUM

(Leading to the Degree of Associate of Science)

The primary objective of the program is to provide an educational alternative for students who desire, and need for their intended careers, basic education beyond high school, but less than a four-year college program, and some practical knowledge to help prepare them for job entry and possible advancement opportunities. Students electing this two-year program may complete the curriculum by utilizing the technical electives to obtain a concentration field in insurance, sales, or general business administration.

For degree and course requirements, see the Division of Basic and Career Studies section of the bulletin. This is a program of that Division and students should become familiar with all divisional requirements.

BACHELOR DEGREE PROGRAMS

Five baccalaureate degree curricula are offered by the College of Administration and Business: Accounting; Business Administration (with several options or

specialties available from the Business Department and Economics and Finance Department); Business Economics; Economics; and Office Administration. The course requirements for these four-year programs are given in the following pages. (Note: The four curricula are given in alphabetical order with several pages of options being listed after the Business Administration curriculum.)

All five of the baccalaureate degree programs have the following objectives: (1) to assist students to prepare personally and professionally for future roles as citizens and leaders in a complex, changing society by providing a broad education, including a background in the liberal arts and natural and social sciences; (2) to encourage students to develop their individual capabilities and the incentive for continued future learning, self-improvement, and advancement by requiring personal discipline, industry, and high-level performance; and (3) to provide an educational background sufficient for the needs of those students who are interested in, and qualified for, pursuing studies at the post baccalaureate level. Additional specific objectives are given at the beginning of each of the four-year curricula.

BASIC B.S. FRESHMAN CURRICULUM

This basic curriculum is required of all bachelor of science degree students who enter the College of Administration and Business. Associate degree and bachelor of arts degree freshman year requirements are given in those curricula. Students enrolling in CAB programs who have already decided what curriculum or major they wish to pursue may designate that curriculum when they register. Students who have not definitely decided what curriculum they wish to pursue should write "BA-Basic" after the word "Curriculum" on the registration form.

Freshman Year	Semester Hours
Economics 200	3
English 101, 102	6
Management 105 ¹	3
Mathematics 107, 108, 109 or 111, 222 ²	6
Office Administration 202 ³	2
Political Science 201	3
Science Elective ⁴	3
Social Studies Elective ⁴	3
Sociology 201	3
Total ⁵	32

¹Students having ACT composite standard scores of 25 or higher may choose not to take Management 105. Instead, they may begin their second year courses sooner. Later they will take a 300 or 400 level CAB elective to satisfy the Management 105 semester hours skipped.

²Counselors will individually advise each student which of the listed math courses he should take. While the Mathematics 107, 108, and 109 will satisfy the mathematics requirement for most College of Administration and Business programs, students may choose to take 111 and/or 222 instead of, or in addition to, 107, 108, and 109. Liberal education electives may be used for such additional math courses. (Note: The Management Science and Industrial Management options require Mathematics 222 or the equivalent.)

³Students having approximately a year of typing in high school are usually ready to take Office Administration 202. Students who have never had typing will need to take Office Administration 201 prior to taking 202. The semester hours for Office Administration 201 will not count in the hours required for a degree.

⁴See "Elective System in CAB."

⁵Some students may take more, and some students may take less, than this number of hours the first year, depending on extracurricular activities, educational background, and so forth.

ACCOUNTING CURRICULUM

(Leading to the Degree of Bachelor of Science)

The Accounting Curriculum provides a thorough education in the accounting discipline. This specialized accounting knowledge, together with the broad liberal arts, sciences, and business background, is designed to prepare students: (1) for advanced studies in accounting or business; (2) to take appropriate trainee and managerial positions in government and various types of business organizations; (3) to provide the basis for future growth and development within the accounting profession; and (4) to provide the educational foundation for future advancement to general administrative and leadership positions.

The accounting profession is one of the most rapidly growing professions in the country. Transfer students electing this curriculum will be required to take at least nine semester hours in advanced accounting at Louisiana Tech.

Freshman Year	Semester Hours
See Basic B.S. Freshman Curriculum	32
Sophomore Year	
Accounting 203, 204, 205	6
Economics 203, 204, 205	6
English 201 or 202	3
Liberal Education Elective ¹	6
Liberal Education or Science Elective ¹	1
Psychology 102	3
Quantitative Analysis 220	3
Science Elective ¹	3
	31

¹See "Elective System in CAB."

Junior Year	
Accounting 303, 304, 305, 307, 308	12
Business Law 350, 352	5
Finance 318	3
Management 311, 312	6
Marketing 300	3
Quantitative Analysis 335, 336, 337	6
	35

Senior Year	
Accounting 411, 412, 413	9
Accounting Electives	6
Economics 312	3
Management 305, 495	6
Speech 377	3
Restricted Electives ¹	5
	32
TOTAL FOR CURRICULUM	130

¹Restricted electives: select five semester hours from Business Law 351; Mathematics 222; Quantitative Analysis 315, 426, 430.

BUSINESS ADMINISTRATION CURRICULUM

(Leading to the Degree of Bachelor of Science)

The Business Administration Curriculum is structured to: (1) provide the broad education students will need for flexibility and mobility as future administrators in various possible types of organizations; (2) permit students to elect to complete the program in general business, thereby tailoring part of the basic program to individual educational objectives; (3) permit students to elect one of several available options (moderate specialties) to assist them in more adequately fulfilling the requirements of their planned initial employment; and (4) prepare students for advanced studies in their chosen fields.

The modern age with its rapid changes has made it essential that the future business man and woman be broadly educated in order to adjust and adapt themselves to changing methods. Furthermore, it has been found that many students move out of their college specialty after entering business. Therefore, it is desirable to their future development that they receive training in all of the staff and functional areas of business. In this way, they will be prepared to take full advantage of opportunities that present themselves.

However, a specialty may be desirable as an entree or door into the business world. Therefore, a number of specialties are provided in the business administration program. These specialties are called options. The student may select his option at any time but should normally have chosen it by the beginning of the junior year.

Freshman Year	Semester Hours
See Basic B.S. Freshman Curriculum	32
Sophomore Year	
Accounting 203, 204, 310	7
Economics 203, 204, 205	6
English 201 or 202	3
Liberal Education Electives ¹	6
Psychology 102	3
Quantitative Analysis 220	3
Science Elective ¹	3
	31

¹See "Elective System in CAB."

Junior Year	
Business Law 350, 351	5
Economics 312	3
Finance 318	3
Management 305, 311, 312	9
Marketing 300	3
Option Elective ¹	3
Quantitative Analysis 335, 336, 337	6
	32



¹The three semester hours of Option Electives in the junior year plus the fifteen semester hours of Option Electives in the senior year permit the student to select one of the several options (specialties) shown on the following pages. As will be noted, some of the options are offered by the Business Department and some by the Economics and Finance Department.

Senior Year

CAB Elective ¹	3
Management 495	3
Option Electives ²	15
Restricted Electives ³	6
Speech 377	3
	<hr/>
	30
TOTAL FOR CURRICULUM	125

¹See "Elective System in CAB."

²See each option for course requirements and any additional requirements (e.g., certain mathematics or science courses to be taken as electives.)

³See each option for the courses listed as restricted electives.

OPTIONS OFFERED DEPARTMENT OF BUSINESS

BUSINESS DATA PROCESSING OPTION

This group of courses is primarily designed to prepare students for careers in data processing, for work directly in computing centers or data processing departments of business and government, and for work in business systems design and analysis. It will provide students with an understanding of the analysis of business data; a knowledge of the techniques and methods of utilizing data; a basic competence in computer programming; and a familiarity with computers and peripheral equipment.

Students interested in business data processing will normally elect the following courses in this option.

	Semester Hours
Quantitative Analysis 310, 315, 428, 435	9
Finance 422, Management 444, 480; Marketing 435; Quantitative Analysis 426, 436 (any nine hours)	9
	<hr/>
Total	18

Restricted CAB Electives in the senior year:

Accounting 308; Economics 409, 437; Marketing 482; Quantitative Analysis 430, 431, 432 (any six hours)	6
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BUSINESS MANAGEMENT OPTION

This option extends the requirement of the Business Administration Curriculum further in the direction of general business management. Students who take this option will logically seek management trainee positions in business or industrial enterprises. The following courses will normally be elected to satisfy this option.

	Semester Hours
Management 470, 475	6
Management Electives (400-level Management Courses)	6
Marketing 482	3
Quantitative Analysis 430	3
	<hr/>
Total	18

Restricted CAB Electives in the senior year:

Business Law 445; Economics 409; Marketing 425; Quantitative Analysis 435; (any six hours)	6
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GENERAL BUSINESS ADMINISTRATION OPTION

The Business Administration Curriculum provides the student with a broad education in business administration including courses in the fields of accounting, economics, business finance, marketing, management, business law, and quantitative analysis. This general concept of broad business administration is extended into the G.B.A. option to include an additional 18 hours of broad education for business. A course in each of two additional fields is required. These fields are insurance and real estate. One additional course is required to be selected from the fields of marketing or management, and the student is permitted to elect three additional courses in the College of Administration and Business.

	Semester Hours
Finance 330	3
Business Law 441 or Finance 442 or 443	3
Marketing 320 or 425 or Management 446 or 465	3
CAB Electives ¹	9
	<hr/>
Total	18

Restricted CAB Electives in the senior year:

Business Law 445 or 447; Economics 409 or 437; Marketing 482; Quantitative Analysis 430	6
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¹See "Elective System in CAB."

INDUSTRIAL MANAGEMENT OPTION*

This option is designed to fill a growing demand for business graduates with sufficient technical background to cope with modern management problems in business and industry. The graduate in this curriculum is qualified for employment in production planning and control, quality control, methods analysis, materials management, and related areas in service industries. The option elective courses normally to be taken are listed below:

	Semester Hours
Industrial Engineering 409	3
Management 444, 475, 476	7
Quantitative Analysis 310, 430	5
Accounting 308, Business Law 447; Economics 418, 419; Management 472; Quantitative Analysis 315, 426, 432 (any three hours)	3
	<hr/>
Total	18

Restricted CAB Electives in the senior year:

Accounting 308; Business Law 447; Economics 418, 419; Management 472; Quantitative Analysis 315, 426, 432 (any six hours)	6
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*Additional specific requirements for the Industrial Management Option are:

Mathematics 107, 108, 109 and 222 or Mathematics 111 and 222 comprise the mathematics requirements for this option. If the student must take more than 6 hours of mathematics to complete Mathematics 222, the additional hours may be used as a liberal education elective(s).

An approved one-year course in physics or chemistry is required. These courses may be taken as either science electives or liberal education electives.

INTERNATIONAL BUSINESS OPTION*

Many firms which sell abroad have found a need to adapt their operational procedures as well as their products to the peculiarities of the nations concerned. This option provides career opportunities with American firms that regard their foreign operations as an integral part of the company.

In addition to specific job opportunities with international firms, either overseas or in the United

States, all managers need at least a minimal understanding of International Business to be in tune with the multinational forces affecting their businesses. The courses normally to be taken to complete this option are listed below.

	Semester Hours
Economics 344	3
Economics 330 or Geography 335	3
Management 485	3
Marketing 485	3
Concentration Field—select six semester hours from one of these fields: Finance, Management, or Marketing	6
Total	18

Restricted CAB Electives in the senior year:
Economics 448; Finance 412;
Management 465 (any six hours)

6

*For Liberal Education Courses the student should consider courses in: foreign language, geography, history, international studies, and political science.

MANAGEMENT SCIENCE OPTION*

This option is for students who desire special training which will prepare them for positions involving quantitative methods in management decision making utilizing mathematics, business statistics, and electronic data processing.

The steadily increasing importance of management science in such areas as government, industry, and education and the rapid growth in the theory and application of management science methods to the management decision making process underscore the desirability of electing this program. This option also particularly prepares one for pursuing the management science specialty in the Master of Business Administration program.

Listed below are the option courses normally to be taken to complete this program.

	Semester Hours
Quantitative Analysis 431, 431 432	9
Select nine hours from: Management 444; Quantitative Analysis 435, 436; and no more than six of the nine hours from Quantitative Analysis 310, 315, 426, 428	9
Total	18

Restricted CAB Electives in the senior year:
Accounting 308; Economics 409, 437; Finance 422;
Marketing 482 (any six hours)

6

*Additional specific requirements of the Management Science Option are:

Mathematics 222 and 228, or the equivalent must be taken as part of the curriculum or as extra courses. They may be taken in lieu of Mathematics 107, 108, 109 or in lieu of Liberal Education Electives.

MARKETING OPTION*

In the past three decades, marketing has become the focal activity of business operations. The manufacturing firm, the wholesale operation, and the retail outlet all offer ample opportunity for employment and rapid career advancement. The Marketing Option is designed to prepare students for a wide range of positions within the field. These positions include activities such as marketing research, product design, testing and management, pricing, advertising, sales and distribution. The option provides the student with a sound knowledge of marketing principles and practice in general and, through the selection of restricted electives, specialization in one or several areas of the discipline may be realized. The courses normally to be taken to satisfy this option are as follows:

	Semester Hours
Marketing 320, 473, 482	9
Nine additional hours to be selected from: Marketing 307, 420, 425, 435 (any nine hours)	9
Total	18

Restricted CAB Electives in the senior year:
Economics 409 or 437; Business Law 445 or
Management 470; Quantitative Analysis 430,
431 or 432

6

*For students interested in Marketing Research, Mathematics 222 is highly recommended. Likewise, Quantitative Analysis 431 or 432 is recommended as the restricted elective in the senior year for those interested in research.

PERSONNEL MANAGEMENT OPTION

This option is designed for students who are interested in personnel management. Students planning to take this option should use some of their liberal education electives to take additional work in the behavioral sciences such as industrial psychology, cultural anthropology, and industrial sociology. The option courses normally to be taken are as follows:

	Semester Hours
Business Law 447	3
Economics 419	3
Management 470, 472	6
Management Electives (400-level Management courses)	6
Total	18

Restricted CAB Electives in the senior year:
Economics 409, 418; Finance 431;
Marketing 482 (any six hours)

6

PRE-LAW OPTIONS

Students expecting to enter law school are well advised to pursue one of the curricula in the College of Administration and Business. A college education in business gives an advantage to the law student in law school and to his later career. The work of successful lawyers has come to be more and more connected with the rendering of opinions and counsel on business matters such as banking, insurance, real estate titles, business contracts, etc. Corporations employ many lawyers full time for their contract and other legal work, and the young lawyer who has a degree in business will be at distinct advantage in obtaining and doing such work.

IMPORTANT: Each law school determines its own requirements, such as admission criteria, number and type of semester hours required for entrance, etc. A student planning to enter a law school should be in communication with that school shortly after coming to college to insure the program he takes will meet **all requirements of the law school he plans to attend.**



Pre-Law Option I*

Under this option, the student finishes the first three years of the Business Administration Curriculum and then enters law school. After he has finished one full year of law school, making a satisfactory average, he may have transferred back to Louisiana Tech the law credits and receive the Bachelor of Science degree.

The option elective courses to be taken are as follows:

	Semester Hours
Management 495	3
Speech 377	3
Total	6

*The minimum semester hours required for the degree are 125. CAB senior year residence requirements apply to the junior year of this program. Only the first bachelors degree may be earned in accordance with these requirements, which must be met precisely.

Pre-Law Option II

Students who elect this option will finish all requirements for the Bachelor of Science degree before they enter law school.

The liberal education electives should be in history and Political Science 326. The CAB elective in the senior year is recommended to be chosen from: Management 480, Finance 330, Marketing 320, Accounting 307, or Economics 418 or 406. The option electives normally to be taken are as follows:

	Semester Hours
Management 444	1
Business Law 352	2
Business Law 441, 445, 447 (any two)	6
Philosophy 325, 326, or 423 (or approved CAB elective)	3
Political Science 302, 318, or 430 (or approved CAB elective)	3
Speech 200 or other approved speech elective	3
Total	18

Restricted CAB Electives in the senior year:
Accounting 307, Economics 409, 410, or 437;
Finance 414 or 422

SPECIAL OPTION

This option is for the student who has some special purpose in mind which the other programs do not satisfy. He may desire to take a special combination of courses in the College of Administration and Business or he may wish to take a combination of courses in business with additional courses in a non-business area. The student may even wish to obtain the equivalent of a minor in some non-business field. Occasionally students want to take courses in other areas because they expect to work in a business enterprise which is involved in such other areas (chemicals, for example). It will be easily possible for such special purpose situations to be taken care of under this option. More information can be obtained about it from the Director of the Undergraduate Division in the College of Administration and Business.

A student planning to take advantage of this option will need to have a conference with his counselor to develop the list of courses to be pursued. This conference will need to occur at least by the time the student is entering his junior year so the courses can be determined and the list of them submitted to the office of the CAB undergraduate division director to be approved and recorded as a part of the student's degree program.

	Semester Hours
Option Electives	18
Restricted CAB Electives in the senior year	6

OPTIONS OFFERED IN DEPARTMENT OF ECONOMICS AND FINANCE**ECONOMICS OPTION**

This option extends the student's training further in economics beyond the courses required in the business administration program. There is an increasing interest in economics among people in the business world, and business administration students who have a greater-than-usual knowledge of economics will undoubtedly find this knowledge of value in their business careers. The option electives normally to be taken are as follows:

	Semester Hours
Economics 408, 409, 437	9
Approved Economics Electives	9
Total	18

Restricted CAB Electives in the senior year:

Appropriate 300 or 400-level CAB electives as approved by student's counselor

FINANCE-BANKING-INVESTMENTS OPTION

Many career opportunities exist with various types of financial organizations, such as banks, brokerage firms, savings and loan associations, commercial finance companies, and the financial areas of government and business. This option extends the student's studies into more advanced topics in preparation for employment or continued study at the master's degree level. The courses normally to be taken in the option are given below.

	Semester Hours
Finance 414, 422, 425, 427	12
Approved Accounting or Finance Electives ¹	6
Total	18

Restricted CAB Electives in the senior year:

Appropriate 300 or 400-level CAB electives as approved by student's counselor¹

¹Part or all of these electives may be used to obtain a concentration field in finance, or a relevant subject field, with the adviser's approval.

INSURANCE-REAL ESTATE OPTION

Many persons have found a knowledge of insurance and real estate a valuable combination. Likewise, many have found more specialized knowledge in one of the fields to be best for their plans. In this option a student may concentrate in one field or take courses in both fields. Career opportunities in real estate include brokerage, appraisal, development and construction, mortgage, and sales. Insurance opportunities include management training programs, sales, agency management, adjustments, and more specialized areas. Courses normally comprising the option are given below.

	Semester Hours
Finance 414, 425, 330 or 442	9
Business Law 441 or Finance 432	3
Finance Electives ¹	6
Total	18

Restricted CAB electives in the senior year:

Appropriate 300 or 400-level CAB electives as approved by student's counselor¹

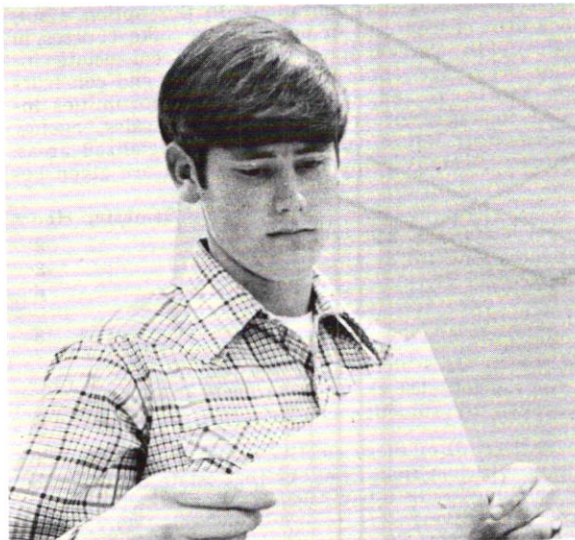
¹Part or all of these electives may be used to obtain a concentration field in either real estate or insurance, or combined with other relevant courses, with the adviser's approval.

BUSINESS ECONOMICS CURRICULUM

(Leading to the Degree of Bachelor of Science)

For the student who has this program which combines economics with the field of business administration, additional opportunities are afforded. Many business executives think that economics combined with business is ideal for success in the business world. This combination of broad business, economics, and cultural education is rated equal to the General Business Administration Curriculum for preparation for almost any business career.

Freshman Year	Semester Hours
See Basic B.S. Freshman Curriculum	32
Sophomore Year	
Accounting 203, 204, 310	7
Economics 203, 204, 205	6
English 201 or 202	3
Liberal Education Electives ¹	6
Psychology 102	3
Quantitative Analysis 220	3
Science Elective ¹	3
	31
Junior Year	
Business Law 350, 351	5
Economics 312, 408	6
Finance 318	3
Management 305, 311, 312	9
Marketing 300	3
Quantitative Analysis 335, 336, 337	6
	32
Senior Year	
CAB Elective ¹	3
Economics 401, 411, 437	9
Economics Electives ¹	6
Economics 410	3
Management 495	3
Quantitative Analysis 430	3
Speech 377	3
	30
TOTAL FOR CURRICULUM	125

¹See "Electives System in CAB."**ECONOMICS CURRICULUM**

(Leading to the Degree of Bachelor of Arts)

Economics is a challenging field of study for the student who desires to know more about the economic society in which we live. More and more opportunities are opening up in various fields for trained economists, but the chief fields of employment today are in government services, industry, and in the teaching profession. Civil service appointments with the federal government are available in a variety of departments.

The Economics Curriculum combines a general education in the arts and sciences with training in economics. The goal of this program is to provide students with: (1) the essential foundation for additional, advanced study in economics; (2) a background for initial employment, and subsequent advancement, in various types of staff, trainee, and future administrative positions in such organizations as business and government, and (3) an appreciation for and understanding of economic phenomena and their impact on society.

An economics-mathematics combination would be valuable for students desiring to enter governmental service, since the work of a statistical analyst in government bureaus or agencies necessitates mathematical skills along with training in statistics. Business research foundations and large industrial concerns also employ graduates who have been trained along these lines.

Freshman Year	Semester Hours
Economics 200	3
English 101, 102	6
Free Non-CAB Elective(s)	3
Liberal Education Electives ¹	6
Mathematics 107, 108, 109	6
Science Electives ¹	6
Social Studies Elective ¹	3
	33
Sophomore Year	
Economics 203, 204, 205	6
English 201, 202	6
English 303, 332, or 336	3
Liberal Education Electives ¹	6
Social Studies Electives ¹	6
Speech 110 or 377	3
	30
Junior Year	
Approved Non-CAB Elective ²	3
Economics 312, 408	6
Economics Electives ¹	6
Non-CAB Minor/Electives ²	12
Social Studies Elective ¹	3
	30
Senior Year	
Approved Non-CAB Electives ²	9
Economics 401, 437	6
Economics Electives ¹	6
Non-CAB Minor/Electives ²	12
	33
TOTAL FOR CURRICULUM	126

¹See "Elective System in CAB"²The minor and these electives must be approved in writing, in advance, by the Head of the Economics and Finance Department.

INTERNATIONAL ECONOMICS OPTION

The expansion of American companies abroad and the economic vitality of developing nations have intensified the demand for university graduates in international trade. In response to new and increasingly complex international business opportunities, American firms have progressed beyond the comparatively simple stage of import-export operations. With the establishment of world-wide operating units, many companies once of only national scope are rapidly becoming multinational.

This option, available in the Economics Curriculum or the Business Economics Curriculum, is designed to prepare students for careers in international business and economics. Positions include employment by multinational firms, foreign departments of domestic banks, governmental agencies, and international organizations interested in economic and trade development. In addition to the option elective courses listed below it is desirable for a student to have a foreign language and he is advised to use his liberal education electives to secure a foreign language foundation. The courses in the option replace courses in the curriculum as specified.

	Semester Hours
Economics 330; 344; 406	9
Economics 448 or 449	3
Total	12 ¹

¹These 12 semester hours are taken in lieu of the economics electives in the junior - senior years of the Economics Curriculum. In the Business Economics Curriculum these 12 semester hours are taken in lieu of Quantitative Analysis 430, three semester hours of CAB elective, and six semester hours of Economics electives.

OFFICE ADMINISTRATION CURRICULUM

(Leading to the Degree of Bachelor of Science)

The Office Administration Curriculum combines the general education in the liberal arts and sciences and business with rigorous specialized study to provide students with the foundation for: (1) advanced study in the field; (2) entry or promotion into executive assistant positions; and (3) future supervisory and administrative positions in the secretarial and office manager areas.

Graduates will be prepared to assume many responsibilities thus relieving the busy executive of routine duties. The shortage of college-educated secretaries is acute, and those prepared for such positions are assured of excellent positions and an opportunity for advancement to supervisory and executive-type positions.

Transfer students electing this curriculum will be required to take at least the last term of the shorthand sequence at this institution regardless of the amount of credit earned elsewhere, unless excused on the basis of an examination by the curriculum adviser.

	Semester Hours
Freshman Year	
See Basic B.S. Freshman Curriculum	32
Sophomore Year	
Economics 203, 204, 205	6
English 201 or 202	3
Liberal Education Elective ¹	3
Liberal Education or Science Elective ¹	1
Office Administration 203, 206, 207, 208	11
Psychology 102	3
Quantitative Analysis 220	3
Science Elective ¹	3

33

Junior Year

Accounting 203, 204, 310	7
Business Law 350, 351	5
Management 311, 312	6
Office Administration 309, 310, 480	8
Quantitative Analysis 335, 336, 337	6

33

Senior Year

CAB Elective ¹	3
Economics 312	3
Finance 318	3
Liberal Education Elective ¹	3
Management 305, 495	6
Marketing 300	3
Office Administration 309, 310, 480	8
Speech 377	3

32

TOTAL FOR CURRICULUM

130

¹See "Electives System in CAB."

BUSINESS EDUCATION CURRICULUM

The Business Education Curriculum and the education courses required in it are offered by the College of Education and will be found in the College of Education's section of the catalog. The business and economics courses required in the curriculum are offered by the various departments in the College of Administration and Business and will be found under appropriate headings in the catalog. The head of the Department of Office Administration is in charge of the Business Education Curriculum and counsels the students pursuing this program.

GRADUATE PROGRAMS

MASTER OF BUSINESS ADMINISTRATION

The Master of Business Administration degree is offered by the College of Administration and Business. Employment and doctoral-level studies opportunities are excellent for MBA graduates. Students may enter the program from baccalaureate programs either in business or non-business fields. For admissions, curriculum, and other information, consult the Louisiana Tech University Graduate School Bulletin.

Students in the MBA program may elect general business—that is, no specialty—or may elect a specialty from one of the following: Accounting, Administration and Organizational Behavior, Business Education, Computer Applications, Economics, Finance, Industrial Management, International Economics, Labor Economics, Management, Management Science, Marketing, and Personnel Management.

DOCTORAL PROGRAMS

Both the Doctor of Business Administration (DBA) and Doctor of Philosophy (PhD) degrees are offered by the College of Administration and Business. The requirements of the programs are given in the Louisiana Tech University Graduate School Bulletin.

The DBA program offers CAB study fields as follows: Accounting, Administration and Organizational Behavior, Business Education, Economics, Finance, International Economics, Labor Economics, Management, Management Science, and Marketing.

The PhD program offers CAB study fields in Economic Theory, Labor Economics, and International Economics. Other CAB fields are also available, including Finance, Accounting, Administration and Organizational Behavior, Management, Management Science, and Marketing.



College
of
Arts
and
Sciences

College of Arts and Sciences

PAUL J. PENNINGTON, Dean

P. B. MOSELEY, Associate Dean

PURPOSE

The purposes of the College of Arts and Sciences may be stated as follows: (1) to provide a broad, general education for those who desire this rather than a more specialized, technical education; (2) to offer the core courses common to many curricula of the college, such as English, mathematics, foreign languages, and social sciences; (3) to provide pre-professional training for those students who intend to study dentistry, law, medicine, nursing, pharmacy, or theology; (4) to assist in the preparation of prospective teachers who desire to major in and teach such subjects as art, English, foreign languages, mathematics, music, natural science, social science, and speech; (5) to provide specialized training for vocations in such fields as chemistry, commercial art, journalism, medical records administration, medical technology, music, nursing, and social welfare; and (6) to provide graduate training leading toward the master's and doctoral degrees.

In general, the student in the College of Arts and Sciences is required to acquaint himself with the main fields of intellectual interest and in addition to acquire, through his major study, a thorough knowledge of some special field. Thus, he may obtain a liberal education, which will prove invaluable to him as preparation for a business or professional career as well as for richer and better living.

SCHOLARSHIPS

Scholarships are available in the College of Arts and Sciences. Information concerning scholarships may be obtained in the Office of the Dean of Arts and Sciences.

DEPARTMENTS AND CURRICULA

The College of Arts and Sciences includes the school of Art and Architecture, and the departments of Chemistry, English, Foreign Languages, History, Journalism, Mathematics, Music, Nursing, Physics, Professional Aviation, Social Sciences, and Speech. It offers curricula leading to the regular degrees of Bachelor of Arts, Bachelor of Fine Arts, and Bachelor of Science in a special subject. The College of Arts and Sciences also has Divisions of Research, Allied Health, Graduate Studies, and a Center of International Studies.

Students who satisfactorily complete the first year of work in an accredited dental, law, medical, or medical technology school and who have previously finished the prescribed pre-professional curriculum in dentistry, law, medical records administration, medical technology, medicine, or nursing at Louisiana Tech University, may receive the bachelor's degree from this institution provided the usual academic standards have been maintained.

SUBJECTS OF INSTRUCTION

The subjects of instruction in the College of Arts and Sciences are advertising art, architecture, art, chemistry, English, French, geography, German, history, honors, interior design and photography, International and American studies, Italian, journalism,

mathematics, medical records administration, medical technology, music, nursing, philosophy, physics, political science, professional aviation, Russian, sacred music, sociology, Spanish, and speech, as well as the "General Studies" curricula.

REQUIREMENTS FOR GRADUATION

Candidates for graduation in the College of Arts and Sciences must have completed an approved curriculum, including a major subject and one or more minor subjects, and must have an average grade of "C" or better on all course credits earned. The required minor subject must be chosen with the approval of the student's adviser before the first quarter of the junior year. Twenty-one semester hours of credit are required for a minor.

Physical education requirements are to be met through physical education activity courses, or through equivalent participation in the United States Air Reserve Officers Training Corps program, or through military service. Not more than four semester hours of physical education activity courses will be counted toward degree requirements.

Foreign language requirements are met through completion of the second year program in a language. Ordinarily, this will mean that four courses in one language will be taken in sequence.

Basic mathematics requirements for students majoring in mathematics or science call for Mathematics 111 and 112; other students may substitute Mathematics 107, 108, and 109.

GRADUATE PROGRAMS

JOHN C. TRISLER, Director Of Graduate Studies

Graduate degrees offered by the College of Arts and Sciences are as follows:

Master of Architecture

Master of Arts (Curricula available as follows:)

English
History
Music
Speech
Speech Pathology

Master of Fine Arts

Master of Science (Curricula available as follows:)

Chemistry
Mathematics
Physics

Doctor of Philosophy

Mathematics

For admissions, curriculum, and other information, consult the Louisiana Tech University Graduate School Bulletin.

DIVISION OF RESEARCH

P. B. MOSELEY, Director

Graduate and undergraduate research are an integral part of the College of Arts and Sciences. Their value is to stimulate both the faculty and the students to achieve a higher degree of knowledge and a desire to contribute this knowledge to their particular fields and related fields of study.

The research is designed to provide the student with adequate information and training in the arts and sciences that will allow him to pursue a terminal degree, choose industrial research, or expand his cultural and educational horizon for his life's vocation. The research activity is well balanced and is coordinated with the instructional program to provide a complete and competent faculty with well equipped laboratories.

The College of Arts and Sciences research committee is chosen from the sciences and humanities, with the director of the Division of Research serving as chairman of the group. This committee is responsible to the dean of the College of Arts and Sciences.

The purpose of a university is instruction, research, and public service. The research division is designed to carry out the second responsibility of these important phases of our educational program.

DIVISION OF ALLIED HEALTH

P. B. MOSELEY, Professor, Director

PROFESSOR: JAMES R. BROWN.

ASSOCIATE PROFESSOR: S. S. KILGORE.

ASSISTANT PROFESSORS: LOU STEBBINS, and ANTHONY P. VILLEMARETTE.

INSTRUCTOR: MARTHA E. RICHARDSON.

The Division of Allied Health in the College of Arts and Sciences was organized to promote and encourage education for the health services.

At the present time the Division offers the following degrees:

1. Medical Technology B.S.
2. Medical Record Administration B.S.

The baccalaureate degree requires four years of study and internship.

MEDICAL RECORD ADMINISTRATION

The Medical Record Administrator supervises the acquisition of complete medical records on each patient cared for by the medical team, plans record retention and retrieval systems and supervises maintenance of them by his staff. The medical record is used to aid the medical team in the treatment and diagnosis of the patient's illness, to verify insurance claims and authenticate legal documents. Information abstracted from the record in statistical form provides data which indicate disease patterns and trends and aid in planning for future health needs. The medical record is used for research. Through the Medical Record Administrator's work of classifying and indexing clinical data, information which often produces new methods of diagnosis and treatment is retrieved to provide improvement in health care.

The Medical Record Administration program requires eleven quarters of study on the campus. These quarters include the following hours:

Science	16 hrs.
Math	6 hrs.
English	12 hrs.
Foreign language	12 hrs.
	<hr/>
	46 hrs.

The campus studies are complemented by directed experience in hospitals designated as directed practice sites. This is a closely supervised learning experience in operating medical record departments. The directed experience will be followed by eight weeks of carefully planned student affiliation with other area health

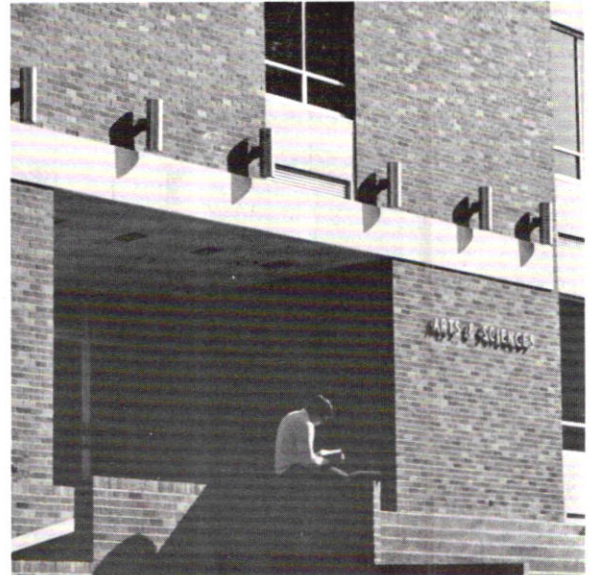
care facilities for a variety of learning experiences. The last two weeks the student will return to the Tech campus for a Medical Record Seminar.

MEDICAL RECORD ADMINISTRATION CURRICULUM

(Leading to the Degree of Bachelor of Science)

LOU STEBBINS, Adviser

Freshman Year	Semester	Hours
English 101, 102		6
Math 107, 108, 109		6
Zoology 111, 112		4
French or Spanish 101, 102		6
Physical Education		2
Medical Technology 110		1
Medical Record Administration 101		3
Elective (science)		4
		<hr/>
		32
Sophomore Year		
English 201, 202		6
Zoology 225, 226		4
French or Spanish 201, 202		6
Physical Education		2
Quantitative Analysis 220		3
Medical Record Administration 201, 202		4
Sociology 201		3
Bacteriology 212		4
Elective		3
		<hr/>
		35
Junior Year		
Medical Record Administration 301, 302, 303, 304, 305, 308, 309, 310		16
Quantitative Analysis 335, 336		4
Management 311		3
Speech 377		3
Psychology 102		3
Elective		3
		<hr/>
		32
Senior Year		
Medical Record Administration 401, 402, 403, 404, 405, 406, 407, 408		24
Office Administration 480		3
Quantitative Analysis 435		3
Elective		3
		<hr/>
		33
		<hr/>
		TOTAL SEMESTER HOURS 132



MEDICAL TECHNOLOGY

The medical technologist needs a thorough background in chemistry, biology and physics. The major portion of the work consists of performing tests on the blood and body fluids using automated methods. The Bachelor of Science requires 129 or 130 semester hours with the following distribution:

- Humanities, 25 semester hours
- Prerequisite science courses, 34 semester hours
- Advanced sciences and technical courses, 40 or 41 semester hours
- Clinical training in one of our ASCP approved affiliate hospitals during the senior year, 30 semester hours. (The student will register at Louisiana Tech each quarter and will pay fees.)

After completion of the clinical year, the student is awarded a Bachelor of Science degree in Medical Technology and is eligible for ASCP registration after passing the registry examination.

MEDICAL TECHNOLOGY CURRICULUM

(Leading to the Degree of Bachelor of Science)
S. S. KILGORE, Adviser

Freshman Year	Semester Hours
Chemistry 101, 103, 102, 104	8
English 101, 102, 201	9
Mathematics 111 or 230, 112 or 231	6
Medical Technology 110	1
Bacteriology 212	4
Zoology 111, 112	4
	32
Sophomore Year	
English 202	3
Zoology 115 and two of the following: Zoology 202, (225 & 226) or Life Sciences 300	11 or 12
Chemistry 220, 351	8
Foreign Language 101, 102	6
Medical Technology 245, 341	6
	34 or 35
Junior Year	
Medical Technology 242, 346, 448, 449, 452	10
Chemistry 212, 352	7
Zoology 401	3
Social Science	6
Physics 209, 210	8
	34
Senior Year	
Medical Technology 453, 454, 455, 456	30
	30
TOTAL SEMESTER HOURS	130 or 131

PRE-OPTOMETRY

P. B. MOSELEY, Adviser

At the request of the Louisiana State Association of Optometrists, it is called to the attention of the interested student that the present offerings of Louisiana Tech University enable any student to earn the credits necessary to satisfy the pre-optometry curriculum requirements of the professional optometry schools. In general, these requirements are as shown below, but specific correlation should be made with the professional school one expects to attend.

Subject	Minimum Semester Hours Credit
English	6
Mathematics (including Algebra and trigonometry)	6
Biology	6
Microbiology	3
General or Inorganic Chemistry	8
General Physics	8
General Psychology	3
Social or Behavioral Science	6

Elective Credits to total 60 hours, equivalent to the Freshman and Sophomore years.

PRE-NURSING CURRICULUM*

(Northwestern State University - Louisiana Tech University Interinstitutional Program for the Bachelor of Science Degree)

P. B. MOSELEY, Adviser

Freshman Year	Semester Hours
Arts & Sciences 101	1
Chemistry 120, 220	6
English 101, 102, 201, or 202	9
History 202	3
Mathematics 107	2
Bacteriology 212	4
Speech 110	3
Electives**	6
	34
Sophomore Year	
Health and Physical Education 321	3
Home Economics 203	3
Management 311	3
Psychology 102, 205	6
Sociology 201, 202	6
Zoology 111, 225, 226	7
Electives**	6
	33

*After completing above curriculum the student may transfer to the Shreveport campus to complete the requirements for the baccalaureate degree.

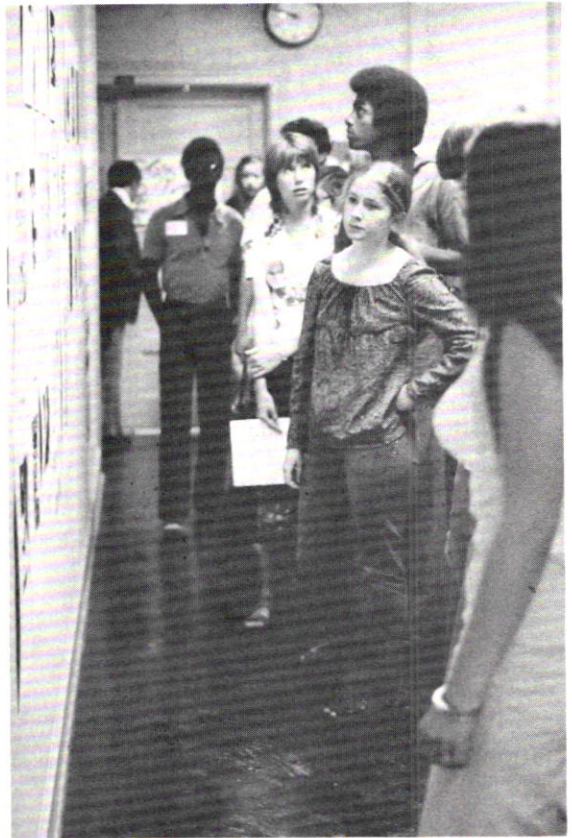
**Additional required electives may be taken at NSU.



TWO-YEAR ACADEMIC CURRICULUM

This two-year curriculum is composed of basic general courses and is designed mainly for those students who have not decided what degree they will work toward but wish to take courses which may be applied on the curriculum they may decide upon later. A student who, after he has completed this curriculum, wishes to take a degree will select one of the curricula given on the following pages and fulfill the requirements which it contains.

Freshman Year	Semester Hours
Arts and Sciences 101	1
Foreign Language	9
History 101, 102	6
Science	4
English 101, 102	6
Mathematics	6
Physical Education	1
	33
Sophomore Year	
Physical Education	3
Foreign Language	3
English 201, 202	6
Science	8
History or Government	6
Speech	3
Elective	3
	32
TOTAL SEMESTER HOURS	65



DEGREE IN GENERAL STUDIES

After completing the two-year academic curriculum the student will normally transfer to a degree curriculum offered by the College of Arts and Sciences or one of the other five colleges at Louisiana Tech University.

If, however, a student wishes to follow a general-ized curriculum, he may pursue a major in General Studies and a concentration (or concentrations) in a specific discipline(s). The curriculum must be approved by the dean of the College of Arts and Sciences and must consist of a total of not less than 126 semester hours. Students pursuing a degree in General Studies may take no more than 27 hours of business courses.

While pursuing the General Studies Curriculum the student will be registered in the College of Arts and Sciences, and upon completion of all requirements he will be granted the degree of Bachelor of Arts, a Liberal Arts and Sciences degree, upon recommendation of the Dean of the College of Arts and Sciences.

A student may earn an Associate of Arts degree, a Liberal Arts and Sciences degree, by completing the following courses: English 101 and 102, six semester hours; mathematics, three semester hours; social science elective, six semester hours; natural science elective, three semester hours; general electives, thirty semester hours; and a concentration of 15 semester hours in a subject matter field approved by the Dean of the College of Arts and Sciences. Total semester hours in the curriculum - 63.



INTERNATIONAL AND AMERICAN STUDIES

Center For International Studies

JOHN F. LEICH, Associate Professor, Director

GENERAL CURRICULUM

(Requirements all options)

English 101, 102, 201, 202	12 hours
History 101, 102, 201, 202	12 hours
Mathematics	6 hours
Science	12 hours
Health and Physical Education	4 hours
Political Science 201, 302, 326, 327	12 hours
Economics 315, 406	6 hours
International and American Studies 397, 398, 399	6 hours
International and American Studies 497, 498, 499	6 hours

TOTAL 76 hours

EUROPEAN STUDIES OPTION

JOHN LEICH, Adviser

The European Studies option offers an undergraduate major, leading to a Bachelor of Arts degree, which is organized on the language and area principle. The approach is interdisciplinary and comparative, and contemporary in emphasis. It is based on the premise that today's European problems can be grasped only by reference to a configuration of geographic, economic, historical, political, ethical, and esthetic principles, and in the light of Europe's past and present position on the world scene. In a Junior and Senior core seminar, the interdisciplinary and comparative focus is fixed on the development and present nature of European society.

Specialization within the option is provided by the requirement that the student complete at least 30 semester hours in one of four traditional disciplines as his principal field of concentration: economics, history, political science, or European languages and literature. Six of these 30 hours must be 300 or 400 level courses outside the continental European area.

The Bachelor of Arts degree with Honors in European Studies may be undertaken by superior students on invitation of the Center. In addition to the general and special requirements of the option, the Honors degree requires the submission of a thesis of not more than 20,000 words on a subject which is comparative and interdisciplinary in nature, oral defense of the thesis, and passing with a grade of at least B a comprehensive written examination.

SPECIAL REQUIREMENTS EUROPEAN STUDIES OPTION

Continental European Language or Languages	24 hours
Geography 360	3 hours
Sociology 201	3 hours
Philosophy 201*	3 hours
Art 364	3 hours
Music 330	2 hours
Additional courses to give 30 hours in principal field and other electives	18 hours

56 hours

Total hours required for degree 132 hours

*not required when principal field is economics.



LATIN AMERICAN STUDIES OPTION

JOHN LEICH, Adviser

The Latin American Studies option is designed to give the student a significant acquaintanceship with the most relevant social, political, and cultural issues of the area. In addition to a thorough grounding in Spanish and the history and geography of the area, the student is expected to understand the cultural and political ties and relationships of Latin America with the United States. The Junior and Senior core seminars adopt a topical interdisciplinary approach to the study of these problems. A Bachelor of Arts degree is awarded.

The student must complete at least 30 semester hours in one of the following traditional disciplines, as his principal field of concentration: economics, history or political science.

The Bachelor of Arts degree with Honors in Latin American Studies may be undertaken by superior students on invitation of the Center. In addition to the general and special requirements of the option, a thesis of not more than 20,000 words must be submitted, which approaches a Latin American country or problem area from an interdisciplinary point of view. The thesis must be defended orally, and a comprehensive examination passed with a grade of "B" or better.

SPECIAL REQUIREMENTS LATIN AMERICAN STUDIES OPTION

Spanish and/or Portuguese	21 hours
History 340, 341	6 hours
Sociology 201*	3 hours
Philosophy 201*	3 hours
Additional courses to give 30 hours in principal field and other electives	23 hours

56 hours

Total hours required for degree 132 hours

*not required when principal field is economics.

AMERICAN STUDIES OPTION

JOHN LEICH, Adviser

The American Studies option, leading to a Bachelor of Arts degree is a program designed to study American culture and the origin and nature of contemporary American society, based on the premise that this society can only be understood in a world context. The core seminars provide an interdisciplinary approach to developmental trends and current problems.

The student must complete at least 30 semester hours in one of the following traditional disciplines, as his principal field of concentration: History, Political Science, American Literature, or Sociology.

SPECIAL REQUIREMENTS AMERICAN STUDIES OPTION

Foreign Language	12 hours
Sociology 201	3 hours
Geography 305	3 hours
Philosophy 201	3 hours
History 470, 471	6 hours
Architecture 468	3 hours
Additional courses to give 30 hours in principal field and other electives	26 hours
	56 hours
TOTAL	132 hours

International and American Studies Minor

The minor in International and American Studies consists of six hours in the European, Latin American, or American Studies colloquium (core seminar) and fifteen hours of 300 or 400 level courses in one or more of the following disciplines: History, Political Science, American Literature*, Sociology*, or Economics**

* open to American Studies minors only

** open to European and Latin American minors only.



SCHOOL OF ART AND ARCHITECTURE

JACK BEARD
Acting Director

PROFESSORS: JACK BEARD and MARY W. MOFFETT.

ASSOCIATE PROFESSORS: MARK R. HARRIS, and TED MCKINNEY.

ASSISTANT PROFESSORS: ROBERT J. BERGUSON, VAUGHN C. CROMBIE, PHOEBE HAYES, ALBINO HINOJOSA, THOMAS JIMISON, ROBERT KARSTEN, FLOYD L. MARTIN, A. D. MATHYS, CHARLES A. MEEDS, MARY K. MORSE, EDWIN PINKSTON, STEVE RODAKIS, ALBERT A. STEWART, and M. DOUGLAS WALTON.

The School of Art and Architecture offers the Bachelor of Fine Arts (B.F.A.) degree with options in Advertising Design, Interior Design, Painting and Photography; the Bachelor of Arts (B.A.) degree in Art Education and upon completion of the first 12 quarters of Architecture; the Master of Fine Arts (M.F.A.) degree with an option in Advertising Design, Interior Design, Painting and Photography; the Master of Arts Degree in Education and the Master of Architecture degree.

Each of these curricula are designed to give the student an understanding of himself in relation to his environment, the community, and its cultural and business needs. At the same time the student is provided a definite program of study in design, drawing, color, media, tools, and technique directed toward professional application.

Requirements For A Minor In Art

A minor in art consists of 21 hours approved by the Director of the School of Art and Architecture.

Bachelor Of Fine Arts

This program is designed to train the professional artist. The curriculum combines a knowledge of techniques and general education. The candidate is required to complete the prescribed courses in the College of Arts and Sciences, and the remainder must be taken in the field of art or photography. Total hours required—127.

Bachelor Of Arts

This degree is offered to the Architecture student upon successful completion of the prescribed course. Acceptance into Graduate School is based on this phase of the six-year Architectural program.

Bachelor Of Arts In Education

(See College of Education)

Prerequisites

All courses numbered 300 and above have the prerequisites of corresponding 200 level courses.

BACHELOR OF FINE ARTS CURRICULUM

All students majoring in any field of art leading toward the B.F.A. degree should take the following courses during the first two years to fulfill requirements of the B.F.A. core curriculum.

	Semester Hours
Art/Architecture	36
Arts and Sciences 101	1
English 101, 102, 201, 202	12
Social Science	6
Mathematics 107, 108, 109	6
	61

ADVERTISING DESIGN OPTION

Junior Year	Semester Hours
Art/Architecture	18
Electives	6
Science	6
Social Science	3
	33
Senior Year	Semester Hours
Art/Architecture	27
Electives	6
	33
Total Semester Hours in Advertising Design Option	66
TOTAL SEMESTER HOURS	127



INTERIOR DESIGN OPTION

Junior Year	Semester Hours
Art/Architecture	18
Electives	6
Science	6
Social Science	3
	33
Senior Year	Semester Hours
Art/Architecture	27
Electives	6
	33
Total Semester Hours in Interior Design Option	66
TOTAL SEMESTER HOURS	127

PAINTING OPTION

Junior Year	Semester Hours
Art/Architecture	18
Electives	6
Science	6
Social Science	3
	33
Senior Year	Semester Hours
Art/Architecture	27
Electives	6
	33
Total Semester Hours in Painting Option	66
TOTAL SEMESTER HOURS	127

PHOTOGRAPHY OPTION

Junior Year	Semester Hours
Art/Architecture	18
Electives	6
Science	6
Social Science	3
	33
Senior Year	Semester Hours
Art/Architecture	27
Electives	6
	33
Total Semester Hours in Photography Option	66
TOTAL SEMESTER HOURS	127

ARCHITECTURE CURRICULUM

(Leading to the Degree of Bachelor of Arts)

See Graduate School Bulletin for fifth and sixth year requirements)

Freshman Year	Semester Hours
Architecture 115, 116, 125, 226, 227	15
English 101, 102	6
Mathematics 111, 112, 220	9
	30
Sophomore Year	Semester Hours
Architecture 215, 216, 366, 367	12
Civil Technology 206, 207	6
English 201 or 202	3
Physics 209, 210	8
Social Science	3
	32
Junior Year	Semester Hours
Architecture 354, 355, 356, 464, 465	15
Civil Technology 340, 342, 459	7
Elective	3
Electrical Engineering 326	3
Mechanical Engineering 326	3
Social Science	3
	34
Senior Year	Semester Hours
Architecture 357, 402, 403, 458	12
Civil Technology 326, 344, 464	9
Electives	9
	30
TOTAL SEMESTER HOURS	126

DEPARTMENT OF CHEMISTRY

CHARLES H. SMITH

Professor and Head of the Department

PROFESSORS: BEN F. FREASIER, PATTERSON B. MOSELEY, SELMA S. PATTON, DONALD D. ROBERTS, and JOHN C. TRISLER.

ASSOCIATE PROFESSORS: JACK B. MARTIN, HARRY E. MOSELEY, CARLOS J. MULLER.

ASSISTANT PROFESSOR: RONALD HOBART THOMPSON.

German 201, 202	6
Mathematics 350	3
Political Science 201	3

Senior Year

Chemistry 402	2
Chemistry 409, 420, 424, 466, 481	16
Electives	5
Physics 410	4
Social Science Elective	3

30

TOTAL SEMESTER HOURS 129

CHEMISTRY CURRICULUM

(Leading to the Bachelor of Arts Degree)

CHARLES H. SMITH, Adviser

Freshman Year	Semester	Hours
Arts and Sciences 101	1	1
Chemistry 101, 102, 105, 106	10	10
English 101, 102, 201	9	9
Physical Education	2	2
Mathematics 111, 112, 230	9	9
Social Science Elective	3	3

34

Sophomore Year

Chemistry 250, 251, 252, 253, 254	8	8
English 202	3	3
Physical Education	2	2
Mathematics 231, 232 or Science Electives	6	6
Modern Foreign Language	6	6
Social Science Elective	3	3
Electives	6	6

34

Junior Year

Chemistry 205	4	4
Physics 201, 202 or 209, 210	8	8
Social Science Electives	6	6
Electives	13	13

31

Senior Year

Chemistry 311, 312, 313, 314 or Chemistry 271, 330	8	8
Electives	24	24

32

TOTAL SEMESTER HOURS 131

THREE-YEAR PRE-MEDICAL/PRE-DENTAL CURRICULUM

CHARLES H. SMITH, Adviser

Freshman Year	Semester	Hours
Arts and Sciences 101	1	1
Chemistry 101, 102, 103, 104	8	8
English 101	3	3
Physical Education	2	2
Mathematics 111, 112, 230	9	9
Social Science Elective	3	3
Zoology 111, 112, 115	8	8

34

Sophomore Year

Chemistry 250, 251, 252, 253, 254	8	8
English 102, 201, 202	9	9
Physical Education	2	2
Modern Foreign Language	6	6
Social Science Elective	3	3
Zoology 202	4	4

32

Junior Year

Chemistry 205, 271, 330	12	12
Life Sciences 300	3	3
Physics 209, 210	8	8
Psychology 102	3	3
Speech 110	3	3
Zoology 411	4	4

33

TOTAL SEMESTER HOURS 99

CHEMISTRY CURRICULUM

(Leading to the Bachelor of Science Degree)

CHARLES H. SMITH, Adviser

Freshman Year	Semester	Hours
Arts and Sciences 101	1	1
Chemistry 101, 102, 105, 106	10	10
English 101, 102	6	6
Physical Education	2	2
History 201	3	3
Mathematics 111, 112, 230	9	9
Speech 110	3	3

34

Sophomore Year

Chemistry 250, 251, 252, 253, 254	8	8
German 101, 102	6	6
Physical Education	2	2
Mathematics 231, 232, 330	9	9
Physics 201, 202	8	8

33

Junior Year

Chemistry 255, 311, 312, 313, 314, 465	14	14
English 202, 303	6	6

PRE-PHARMACY CURRICULUM

CHARLES H. SMITH, Adviser

Freshman Year	Semester	Hours
Arts and Sciences 101	1	1
Botany 101	4	4
Chemistry 101, 102, 105, 106	10	10
English 101, 102	6	6
Physical Education	2	2
Mathematics 111, 112	6	6
Zoology 111, 112	4	4

33

Sophomore Year

Bacteriology 212	4	4
Chemistry 250, 251, 252, 253, 254, 271	14	14
Economics 315	3	3
English 201	3	3
Physical Education	2	2
Physics 209, 210	8	8

34

TOTAL SEMESTER HOURS 67

DEPARTMENT OF ENGLISH

ROBERT C. SNYDER

Professor and Head of Department

PROFESSORS: A. Z. BUTLER, LOWELL F. LYNDE, EDWARD E. SAMAHA, JR.

ASSOCIATE PROFESSORS: NELLE T. FRANCIS, SIDNEY J. LANDMAN, CAROLE S. TABOR.

ASSISTANT PROFESSORS: ROBERT E. BARHAM, MARTHA BREWERTON, JAN HALL, EDWARD JACOBS, JUDITH JANSSEN, ROBERT JUNGMAN, DENNIS MINOR, JOHN ROTH, GARY SLOAN.

INSTRUCTORS: RUTH CALHOUN, BARBARA ENRIGHT, MARY FARRAR, ANN FUTRELL, ANNE GRIFFIN, MARIA HAMMON, EUGENIA JOHNSON, FRAN JOHNSON, RUTH JOHNSON, SUE KINMAN, GLENDA MADDOX, ANNA MITCHELL, IRENE MYLES, LIZ WHITE.

English Exemption and Credit Examination

Any high school graduate whose ACT score was a composite 26, or above, is invited to take the English Exemption Examination which will be given at the beginning of the fall and spring quarters in each academic year. A written request to take the examination must be on file with the Chairman of the English Department at least two weeks in advance of the beginning of the fall or spring quarter. The examination will consist of grammar, punctuation, spelling, and composition. Credit for English 101 will be given to those students who successfully pass the examination which will be administered by the English staff.

Requirements For A Major

Each student in the Department of English is required to follow the curriculum for English. Not later than the end of his sophomore year, each student must, with the approval of the head of the Department, choose his major and minor fields of study and the rest of his program of work for his junior and senior years.

A major in English consists of 30 semester hours, which must include English 101, 102, 201, 202, 415, 422, 440, 450, and six additional hours of English. A student may not receive credit for more than one of the following courses: English 303, 332, 336.

Requirements For A Minor In The Department of English

A minor in English consists of 21 semester hours including English 101, 102, 201, 202, 415, 422, and three additional semester hours of English.

ENGLISH CURRICULUM

(Leading to the Degree of Bachelor of Arts)

ROBERT C. SNYDER, ADVISER

Freshman Year ¹	Semester Hours
Arts and Sciences 101	1
English 101, 102; 201 or 202	9
History 101, 102	6
History 201 or Political Science 201	3
Mathematics 111, 112 ² or 107, 108, 109	6
Science	4
Physical Education ³	2
	31
Sophomore Year	
English 201 or 202	3
History 202 or Political Science 302	3
Foreign Language ⁴	6

Science	8
Speech 110	3
Music 330	2
Physical Education	1
Electives ⁵	9

Junior Year

English 422, 450	6
Foreign Language	6
Physical Education	1
Electives	20

Senior Year

Electives	24
English 415, 440	6

TOTAL SEMESTER HOURS 129

¹Three quarters constitute an average academic year.

²Students choosing Mathematics 111 must continue with Mathematics 112. Students choosing Mathematics 107 must continue with Mathematics 108 and 109.

³The student is required to take four hours of activity courses in physical education.

⁴The 12 hours of required credit in foreign language must be in a single language.

⁵In choosing his electives the student should remember the following points: first, he must complete a minimum of 30 hours in English; second, he must get the approval of his minor from the head of the Department, and he must meet the minimum requirements in hours for the minor subject.

DEPARTMENT OF FOREIGN LANGUAGES

RICHARD L. EZELL

Associate Professor and Head of Department

PROFESSOR: O'NEIL J. RICHARD.

ASSISTANT PROFESSOR: CIDA S. CHASE

INSTRUCTORS: MAGDALENE FERGUSON, SUSAN GOSS.

Students who so elect may earn credit for French 101 and 102 and Spanish 101 and 102 by passing the corresponding departmental credit examinations. Students with three or more years of high school credit should consult the department head before registration.

All students are advised to complete a year's sequence without any time interval between courses and to have two years' work in their foreign language without any unnecessary interval between courses.

Requirements For A Major

A major in French consists of 30 semester hours, which must include 300, 301, 302, 320, 321.

A major in Spanish consists of 30 semester hours, including 18 semester hours in courses numbered 300 or above.

The curricula allow the student a choice of complementing minors from many subjects and colleges of the University. Consult the department head for further information.

Requirements For A Minor In The Department of Foreign Languages

A minor in French, Spanish, or German consists of 21 semester hours including nine semester hours of courses numbered 300 or above, plus prerequisites to these courses.

FRENCH CURRICULUM

(Leading to the Degree of Bachelor of Arts)

O. J. RICHARD, Adviser

This curriculum allows the student a choice of minors from many subjects and colleges of the University. Consult the department head for further information.

Students who enter Louisiana Tech with high school credit in French will register as follows: those with one year of high school credit will register in French 101; those with two years of high school credit may take 201; those with three or more years of high school credit should consult the department head before registration. Any student with two or more years of high school work in French may elect to begin studies in French with 101 and will receive credit toward graduation for any course successfully completed at Louisiana Tech.

All students in French are advised to complete a year's sequence without any time interval between courses, and to have two years of required work in the language without any unnecessary interval between courses.

Freshman Year	Semester Hours
Arts and Sciences 101	1
French 101, 102, 201	9
English 101, 102; 201 or 202	9
History 101, 102	6
Science	4
Physical Education	2
	31
Sophomore Year	
French 202, 300, 301, 302	12
English 201 or 202	3
Science	8
Physical Education	2
Electives ²	8
	33
Junior Year	
French 320, 321	6
History 201, 202 or Political Science 201, 302	6
Music 330	2
Mathematics 111 ¹ , 112 or 107, 108, 109	6
Electives	12
	32
Senior Year	
Electives or Minor	33
	TOTAL SEMESTER HOURS 129

¹Students choosing Mathematics 111 must continue with Mathematics 112. Students choosing Mathematics 107 must continue with Mathematics 108 and 109.

²In choosing his electives, the student should remember that he is required to complete a minor in a subject approved by the Head of the Department.

SPANISH CURRICULUM

(Leading to the Degree of Bachelor of Arts)

RICHARD L. EZELL, Adviser

Freshman Year	Semester Hours
Arts and Sciences 101	1
English 101, 102; 201 or 202	9
Mathematics 111, 112 ¹ or 107, 108, 109	6
Spanish 101, 102, 201	9

Science	4
Physical Education	2
	31

Sophomore Year

English 201 or 202, 415	6
Spanish 202, 301, 302	9
History 201, 202 or Political Science 201, 302	6
Science	8
Music 330	2
Physical Education	1
Electives ²	3
	35

Junior Year

Spanish	9
History 101, 102	6
Physical Education	1
Electives or Minor	15
	31

Senior Year

Electives or Minor	29
Spanish	3
	32

TOTAL SEMESTER HOURS 129

¹Students choosing Mathematics 111 must continue with Mathematics 112. Students choosing Mathematics 107 must continue with Mathematics 108 and 109.

²Before choosing electives, the student must get the approval of his minor subject from his adviser and complete the minimum requirements for hours in the minor subject.

DEPARTMENT OF HISTORY

WILLIAM Y. THOMPSON
Professor and Head of Department

PROFESSORS: BILLY H. GILLEY, JOHN D. WINTERS.

ASSOCIATE PROFESSORS: ABRAHAM M. ATTREP, S. DAVID BUICE, JOHN M. BUSH, PHILIP C. COOK, E. GLYNN INGRAM, C. WADE MEADE, MORGAN PEOPLES, KENNETH W. REA.

ASSISTANT PROFESSOR: H. PAT TOMLINSON.

Requirements For A Major In The Department of History

Thirty semester hours in history constitute a major in the Department of History. Every major will consult with his adviser during each registration period and throughout the term as need arises.

Requirements For A Minor In The Department of History

(For Students in Other Departments)

History 101, 102, 201 and 202 plus nine hours of advanced history taken during the junior and senior years constitute a minor.

HISTORY CURRICULUM

(Leading to the Degree of Bachelor of Arts)

W. Y. THOMPSON, ADVISER

Freshman Year	Semester Hours
Arts and Sciences 101	1
English 101, 102	6
Foreign Language	6
Geography 203, 225, or 226	3
History 101, 102	6
Mathematics 107, 108, 109 ¹	6
Physical Education	3
	31
Sophomore Year	
English 201, 202	6
Foreign Language	6
History 201, 202	6
Physical Education	1
Science	8
Sociology 201, 202	6
	33
Junior Year	
Economics 200, 315	6
History 300 or 400 level course	9
Minor subject	9
Political Science 302	6
Science	4
	34
Senior Year	
Elective	10
History 300 or 400 level course	9
Minor subject	12
	31
TOTAL SEMESTER HOURS	129

¹Mathematics 111 and 112, each three hours credit, may be taken in place of Mathematics 107, 108, and 109.

DEPARTMENT OF JOURNALISM

WILEY W. HILBURN, JR.

Associate Professor and Head of Department

ASSISTANT PROFESSOR: NEIL RON WHITE.

INSTRUCTOR: SALLIE R. HOLLIS.

Requirements For A Major In Journalism

The 31 semester hours required for a major in journalism are Journalism 101 and 28 hours in advanced courses numbered in the 300 or 400 series, including a total of 8 hours of Journalism 350, 353, and 355.

For a minor, the student must complete 21 hours in a subject related to journalism. Junior and senior courses in such fields as English are recommended as a minor with a journalism major, although other subjects, such as the social sciences, may be selected upon approval of the dean of the College of Arts and Sciences and the department head.

Proficiency in spelling and grammar is essential to successful newspaper work. Students weak in those subjects are discouraged from enrolling in journalism as a major.

Requirements For A Minor In Journalism

(For Students in Other Departments)

Journalism 101 and 18 hours of advanced journalism courses, numbered in the 300 or 400 series, including any two courses in practical journalism, will constitute a minor in journalism.

THE UNIVERSITY NEWSPAPER

Practical experience in newspaper work is afforded the journalism students through their work as staff

members of "The Tech Talk," the University newspaper, which is printed in the University printing plant. In addition to their editorial work on the newspaper staff, the journalism students are encouraged to gain experience through page make-up, etc.

JOURNALISM DEPARTMENT SCHOLARSHIPS

THE SHREVEPORT JOURNAL SCHOLARSHIP

TOMMY LEWIS MEMORIAL SCHOLARSHIP

STUDENT PUBLICATION SERVICE SCHOLARSHIPS

These scholarships are service-based and are awarded basically to editors of The Tech Talk.

JOURNALISM CURRICULUM

(Leading to the Degree of Bachelor of Arts)

WILEY W. HILBURN, JR., ADVISER

Freshman Year	Semester Hours
Arts and Sciences 101	1
English 101, 102	6
Foreign Language 101, 102	6
Journalism 101, 310	6
History 201, 202	6
Mathematics 107, 108	4
Physical Education	1
Science	4
	34
Sophomore Year	
English 201, 202	6
Foreign Language 201, 202	6
Journalism 320, 350, 353	7
History or Government	6
Mathematics	2
Physical Education	2
Minor	6
	35
Junior Year	
Journalism 330, 353, 355, 374, 375	12
Physical Education	1
Science	4
Electives	8
Minor	8
	33
Senior Year	
Journalism 360, 450	6
Electives	14
Science	4
Minor	7
	31
TOTAL SEMESTER HOURS	133

DEPARTMENT OF MATHEMATICS

W. B. TEMPLE

Professor and Head of Department

PROFESSORS: B. J. ATTEBERY, J. B. GARNER, J. D. GILBERT, H. C. HEARNE, WALLACE HERBERT, A. M. JOHNSON, E. P. KELLY, W. E. KOSS.

ASSOCIATE PROFESSORS: E. P. BURTON, GEORGE BUTLER, KENNY S. CRUMP, RICHARD B. HOWE, R. D. SALMON, S. E. SIMS, MARGARET SUMRALL.

ASSISTANT PROFESSORS: H. W. BOYETTE, N. B. COLEMAN, LEAMON GRIFFITH, CHARLES HANCOCK, R. A. JONES, C. C. McBRIDE, JAMES T. MARANTO, J. D. SPENCER, C. D. TABOR, W. W. WATSON.

INSTRUCTORS: RUTH E. HANNA, GERALDINE LAMBRIGHT.

The courses in the department are designed as follows: (1) to provide general disciplines in mathematics in the core curriculum; (2) to serve the requirements of students pursuing specialized curriculum in business, education, engineering, etc.; and (3) to provide students majoring in mathematics a thorough preparation for teaching, graduate work, or for industry.

Prior to registration in Mathematics 230 a student majoring in mathematics from the College of Arts and Sciences, a student majoring in mathematics from the College of Education, or a student from the College of Engineering not having had high school geometry will be required to have credit in Mathematics 113.

Mathematics Placement By American College Testing Program and Mathematics Placement Test

Each beginning student prior to registration is required to take a placement test administered by the Mathematics Department. The student along with his adviser will determine his beginning mathematics course based on the placement test score, the ACT Mathematics score, and the student's high school record.

First Required Math Courses	ACT 27 up	Mathematics 14-26	Score 0-13
Register for the Following:			
111-112	111 & 112	111 & 112	107
111-112 & 220 or 230	220 or 230	111 & 112	107
111 & 222	222	111	107
230	230	111 & 112	107
107-108-109	107	107	105

Credit will not be given for courses bypassed. If the student desires credit for bypassed courses or others, provision is made for credit by examination. See Section "Credit by Examination" in this bulletin.

Requirements For A Major In Mathematics

Each student majoring in mathematics will be assigned an adviser from the members of the mathematics department staff. This staff member will serve as the student's adviser throughout his college career. The student is requested to meet with his adviser at least once during each quarter, at which time courses for the following quarter will be decided upon.

*Each mathematics major is required to complete a minor. The minor requirements are listed under the department concerned.

Prescribed courses, totaling 36 semester hours, for a major in mathematics include: Mathematics 111, 112, 230, 231, 232, 308, 318, 330, 350 and in addition nine semester hours in elective courses, six of which must be chosen from 400 series courses.

*Students who choose to take a minimum of 22 hours in statistical and computer technology will not be required to declare a minor. However, no mathematics course may count toward both the major and in statistical and computer technology. The following courses are required in the statistical and computer technology curriculum: Computer Science 102, Mathematics 228, 414, 418, 440, and any three of the following: Mathematics 415, 428, 441, 448, 449. Furthermore, it is strongly recommended that the computer technology student choose technical electives from the following: Electrical Engineering 436, 437, 441, 443, and 444.

Requirements For A Minor In Mathematics

(For Students in Other Departments)

W. B. TEMPLE, Adviser

Students in other departments who wish to minor in mathematics are required to take Mathematics 111, 112, 230, and in addition 11 semester hours earned in courses numerically above Mathematics 222.

MATHEMATICS CURRICULUM

(Leading to the Degree of Bachelor of Science)

W. B. TEMPLE, ADVISER

Freshman Year	Semester	Hours
Arts and Sciences 101	1	1
Chemistry 101, 102, 103, 104	8	8
English 101, 102, 201	9	9
Mathematics 111, 112, 230	9	9
History 101	3	3
Physical Education	3	3
		33
Sophomore Year		
English 202	3	3
History 102, 201, 202	9	9
Mathematics 231, 232, 308, 318, 330	15	15
Physics 201, 202	8	8
Physical Education	1	1
		36
Junior Year		
Foreign Language	9	9
Mathematics 350	3	3
Mathematics (Electives Above 400)	6	6
Science (Electives)	6	6
General Electives	12	12
		36
Senior Year		
Foreign Language	3	3
Mathematics Elective	3	3
General Electives	24	24
		30
	TOTAL SEMESTER HOURS	135

DEPARTMENT OF MUSIC

RAYMOND G. YOUNG

Head of the Department

Associate Professor and Director of Bands

PROFESSOR: MARSHALL E. BRETZ, Fine Arts Coordinator, Organ and Sacred Music.

ASSOCIATE PROFESSORS: ROBERT H. FERRINGTON, Director of Choral Activities, Coordinator of Graduate Studies; JOHN LUCE, Theory and Strings; SCHUMAN YANG, Coordinator of Voice, Music Education.

ASSISTANT PROFESSORS: JOHN P. FORD, Coordinator of Theory and Composition; SUE MOORE, Coordinator of Piano; JAMES C. YOUNG, Associate Director of Bands, Coordinator of Music History, French Horn; JON BARKER, Voice; PRENTISS DUNN, Piano; GEORGIA FILLINGHAM, Flute, Double Reeds, Music Education; ROBERT DOUGLAS GRAHAM, Clarinet, Saxophone, Coordinator of Woodwinds, Director of Jazz Band; ELIZABETH HOWARD, Piano; ROY PICKERING, Trombone and Tuba.

INSTRUCTORS: GARY COOK, Percussion, Director of Percussion Ensembles, Theory; ROBERT CHEATHAM, Trumpet, Coordinator of Brass; JERLYNNE DAVIS, Piano.

Louisiana Tech University Department of Music is a fully accredited member of the National Association of Schools of Music. Requirements for entrance and for graduation are in accordance with the published regulations of this Association.

Entrance examinations in music theory are given all freshmen music students. Transfer students are given validation requirements in theory and in their applied areas.

Students desiring to major in music can elect piano, organ, voice, violin, viola, violoncello, string bass, flute, oboe, bassoon, clarinet, saxophone, trumpet, horn, trombone, euphonium, tuba, music history and literature, theory and composition, sacred music; or vocal, piano or instrumental music education as a major.

Any student of the University not registered for a music degree may pursue such courses in music as he or she wishes.

The Department of Music offers the following degrees:
 Bachelor of Arts
 Bachelor of Fine Arts
 Master of Arts in Music

In cooperation with College of Education:
 Master of Arts in Music Education
 Bachelor of Music Education

Requirements For The Bachelor Of Fine Arts Degree—Applied Music

	Semester Hours
Theory, Conducting and Literature	32
Applied & Ensemble Music	41

TOTAL SEMESTER HOURS 73

In addition, students will complete the rest of the work indicated in the Music curriculum to make a total of 129 semester hours.

Requirements For The Bachelor Of Fine Arts Degree—Sacred Music

	Semester Hours
Theory, Conducting and Literature	32
Applied Music	41
Professional courses	15

TOTAL SEMESTER HOURS 88

In addition, students will complete the rest of the work indicated in the Bachelor of Music degree in the Sacred Music curriculum to make a total of 129 semester hours.

Requirements For The Bachelor Of Arts Degree—Music

	Semester Hours
Theory and Literature	20
Applied & Ensemble Music	22

TOTAL SEMESTER HOURS 42

In addition, students will complete the rest of the work indicated in the Bachelor of Arts in Music curriculum to make a total of 131 semester hours.

Music Minor Program

The Music Minor Program is designed for those who have a strong interest in music as a secondary subject. The requirements are as follows:

32 semester hours—16 applied music; 16 basic music

Basic music to include:

- 6 hours theory
- 6 hours literature & history
- 1 hour conducting
- 1 hour choral or instrumental arranging
- 2 hours music academic elective

Applied music to include:

- 8 hours major area
- 8 hours minor area

Ensembles

UNIVERSITY CHORUS

- University Chorus
- Concert Choir
- Madrigal Singers

UNIVERSITY BANDS

- Symphonic Band
- Concert Band
- Marching Band
- Jazz Band
- Woodwind Choir

- Brass Choir
- Percussion Choir

ORCHESTRA

- Ruston-Tech Civic Symphony Orchestra
- String Ensembles

Ensemble Requirements

Full time music majors will enroll in at least one major ensemble every quarter they are students in the Music Department. Vocal, piano and organ majors will enroll in University Chorus; Wind and percussion majors will enroll in band and string majors will enroll in orchestra. All other music majors may select the major ensemble of their choice. The student will be allowed to participate in one other ensemble. Permission for participation in more than two ensembles or other music activity must be granted by the student's applied teacher and Head of the Department.

Every music major is required to attend the weekly recital class each quarter and perform a minimum of once each quarter.

MUSIC CURRICULUM

(Leading to the Degree of Bachelor of Fine Arts)

ROBERT H. FERRINGTON, Adviser

This curriculum is designed for those who wish to stress the performing aspects of their training in any major—in voice, piano or in some instrument of the Symphony Orchestra or Band. All majors are required to take a minimum of two quarters of a foreign language. Other academic electives are approved according to individual needs. Each student must confer once each quarter with his adviser to check on his academic status and to plan future work. A senior recital is required.

Freshman Year	Semester Hours
Arts and Sciences 101	1
English 101, 102	6
Music 101	2
Music 102, 103, 104	6
Music Applied Major	4
Music Applied Minor	2
Music Ensemble	3
Physical Education	3
Science	3

30

Sophomore Year

English, Foreign Language or Speech	3
Music 201, 202, 203	6
Music 204, 305, or 306	3
Music Applied Major	5
Music Applied Minor	3
Music Ensemble	3
Music or Related Elective	3
Science	3
Physical Education	1
Psychology 102	3

33

Junior Year

Foreign Language	3
Music or Related Elective	3
Music 310	3
Music 317, 318, 319	6
Music Applied Major	5
Music Applied Minor	2
Music Ensemble	3
Music 303 or 314	3
Social Science	6

34

Senior Year

Academic Elective	9
Foreign Language	3
Music or Related Elective	6
Music Theory Elective	3
Music Applied Major	6
Music Applied Minor	2
Music Ensemble	3
Recital	0

32
TOTAL SEMESTER HOURS 129

MUSIC MAJOR CURRICULUM

(Leading to the Bachelor of Arts Degree)

ROBERT H. FERRINGTON, Adviser

Students who pursue a music major leading to the Bachelor of Arts degree will be required to complete the following distribution in music: Music Theory, 12 hours; History of Music, 8 hours; Applied and Ensemble Music 22 hours. For their minor, students will take 21 hours in a subject chosen with the approval of the head of the department and the dean. In addition to their major and minor, they will complete the rest of the work indicated in the curriculum below, to make a total of 131 semester hours.

Freshman Year	Semester Hours
Arts & Sciences 101	1
English 101, 102	6
History 101, 102	6
Mathematics 107, 108	4
Music 101	2
Music 102, 103, 104	6
Music Applied	3
Music Ensemble	3
Physical Education	1
Science	3
35	

Sophomore Year

History 201 or Political Science 202	6
Math 109	2
Minor Subject	9
Music 201, 202, 203	6
Music Applied	3
Music Ensemble	3
Physical Education	1
Science	3
33	

Junior Year

Elective (Music Ensemble recommended)	3
English 201, 202	6
Foreign Language	3
Minor Subject	9
Music Applied	4
Music 317, 318, 319	6
Physical Education	2
33	

Senior Year

Elective (Music Ensemble recommended)	3
Elective	3
Foreign Language	9
Minor Subject	3
Music Applied	6
Science	6
30	

TOTAL SEMESTER HOURS 131

SACRED MUSIC CURRICULUM

(Leading to the Degree of Bachelor of Fine Arts)

MARSHALL E. BRETZ, Adviser

This curriculum is designed for those who wish to specialize in the directing of church music programs as either singers, organists, or conductors. Each student will have field work planned at a local church, which will be evaluated by a member of the music faculty. The sacred music program is devised to prepare those students who intend to enter seminaries to further pursue the degree of graduate in sacred music.

Freshman Year

	Semester Hours
Arts & Sciences 101	1
English 101, 102	6
Music 101	2
Music 102, 103, 104	6
Music 107	3
Music Applied Major	4
Music Applied Minor	2
Music Ensemble	3
Physical Education	3
30	

Sophomore Year

English, Foreign Language or Speech	3
Music 201, 202, 203	6
Music 204, 305 or 306	3
Music Applied Major	5
Music Applied Minor	3
Music 207	2
Music Ensemble	3
Physical Education	1
Psychology 102	3
Science Elective	3
32	

Junior Year

Foreign Language	6
Music 317, 318, 319	6
Music 310	3
Music 307	3
Music 303 or 314	3
Music Ensemble	3
Music Applied Major	5
Music Applied Minor	2
Social Science Elective	3
34	

Senior Year

Music Theory Elective	3
Music 407	3
Music Applied Major	6
Music Applied Minor	2
Music Ensemble	3
Music Elective	3
Academic Electives	7
Social Science Elective	3
Science Elective	3
33	

TOTAL SEMESTER HOURS 129

NURSING

VIRGINIA R. PENNINGTON

Assistant Professor and Head of Department

INSTRUCTORS: SUSAN T. HALEY, RITA MARCEAUX,
LOUISE B. MURPHY.

The Nursing Curriculum, a two year program leading to the Associate of Arts degree, is presented in the Division of Admissions, Basic and Career Studies section of this bulletin.

DEPARTMENT OF PHYSICS

WILLIAM H. BRUMAGE
Professor and Head of Department

PROFESSORS: W. H. BERNARD, A. J. GALLI, RICHARD L. GIBBS.

ASSOCIATE PROFESSORS: ROBERT L. CASON, TUCSON DUNN, ROBERT ELIOFF, PAUL B. STEPHENSON.

ASSISTANT PROFESSOR: ROBERT E. HAMBURG.

This curriculum is designed to give a broad and fundamental knowledge of the principles of physics, as well as an introduction to the techniques of physics research. Although the primary aim of the basic curriculum is to prepare the student for graduate work in physics, sufficient specialized courses are available to prepare the graduate for jobs in industry and in various government laboratories. The student is encouraged to pursue advanced courses in other fields to assure a broad scientific background.

Requirements For A Major In Physics

Each student who majors in physics is required to follow the physics curriculum leading to the Bachelor of Science degree in physics, or to follow the curriculum for one of the following options:

Chemical Physics Option. This curriculum is planned to prepare the student for graduate study in solid state physics, chemical physics, theoretical chemistry, or the rapidly expanding field of molecular biology. Sufficient specialized courses are included to prepare the graduate for jobs in industry and in various government laboratories.

Applied Physics Option. The curriculum in applied physics is designed to equip its graduates with a flexible background of basic scientific knowledge with which to meet the ever changing problems of modern research and development. The program provides a sound basic foundation for study toward advanced degrees in either physics or the engineering sciences.

Mathematical Physics Option. This curriculum is planned to prepare the student for graduate study in the areas of theoretical physics, applied mathematics, or engineering mathematics.

Biophysics Option. Utilizing courses under the Zoology Department and the Chemistry Department, the Physics Department can offer a course sequence to thoroughly prepare a student for graduate work in Biophysics.

Requirements For A Minor In Physics

Students from other departments who elect a minor in physics should complete Physics 201-202, and 14 semester hours of advanced courses.

PHYSICS CURRICULUM¹

(Leading to the Bachelor of Science Degree)

W. H. BRUMAGE, Adviser

Freshman Year	Semester Hours
Chemistry 101, 102, 103, 104	8
Mathematics 230, 231	6
Arts & Sciences 101	1
Physical Education ²	3
English 101, 102	6
History 202	3
Speech 110	3
	<hr/>
	30
Sophomore Year	
Physical Education ²	1
English 202, 303	6
Physics 201, 202	8

Mathematics 232, 330, 350	9
German 101, 102 ³	6
Liberal Arts Elective ⁴	3

	<hr/>	33
Junior Year		
Physics 304, 410, 411	11	
Technical Electives ⁵	12	
German 201, 202 ³	6	
Liberal Arts Electives ⁴	3	

	<hr/>	32
Senior Year		
Physics 307, 401, 402	5	
Physics 404, 405, 422, 423	14	
Chemistry 424	3	
Technical Electives ⁵	7	
Liberal Arts Electives ⁴	6	

TOTAL SEMESTER HOURS 130

¹See also Chemical Physics Option, Applied Physics Option, Mathematical Option, and Biophysics Option.

²Only four semester hours of physical education activity courses may count toward graduation.

³The student may substitute French or Russian for German.

⁴Liberal arts electives are to be selected from courses offered in the departments of Art, Economics, English, Foreign Languages, Psychology, or Social Sciences.

⁵Technical electives are to be selected from courses offered in the College of Engineering or from the departments of Chemistry, Mathematics, or Physics.

APPLIED PHYSICS OPTION¹

(Leading to the Bachelor of Science Degree)

W. H. BRUMAGE, Adviser

Freshman Year	Semester Hours
Chemistry 101, 102, 103, 104	8
Engineering 102, 151, 162	6
Physical Education ²	3
Mathematics 230, 231	6
Arts & Sciences 101	1
English 101, 102	6

	<hr/>	30
Sophomore Year		
Physics 201, 202	8	
Mathematics 232, 330, 350	9	
Physical Education ²	1	
Engineering Mechanics 201	2	
Electrical Engineering 202, 204, 205	7	
English 202, 303	6	

	<hr/>	33
Junior Year		
Physics 304, 410, 411	11	
Engineering Mechanics 203	2	
Electrical Engineering 315 ³ , 302, 303	7	
Mechanical Engineering 433	3	
Speech 110	3	
Technical Electives ⁴	7	

	<hr/>	33
Senior Year		
Physics 307, 401, 402	5	
Chemistry 424	3	
Physics 404, 405, 422, 423	14	
Engineering 401	3	
Economics 315	3	
Liberal Arts Electives ⁵	6	

TOTAL SEMESTER HOURS 130

¹See also Physics, Chemical Physics Option, Mathematical Physics Option, and Biophysics Option.

²Only four semester hours of physical education activity courses may count toward graduation.

³The student may substitute Electrical Engineering 353 for Electrical Engineering 315.

⁴Technical electives are to be selected from courses offered in the College of Engineering or from the departments of Chemistry, Mathematics, or Physics.

⁵Liberal arts electives are to be selected from courses offered in the departments of Art, Economics, English, Foreign Languages, History, Psychology or Social Sciences.

BIOPHYSICS OPTION¹

(Leading to the Bachelor of Science Degree)

W. H. BRUMAGE, Adviser

The course requirements for the first two years are the same as for the Physics Curriculum.

Junior Year	Semester Hours
Physics 304, 410, 411	11
German 201, 202	6
Chemistry 250, 251, 252, 253, 254	8
Zoology 111, 112, 115	8

33

Senior Year

Physics 404, 405, 422	11
Physics 401, 402, 318	6
Chemical Engineering 418	3
Zoology 320	4
Chemistry 424, 311, 313	7
Technical Electives	3

34

TOTAL SEMESTER HOURS 130

¹See also under Physics, Applied Physics Option, Mathematical Physics Option, and Chemical Physics Option.

CHEMICAL PHYSICS OPTION¹

(Leading to the Bachelor of Science Degree)

W. H. BRUMAGE, Adviser

The course requirements for the first two years are the same as for the Physics Curriculum.

Junior Year	Semester Hours
Physics 304, 410, 411	11
German 201, 202	6
Chemistry 250, 251, 252, 253, 254	8
Chemistry 311, 312, 313, 314	8

33

Senior Year

Physics 401, 402, 418	6
Physics 404, 405, 422, 423	14
Chemistry 424, 465, 466, 481	14

34

TOTAL SEMESTER HOURS 130

¹See also under Physics, Applied Physics Option, Mathematical Physics Option and Biophysics Option.

MATHEMATICAL PHYSICS OPTION¹

(Leading to the Bachelor of Science Degree)

W. H. BRUMAGE, Adviser

The course requirements for the first two years are the same as for the Physics Curriculum.

Junior Year	Semester Hours
Physics 304, 410, 411	11
Mathematics 308, 318, 340	9
German 201, 202	6
Mathematics Electives	6

32

Senior Year

Physics 307, 404, 405, 422, 423	17
Chemistry 424	3
Mathematics 410, 411 ²	6
Technical Electives	3
Liberal Art Electives	6

35

TOTAL SEMESTER HOURS 130

¹See also under Physics, Chemical Physics Option, Applied Physics Option, and Biophysics Option.

²The student may substitute Mathematics 445, Theory of Functions of Complex Variables, and Mathematics 412, Vector and Tensor Analysis, for Mathematics 410 and 411.

DEPARTMENT OF PROFESSIONAL AVIATION

A. L. MILLER

Assistant Professor and Head of Department

INSTRUCTORS: M. E. ANDERSON, W. A. JONES, G. J. SCHNEIDER, J. A. TURGI, S. E. WEST.

The Program

The Professional Aviation curriculum combines flight training with both aviation technical courses and non-aviation university studies.

Requirements For Admission

The student must pass an appropriate physical examination administered by a Federal Aviation Administration designated medical doctor.

Requirements For A Major In Professional Aviation

A major in Professional Aviation consists of 30 semester hours of aviation courses as follows: Professional Aviation 101, 102, 110, 111, 201, 202, 203, 210, 211, 212, 300, 301, 302, 310, 311, and 401 and 410, or 406 and 416, or 407 and 417.



Requirements For A Minor In Professional Aviation

Two minors are offered in Professional Aviation. A minor in aviation flight consists of 22 hours in the following courses: Professional Aviation 101, 102, 110, 111, 201, 202, 203, 210, 211, 212, 300, and 301.

A minor in Airport Administration consists of 23 hours in the following courses: Accounting 203, 204; Business Law 350; Economics 315; Marketing 300; Professional Aviation 321, 322, 421, 424, and 425.

Special Flight Fees

Fees are required for each flight course. A listing of these fees can be obtained by writing the Department Head.

PROFESSIONAL AVIATION CURRICULUM

(Leading to the Degree of Bachelor of Science)

A. L. MILLER, Adviser

Freshman Year	Semester Hours
Professional Aviation 101, 102, 110, 111, 201, 202, 210	12
English 101, 102, 201	9
Mathematics 111, 112	6
Arts & Sciences 101	1
Physical Education	2
Physics 205	3
	33
Sophomore Year	
Professional Aviation 203, 211, 212, 300, 301, 310	11
English 202	3
Physics 206	3
Speech 377	3
Psychology 102	3
Social Science Elective	3
Foreign Language 101, 102	6
Physical Education	2
	34
Junior Year	
Professional Aviation 302, 311, 401 and 410 or 406 and 416 or 407 and 417	7
Foreign Language 201, 202	6
History 201, 202	6
Social Science Elective	3
Natural Science Elective	3
Minor Field	6
	31
Senior Year	
Natural Science Elective	3
Minor Field	15
Electives	13
	31
TOTAL SEMESTER HOURS	129

DEPARTMENT OF SOCIAL SCIENCES

WILLIAM J. CONWAY

Associate Professor and Head of Department

ASSOCIATE PROFESSORS: JOHN F. LEICH, ROBERT K. TOBUREN.

ASSISTANT PROFESSORS: RILEY E. BAKER, WILLIAM JUNKIN, RALPH PIERCE, JOHN K. PRICE.

INSTRUCTORS ALLEN D. LINDSEY, GARY M. STOKLEY.

Requirements For A Major In The Department Of Social Sciences

Thirty semester hours in one of the following subjects constitute a major in the Department of Social Sciences: geography, political science, and sociology. Thirty hours of prescribed courses in sociology will satisfy the requirements for a major in the Pre-Professional Curriculum in Social Welfare. Every departmental major will consult with his adviser during each registration period and throughout the term as need arises.

Requirements For A Minor In The Department Of Social Sciences

(For Students in Other Departments)

GEOGRAPHY: Any seven courses in geography constitute a minor.

POLITICAL SCIENCE: Any seven courses in political science constitute a minor.

SOCIOLOGY: Any seven courses in sociology constitute a minor.

GEOGRAPHY CURRICULUM

(Leading to the Degree of Bachelor of Arts)

RALPH PIERCE, Adviser

Freshman Year	Semester Hours
Arts & Sciences 101	1
English 101, 102, 201	9
Geography 203	3
History 101, 102, 201	9
Mathematics 107, 108, 109	6
Physical Education	2
	30
Sophomore Year	
English 202	3
Foreign Language	6
Geography 225, 226	6
History 202	3
Physical Education	2
Political Science 302, plus Elective	6
Science	8
	34
Junior Year	
Economics 315	3
Electives	6
Foreign Language	6
Geography 310, 380	6
Geology 111, 121	4
Sociology 201, 360	6
	31
Senior Year	
Electives	19
Geography	15
	34
TOTAL SEMESTER HOURS	129

POLITICAL SCIENCE CURRICULUM

(Leading to the Degree of Bachelor of Arts)

ROBERT K. TOBUREN, Adviser

Freshman Year	Semester Hours
Arts & Sciences 101	1
English 101, 102, 201	9
History 101, 102, 201	9
Mathematics 107, 108, 109	6
Physical Education	2
Speech 110	3
	30

Sophomore Year

English 202	3
Foreign Language	6
Geography 203	3
History 202	3
Physical Education	2
Political Science 201, 302, plus Elective	9
Science	8
	<hr/>
	34

Junior Year

Economics 203	2
Elective	3
Foreign Language	6
Political Science	9
Science	4
Sociology 201, 202	6
	<hr/>
	30

Senior Year

Economics 204, 205	4
Electives	19
Political Science	12
	<hr/>
	35

TOTAL SEMESTER HOURS 129

PRE-LAW CURRICULUM

RILEY E. BAKER, Adviser

Students intending to study law would do well to complete a degree before entering law school. Those who cannot do so should follow the curriculum given below.

Students who satisfactorily complete the first year of work in an accredited law school, and who have previously completed this three-year curriculum, may receive the Bachelor of Arts degree at Louisiana Tech University provided the usual academic standards have been maintained.

Freshman Year

Arts & Sciences 101	1
English 101, 102, 201	9
History 101, 102 (History 201 or Political Science 201)	9
Mathematics 107 ¹ , 108, 109	6
Physical Education	2
Speech 110	3
	<hr/>
	30

Sophomore Year

Business, Economics, English or Social Sciences	12
English 202	3
Foreign Language	6
Physical Education	2
Political Science 302 or History 202	3
Science	8
	<hr/>
	34

Junior Year

Business, Economics, English or Social Sciences	17
English 309, 423	5
Foreign Language	6
Geography 203	3
Science	4
	<hr/>
	35

TOTAL SEMESTER HOURS 99

¹Mathematics 111 and 112 each three hours credit, may be taken in place of Mathematics 107, 108 & 109.

PRE-PROFESSIONAL CURRICULUM**IN SOCIAL WELFARE**

(Leading to the Degree of Bachelor of Arts)

W. J. CONWAY, Adviser

Freshman Year

Arts & Sciences 101	1
English 101, 102	6
Foreign Language	6
History 101, 102	6
Mathematics 107, 108	4
Physical Education	2
Speech 110	3
Zoology	4
	<hr/>
	32

Sophomore Year

English 201, 202	6
Foreign Language	6
History 201, 202	6
Mathematics 109	2
Physical Education	2
Political Science 201, 304	6
Sociology 201, 202	6
	<hr/>
	34

Junior Year

Economics 200, 315	6
Geography 225, 310	6
History 460	3
Political Science 312	3
Psychology 102, 310	6
Social Welfare 200	3
Sociology 308, 314	6
	<hr/>
	33

Senior Year

Electives	12
Physical Education	3
Sociology 304, 312, 330 or 340, 360 and one elective	15
	<hr/>
	30

TOTAL SEMESTER HOURS 129

SOCIOLOGY CURRICULUM

(Leading to the Degree of Bachelor of Arts)

W. J. CONWAY, Adviser

Freshman Year

Arts & Sciences 101	1
English 101, 102	6
Foreign Language	6
History 101, 102	6
Mathematics 107, 108	4
Physical Education	2
Science	8
	<hr/>
	33

Sophomore Year

English 201, 202	6
Foreign Language	6
Geography 225	3
History 201, 202	6
Mathematics 109	2
Physical Education	2
Science	4
Sociology 201, 202	6
	<hr/>
	35

Junior Year

Economics 315	3
Electives	9
Political Science 201, 304	6
Sociology	12
Speech 110	3
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	33

Senior Year	
Electives	13
Psychology 300	3
Sociology 460 and nine additional sociology hours	12
	<hr/>
TOTAL SEMESTER HOURS	28
	<hr/>
	129

DEPARTMENT OF SPEECH

E. R. MINCHEW, Professor

ASSOCIATE PROFESSORS: MARY WILMA BAUGH, MARY F. BEASLEY, ARTHUR STONE.

ASSISTANT PROFESSORS: GUY LEAKE, GLADYS MOORE.

INSTRUCTORS: BARBARA J. ALEXANDER, LYNNE E. RICHARDSON

Requirements For A Major In Speech

A major in speech consists of 33 hours which should include Speech 110, 200, 210, 211, 222, 315, 340, and 406 plus nine additional hours of speech, approved by the department head.

Pre-Professional Speech

An undergraduate major in the area of Pre-Professional Speech Pathology may be obtained by substituting pathology courses for the regular speech courses. The Speech Clinic has interim approval by the American Speech and Hearing Association.

Requirements For A Minor In Speech

A minor in speech consists of 24 hours which should include Speech 110, 200, 210, 211, 222, 315, 340, 406.

Facilities For Speech Activities

Courses which include instruction in the techniques of television and motion pictures are taught in the studio facilities of Madison Hall. These courses involve actual operation of equipment by all students enrolled.

Extra-curricular experience is provided through participation in the production of programs for Louisiana Tech's closed-circuit instructional television system.

The Louisiana Tech University Forensic Program is directed by members of the Speech Faculty. This program is available to all Tech undergraduate students who are interested in participating in competitive Speech activities, including Debate. Tech debaters enter ten or more college tournaments each year, and travel into at least nine states.

The Louisiana Tech Theatre Players organization is available to all Tech students who are interested in the Theatre.

Summer Debate Camp

The Department of Speech conducts a two-week workshop in debate for high school students each summer, beginning on the first Monday after July 4.

SPEECH CURRICULUM

(Leading to the Degree of Bachelor of Arts)

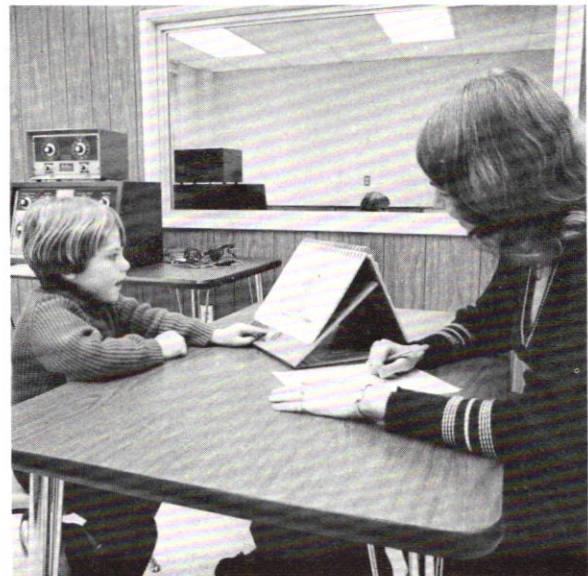
E. R. MINCHEW, ADVISER

Freshman Year	Semester Hours
Arts & Sciences 101	1
Speech 222, 210, 110	9
Science	4
Mathematics 107, 108, 109	6
Foreign Language	6
Physical Education (Activity or ROTC)	2
English 101	3
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	31

Sophomore Year	Semester Hours
English 102, 201	6
Speech 211, 200, Speech Elective	9
Foreign Language	6
Physical Education (Activity or ROTC)	2
Science	4
History	3
Elective or Minor	3
	<hr/>
	33

Junior Year	Semester Hours
English 202	3
Speech 315, 340, 406, Speech Elective	12
Science	4
History	3
Electives	9
Social Science	3
	<hr/>
	34

Senior Year	Semester Hours
Electives or Minor	26
Social Science	3
Speech Elective	3
	<hr/>
	32
TOTAL SEMESTER HOURS	130



**PRE-PROFESSIONAL SPEECH
PATHOLOGY CURRICULUM**

(Leading to the Degree of Bachelor of Arts)

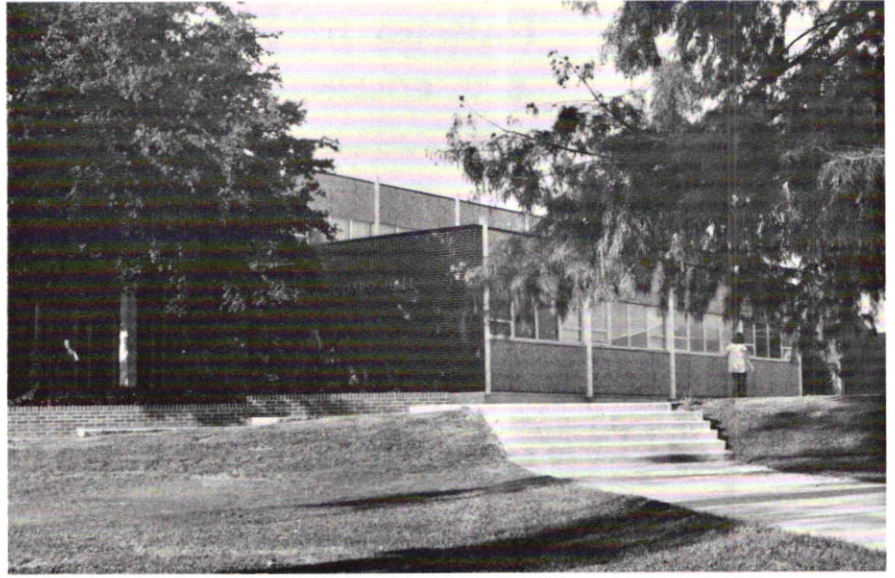
E. R. MINCHEW, Adviser

Freshman Year	Semester Hours
English 101, 102	6
Mathematics 107, 108, 109	6
Arts & Sciences 101	1
Speech 222, 210, 440, 110	12
History 101, 102	6
Science	3
	<hr/>
	34
Sophomore Year	
Psychology 102	3
English 201, 202	6
Special Education 300, 301	6
Speech 411, 412, 441, 442, 465	19
	<hr/>
	34

Junior Year	
Foreign Language	9
Speech 413, 420	6
Science	6
History 201, 202	6
Psychology 205 or 206	3
Education 354	3
Special Education 325	3
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	36
Senior Year	
Foreign Language	3
Health and Physical Education 321	2
Science	3
Special Education 340	3
Speech 412, 425	7
Psychology 310 or 414	3
Electives	9
	<hr/>
	30
TOTAL SEMESTER HOURS	
	134

SUGGESTED ELECTIVES:

Psychology 304, Social: Psychology 418, Abnormal;
Psychology 300, Statistics.
Special Education 375.



College of Education

College of Education

B. J. COLLINSWORTH, Dean

J. J. HINTON, Associate Dean, Curriculum and Instruction
 W. L. BERGERON, Associate Dean, Research and Service and Acting Director, Special Education Center
 R. E. HEARN, Director, A. E. Phillips
 G. C. MILLER, Director, Graduate Study
 D. R. NELSON, Area Coordinator, Teacher Education
 C. E. SUTTON, Director, Laboratory Experiences
 J. M. WILLIAMS, Area Coordinator, Psychology and Counseling
 A. H. WILLIAMSON, Area Coordinator, Health and Physical Education

PROFESSORS

W. L. BERGERON, Research and Service; B. J. COLLINSWORTH, Education; W. M. CROW, Teacher Education; J. J. HINTON, Curriculum and Instruction; G. C. MILLER, Curriculum and Instruction; D. R. NELSON, Teacher Education; J. C. OWEN, Teacher Education; J. M. WILLIAMS, Psychology and Counseling; A. H. WILLIAMSON, Health and Physical Education.

ASSOCIATE PROFESSORS

ARCHIE CRAIG, Health and Physical Education; S. V. DAUZAT, Teacher Education; C. L. FOXWORTH, Teacher Education; JOHN HAY, Health and Physical Education; SYBIL LEACHMAN, Health and Physical Education; BETTY MARKHAM, Health and Physical Education; DOROTHY MILLER, Psychology and Counseling; J. C. RAMSAUR, Psychology and Counseling; SYLVIA STROOPS, Health and Physical Education; C. E. SUTTON, Curriculum and Instruction; S. J. TULLOS, Psychology and Counseling.

ASSISTANT PROFESSORS

LOU ANN ALBRITTON, Health and Physical Education; HERMIONE DRISKELL, Teacher Education; GARLAND GREGORY, Health and Physical Education; R. E. HEARN, A. E. Phillips; TOMMIE HERREN, Teacher Education; CHARLES LEE LOWERY, Psychology and Counseling; M. A. MCCREADY, Teacher Education; G. E. MILFORD, Psychology and Counseling; J. L. MILLER, Teacher Education; MINNIE MIZE, Health and Physical Education; C. E. PYLE, JR., Health and Physical Education; JACKIE PYLE, Health and Physical Education; THOMAS P. SPRINGER, Psychology and Counseling; BILLY JACK TALTON, Health and Physical Education; C. N. THOMPSON, Health and Physical Education; JEANET WIMBERLY, Teacher Education.

INSTRUCTORS

ERA CHANDLER, A. E. Phillips Lab School; DOROTHY HINES, A. E. Phillips Lab School; SONJA HOGG, Health and Physical Education; ELFREDA HUMPHRIES, A. E. Phillips Lab School; JERALD EUGENE JOHNSON, A. E. Phillips Lab School; R. A. LANEY, A. E. Phillips Lab School; LAURA MAE McCULLIN, A. E. Phillips Lab School; A. R. MOORE, A. E. Phillips Lab School; JACQUE NEWSOM, A. E. Phillips Lab School; G. E. NIPPER, Teacher Education; MYRTIS ORR, A. E. Phillips Lab School; LAVERNE PYBURN, A. E. Phillips Lab School; BILLIE SMITH, A. E. Phillips Lab School; HENRI ALICE WISE, A. E. Phillips Lab School.

SPECIAL EDUCATION CENTER PERSONNEL

REBA BOYD, Education Consultant
 RICHARD GIESSE, Psychologist
 LEONARD MILLER, Speech and Hearing Consultant
 JOE SANDERS, Social Worker
 FRANKIE STEWART, Education Consultant

ACCREDITATION

The College of Education, one of six colleges of Louisiana Tech University approved by the Louisiana State Board of Education, is accredited by the Southern Association of Schools and Colleges. As an individual unit, it is a member of the American Association of Colleges for Teacher Education and of the American Association of Business Teachers. The College of Education is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary teachers at the undergraduate and master's degree levels.

HISTORY AND ORGANIZATION

Since the founding of Louisiana Tech in 1894 the education of teachers has been a primary aim of the institution. The Laboratory School, A. E. Phillips Elementary School, was created by the Legislature in 1916. On November 12, 1925, the State Board of Education approved teacher education curricula, and on March 15, 1926, the State Board recognized the reorganization of these curricula. A Department of Education was recognized by the State Board in 1933 and in April of the following year authorization was granted for the organization of a separate school. In July, 1970, the School was elevated to the level of a College of Education.

In 1948, physical education was transferred from the School of Arts and Sciences to the School of Education as a department. In 1955, the offerings in education were divided, forming departments of elementary and secondary education; and the Department of Special Education was created to service schools in the parishes of Bienville, Claiborne, Jackson, Lincoln, Union, and Webster to train teachers in working with the various areas of exceptionality. Bossier Parish was added to the work area in 1959. In 1965 the organization was further expanded to include a Department of Psychology and Guidance and in 1970 the Division of Research and Publications was established. In July, 1972, the State Board approved a reorganization of the College which created a Division of Research and Service and a Division of Curriculum and Instruction. In the Division of Curriculum and Instruction three areas of instruction were created; teacher education which included all elementary and secondary programs, psychology and counseling, and health and physical education which included programs for men and women.

By action of the State Board of Education on December 17, 1957, January 31, 1958, April 3, 1958, April 18, 1961, and July 29, 1968, authorization was given to grant the Master of Arts degree in Art Education, Elementary Education, English Education, Music Education, Social Studies Education, Special Education, Speech Education, and Vocational Guidance, and the Master of Science degree in Biology Education, Business Education, Chemistry Education, Mathematics Education, Physics Education, and Health and Physical Education. In April, 1967, the State Board of Education granted approval to offer the Specialist Degree and on November 1, 1968, authority was granted to offer extension or off-campus courses.

OBJECTIVES

The College of Education functions as an integral part of Louisiana Tech University. From its founding in 1894, one of the purposes of the University has been the preparation of elementary and secondary teachers. Teacher education has continued to maintain an important position within the institution. The purposes of the College of Education, therefore, are consonant with those of the University: to prepare qualified practitioners, to facilitate learning, to conduct research, and to perform public services. These purposes find expression in the following objectives:

1. To assist undergraduates to become competent, qualified teachers by providing quality programs in teacher education;
2. To maintain teacher-education programs which, through reading, research, and professional meetings, embody the best of current educational ideas and practices;

3. To provide a variety of experiences which will prepare the prospective teacher to assume the professional role of the teacher;
4. To implement learning through the continuous development of facilities such as learning laboratories and library resources which are relevant to educational processes at all levels;
5. To research, develop, use, and disseminate knowledge of human behavior and relevant teacher-learning processes;
6. To provide at the graduate level educational experiences which will develop the individual's knowledge in both breadth and depth;
7. To provide needed diagnostic services to educationally disadvantaged children, their teachers, and their parents;
8. To provide professional consultation service, workshops, seminars, extension courses, and contract research to teachers, administrators, school boards, and other community agents interested in human development and education; and
9. To continually evaluate the curricula, course offerings, and community services of the College in the light of new knowledge, contemporary career requirements, and opportunities for college graduates.

ADMISSION AND RETENTION

Admission and retention policy for the College of Education is set by the faculty and administered by the College of Education Admission and Retention Committee.

Students desiring to enter the College of Education must make an application in which they show at least a 2.0 on all college work earned, in addition to freedom from disqualifying physical handicaps. "D" work earned at another university will not count toward a degree.

Upon admission to the College of Education, each student will be assigned an adviser who will assist him in planning his program in teacher education. This adviser will be available for conferences during the academic year and must be consulted at each registration.

Students placed on academic probation and/or suspension four times will be dropped from the College of Education. Any student re-entering the College of Education after being suspended for academic, attendance, or disciplinary reasons must re-apply to the Admission and Retention Committee. A student dropping out of a program for one or more years will be required upon returning to pursue the curriculum as listed in the Dean's curriculum file.

UPPER DIVISION

After a student has earned 30 semester hours of university credit and has been registered in the College of Education for one quarter at Louisiana Tech, he may apply for Upper Division. An application must be made in which the student gives evidence of meeting the following qualifications:

1. Applicant must have earned at least 30 semester hours of college or university credits which include the following courses or their equivalents: Education 101, 200; English 101, 102; mathematics (2 semester hours); physical education activity (2 semester hours); science (3 semester hours); and Speech 110.
2. Applicant must have an over-all earned grade point average of 2.0 with a grade of at least "C" in Education 200; English 101, 102; and Speech 110.

3. Applicant must be free from physical and emotional impediments which would prevent him from being an effective teacher.

Students who have not earned credit in Education 101 at Louisiana Tech will be required to complete a battery of standardized tests administered by the College of Education before making application for Upper Division.

Deliberate falsification of the application may result in the student being dropped from the College of Education. The application must be filled in completely, dated, signed, and turned in to the Dean's office one week before the beginning of the quarter during which the applicant will register for Upper Division courses.

Applicants may be asked to appear before the Admission and Retention Committee of the College of Education to explain or defend their applications, to present additional information, or to demonstrate ability in certain areas. Students may re-apply once for upper division admittance if the first application is refused. Students will be dropped from the College of Education if refused admittance twice unless the committee feels there are extenuating circumstances.

CREDITS THROUGH COLLEGE ENTRANCE EXAMINATION BOARD

For information concerning this section, contact the office of the Dean.

DEGREES

Students who complete a four-year teacher education curriculum in the College of Education are granted the bachelor's degree, and are awarded a certificate by the State Department of Education to teach their specialties in the schools of Louisiana.

The degree of Bachelor of Science is awarded to students who finish the curricula in business education, mathematics education, science education, and physical education. The degree of Bachelor of Arts is awarded to students finishing all other undergraduate curricula. The Master of Arts degree is awarded in the following areas: art education, counseling education, elementary education, English, human relations and supervision, music, reading, social studies, special education, speech education, and speech and hearing therapy. The Master of Science degree is awarded in the following: biology, business, chemistry, physics, mathematics, and physical education. The Specialist degree in Education is awarded in the following areas: elementary, reading, business, counseling, mathematics, music, science, social studies, and English.

GRADUATION REQUIREMENTS

In addition to completing the general graduation requirements of Louisiana Tech, teacher education students must complete one of the state approved education degree programs with a 2.0 earned average.

Four physical education activity courses are required of all Education majors. State certification requirements do not permit the substitution of credit for ROTC and band for this requirement. Physical education activity credit accepted by the University for military service can be applied to satisfy this requirement, except in cases where a specific activity is required in a curriculum.

Correspondence courses and off-campus work which a student in the College of Education wishes to apply toward a degree must be approved by his adviser and dean in advance of registration in writing.

MINORS

Minors are required in all teacher education curricula except art, elementary, business, music, speech and hearing therapy, and the science curricula.

The specific course requirements for minors in the different fields are as follows:

English:

Education 403, English 101, 102, 201, 202, 332, 336, 415, 422, and 3 hours of English electives.

French:*

101, 102, 201, 202, 251, and 9 hours in the 300 and 400's.

Journalism:

101, 455, 2 of the following courses: 350, 353, 355; and 11 hours of electives.

Library Science:

201, 210, 301, 302, 303, 305, 404.

Mathematics:

111, 112, 113, 230, 231, 232, and 307.

Science:

6 hours of Biology (Botany, Zoology, or Bacteriology)
6 hours of Chemistry
6 hours of Physics
6 hours of Earth Science
Plus 8 hours in any one of the above fields.

Health and Physical Education

310, 320, 321, 326, Zoology 325, plus 15 hours in activities, methods, and techniques with consent of advisor.

Social Studies:

History 101, 102, 201, 202, 460.
Political Science 201, Sociology 201, Geography 203, 225.
Economics 200 or 315.

Spanish:*

101, 102, 201, 202, and 12 additional hours.

Speech:

110, 200, 211, 222, 315, 340, 406, plus 3 hour Speech Elective.

Speech & Hearing Therapy as a Minor for Speech Majors only

Certification in Speech & Hearing Therapy may be earned in lieu of a second teaching field in secondary education if the following courses are taken:
Art 101, 102, 201; Psychology 310 or 414, 205; Special Education. 300; Speech 411, 412, 420, 441, 442.
Any one of the above Speech courses can be used as electives in the secondary speech major curriculum.

*Eighteen hours are sufficient if the freshman courses are not taken for credit.

3. Must be recommended for student teaching by faculty adviser and approved by the Student Teacher Screening Committee.
4. Education 402 must be taken before or during student teaching.
5. Must have earned a grade no lower than "C" in all education and psychology courses taken before student teaching.
6. Must have successfully completed Education 390, Education 415, and Psychology 204.

B. Additional Prerequisites for Elementary Education Majors

1. Must have successfully completed Education 320, Education 322, Education 323, Education 324, and Psychology 205.

C. Additional Prerequisites for Secondary Education Majors

1. Must have successfully completed Education 306 and Psychology 206.
2. Must have earned a grade point average no less than 2.2 in the subject area(s) in which student teaching is planned.
3. The special methods course(s) in student teaching area(s) must be completed before or during student teaching.

The course(s) scheduled in addition to student teaching may be only those course(s) which may be scheduled without conflict with student teaching. The hours involved in student teaching will be approximately 8 a.m. to 3 p.m., Monday through Friday.

While one and seven semester hours credit, respectively, are awarded for observation and student teaching, no conventional grades or quality points are given.

SPECIAL EDUCATION CENTER

The Special Education Center, a major unit of the College of Education, has the responsibility for developing, encouraging, and improving special educational and training facilities, services, and classes for exceptional children. The Grambling-Louisiana Tech Center provides services to the public school systems in the parishes of Bienville, Claiborne, Jackson, Lincoln, Union, and Webster. These services are provided through a wide variety of activities including psychoeducational assessment; consultation with school administrators, teachers, and parents; development and provision of special instructional materials; contingency management of behavior problems; and research. Undergraduate and graduate students in special education utilize the resources of the Center for clinical teaching experiences.

DIVISION OF EDUCATIONAL RESEARCH AND SERVICE

The Division of Educational Research and Service was officially created in 1970. All faculty members in the College of Education are members of the Division. The purpose of the Division is to encourage research, writing, and demonstration projects by the faculty of the College and to assist in identifying appropriate avenues for the dissemination of the results.

The College of Education research committee is chosen from the academic department and division chairmen, with the director of the Division of Research and Service serving as chairman. The committee is charged with establishing general policies and procedures for the Division and is responsible to the Dean of the College of Education.

Financial support for the activities of this Division is derived through the regular operating budget and from special grants of local school districts, state and federal agencies.

STUDENT TEACHING AND LABORATORY EXPERIENCES

The capstone of all teacher education curricula is the professional laboratory experience. In the College of Education this experience is provided in two phases: (1) directed observation and participation experiences (Education 415), and (2) student teaching (Education 416).

Professional laboratory experiences are provided both in a campus laboratory school and in off-campus elementary and secondary laboratory schools in area parishes.

Prerequisites for student teaching are as follows:

A. General Prerequisites

1. Must be registered in the Upper Division of the College of Education.
2. Must have an overall grade point average no lower than 2.2 on all hours earned.

THE GRADUATE PROGRAM

Candidates seeking a graduate degree in any of the teaching areas must hold a valid teacher's certificate. Students seeking a graduate degree with a major in a subject field or in elementary education must have completed all requirements for certification in that field. Students enrolling with insufficient preparation to meet this requirement must regard as deficiencies all courses needed to meet the standard.

In addition to the 2.50 overall pursued undergraduate grade point average or 2.75 on the last 60 hours attempted for unconditional admission and 2.25 overall or 2.50 on the last 60 hours attempted for conditional admission to Graduate School, the College of Education requires the submission of a satisfactory Miller Analogies Test score for admission to the master's degree programs in education.

The College of Education offers the master's degree and the specialist's degree in several areas. The master's degree may be obtained in art, business, counseling, elementary education, English, human relations and supervision, mathematics, music, physical education, reading, science, social studies, special education, speech, and speech and hearing therapy. The specialist's degree may be obtained in elementary education, reading, business, counseling, mathematics, music, science, social studies, English, and speech.

More complete details concerning the graduate programs in education can be found in the current University Graduate School Bulletin.

ART EDUCATION CURRICULUM

Freshman Year	Semester Hours
Architecture 115, 116, 125, 126	12
Art 120	3
Education 101	1
English 101, 102, 201	9
Mathematics 107, 108	4
Physical Education Activities	3
Speech 110	3
	35
Sophomore Year	Semester Hours
Architecture 215, 216, 366	9
Art 121, 220	6
Biological Science	3
Education 200	3
English 202	3
History 201, 202	6
Mathematics 109	2
Physical Education 321	2
Physical Education Activity	1
	35
Junior Year	Semester Hours
Architecture 367	3
Art 225, 240, 308	9
Education 306, 360, 390	7
Physical Education 290	3
Physical Science	3
Political Science 201	3
Psychology 204	3
Science Elective	3
	34
Senior Year	Semester Hours
Art 241, 320	6
Art Elective	3
Education 402, 415, 416	10
Psychology 206	3
Science Elective	3
Social Studies Elective	3
	28
TOTAL SEMESTER HOURS	132

BUSINESS EDUCATION CURRICULUM

Freshman Year	Semester Hours
Accounting 203	2
Biological Science Elective	3
Economics 203, 204	4
Education 101	1
English 101, 102	6
Mathematics 107, 108	4
Office Administration 202, 203	4
Physical Education Activities	2
Physical Science Elective	3
Speech 110	3
	32
Sophomore Year	Semester Hours
Accounting 204, 205	4
Business Law 350	3
Economics 205	2
Education 200, 390	4
Electives	6
English 201	3
Marketing 300	3
Mathematics 109	2
Physical Education Activities	2
Psychology 204	3
	32
Junior Year	Semester Hours
Accounting 310	3
Education 306	3
Electives	12
English 202	3
History 201, 202	6
Management 305	3
Psychology 206	3
Science Elective	3
	36
Senior Year	Semester Hours
Education 358, 402, 415, 416	13
Electives	2
Management 311	3
Office Administration 307, 310	5
Political Science 201	3
Quantitative Analysis 220	3
Science Elective	3
	32
TOTAL SEMESTER HOURS	132

SHORTHAND OPTION (15 hours)

Office Administration 206, 207, 208, 303, 304

BUSINESS ADMINISTRATION OPTION (14 hours)

Business Law 351	2
Economics 312	3
Finance 318	3
Office Administration 250	3
3 Hours from following:	3
Finance 414	
Economics 330, 344, 472	

ELEMENTARY EDUCATION CURRICULUM

Freshman Year	Semester Hours
Art 101, 102	4
Botany 101	4
Education 101	1
English 101, 102, 201	9
History 201	3
Mathematics 107	2
Physical Education 290	3
Physical Education Activities	2
Speech 110	3
	31

Sophomore Year

Botany 225	3
Education 200	3
English 202	3
Geography 203, 225	6
History 202	3
Library Science 201	3
Music 230	2
Physical Education 130, 321	3
Political Science 201	3
Psychology 204	3
Zoology 111, 112	4

36

Junior Year

Education 320, 322	5
Elective	6
English 332	3
Mathematics 303, 304	6
Music 234	2
Physical Education 340	3
Physical Education Activity	1
Physics 205	3
Psychology 205	3
Speech 330	3

35

Senior Year

Education 323, 324, 390, 402, 415, 416	16
Electives	8
History 460	3

27

TOTAL SEMESTER HOURS 129

OPTIONS IN ELEMENTARY EDUCATION

In lieu of the basic elementary education curriculum, students in the field may choose to follow one of the following options:

EARLY CHILDHOOD EDUCATION

In addition to the basic elementary curriculum the following courses will be required to complete this option: Education 431, 432, 441, 442, Psychology 408 or Home Economics 301, and Sociology 201.

The following courses found in the basic elementary curriculum will not be required for this option: English 332, Geography 225, Physical Education 290.

SPECIAL EDUCATION—NONSENSORY PHYSICAL HANDICAPPED

In addition to the basic elementary curriculum, the following will be required to complete this option: Art 201, Special Education 300, 301, 335, 375, 417, Zoology 225.

The following courses found in the basic elementary curriculum will not be required for this option: Botany 101, Electives 7 hours, English 332, Speech 330, Physical Education 290, Physical Education Activity 1 hour, Zoology 112.

SPECIAL EDUCATION—MENTAL RETARDATION

In addition to the basic elementary curriculum the following courses will be required to complete this option: Art 201, Special Education 301, 325, 375, 417, Zoology 225.

The following courses found in the basic elementary curriculum are not required for this option: Botany 101, Electives 7 hours, English 332, Physics 1 hour, Education 290, Physical Education Activity 1 hour, Zoology 112, Speech 330.

SPECIAL EDUCATION—BEHAVIOR DISORDERS

In addition to the basic elementary curriculum the following courses will be required to complete this option: Art 201, Special Education 300, 340, 345, 375, 417, Zoology 225.

The following courses found in the basic elementary curriculum are not required in this option: Botany 101, Electives 8 hours, English 332, Physical Education 290, Physical Education Activity 1 hour, Speech 330, Zoology 112.

SPEECH AND HEARING THERAPY

In addition to the basic elementary curriculum the following courses will be required to complete this option: Art 201, Biological Science elective, Physical Science elective, Political Science 201, Psychology 310 or 414, Science elective, Social Studies elective, Speech 210, 222, 411, 412, 420, 440, 441, 442, Special Education 300.

The following courses found in the basic elementary education curriculum are not required in this option: Botany 101, English 332, Geography 225, Physical Education 290, Physical Education Activity 1 hour, Physics 205, Speech 330, Zoology 111, 112.



ENGLISH EDUCATION CURRICULUM

Freshman Year	Semester Hours
Biological Science	3
Education 101	1
English 101, 102, 201	9
History 201, 202	6
Mathematics 107, 108, 109	6
Physical Education Activities	2
Physical Science	3
Speech 110	3

33

Sophomore Year

Education 200	3
Elective	3
English 202, 332	6
English Elective	3
Physical Education 290	3
Physical Education Activity	1
Political Science 201	3
Psychology 204	3
Science Electives	6
Social Science Elective	3

34

Junior Year

Education 306, 350	6
Electives	6
English 415, 422	6
English 400 Level Elective	3
Library Science 303, 305	6
Physical Education 321	2
Physical Education Activity	1
Psychology 206	3

33

Senior Year

Education 390, 402, 415, 416	11
Electives	15
English 400 Level Elective	3
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	29
TOTAL SEMESTER HOURS	129

FRENCH EDUCATION CURRICULUM**Freshman Year**

	Semester Hours
Education 101	1
English 101, 102, 201	9
French 101, 102, 201	9
History 201, 202	6
Mathematics 107, 108	4
Physical Education Activities	2
Speech 110	3
	<hr/>
	34

Sophomore Year

Biological Science	3
Education 200	3
Elective	3
English 202, 422	6
French 202, 300, 301	9
Mathematics 109	2
Physical Education Activities	2
Physical Science	3
Science Elective	3
	<hr/>
	34

Junior Year

Education 306, 351	6
Electives	6
French 251, 302, 320	9
Physical Education 290, 321	5
Psychology 204, 206	6
Science Elective	3
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	35

Senior Year

Education 390, 402, 415, 416	11
Electives	6
French 321	3
Political Science 201	3
Social Studies Elective	3
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	26
TOTAL SEMESTER HOURS	129

HEALTH AND PHYSICAL EDUCATION CURRICULUM**Freshman Year**

	Semester Hours
Biological Science	4
Education 101	1
English 101, 102, 201, 202	12
*Health and Physical Education Activities	3
History 201, 202	6
Mathematics 107, 108, 109	6
Speech 110	3
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	35

Sophomore Year

Education 200	3
*Elective	3
*Health and Physical Education Activities & Techniques	6
Health and Physical Education 290, 291, 321	8
Physical Science	3
Psychology 204, 206	6
Zoology 111, 112	4
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	33

Junior Year

Education 306, 357	7
*Health and Physical Education 300, 305, 310, 320, 340 and 5 hours methods and techniques	20
Political Science 201	3
Social Studies Elective	3
Zoology 225, 226	4
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	37

Senior Year

Education 390, 402, 415, 416	11
*Electives	9
Health and Physical Education 326	3
Methods in Second Teaching Field	3
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	26
TOTAL SEMESTER HOURS	131

*With consent of adviser

HEALTH AND PHYSICAL EDUCATION CURRICULUM

(Does not lead to Teacher Certification)

Freshman Year

	Semester Hours
Arts & Sciences 101	1
English 101, 102, 201	9
Foreign Languages 101, 102	6
History 101, 102	6
Mathematics 107, 108, 109	6
Speech 377	3
Sports Activity	2
	<hr/>
	33

Sophomore Year

English 202	3
Botany 101	4
Physics 205, 206	6
Physical Education 207, 290, 291, 304, 321	13
Sports Activity	2
Electives (minor)	6
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	34

Junior Year

History 201, 202 or Political Science 201, 302	6
Physical Education 310, 320	6
Zoology 111, 112	4
Electives (minor)	15
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	31

Senior Year

Physical Education (Health, Safety, or Recreation)	5
Physical Education 326	3
Psychology 102	3
Zoology 225	3
Electives (minor)	17
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	31

TOTAL SEMESTER HOURS 129

HEALTH AND PHYSICAL EDUCATION CURRICULUM**RECREATION OPTION**

(Does not lead to Teacher Certification)

Freshman Year

	Semester Hours
Arts and Sciences 101	1
Botany 101	4
English 101, 102, 201	9
Physical Education 207, 281 or 284, 290, 304	9
History 201, 202	6
Mathematics 107, 108, 109	6
Sports Activity	2
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	31

Sophomore Year

Accounting 203	2
English 202	3
Foreign Language	6
Journalism 101	3
Physical Education 207, 281 or 284, 290, 304	9
Sports Activity	2
Sociology 201	3
Zoology 111, 112	4
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	32

Junior Year

Horticulture 220 or 307	3
Physical Education 225, 226, 241, 300, 355	13
Physical Education Elective	1
Political Science 201	3
Psychology 206	3
Speech 110	3
Zoology 225	3
Electives (Minor)	6
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	35

Senior Year

Art 216 or 240	3
Physical Education 130, 326, 404, 410, 415	16
Electives (Minor)	15
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	34

TOTAL SEMESTER HOURS 132

To meet the needs of Louisiana schools, courses in library science are offered which prepare teachers and librarians in conformity with the requirements of the State Department of Education and the Southern Association of Colleges and Schools. Students completing the 18 hours of library science qualify for public library subprofessional positions in the state and are eligible for employment as public library assistants. Students may follow the library science curriculum, completing a major in library science and a minor in a subject matter field. Students interested in continuing their studies in library science at the graduate level are advised to elect 12 semester hours in a foreign language.

LIBRARY SCIENCE ELEMENTARY EDUCATION CURRICULUM

Freshman Year	Semester Hours
Art 101, 102	4
Biological Science	3
Education 101	1
English 101, 102, 201	9
History 201, 202	6
Mathematics 107, 303, 304	8
Speech 110	3
Physical Education Activity	1
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	35

Sophomore Year

Education 200	3
English 202	3
Geography 203	3
Library Science 201, 210, 303	9
Music 230	2
Physical Science	3
Psychology 204	3
Science Elective	6
Physical Education 130	1
Physical Education Activity	1
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	34

Junior Year

Education 320, 322, 323	7
English 332	3
Geography 225	3

Library Science 301, 302, 305	9
Library Science Elective	3
Physical Education 321	2
Physical Education Activity	1
Political Science 201	3
Psychology 205	3
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	34

Senior Year

Education 324, 390, 402, 415, 416	14
History 460	3
Library Science 404	3
Library Science Electives	6
Physical Education 340	3
	<hr/>
	29

TOTAL SEMESTER HOURS 132

LIBRARY SCIENCE SECONDARY EDUCATION CURRICULUM

Freshman Year	Semester Hours
Biological Science	3
Education 101	1
English 101, 102, 201	9
History 201, 202	6
Mathematics 107, 108, 109	6
Physical Education Activities	2
Science Elective	3
Speech 110	3
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	33

Sophomore Year

Education 200	3
English 202	3
Electives	6
Library Science 201, 210, 303	9
Physical Education Activity	1
Political Science 201	3
Psychology 204, 206	6
Science Elective	3
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	34

Junior Year

Education 306	3
Electives	12
Library Science 301, 302, 305	9
Library Science Elective	3
Physical Education Activity	1
Sociology 201	3
Special Methods	3
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	36

Senior Year

Education 390, 402, 415, 416	11
Elective	3
Library Science 404	3
Physical Education 321	2
Library Science Electives	6
Physical Science	3
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	26

TOTAL SEMESTER HOURS 129

LIBRARY SCIENCE CURRICULUM

(Does not lead to Teacher Certification)

Freshman Year	Semester Hours
Arts and Sciences 101	1
English 101, 102, 201	9
Foreign Language 101, 102	6
History 101, 102	6
Mathematics 107, 108, 109	6
Physical Education	2
Science	3
	<hr/>
	33

Sophomore Year

English 202	3
Foreign Language 201, 202	6
History 201, 202 or Political Science 201, 302	6
Library Science 201, 210, 303	9
Physical Education	2
Science	3
Speech 110	3
32	

Junior Year

Library Science 301, 302, 305	9
Library Science Elective*	3
Science	4
Electives or minor	16
32	

Senior Year

Library Science 404	3
Library Science Elective*	6
Science	2
Electives or minor	21
32	

TOTAL SEMESTER HOURS 129

* To be elected from the following:
Library Science 315, 330, 410, 440, 450

MATHEMATICS EDUCATION CURRICULUM

Freshman Year	Semester Hours
Education 101	1
English 101, 102, 201	9
History 201, 202	6
Mathematics 111, 112, 113	9
Physical Education Activities	3
Speech 110	3
31	

Sophomore Year

Botany 101	4
Education 200	3
Elective	3
English 202	3
Mathematics 230, 231, 232	9
Physical Education Activity	1
Physical Education 290	3
Psychology 206	3
Zoology 111, 112	4
33	

Junior Year

Education 306, 356	6
Electives	7
Mathematics 307, 318, 401	9
Physics 205, 206	6
Political Science 201	3
Psychology 204	3
34	

Senior Year

Education 390, 402, 415, 416	11
Electives	9
Mathematics Electives	6
Physical Education 321	2
Social Studies Elective	3
31	

TOTAL SEMESTER HOURS 129

After completing the curriculum below, the graduate will be eligible for certification from the State Department of Education to teach vocal and/or instrumental music in the schools, depending upon the applied music elected. Upon entrance, the student will declare the particular certification desired.

MUSIC EDUCATION CURRICULUM

Freshman Year	Semester Hours
Applied Music	10
Education 101	1
English 101, 102	6
Mathematics 107, 108	4
Music 101, 102, 103, 104	8
Physical Education Activity	3
Speech	3
35	

Sophomore Year

Applied Music	6
Education 200	3
English 201, 202	6
History 201, 202	6
Mathematics 109	2
Music 201, 202, 204, 317, 318	9
Physical Education Activity	1
Psychology 204	3
36	

Junior Year

Applied Music	9
Biological Science	3
Education 309	3
Music 203, 305 or 306, 310, 319	9
Physical Science Elective	3
Political Science 201	3
Psychology 206	3
Science Elective	3
36	

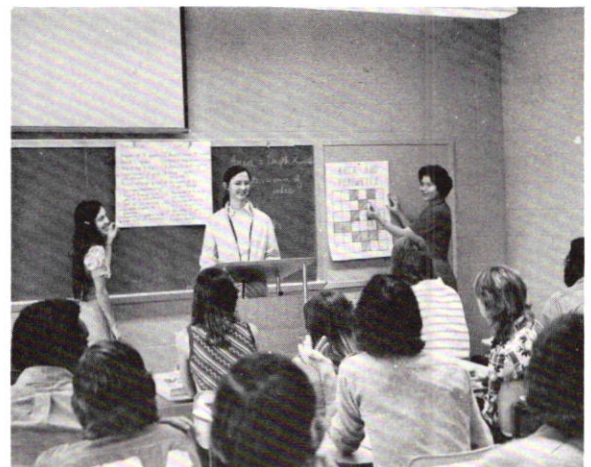
Senior Year

Applied Music	5
Education 390, 402, 415, 416, 465 or 466	14
Music 303 or 314	3
Music Theory	3
Science Elective	3
Social Science Elective	3
31	

TOTAL SEMESTER HOURS 138

For those desiring certification to teach music, the distribution of work taken in applied music must be in accordance with one or more of the plans listed below. The plan, or plans, pursued will be determined by individual desire for certification.

The curriculum for Vocal and Instrumental Certificate includes both Music 303 and 314, Education 465 and 466, and 20 additional music hours. Ensemble Requirements for Music Majors listed under the College of Arts and Sciences should be noted.



PSYCHOLOGY CURRICULUM

(Does not lead to Teacher Certification)

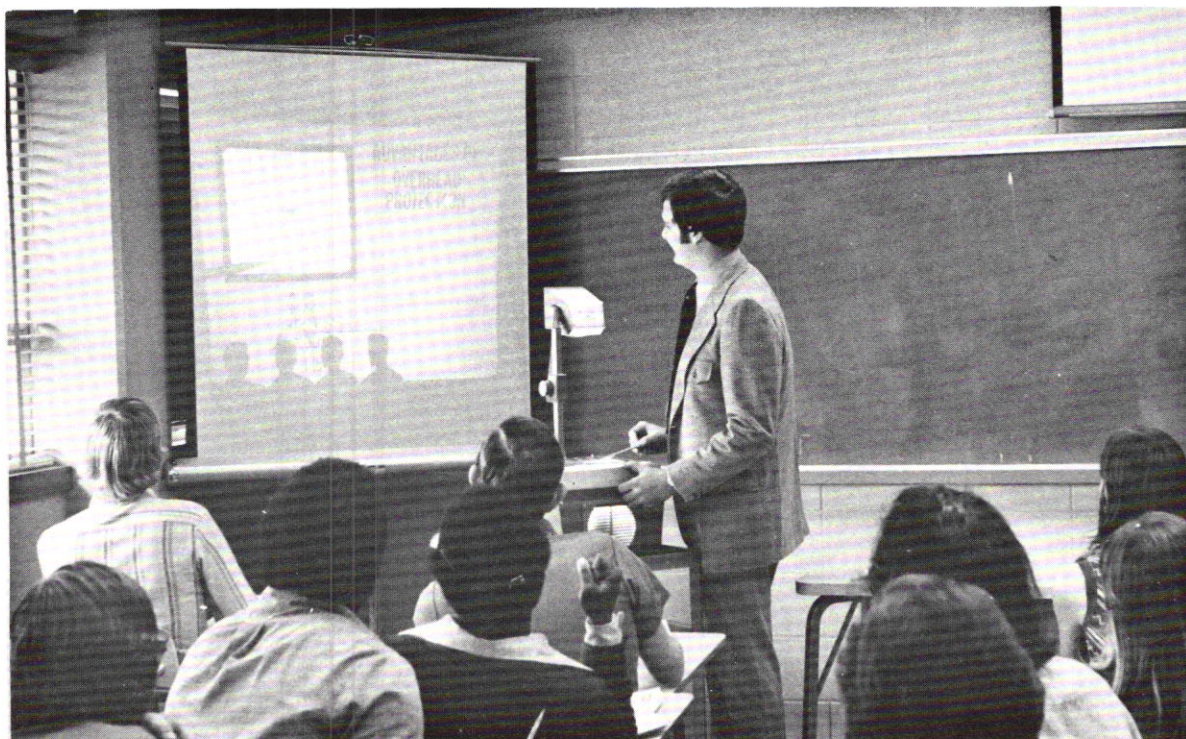
Freshman Year	Semester Hours
Arts and Sciences 101	1
English 101, 102, and 201 or 202	9
Foreign Language	6
Mathematics 111	3
Physical Education	3
Psychology 102	3
Science Elective	3
Zoology 111, 112	4
	32
Sophomore Year	
Electives	6
English 303	3
History 101, 102 or 201, 202	6
Physical Education	1
Political Science	3
Psychology 202, 300, 301	9
Sociology 201	3
Zoology 225	3
	34
Junior Year	
Computer Science 101, 104	3
Electives	9
Life Sciences 300	3
Psychology 302, 304, 307, 310, 312, 321	18
	33
Senior Year	
Electives	6
Psychology 407, 418, 459, 465	12
Psychology Electives	9
Zoology 426	3
	30
TOTAL SEMESTER HOURS	129

Requirements for a minor in Psychology:
21 hours approved by the Psychology adviser

SCIENCE EDUCATION CURRICULUM

(Biology, Chemistry, and General)

Freshman Year	Semester Hours
Botany 101	4
Chemistry 101, 103	4
Education 101	1
English 101, 102	6
Geology 111, 112	4
Mathematics 111, 112	6
Physical Education Activities	2
Speech 110	3
Zoology 111, 112	4
	34
Sophomore Year	
Bacteriology 210	3
Botany 220	3
Chemistry 102, 104	4
Education 200	3
English 201, 202	6
History 201	3
Physical Education Activities	2
Political Science 201	3
Psychology 206	3
Zoology 115	4
	34
Junior Year	
Botany Elective	3
Chemistry 205, 220	8
Education 306	3
History 202	3
Physics 209, 210	8
Psychology 204	3
Zoology 202	4
	32
Senior Year	
Education 352, 390, 402, 415, 416	14
Geology Elective	3
Life Sciences 300	3
Mathematics or Science Elective	4
Physical Education 321	2
Social Studies Elective	3
	29
TOTAL SEMESTER HOURS	129



SCIENCE EDUCATION CURRICULUM

(Biology, Physics, and General)

Freshman Year	Semester Hours
Botany 101	4
Education 101	1
English 101, 102	6
Geology 111, 112	4
Mathematics 111, 112	6
Physical Education Activities	3
Speech 110	3
Zoology 111, 112, 115	8

35

Sophomore Year	Semester Hours
Bacteriology 210	3
Botany 220	3
Education 200	3
English 201, 202	6
History 201	3
Mathematics 230, 231, 232	9
Physical Education Activity	1
Physics 201 or 209	4
Psychology 206	3

35

Junior Year	Semester Hours
Chemistry Electives	6 or 8
Education 306	3
History 202	3
Political Sciences 201	3
Physics 202 or 210	4
Physics Elective	4
Physical Education 321	2
Psychology 204	3
Zoology Elective	4

32 or 34

Senior Year	Semester Hours
Botany Elective	3
Education 352, 390, 402, 415, 416	14
Geology Elective	3
Physics Elective	4
Social Studies Elective	3

27

TOTAL SEMESTER HOURS 129 or 131

SCIENCE EDUCATION CURRICULUM

(Physics, Chemistry, and General)

Freshman Year	Semester Hours
Botany 101	4
Chemistry 101, 102, 103, 104	8
Education 101	1
English 101, 102	6
Mathematics 111, 112	6
Physical Education Activities	3
Speech 110	3
Zoology 111, 112	4

35

Sophomore Year	Semester Hours
Chemistry 205	4
Education 200	3
English 201, 202	6
Mathematics 230, 231, 232	9
Physical Education Activity	1
Physics 201 or 209, 202 or 210	8
Psychology 206	3

34

Junior Year	Semester Hours
Chemistry 220	4
Education 306	3
Geology Electives	3
History 201, 202	6
Physics Electives	8
Physical Education 321	2
Political Science 201	3
Psychology 204	3

32

Senior Year

Chemistry Electives	8
Education 352, 390, 402, 415, 416	14
Geology Elective	3
Social Studies Elective	3

28

TOTAL SEMESTER HOURS 129



SOCIAL STUDIES CURRICULUM

Freshman Year	Semester Hours
Biological Science	3
Education 101	1
English 101, 102, 201	9
History 101, 102, 201	9
Mathematics 107, 108	4
Physical Education Activities	2
Science Elective	3
Speech 110	3

34

Sophomore Year	Semester Hours
Education 200	3
English 202	3
Geography 203	3
History 202	3
Mathematics 109	2
Physical Education 321	2
Physical Education Activity	1
Physical Science Elective	3
Psychology 204	3
Science Elective	3
Sociology 201	3
Sociology Elective	3

32

Junior Year	Semester Hours
Economics 200, 315	6
Education 306, 390	4
Elective	3
Geography 225, 226	6
History 460	3
Library Science 305	3
Physical Education Activity	1
Political Science 201, 304	6

32

Senior Year	Semester Hours
Education 353, 402, 415, 416	13
Elective	9
History Electives	6
Psychology 206	3

31

TOTAL SEMESTER HOURS 129

SPANISH EDUCATION CURRICULUM

Freshman Year	Semester Hours
Education 101	1
English 101, 102, 201	9
History 201, 202	6
Mathematics 107, 108	4
Physical Education Activities	2
Spanish 101, 102, 201	9
Speech 110	3

34

Sophomore Year

Biological Science	3
Education 200	3
English 202, 422	6
Elective	3
Mathematics 109	2
Physical Education Activities	2
Physical Science Elective	3
Science Elective	3
Spanish 202, 301, 302	9

34

Junior Year

Education 306, 351	6
Electives	6
Physical Education 290, 321	5
Psychology 204, 206	6
Science Elective	3
Spanish Electives	9

35

Senior Year

Education 390, 402, 415, 416	11
Electives	6
Political Science 201	3
Social Studies Elective	3
Spanish Elective	3

26

TOTAL SEMESTER HOURS 129

SPEECH EDUCATION CURRICULUM

Freshman Year	Semester Hours
Biological Science	3
Education 101	1
Elective	3
English 101, 102, 201	9
Mathematics 107, 108, 109	6
Physical Education Activities	2
Speech 110, 210, 222	9

33

Sophomore Year

Education 200	3
Electives	6
English 202	3
History 201, 202	6
Physical Education 321	2
Physical Education Activity	1
Science Electives	6
Speech 200, 211	6
Speech Elective	3

36

Junior Year

Education 306	3
Elective	3
Library Science 305	3
Physical Education 290	3
Physical Education Activity	1
Physical Science Elective	3
Political Science 201	3
Psychology 204, 206	6
Speech 315, 406	6
Speech Elective	3

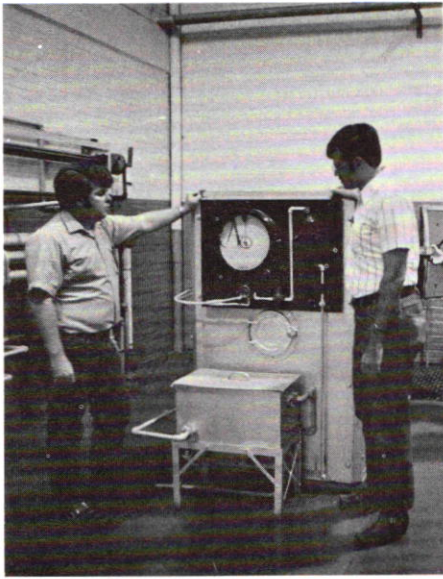
34

Senior Year

Education 354, 390, 402, 415, 416	14
Electives	6
Social Studies Elective	3
Speech 340	3

26

TOTAL SEMESTER HOURS 129



College of Engineering

College of Engineering

BEN T. BOGARD, Dean

CHARLES A. KILLGORE, Associate Dean

DEPARTMENTS AND FACULTY

BIOMEDICAL ENGINEERING

DANIEL D. RENEAU

Professor and Head of the Department

ASSOCIATE PROFESSOR: JAMES D. GREEN

ASSISTANT PROFESSOR: ERIC J. GUILBEAU.

CHEMICAL ENGINEERING

W. W. CHEW

Professor and Head of the Department

PROFESSORS: HOUSTON K. HUCKABAY, JAMES W. MALONE.

ASSOCIATE PROFESSOR: CHARLES A. KILLGORE.

ASSISTANT PROFESSOR: GUY L. LEEFE, III.

INSTRUCTOR: JAMES M. CAMERON.

CIVIL ENGINEERING

R. A. SMITH

Professor and Head of the Department

PROFESSORS: C. H. EDWARDS, R. W. McLEANE, G. W. MIDDLE-

TON, J. T. PAINTER, J. R. WILSON.

ASSOCIATE PROFESSORS: W. O. HADLEY, C. A. LEMKE, B.

E. PRICE.

ELECTRICAL ENGINEERING

DAVID L. JOHNSON

Professor and Head of the Department

PROFESSORS: B. F. BROWN, M. R. JOHNSON, JR., R. M. STEERE.

ASSOCIATE PROFESSORS: R. H. NEWELL, E. N. ROOTS, JR., THOMAS WILLIAMS, JR., J. D. WISTERMAN.

ASSISTANT PROFESSORS: G. R. BADEAUX, A. C. THIGPEN, NITIA SCHROEDER, DEAN L. SMITH.

INSTRUCTOR: LEE E. BAIRNSFATHER.

GEOSCIENCES

LEO A. HERRMANN

Professor and Head of the Department

ASSOCIATE PROFESSORS: R. E. DAVENPORT, W. R. HIGGS.

INDUSTRIAL ENGINEERING AND COMPUTER SCIENCE

H. L. HENRY, JR.

Professor and Head of the Department

ASSOCIATE PROFESSORS: P. N. HALE, JR., J. B. KEATS, D. R. SULE.

ASSISTANT PROFESSORS: C. N. SCHROEDER.

MECHANICAL ENGINEERING

J. J. THIGPEN

Professor and Head of the Department

PROFESSORS: JOE H. BARNWELL, R. F. BARRON, BEN T. BOGARD, JOHN D. CALHOUN, JACK CANTERBURY, E. M. KILLGORE, J. D. LOWTHER, G. J. TRAMMELL.

ASSOCIATE PROFESSORS: A. C. BRUCE, R. D. HOLSTEAD, M. T. WILKINSON.

PETROLEUM ENGINEERING

R. M. CARUTHERS

Professor and Head of the Department

ASSOCIATE PROFESSOR: R. E. STORMS.

GENERAL INFORMATION

HISTORY AND ORGANIZATION

Engineering education at Louisiana Tech University began in September 1895 in the Department of Mechanical Arts of the Louisiana Industrial Institute. Throughout its history the College of Engineering has kept pace with advances in education and industry, consistently turning out top quality graduates.

The growth and development of engineering education at Louisiana Tech is outlined below:

- 1910 February, curriculum offering the Bachelor of Industry degree in General Engineering, replaced curriculum in Mechanic Arts.
- 1921 Louisiana Industrial Institute changed to Louisiana Polytechnic Institute. Bachelor of Science degree in General Engineering offered.
- 1927 Bachelor of Science degree in Mechanical and Electrical Engineering and Bachelor of Science degree in Civil Engineering offered, replacing the curriculum in General Engineering.
- 1936 Bachelor of Science degree in Mechanical and Electrical Engineering replaced by offering the Bachelor of Science degree in Mechanical Engineering and the Bachelor of Science degree in Electrical Engineering.
- 1940 Bachelor of Science degree in Chemical Engineering offered.
- 1948 Bachelor of Science degree in Petroleum Engineering offered.
- 1953 Department of Engineering Research created. A curriculum leading to the Bachelor of Science degree in Geology initiated. The curriculum was incorporated into the newly named Department of Petroleum Engineering and Geology.
- 1955 Bachelor of Science degree in Geological Engineering offered and the granting of bachelor's degrees in geology removed from the School of Engineering and placed with the School of Arts and Sciences. The Department of Petroleum and Geological Engineering established.
- 1956 The General Engineering Department established as a non-degree granting department to administer the engineering courses that are not identified with a particular branch of engineering.
- 1957 A Bachelor of Science degree in Industrial Engineering offered in the Department of General Engineering. A cooperative plan arrangement developed with certain industrial firms, thereby providing for students a plan of alternate work in college and industry.
- 1958 The State Board of Education authorized the School of Engineering to offer courses and curricula leading to the Master of Science degree.

- 1963 The Department of Industrial Engineering replaced the Department of General Engineering. In addition to the Industrial Engineering offerings, the Department continued to offer the courses that were common to all engineering curricula.
- 1966 The Division of Continuing Engineering Education established.
- 1967 The Department of Civil Engineering renamed Department of Civil Engineering and Geology and administered the curriculum in Geological Engineering. The Department of Petroleum and Geological Engineering renamed Department of Petroleum Engineering. The Aerospace Option in Mechanical Engineering offered. The Bachelor of Science degree in Geology continued to be granted by the School of Arts and Sciences.
- 1968 The Department of Civil Engineering and Geology offered the Construction Technology curriculum and the Geophysical Engineering option. The Department of Industrial Engineering offered a degree in Computer Science. The School of Engineering was authorized to grant the Doctor of Philosophy degree beginning in September 1968.
- 1970 The Department of Civil Engineering and Geology offered a certificate of proficiency in land surveying. The Department of Industrial Engineering and Computer Science offered an Operations Research option to the Master of Science degree program in Industrial Engineering. The official designation changed from School of Engineering to College of Engineering.
- 1971 The Geology curriculum was added to the Department of Civil Engineering and Geology (from the College of Arts and Sciences).
- 1972 The Department of Biomedical Engineering and the Department of Geosciences were established. The Bachelor of Science degree in Electro-Technology (presently called Electrical Engineering Technology) was offered.
- 1973 Associate of Science degrees (2-year) in Environmental Technology, Instrumentation Technology, Petroleum Technology, Technical Drafting, and Pulp and Paper Technology offered.
- 1974 Associate of Science degree (2-year) in Mechanical Technology.

ACCREDITATION

The curricula of Chemical, Civil, Electrical, Industrial, Mechanical and Petroleum Engineering are accredited by the Engineers' Council for Professional Development.

DEGREES

BACHELOR OF SCIENCE in: Biomedical Engineering; Chemical Engineering; Civil Engineering; Computer Science; Construction Technology; Electrical Engineering; Electrical Engineering Technology; Geology; Industrial Engineering; Mechanical Engineering; and Petroleum Engineering.

ASSOCIATE OF SCIENCE in: Technical Drafting; Land Surveying Technology; Environmental Technology; Instrumentation Technology; Mechanical Technology; Petroleum Technology and Pulp and Paper Technology. These programs are listed in this bulletin under the Division of Admissions, Basic and Career Studies.

MASTER OF SCIENCE IN ENGINEERING: See *Graduate School Bulletin*.

MASTER OF SCIENCE IN GEOLOGY: See *Graduate School Bulletin*.

DOCTOR OF PHILOSOPHY IN ENGINEERING: See *Graduate School Bulletin*.

ADMISSION

All first-term freshmen enter the Division of Admissions, Basic and Career Studies and transfer from that Division to the College of Engineering when they have demonstrated a satisfactory scholastic achievement. For details on this procedure, refer to the appropriate section in this catalog under the Division of Admissions, Basic and Career Studies.

A student planning to pursue a curriculum in engineering must meet the general University entrance requirements and it is recommended that he obtain the high school credits listed below. However, any deficiency in these may be remedied while the student is enrolled in the Division of Basic and Career Studies.

English	4 units
Algebra	2 units
Plane Geometry	1 unit
Trigonometry	1/2 unit
Chemistry	1 unit
Physics	1 unit

SCHOLASTIC REQUIREMENTS

The College of Engineering is aware of its responsibility of training men and women for public service; therefore, it must hold exacting standards of achievement for those students to whom it gives its approval. Since the sciences, especially physics, chemistry, and mathematics, and the communication skills are the basis of any sound engineering curriculum, satisfactory work is essential in these departments during the first two years.

To continue in an engineering curriculum a student who has been enrolled for six quarters must have achieved an over-all grade-point average (quality points divided by semester hours) of at least 1.75 on the total semester hours he has pursued. This requirement will apply each quarter thereafter for him to continue in the College of Engineering.

In order to remain in good standing in the College of Engineering, the student must maintain a grade average of "C" or higher for his total pursued semester hours. The College of Engineering reserves the right to accept toward graduation only credits with a "C" or higher grade in engineering courses, and if the student receives a grade of "D" in any non-terminal mathematics course required in his curriculum the course must be repeated before he proceeds in the sequence. During any quarter in which an engineering student is on scholastic probation, he may enroll in no more than 9 semester hours.

An engineering student, in order to graduate, must have a "C" average or better in his major field. This grade point average will be calculated on semester hours earned. Also, an engineering student, in order to graduate, must have taken 27 of his last 36 hours while registered in the College of Engineering at Louisiana Tech.

ELECTIVES

All electives must be approved by the appropriate department head. A free elective cannot be a prerequisite for a course specifically required in a student's curriculum.

TRANSFER STUDENTS

A candidate for admission to the College of Engineering by transfer from another institution or college must submit a satisfactory record in scholarship and in conduct from the institution(s) or college(s) from which he wishes to transfer.

If the subjects satisfactorily passed cover in time and content certain of the required subjects in the engineering college curriculum which he expects to enter, equivalent credit will be allowed.

Transfer students having completed six or more quarters of college work will be required to have an over-all "C" average in order to enroll in an engineering curriculum. All students transferring to an engineering curriculum must have an average grade of "C" in all courses for which credit may be allowed. For all students transferring to an engineering curriculum a one-year probationary period will follow entrance, during which time an over-all "C" average must be maintained in required courses or the student will not be permitted to continue in an engineering curriculum.

NON-ENGINEERING MAJORS

A non-engineering major who meets prerequisite requirements may take without special approval from the Dean of Engineering the following engineering courses: Engineering 151, Engineering 300, Engineering 401, Engineering 431, Biomedical Engineering 200, Electrical Engineering 203, Electrical Engineering 326, Industrial Engineering 201, Industrial Engineering 301, Petroleum Engineering 200, Mechanical Engineering 200, Mechanical Engineering 251, Aerospace Engineering 301, or any engineering course required in his curriculum.

A non-engineering major who meets prerequisite requirements and who obtains written approval from the Dean of Engineering (or his representative) may (a) take any one engineering course per quarter, or (b) take any two engineering courses per quarter if he has maintained an over-all "C" average and has not previously failed to meet scholastic requirements while enrolled as a student in the College of Engineering.

MILITARY STUDIES CREDIT IN ENGINEERING CURRICULA

The various engineering curricula make provision for use of credit for Air Force Aerospace Studies to the following extent:

For engineering students enrolled in the Air Force ROTC program the lower division courses in Air Force Aerospace Studies will be accepted in lieu of 3 hours of free elective.

The twelve semester hours of advanced Air Force Aerospace Studies, when successfully completed, will be accepted upon approval of the major department head and dean, for three semester hours of non-technical elective toward the engineering degree being pursued. Should the student, upon successful completion of the first six semester hours of advanced studies, be prevented through no fault of his own from enrolling in and completing the remaining six semester hours, credit shall be granted upon approval of the major department head and dean for the aforementioned three semester hours of elective.

The above rules will be interpreted within the following rulings:

1. A student whose military contract with the Air Force ROTC is voided for reasons beyond his control will receive credit in his curriculum for advanced ROTC courses completed.
2. A student whose military contract with the Air Force ROTC is voided for reasons within his control, including poor scholarship and misconduct, will not receive credit in his curriculum for advanced ROTC courses completed.

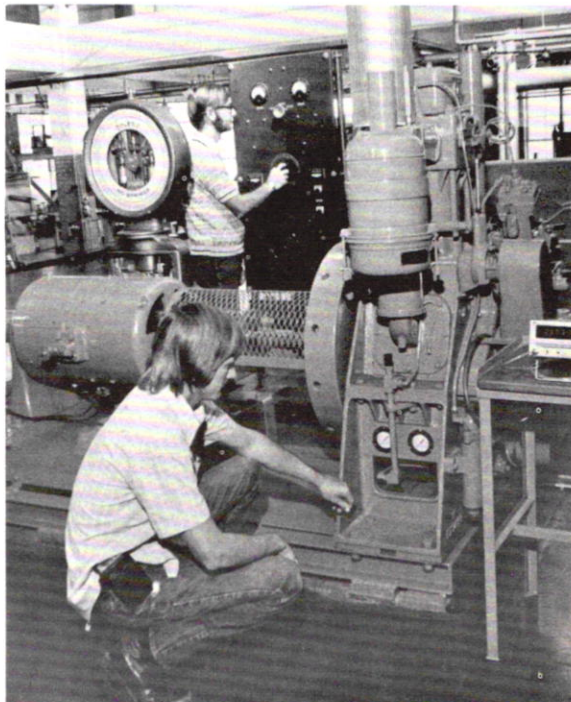
Students in the Naval Reserve Officer Candidate program may obtain a maximum of three semester hours of non-technical elective credit for the successful completion of one or more eight-week summer training periods at the Officer Candidate School, Newport, Rhode Island, provided:

1. The chief of Naval Personnel, upon the request of the individual student, forwards an accreditation transcript to the Registrar, and

2. The major department head and the dean approve.

Students in the Marine Platoon Leaders Class (MPLC) program may obtain a maximum of three semester hours of non-technical elective credit for the successful completion of one or more summers' training, provided:

1. The military Personnel Procurement Branch, Headquarters, U. S. Marine Corps, upon the request of the individual student, forwards an accreditation transcript to the Registrar, and
2. The major department head and the dean approve.



EXPENSES

In addition to the regular collegiate expenses the beginner in engineering is required to purchase drawing equipment of a quality approved by the faculty. All freshmen are required to purchase a slide rule or a pocket electronic calculator. All engineering students are required to pay \$1.95 per quarter to cover the subscription cost of the "Tech Engineer" and membership dues in the Louisiana Tech Engineers' Association. All students, on reaching the junior level, should have free access to a typewriter for the purpose of preparing laboratory and other reports. This machine may be either portable or desk model. Graduating seniors in the College of Engineering are required to complete an Engineering Graduate Data Form and to supply the Office of the Dean with three recent application-type photographs approximately 2" x 2 1/2".

CORRESPONDENCE COURSES

Students in the College of Engineering are permitted to include no more than six semester hours of correspondence courses for credit toward graduation in any curriculum. Prior to pursuing the correspondence work the student must obtain written approval of the Dean of Engineering. Approval will be granted only for courses in areas such as the humanities or economics (English courses are excluded).

CREDIT BY EXAMINATION

The College of Engineering recognizes the outstanding student and encourages him to advance as rapidly as possible. Therefore, a student may receive up to a maximum of thirty semester hours of degree credits by scoring high on special examinations.

General Examinations (CLEP)

With the approval of the department head and the Dean, the College of Engineering will accept in each of its engineering curricula a maximum of eighteen semester hours credit by CLEP General Examinations, provided the subject(s) for which credit is allowed has not already been taken by the student. Subject to the approval of the Head of the Biomedical Engineering Department, six additional semester hours may be given for technical elective credit in zoology. In non-engineering curricula administered by the College of Engineering, twenty-four semester hours of credit may be given, subject to the approval of the head of the department responsible for that curriculum.

Six semester hours of degree credit may be allowed in English (English 101 and 102.) Six semester hours credit may also be allowed in English and American Literature (English 201 and 202.) In addition, six semester hours credit may be allowed for Humanities or Social Sciences electives.

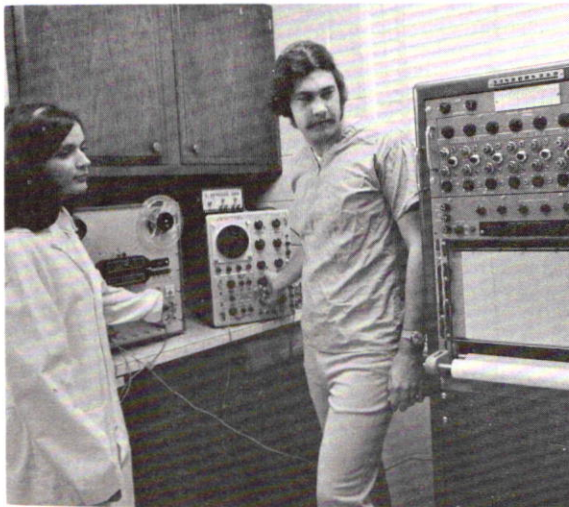
Subject Examinations

With the approval of the department head and the Dean of Engineering, degree credit may be obtained by acceptable scores on Subject Examinations in accordance with the general University policy. An engineering student may receive up to thirty semester hours of degree credit in any one of the engineering curricula by such examinations, if comparable course work has not been taken by the student. The Subject Examinations may be of three types: (1) CLEP Examinations, (2) USAFI Subject Examinations, (3) Subject Examinations for credit prepared by Louisiana Tech University faculty members.

STUDENT ORGANIZATIONS

The following engineering organizations are available for student participation:

Louisiana Tech Engineers' Association, Student Branch of the American Institute of Aeronautics and Astronautics, Student Chapter of the American Society of Agricultural Engineers, Student Chapter of the Association of Biomedical Engineers, Student Chapter of the American Institute of Chemical Engineers, Student Chapter of the American Society of Civil Engineers, Student Chapter of the Association for Computing



Machinery, Student Branch of the Institute of Electrical and Electronics Engineers, Geology Club, Student Chapter of the American Institute of Industrial Engineers, Student Section of the American Society of Mechanical Engineers, Student Chapter of the Society of Petroleum Engineers of A.I.M.E.

STUDENT HONOR SOCIETIES

The following honor societies are available to those students who excel academically and are elected to membership:

Alpha Pi Mu—Industrial Engineering Honor Society, Civil Engineering Honor Society; Eta Kappa Nu—Electrical Engineering Honor Society; Omega Chi Epsilon—Chemical Engineering Honor Society; Upsilon Pi Upsilon—Computer Science Honor Society; Pi Epsilon Tau—Petroleum Engineering Honor Society; Pi Tau Sigma—Mechanical Engineering Honor Fraternity; Sigma Gamma Epsilon—Earth Sciences Honor Society; Tau Beta Pi—all engineering.

SCHOLARSHIPS

In addition to the financial aid mentioned elsewhere, certain engineering students will be eligible for the scholarships listed below:

R. C. BAKER FOUNDATION: An outstanding senior student and an outstanding junior student in mechanical engineering.

R. C. BAKER FOUNDATION: An outstanding senior student and an outstanding junior student in petroleum engineering.

LOUISIANA ENGINEERING SOCIETY, WOMEN'S AUXILIARY, SHREVEPORT SECTION: Two outstanding senior students from Caddo or Bossier Parishes.

LOUISIANA ENGINEERING SOCIETY, WOMEN'S AUXILIARY, MONROE SECTION: An outstanding senior student from the Fifth Congressional District.

DOW CHEMICAL COMPANY, LOUISIANA DIVISION: Two outstanding junior or senior students in chemical engineering.

SKELLY OIL COMPANY: An outstanding undergraduate student in petroleum engineering who is a U. S. citizen.

CONTINENTAL OIL COMPANY: An outstanding student in Petroleum Engineering.

JOHN R. HORTON: A deserving sophomore, junior, or senior student.

PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION SCHOLARSHIP FOUNDATION: Personal loans to deserving junior, senior, or graduate students in electrical engineering.

THE LOUISIANA LAND AND EXPLORATION COMPANY: An outstanding junior or senior student in petroleum engineering who is a Louisiana resident and U. S. citizen.

THE LOUISIANA LAND AND EXPLORATION COMPANY: An outstanding junior or senior student in geology who is a Louisiana resident and U. S. citizen.

SOUTHWESTERN ELECTRIC POWER COMPANY: An outstanding senior student in electrical engineering whose home is in the company service area.

SOUTHWESTERN ELECTRIC POWER COMPANY: An outstanding senior student in mechanical engineering whose home is in the company service area.

LOUISIANA TECH ENGINEERING FOUNDATION: An outstanding graduate student.

EXXON EDUCATION FOUNDATION: Four outstanding beginning freshmen students in chemical, mechanical, and petroleum engineering.

CHEVRON OIL COMPANY: An outstanding student in petroleum engineering.

H. A. LOTT, INCORPORATED: Two outstanding students.

WESTERN ELECTRIC FUND: An outstanding junior or senior student.

MONSANTO COMPANY: Two outstanding junior or senior students in chemical engineering.

MONSANTO COMPANY: An outstanding junior or senior student in mechanical engineering.

AMERICAN PETROLEUM INSTITUTE, SOUTH ARKANSAS CHAPTER: An outstanding student in petroleum engineering.

AMERICAN PETROLEUM INSTITUTE, MONROE CHAPTER: An outstanding student in petroleum engineering.

KAISER ALUMINUM AND CHEMICAL CORPORATION: An outstanding graduate student in chemical engineering.

KAISER ALUMINUM AND CHEMICAL CORPORATION: A deserving student in chemical engineering.

LOUISIANA POWER AND LIGHT COMPANY: An outstanding junior or senior student in mechanical engineering.

LOUISIANA POWER AND LIGHT COMPANY: Two outstanding junior or senior students in electrical engineering.

AMERICAN INSTITUTE OF INDUSTRIAL ENGINEERS, SHREVEPORT SECTION: An outstanding student in industrial engineering.

NORTHWEST LOUISIANA PLUMBING AND AIR CONDITIONING INDUSTRY: An outstanding junior or senior student in mechanical engineering.

T. L. JAMES COMPANY: An outstanding student in each of the freshman, sophomore, junior and senior classes.

TEXACO, INCORPORATED: An outstanding graduate student in chemical engineering.

R. A. McFARLAND: An outstanding junior student in civil engineering.

SHELL OIL COMPANY: An outstanding student in petroleum engineering.

SAMUEL McCAIN YOUNG: An outstanding student in civil engineering from metropolitan New Orleans area who is a U. S. citizen.

WYLY AND ALUMNI: Outstanding beginning freshman.

CONTINENTAL OIL COMPANY: Two outstanding junior or senior students in chemical engineering.

PETROLEUM ENGINEERING DEPARTMENT: Six deserving students in petroleum engineering.

DRESSER FOUNDATION: An outstanding beginning freshman student in petroleum engineering.

COMPUTER FACILITIES

The College of Engineering has long been active in computer technology and applications. The Department of Electrical Engineering began teaching a sequence of courses in switching and digital control theory in 1955. In 1957 a digital computer was purchased and courses in computer programming were offered by the department. The B.S. degree in electrical engineering has computer engineering as one of its options, including both hardware and software. Since 1968 the Department of Industrial Engineering and Computer Science has offered a curriculum leading to the B.S. degree in computer science to meet the demand for software specialists. The electro-technology program in the Department of Electrical Engineering includes courses in analog and digital computer circuitry, maintenance and use.

All majors in the College of Engineering make extensive use of the IBM digital computers in the University Computing Center. They have ready access to analog computers in the various engineering departments and also to the computers in the Electrical Engineering Department: a Digital Equipment Corporation PDP-9 digital computer, a Univac Solid-State 90 digital computer, and Applied Dynamics AD-40 and AD-80 analog computers. A remote terminal has recently been added to allow those doing research in the Department of Biomedical Engineering to use the AD-80 even though their laboratory is in another building.

DIVISION OF ENGINEERING RESEARCH

CHARLES A. KILLGORE, Director

The Division of Engineering Research was created in 1953 in recognition of the importance of fundamental and applied research to the world of technology and to the professional development of a competent faculty. The purpose of the division is to encourage, promote, and facilitate the performance of original research by members of the College of Engineering and to expedite the dissemination of the knowledge thus gained. The activities of the division are directed by the Research Coordinating Committee, composed of the Engineering Academic Department Heads with the Director of Engineering Research serving as chairman of the group. This committee is responsible to the Dean of the College of Engineering.

The financial support of research projects is derived from two primary sources: (a) the operating budget of the Research Department, and (b) sponsorship of a project by an interested outside agency.

ENGINEERING GRADUATE STUDIES

H. K. HUCKABAY, Director

The College of Engineering offers the Master of Science and the Doctor of Philosophy Degree with majors (specializations) available in biomedical, chemical, civil, electrical, industrial (with an operations research option at M.S. level), mechanical and petroleum engineering. A Master of Science in Geology is offered by the College of Engineering. The College of Life Sciences offers the Master of Science in Agricultural Engineering.

Details of these programs are found in the University Graduate School Bulletin.

THE COOPERATIVE PLAN

MILTON R. JOHNSON, JR., Coordinator

The College of Engineering is cooperating with certain industrial firms in a plan of alternate periods of work and university study for students in engineering. The Cooperative Plan provides one of the best methods for integrating technical theory and practical industrial experience in a five-year educational program. Another important purpose for maintaining the Cooperative Plan is to provide promising engineering students who find it financially difficult to complete their formal education an opportunity to earn money that can pay a large part, or possibly all, of their college expenses.

Although the College cannot guarantee work or stipulate compensation, every effort will be made to place the student to his best educational and financial advantage. The Cooperative Plan will allow the student to have approximately a year of practical experience by the time of his graduation. In cases where the student accepts permanent employment with the cooperating company, the necessity for his taking special company orientation and training courses after graduation is usually eliminated. The Cooperative Plan graduate is not obligated to accept employment with the cooperating company nor is the company obligated to offer him permanent employment.

Each student participating in the Cooperative Plan is required to register at Louisiana Tech during the work phase.

Students from any department within the College of Engineering will be considered for participation in the Cooperative Plan provided they have completed three quarters of university work successfully with at least a grade-point average of 2.5 and are specifically recommended by the head of the department in which they plan to complete requirements for a degree. Requirements for graduation and the degree earned are the same as those for regular students pursuing a four-year program. Individuals interested in further details should contact the Coordinator of the Cooperative Plan, College of Engineering, Louisiana Tech University, Ruston.

DIVISION OF CONTINUING ENGINEERING EDUCATION

GROVER J. TRAMMELL, Director

The Division of Continuing Engineering Education sponsors and coordinates various special programs other than the regular academic and research programs. These include conferences, short courses, lectures, seminars, continuing education programs and summer institutes. These programs are designed to aid the practicing engineers, technicians and others in this area to keep abreast of the latest developments in the rapidly expanding technical fields. Some are offered regularly on a periodic basis while others are offered on demand. Anyone desiring the offering of any special course should contact the director.

JOINT CURRICULA OFFERED BY THE COLLEGE OF ENGINEERING AND COLLEGE OF ADMINISTRATION AND BUSINESS

The College of Engineering in cooperation with the College of Administration and Business has arranged four curricula which will enable students who desire to do so, to obtain a degree in one of four fields of Engineering and a degree in Business Administration. This program of study requires five years and one quarter for completion, at which time the two degrees are awarded. These curricula are jointly administered by the two colleges. The four departments of the College of Engineering offering these joint curricula are: Chemical, Civil, Electrical, and Mechanical.

DEPARTMENTAL INFORMATION

ENGINEERING FRESHMEN

CALVIN A. LEMKE, ADVISER

The courses in the first three quarters are common to all engineering curricula and are intended to provide an opportunity for the student to become acquainted with basic scientific and engineering fundamentals. This permits the engineering student to delay in choosing the engineering department in which he proposes to pursue a degree until later in his freshman year.

FRESHMAN ENGINEERING CURRICULUM

(Same for all engineering disciplines)

Freshman Year	Semester	Hours
Chemistry 101, 103, 102, 104	8	8
Engineering 102, 151	4	4
English 101, 102	6	6
Mathematics 230, 231, 232	9	9
Non-Technical Electives ¹	6	6

TOTAL SEMESTER HOURS 33

¹All Non-Technical electives must be approved by the engineering freshman adviser and must be selected from courses offered in the departments of English, Foreign Languages, History, or Social Sciences.



BIOMEDICAL ENGINEERING

DANIEL D. RENEAU
Head of the Department

Biomedical Engineering is formally defined as that field which deals with the interaction between the engineering sciences and biology and medicine. The nature of our undergraduate program at Louisiana Tech University is to combine the practical aspects of engineering with biology and medicine to produce a new type of engineer capable of conducting biomedical work. The program allows medical and biological instruction to be obtained in the life sciences (i.e., general biology, genetics, comparative anatomy, embryology, micro-biology, physiology, etc.) and engineering instruction to be obtained from selected standard engineering courses. The aspects of the biological training is combined with the engineering training by means of a series of coordinated biomedical engineering courses taught at the sophomore, junior and senior academic levels.

The training program leading to a Bachelor of Science degree in Biomedical Engineering is designed along broad lines that permit a student to obtain an overall education in Biomedical Engineering, and a specialty in one of the following areas: Electronics, Systems Analysis, Design, or Life Sciences.

The biomedical engineers of today are working in many rewarding areas. For example, some are involved in the design and construction of artificial internal organs; others are clinically involved in the electronics and instrumentation associated with hospital operating rooms, intensive care rooms and automated clinical laboratories; others are involved in biomedical computer systems; and some are conducting basic research using engineering analysis principles aimed at understanding the basic mechanisms that regulate the human body. Among others, employment opportunities exist in hospitals, national research foundations, governmental research institutes, chemical companies, pharmaceutical companies, and the electronics and computer industries.

One special characteristic feature of our biomedical engineering program is that upon graduation, or at the end of the first three years of study, the student will have completed the basic requirements necessary for admission to medical school. The program is viewed as having strong quantitative background for one who wishes to pursue a future medical career.

An internship program has been developed with hospitals in the state. The program is optional, and the student may spend one quarter of study in the hospital system.

Another feature of the program is that upon completion of the biomedical engineering degree program in any of the above specialties, the student will be adequately prepared to continue his education at the graduate level by pursuing either a Master of Science and/or the Doctor of Philosophy degree in Engineering.

BIOMEDICAL ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Freshman Engineering Curriculum	33
Sophomore Year	
Biomedical Engineering 201 and 210	5
Mathematics 330 and 350	6
Physics 201 and 202	8
English 201 or 202	3
Technical Elective ¹	3
Zoology 202	4
	<hr/> 29
Junior Year*	
Biomedical Engineering 301 and 320	6
Chemistry 250, 251, 253 and 254	6
Economics 203	2
Electrical Engineering 213	3
Engineering Mechanics 201	2
Technical Elective	9
Zoology 320	4
	<hr/> 32
Senior Year**	
Biomedical Engineering 401, 402, and 403	9
Economics 204	2
Electrical Engineering 325	3
Free Elective	3
Non-Technical Elective	6
Technical Elective	9
Zoology 410	3
	<hr/> 35
TOTAL SEMESTER HOURS	129

¹All electives must be approved by the Head of the Department of Biomedical Engineering. Non-technical electives are to be selected from courses offered in the Departments of Arts, Economics, English and Foreign Languages, or Social Sciences. Technical electives are to be selected from courses offered in the Departments of the College of Engineering or in the Departments of Mathematics, Chemistry, Physics, or in the Life Sciences. (A minimum of four semester hours of credit is required in thermodynamics.) The student must select, in conjunction with the Department Head, a series of courses consisting of a minimum of 12 hours which specialize in one of the following areas:

- Electronics
- Design
- Systems analysis
- Life Sciences

*At the end of the ninth quarter, the student can complete the basic requirements necessary for admission to medical school and may elect to apply for entrance.

**One quarter may be spent as an intern in an associated hospital.

CHEMICAL ENGINEERING

W. W. CHEW
Head of the Department

Chemical Engineering is that branch of engineering concerned with the development, application, and operation of the manufacturing process in which chemical and/or certain physical changes of material are involved. The work of the chemical engineer is to develop, design, construct and supervise the operation of equipment and plants in which raw products are processed into finished bulk chemicals. A chemical engineer is one who can make scientific applications of mathematics, physics, chemistry, and chemical engineering principles to the development, design and operation of such equipment and plants within economic restraints.

The training of the chemical engineer must cover pure and applied sciences—chemistry, physics, mathematics, general engineering, analog and digital computer applications, and fundamental chemical engineering. The latter is best presented by a study of material balances, energy balances, equilibria, rates of reaction, and the associated equipment. These are the basic studies that may be applied to any industry. The study of many chemical processes are included in the laboratory and classroom work.

In order to meet newly developed interests in the chemical and related fields, elective courses are offered in radio-active isotopes, industrial waste treatment, specialized computer techniques and environmental problems.

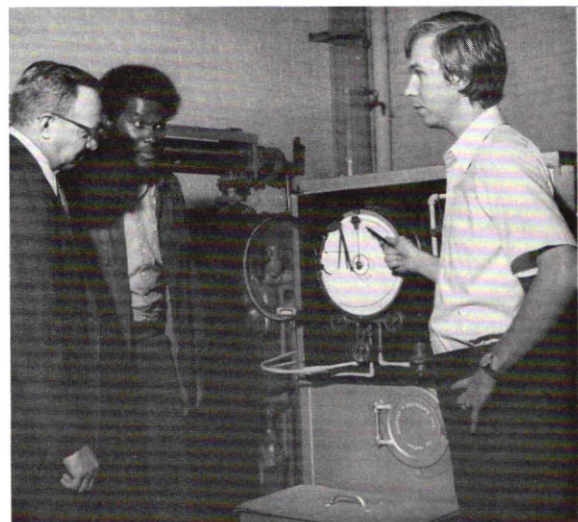
The fundamental objective of the curriculum in chemical engineering is to prepare young men and women for careers in the field of chemical manufacturing and allied industries.

The graduate in chemical engineering enters industrial work as an engineer in the production or operating departments of chemical or allied plants (such as metals, paper, petroleum, plastics, forest products, pharmaceuticals or food processing), or in the technical service or process improvement sections of such industries. Additional opportunities exist in the research and development sections of such industries, or in private or governmental research organizations. Market research or technical sales service positions are also available. In all these endeavors, an engineering education has been established as a valid route to top management. Graduates also are prepared to enter graduate study at accredited schools throughout the nation.

CHEMICAL ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Freshman Engineering Curriculum	33
Sophomore Year	
Chemical Engineering 201, 202, 254, 306	8
Economics 203	2
Electrical Engineering 213	3
English 201 or 202, and 303	6
Mathematics 330, 350	6
Physics 201, 202	8
	<hr/> 33



Junior Year

Chemical Engineering 301, 303, 321, 322, 350, 351, and 352	11
Chemistry 250, 251, 253, 254, 311, 312, 313, and 314	14
Economics 204, 205	4
Engineering Mechanics 201, 202	4
	<hr/>
	33

Senior Year

Chemical Engineering 401, 402, 407, 424, 432, and 451	13
Electrical Engineering 325	3
Free Elective ¹	3
Non-Technical Electives ¹	6
Technical Electives ¹	9
	<hr/>
	34

TOTAL SEMESTER HOURS 133

¹All electives must be approved by the Head of the Department of Chemical Engineering. Non-Technical electives are to be selected from courses offered in the fields of history, government, literature, sociology, philosophy, psychology, fine arts or foreign languages. Technical electives must be selected from courses offered in the departments of the College of Engineering or in the departments of Chemistry, Mathematics, or Physics.

PULP AND PAPER TECHNOLOGY

The pulp and paper technology curriculum, a two-year program leading to the Associate of Science Degree, is presented in the Division of Admissions, Basic and Career Studies section of this bulletin.

CIVIL ENGINEERING

R. A. SMITH
Head of the Department

The civil engineer is in the first wave of pioneering economic and industrial development. This demands of the civil engineer a high level of social responsibility, a conscious awareness of the needs of people for present day and anticipated requirements of the future.

The course of study includes civic and cultural development which helps to prepare the graduate for growth toward a position of leadership in his community. The curriculum provides a broad background in the basic and engineering sciences so that the graduate may continue his education either through practical application as a practicing engineer, or through formal education in pursuit of the Master of Science and Doctor of Philosophy degrees. The civil engineering curriculum is accredited by the Engineers' Council for Professional Development.

The laboratories are equipped to enhance the teaching of engineering sciences and to facilitate original research in advanced work. The principal laboratories are: Environmental Engineering, Experimental Stress Analysis, Hydraulics, Photogrammetry, Soil Mechanics, and Surveying.

Through choice of electives, optional programs are available in the following areas: Civil Engineering (general), Construction Management, Environmental Engineering, Structural Engineering, Transportation Engineering and Water Resources Engineering. For those who wish to prepare for a career in construction management, a program is described later in this section leading to a B.S. degree in Construction Technology.

CIVIL ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester	Hours
Freshman Engineering Curriculum		33
Sophomore Year		
Civil Engineering 254, 332		7
Engineering Mechanics 201, 202		4
English 202, 303		6
Humanities Elective ¹		3
Mathematics 330, 350		6
Physics 201, 202		8
	<hr/>	
		34
Junior Year		
Civil Engineering 302, 310, 314, 324, 346, 391		15
Engineering Mechanics 203, 301, 321		7
Geology 111		3
Humanities Elective		3
Mechanical Engineering 315, 316		4
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		32

Senior Year

Civil Engineering 424, 443, 444, 465	9
Economics 315	3
Electrical Engineering 213	3
Engineering 401	3
Humanities Elective	3
Mathematics Elective	3
Speech 377	3
Technical Electives	8
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	35

TOTAL SEMESTER HOURS 134

¹All electives must be approved by the head of the Department of Civil Engineering. Humanities electives may be selected from course offerings in the departments of Economics, English, Foreign Language, History, Music, and Social Science. Technical electives may be selected from course offerings in the College of Engineering, and the departments of Botany and Bacteriology, Mathematics, and the physical sciences.

CONSTRUCTION TECHNOLOGY

JOE R. WILSON, Adviser

The construction industry accounts for 15 out of every 100 jobs and consumes more basic and finished materials than any other industry in the United States. It is essentially a service industry converting the plans and specifications prepared by engineers and architects into finished products. With increasing demand for its services the construction industry continues to expand technologically and graphically.

This four-year curriculum is a balanced mixture of the humanities courses for general education, of technical courses for understanding the physical aspects of construction, and of business administration courses for introduction to management.

CONSTRUCTION TECHNOLOGY CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester	Hours
English 101, 102, 202		9
Mathematics 111, 112, 220		9
Technical Drafting 101		3
Civil Technology 102		1
Physics 209		4
Electro-Technology 160, 161		4
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		30
Sophomore Year		
Accounting 203, 204		4
Civil Technology 206, 207		6
Physics 210		4
English 303		3
Economics 315		3
Civil Engineering 254		4
Elective ¹		3
Political Science		3
Electro-Technology 264		2
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		32

Junior Year

Civil Technology 326, 340, 341, 342, 343, 344, 459	19
Mechanical Technology 215	3
Electro-Technology 274	3
Industrial Engineering 427	3
Elective ¹	3
	31

Senior Year

Civil Technology 210, 432, 464	9
Engineering 401, 431	5
Finance 318	3
Business Law 350, 351	5
Civil Engineering Elective	3
Elective ¹	6
	31
TOTAL SEMESTER HOURS	124

¹All electives must be approved by the Construction Technology adviser.

ENVIRONMENTAL TECHNOLOGY

The Environmental Technology curriculum, with options in Environmental Control and in Water and Wastewater, is a two-year program leading to the Associate of Science degree. This program is presented in the Division of Admissions, Basic and Career Studies section of this bulletin.

LAND SURVEYING TECHNOLOGY

The Land Surveying Technology curriculum, a two-year program leading to the Associate of Science degree, is presented in the Division of Admissions, Basic and Career Studies section of this bulletin.

ELECTRICAL ENGINEERING

D. L. JOHNSON
Head of the Department

Electrical engineering is that profession which deals with the application of the fundamental laws of electrical phenomena to the service of mankind. Broadly, electrical engineers are involved in one or more of the following areas: electromagnetics; the design of electronic and solid-state devices; the control, conversion and distribution of energy; computing and data processing; communication and information transmission or retrieval.

The undergraduate Electrical Engineering Curriculum is a carefully planned program of study designed to meet the challenges of expanding professional opportunities. From foundations in the basic sciences of mathematics, physics and chemistry, the program progresses through the engineering sciences to emphasize the roles of mechanics, thermodynamics and electrical theory in the analysis, synthesis, design and operation of engineering elements. A coordinated laboratory program utilizing modern equipment and facilities seeks to supplement classroom instruction, stimulate creativity and further professional competence. Finally, a variety of courses selected to provide an adequate humanistic and cultural background is included to insure both the recognition and fulfillment of the engineer's responsibilities as a citizen.

The curriculum is accredited by the Engineers' Council for Professional Development (E.C.P.D.). Graduation from an E.C.P.D. accredited program is one of the requirements for qualifying as a Registered Professional Engineer in Louisiana as well as most other states. If in addition to meeting the minimum requirements established for an E.C.P.D. accredited curriculum the graduate has maintained a relatively good scholastic record, he may qualify for further study in the advanced degree program.

The College of Engineering offers the opportunity for graduate study leading to the degrees of Master of Science and Doctor of Philosophy. These programs seek to build on the basic foundations established by the undergraduate course of study. Each is in large measure an individual matter developed jointly by the student and his advisory committee. The study plan may reflect a desire for more specialized undertakings or a continuing interest in the broad, underlying theories of the profession. In each case, the culmination of the program is the required graduate research project, with thesis or dissertation, accomplished with the aid and guidance of a research adviser.

The Master of Science program requires approximately one year to complete when pursued on a full-time basis. The requirements for the Doctor of Philosophy degree may be completed in a minimum of two additional years of full-time study. Those who attain either of these advanced degrees will find a wide range of opportunities for rewarding careers in many areas of business, industry, government and education.



ELECTRICAL ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Freshman Engineering Curriculum	33
Sophomore Year	
Electrical Engineering 203, 213, 214, 302, 303	11
Engineering Mechanics 201, 202	4
English 201 or 202	3
Mathematics 308, 330, 350	9
Physics 201, 202	8
	35
Junior Year	
Economics 315	3
Electrical Engineering 301, 308, 309, 313, 353, 354, 355, 401	19
Engineering Mechanics 203	2
English 303	3
Mechanical Engineering 315	2
Speech 377	3
Electives ³	3
	35
Senior Year	
Chemical Engineering 306	2
Electrical Engineering 424	1
Electrical Engineering Electives ¹	10

Mechanical Engineering 316	2
Non-Technical Electives ³	9
Technical Electives ²	7

31

TOTAL SEMESTER HOURS 134

All electives (Electrical Engineering, technical and non-technical) must be approved by the head of the department of Electrical Engineering.

¹Each student must earn a total of ten semester hours in one of the following areas of major interest:

- (a) Automatic Control Systems:
Electrical Engineering 408, 409, 432, 436
- (b) Computer Engineering:
Electrical Engineering 436, 437, 442, 445
- (c) Electronics/Communications:
Electrical Engineering 420, 430, 431, 439
- (d) Power Systems:
Electrical Engineering 421, 426, 427, 432

²Technical Electives must be selected from courses offered in the departments of the College of Engineering or in the departments of Mathematics or Physical Sciences.

³Non-technical electives must be selected from courses offered in the departments of Art, Economics, English, Foreign Language, History or Social Sciences.

Technical Drafting 101	3
Non-Technical Elective ¹	3
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	31

Junior Year

Civil Technology 206	3
Electro-Technology 284, 285, 360, 361, 370, 371	12
Basic Science Electives ¹	8
Free Elective ¹	3
Non-Technical Elective ¹	3
Mechanical Technology 215	3

32

Senior Year

Electro-Technology 262, 390, 460, 461, 470, 471, 472	11
Electro-Technology Elective ¹	3
Free Electives	8
Non-Technical Electives ¹	9

31

TOTAL SEMESTER HOURS 126

¹All electives must be approved by the Head of the Department of Electrical Engineering or his authorized representative.

ELECTRICAL ENGINEERING TECHNOLOGY

THOMAS WILLIAMS, Adviser

The increasing complexity of our industrial processes and the great expansion in research and production has created demand for a new group of specialists known as engineering technologists. These technologists work with professional engineers and scientists, or assume independent responsibility in the production, installation, operation and maintenance of complex technical apparatus. The engineering technologist organizes the men, materials and equipment to design, construct, operate and manage technical projects. He coordinates people, materials and machines. He must possess a variety of skills and practical and theoretical knowledge to get things done.

Electrical Engineering Technology includes the areas of computers, electrical power, communications, instrumentation and control systems. The program combines course work with coordinated laboratory work so that graduates will be capable of performing the variety of technical tasks demanded of them. The course and laboratory work emphasizes the latest in solidstate transistors and integrated circuit technology throughout. The graduate will also have received training in technical writing, public speaking, documentation and general industrial practices so that he will fit rapidly into the typical industrial organization with the training to qualify for advancement. Thus, the program produces graduates qualified for a wide variety of commercial and industrial employment in the rapidly developing electrical-electronics technology field.

ELECTRICAL ENGINEERING TECHNOLOGY CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Electro-Technology 160, 161, 170, 171, 180, 181	12
English 101, 102	6
Mathematics 111, 112, 220	9
Mechanical Technology 251	2
Non-Technical Elective ¹	3
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	32
Sophomore Year	
Electro-Technology 182, 260, 261, 264, 270, 274, 280	17
Physics 209, 210	8

DEPARTMENT OF GEOSCIENCES

L. A. HERRMANN
Head Of The Department

Geosciences encompasses many scientific disciplines including geology, geophysics, oceanography, geochemistry, and astrogeology. These fields touch every facet of modern civilization from the discovery of mineral wealth to the more exotic exploration of the moon and planets.

The Department of Geosciences at Louisiana Tech specializes in the training of geologists and geophysical engineers. In the past decade there has been a strong demand by the petroleum industry for our graduates and we expect this demand to continue. Employment opportunities are also available with the U. S. Geological Survey, the Environmental Protection Agency, other branches of the Federal Government and state geological surveys. A number of geosciences majors are currently participating in a Co-op program sponsored by the Water Resources Branch of the U. S. Geological Survey.

The department offers the bachelor's and master's degrees in geology. The bachelor's degree in civil engineering with a geophysical engineering option is also available in conjunction with the Civil Engineering Department.

The Geology curriculum is planned to give a broad and fundamental training in the major areas of geology, with a background in mathematics, physics, chemistry, and zoology. It is designed for those students planning for a professional career in geology and the earth sciences.

Students in other departments who wish to minor in geology are required to take Geology 111, 112, 121, 122, 209, 210, 211, and six additional hours of geology.

GEOLOGY CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Chemistry 101, 102, 103, 104	3
English 101, 102, 201 (or 202)	9
Geology 111, 112	6
Mathematics 111, 112	6
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	29
Sophomore Year	
Geology 209, 210, 211	9
History 101 (or 201), 102 (or 202)	6
Mathematics 228, 230	6
Physics 209, 210	8
Zoology 111, 112	4
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	33

Junior Year	
Botany 101	4
Civil Engineering 304	2
Computer Science 101, 102	4
English 303	3
Geology 206, 305, 315	8
Geology 320 (Summer Field Camp)	6
Electives ¹	9
	36
Senior Year	
Economics 315	3
Geology 302, 408, 412, 413, 421	15
Speech 377	3
Electives ¹	9
	30
TOTAL SEMESTER HOURS	128

¹Electives to be chosen with consent of adviser.

INSTRUMENTATION TECHNOLOGY

(Leading to the Degree of Associate of Science)

The Instrumentation Technology curriculum, a two year program leading to the Associate of Science degree, is presented in the Division of Admissions, Basic and Career Studies section of the catalog.

INDUSTRIAL ENGINEERING

H. L. HENRY
Head Of The Department

The American Institute of Industrial Engineers, the national professional society of Industrial Engineers, defines Industrial Engineering as follows:

"Industrial Engineering is concerned with the design, improvement, and installation of integrated systems of men, materials and equipment. It draws upon specialized knowledge and skill in the mathematical, physical and social sciences together with the principles and methods of engineering analysis and design to specify, predict and evaluate the results to be obtained from such systems."

The Industrial Engineering Curriculum has been designed to prepare young men and women to find a meaningful career in this branch of engineering.

The success of the program is evidenced by the accreditation granted by the Engineers' Council for Professional Development, the demand for graduates by industry, government and others, and the professional activities of the faculty.

INDUSTRIAL ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Freshman Engineering Curriculum	33
Sophomore Year	
Chemical Engineering 306	2
Economics 315	3
Electrical Engineering 213	3
Engineering Mechanics 201, 202	4
Industrial Engineering 201	3
Mathematics 330	3
Mathematics Elective ¹	3
Mechanical Engineering 251	2
Physics 201, 202	8
Psychology 102	3
	34
Junior Year	
Electrical Engineering 325	3
Engineering Mechanics 203, 321	5
Engineering Science Electives ¹	6
English 303	3
Industrial Engineering 301, 400, 401, 408	12
Mechanical Engineering 315, 316	4
	33
Senior Year	
Economics Elective ¹	3
Engineering 401	3
English 201 or 202	3
Free Elective	3
Industrial Engineering 402, 404, 409, 411, 412, 424	14
Political Science 201	3
Speech 377	3
Technical Elective ¹	2
	34
TOTAL SEMESTER HOURS	134

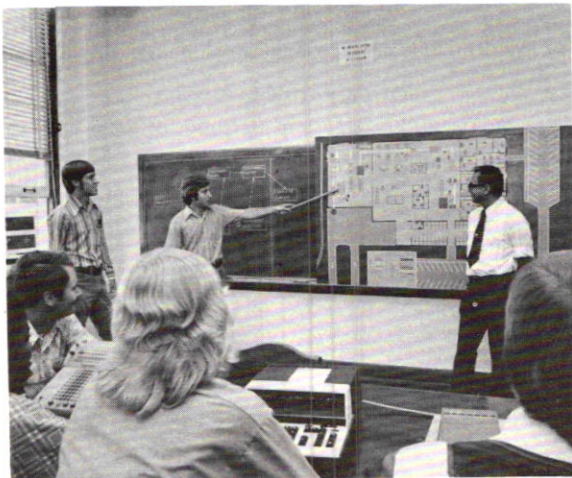
¹All electives must be approved by the Head of the Department of Industrial Engineering and Computer Science.

COMPUTER SCIENCE

H. L. HENRY
Head of the Department

Computer Science at Louisiana Tech is the study of information processing systems. The curriculum is designed to meet three objectives: (1) a general education in mathematics, science, and the humanities; (2) a broad introduction to information processing systems, including the practical and theoretical aspects of the hardware (equipment) and software (procedures) of these systems; (3) an opportunity to prepare a base for specialization in an area of computer application.

Computer Science at Louisiana Tech places emphasis on the basic concepts of information processing systems and the development of professional techniques. The goal is to expose the student to a depth of knowledge sufficient to form the basis for professional competence and to promote the intellectual maturity required to keep abreast of developments in his own discipline and interact with others.



COMPUTER SCIENCE CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester	Hours
Computer Science 101, 102, 104, 106		6
English 101, 102		6
Mathematics 111, 112, 230		9
Non-Technical Elective		3
Science Electives		8
		<hr/>
		32
Sophomore Year		
Computer Science 201, 206, 214		6
Economics 315		3
English 201 or 202		3
Industrial Engineering 202		3
Mathematics 231, 232, 308		9
Non-Technical Elective ¹		3
Physics 209, 210		8
		<hr/>
		32
Junior Year		
Computer Science 303, 450, 452		8
Electrical Engineering 442		4
Industrial Engineering 400, 402		6
Mathematics 313		3
Non-Technical Elective ¹		3
Speech 377		3
Technical Electives ¹		5
		<hr/>
		32
Senior Year		
Computer Science 424, 451, 453		7
English 303		3
Free Electives		6
Non-Technical Electives ¹		6
Technical Electives ¹		8
		<hr/>
		30
		<hr/>
		TOTAL SEMESTER HOURS 126

¹All electives must be approved by the Head of the Department of Industrial Engineering and Computer Science.

Technical Electives MUST contain one of the following blocks:

Computer Science 460	3
Computer Science 461	2
Computer Science 462	2
	<hr/>
	Hours 7
Accounting 203	2
Accounting 204	2
Business Elective	3
	<hr/>
	Hours 7
Mathematics 330	3
Mathematics 414	3
	<hr/>
	Hours 6

TECHNICAL DRAFTING

The two-year Associate of Science Degree Curriculum in Technical Drafting is described in the catalog under Division of Admissions, Basic and Career Studies.

MECHANICAL ENGINEERING

J. J. THIGPEN
Head of the Department

The curriculum in mechanical engineering is designed to give the student a basic knowledge of the fundamentals required in the field of mechanical engineering and to give him an opportunity to develop his ability to use these fundamentals in the analysis and solution of practical problems. This curriculum

is approved by the Engineers' Council for Professional Development and provides a course of study of 12 quarters and leads to the degree of Bachelor of Science in Mechanical Engineering. Emphasis is placed on the basic studies of mathematics, chemistry, physics, and English. A number of courses in the social sciences and humanities are included to broaden the outlook of the student. The course work in engineering begins with a group of core courses that are fundamental to all branches of engineering and progresses into more advanced studies of particular interest to mechanical engineers. The mechanical engineering laboratories are well equipped and the instruction is planned so that the student's laboratory work is correlated with his lecture courses. Laboratories in the Department of Mechanical Engineering include the materials of engineering, manufacturing processes, thermal engineering, stress analysis, cryogenic engineering, and machine design. The mechanical engineering graduate has a broad latitude in choosing his life work. Some major fields of interest are aeronautics and space, air conditioning and refrigeration, atomic energy, automation and instrumentation, energy conversion, plant engineering, power generation, and transportation. The successful completion of the undergraduate curriculum also prepares the student to enter a program of graduate study in mechanical engineering.

An aerospace option is offered in the mechanical engineering curriculum. The academic work in the first two years is the same for those taking the aerospace option as for the regular mechanical engineering students. In the last two years those students taking the aerospace option replace 28 hours of work required in the mechanical engineering curriculum with an equal number of hours of aerospace courses. Aerospace engineering deals with flight in all its aspects and opportunities in this field are exciting, challenging, and rewarding.

MECHANICAL ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester	Hours
Freshman Engineering Curriculum		33
Sophomore Year		
Chemical Engineering 306		2
Economics 315		3
English 201 or 202, 303		6
Engineering Mechanics 201		2
Mathematics 330 and 350		6
Mechanical Engineering 201, 251		4
Physics 201 and 202		8
Speech 377		3
		<hr/>
		34
Junior Year		
Electrical Engineering 213, 324		6
Engineering Mechanics 202, 203, 301, 321		9
Mathematics 375		3
Mechanical Engineering 307, 309, 315, 316, 317, 351, 353, 354, 421		16
		<hr/>
		34
Senior Year		
Electrical Engineering 325		3
Engineering 401		3
Mechanical Engineering 402, 404, 405, 410, 424, 431, 452		15
*Non-Technical Electives		6
*Technical Electives		6
		<hr/>
		33
		<hr/>
		TOTAL SEMESTER HOURS 134

*All electives must be approved by the Head of the Department of Mechanical Engineering. Physical Education may be taken for the free elective.

MECHANICAL ENGINEERING CURRICULUM

AEROSPACE OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Freshman Engineering Curriculum	33
Sophomore Year	
Same as regular Mechanical Engineering program	34
Junior Year	
Aerospace Engineering 301, 321, 323	8
Electrical Engineering 213	3
Engineering Mechanics 202, 203, and 301	6
Mechanical Engineering 307, 309, 315, 316, 317, 353 and 354	12
*Free Elective	3
*Mathematics Elective	3
	35
Senior Year	
Aerospace Engineering 401, 402, 403, 409, 411, 424, 435, and 451	18
Electrical Engineering 325	3
Mechanical Engineering 423	2
Speech 377	3
*Non-Technical Electives	6

32
TOTAL SEMESTER HOURS 134

*All electives must be approved by the Head of the Department of Mechanical Engineering. Physical Education may be taken for the free elective.

MECHANICAL TECHNOLOGY

(Leading to the Degree of Associate of Science)

The two-year Associate of Science Degree curriculum in Mechanical Technology is presented in the Division of Admissions, Basic and Career Studies section of the catalog.

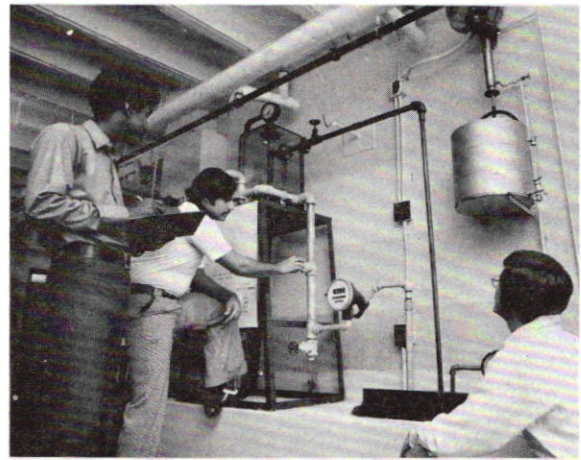
PETROLEUM ENGINEERING

R. M. CARUTHERS
Head of the Department

The Petroleum Engineering curriculum is designed to prepare its graduate for useful employment or graduate study in the petroleum and natural gas industry, particularly in the areas concerned with drilling, production, and transportation, by emphasizing the application of basic studies in mathematics, chemistry, physics, geology, and engineering sciences. The curriculum provides for a four-year course of study leading to the Bachelor of Science degree in Petroleum Engineering. Briefly, the petroleum engineer is concerned with the drilling of oil and gas wells, the completion of oil and gas wells, the lifting and production of oil, gas deliverability, the development and further planning of future drilling and lifting operations, secondary recovery of petroleum, movement through pipelines of oil and gas from the well to the refinery or market, the taking of information and estimating present value economics or future worth, and the removing of sand, water, gas or other undesirables from the oil before it is moved through the pipelines.

The laboratory is designed to familiarize the student with the practical and theoretical problems encountered in the production of oil and gas. Throughout the course of study, whenever practical, inspection trips are utilized to illustrate equipment and problems studied.

Although not a requirement, students are encouraged to find summer employment with oil and gas companies and to spend at least one ten-week period so employed.



PETROLEUM ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Freshman Engineering Curriculum	33
Sophomore Year	
Electives	6
Mathematics 330, 350	6
Petroleum Engineering 200, 202, 311	8
Physics 201, 202	8
Speech 377	3
	31
Junior Year	
Chemical Engineering 321	2
Chemistry 311, 312	6
Engineering Mechanics 201, 202, 203, 321	9
English 201 or 202	3
Geology 111, 121	4
Petroleum Engineering 305, 404, 414, 415	10
	34
Senior Year	
Economics 315	3
Electives	6
Electrical Engineering 213	3
English 303	3
Geology 112, 315	6
Petroleum Engineering 402, 403, 405, 406, 425	12

33
TOTAL SEMESTER HOUR 131

ELECTIVES: Twelve semester hours of electives must be approved by the Head of the Department of Petroleum Engineering. Eight must be selected from the fields of history, government, literature, sociology, philosophy, psychology, fine arts or foreign languages; three must be selected from courses offered in the College of Engineering or in the Departments of Chemistry, Mathematics, or Physics; and three, selected by the student as a "free elective," cannot be a prerequisite for a course specifically required in the student's curriculum.

PETROLEUM TECHNOLOGY

The Petroleum Technology curriculum, a two-year program leading to the Associate of Science Degree, is presented in the Division of Admissions, Basic and Career Studies section of this bulletin.



College of Home Economics

College of Home Economics

AGNES C. MILLER, Dean

ELIZABETH G. HALEY, Associate Dean

NANCY M. TOLMAN, Director of Research and Graduate Studies

PROFESSORS: JEAN C. DYKES, AGNES C. MILLER, NANCY M. TOLMAN

ASSOCIATE PROFESSORS: JEANNE M. GILLEY, BESS HALEY, ADDIE H. KNICKERBOCKER

ASSISTANT PROFESSORS: LINDA EVANS, ADELAIDE MURDOCK, SHIRLEY P. REAGAN, JANET B. WRIGHT

INSTRUCTORS: SYLVIA G. FRANZ, REBECCA J. MANDELL, BENNIE MELL L. THOMPSON, MARY BELLE K. TUTEN, HARRIET F. WALKER

CLINICAL CONSULTANT: LOIS M. JACKSON

NURSERY SCHOOL TEACHER: KATHERINE W. CARTER

SUPERVISORS: FRANCES HARRISON, MARY LOUISE T. RABUN, JO ANN W. SANDERS, NORMA W. TAYLOR, MARY P. WALDRIP.

HISTORY AND OBJECTIVES

Home economics is an applied field of study, built upon many disciplines to promote the welfare and well-being of homes and families in an ever-changing society. The College of Home Economics provides educational and cultural experiences which prepare students for citizenship, for a profession, and for family life.

The importance of home economics has been recognized at Louisiana Tech University since its beginning. At that time provision was made to include home economics among the limited number of courses. The decision was a progressive move since no other college in Louisiana and only three in the South were teaching home economics at that time. When the college was authorized to grant standard baccalaureate degrees, the Bachelor of Science in Home Economics was one of those approved. The importance of home economics was again recognized with the creation of the School of Home Economics in 1939, and the granting of college status in 1970 when Louisiana Tech was named a University.

Home economics courses have always been planned to meet the highest standards in the profession. Graduates of the Teacher Education curriculum have been certified to teach in the vocational high schools of the state from the beginning of the vocational program. Since its introduction in 1939 the Institution Management Curriculum (Dietetics) has met the requirements of the American Dietetic Association. The College of Home Economics was one of 28 in the nation who recently completed pilot studies of curriculum revision for the American Dietetic Association. The Home Economics Education Option in Early Childhood Education: Nursery School was approved June 5, 1973 for certification. The following year the option was revised to meet nursery and kindergarten certification. In 1973 the first course in fashion merchandising international was offered.

ADMISSION

General admission requirements to the University apply to entering freshmen students and transfers. All entering freshmen will enroll in the Division of Admissions, Basic and Career Studies and will remain in this division until they have met the requirements for admission to the College of Home Economics. While

in the Division of Admissions, Basic and Career Studies, students indicating an interest in home economics will be advised by home economics faculty members. Transfer students who meet the grade point average requirements set for students entering from the Division of Admissions, Basic and Career Studies will be admitted to the College of Home Economics. Those not meeting these requirements will be placed in the Division of Admissions, Basic and Career Studies. A choice of curriculum should be made when the student is admitted to the College of Home Economics and no later than when he applies for Upper Division.

Students may enroll only by permission of instructor for audit of laboratory classes.

UPPER DIVISION: Students are eligible to apply for upper division status when they: (1) have been registered in the College of Home Economics for at least one quarter, (2) have earned with a C average or above at least thirty semester hours credit including the following:

English (six semester hours with a grade of C or above)

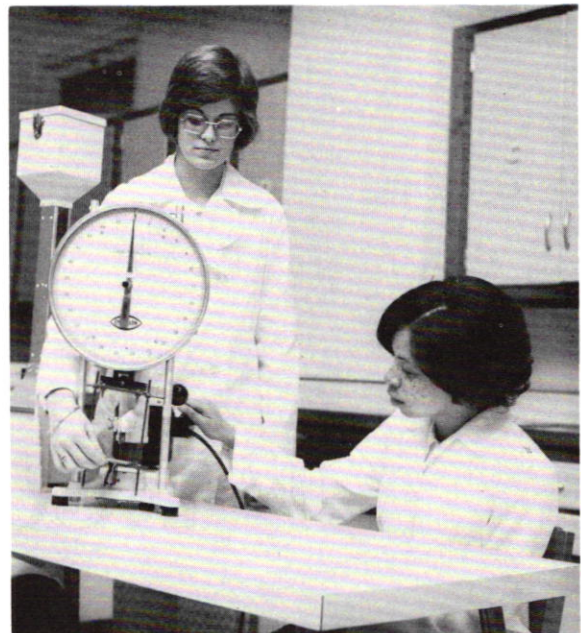
Home Economics (six semester hours with a grade of C or above)

Speech (three semester hours with a grade of C or above)

Physical Education Activity (two semester hours)

In addition, students enrolled in education options should (1) have credit for two hours in mathematics, (2) have credit for three hours of science, and (3) have shown serious intent for teacher training by completing three surveys of ability (Brown, Holtzman Survey of Study Habits, Diagnostic Reading Test, and communications ability survey).

Before they have been admitted to Upper Division, students may not enroll in education or psychology courses except Education 200, and Psychology 102, or in home economics courses numbered 300 or above without permission from the Dean.



SCHOLASTIC STANDARDS

Requirements for entrance to Louisiana Tech University are also requirements for the College of Home Economics. Students transferring into home economics from another institution should request that the Office of Admissions, Basic and Career Studies forward a copy of official transcripts to the College of Home Economics. ACT scores are required of all students. A grade of C or better is considered acceptable for transfer of credit for required or equivalent courses in the home economics degree programs. Transfer students are required to complete at least one course at Louisiana Tech University in each of three of the four major subject matter areas of home economics.

All students are advised to repeat home economics courses in which they have grades less than C before undertaking the next course of the subject matter series.

DEGREES

The College of Home Economics confers Bachelor of Arts, Bachelor of Science, and Master of Science degrees. The Bachelor of Arts degree is conferred on those who graduate with a major in general home economics with emphasis on fashion merchandising, home service (home economics in business), or family life. The Bachelor of Science degree is conferred on those who major in institution management (dietetics) or education with emphasis on teacher training or early childhood education: nursery school.

The two-year associate degree program in food service offered in the College of Home Economics is administered by the Division of Admissions, Basic and Career Studies.

ELECTIVES AND THE MINOR IN HOME ECONOMICS

Courses in home economics are open to non-majors and appropriate experience may substitute for prerequisites. The only requirement for a minor is 21 hours chosen with the approval of the Dean of Home Economics and the adviser of the student concerned. The student minoring in home economics may specialize in a particular area or obtain a general background. The Dean and other faculty members in home economics are available to discuss the selection of electives in home economics by men and women in other colleges. Suggested electives include Home Economics 100, Marriage and Family Living; 103, Nutrition and Weight Control; 112, Food Study and Preparation; 118, Clothing Construction; 128, Clothing Selection; 201, Introduction to Child Development and Early Childhood Education; 203, Nutrition; 213, Group Nutrition; 219, Textiles; 236, Household Equipment; 301, Early Childhood Development; 401, Creative Activities for Early Childhood; 426, Housing; 438, Historic Costume; and 498, Fashion Merchandising International. Courses appropriate for those having interests in hotel and restaurant management are 222, Food Cost Control; 242, Food Service Supervision; 342, Quantity Cookery and 442, Food Service Administration.

SCHOLARSHIPS AND LOANS

Students who expect to major in home economics may apply for Greater Tech Foundation, State Board of Education, and T. H. Harris Scholarships. High school achievements and ACT test scores of applicants are considered several months prior to the high school graduation date. Interested persons should therefore take ACT tests before, and not later than, October of the graduation year. Direct inquiries about these and other kinds of financial aid should be addressed to: School and College Services, Division of Financial Aid.

A number of scholarships, ranging from \$200 to \$1,000 are available to students majoring in home economics. These scholarships are provided by contributions from home economics alumnae, the Wylie Brothers Scholarship Funds and profit from sale of a salad dressing mix. The selections are based on high school academic records, ACT scores and extracurricula activities. Consideration of applicants is not limited to those who have had high school home economics. Deadline for applying is April 1. Depending on the availability of funds, a special group of scholarships is awarded to individuals over 35 years of age who are pursuing work in home economics.

A limited number of scholarships are available for graduate students. The Helen Graham Fund offers loans up to \$500 to Louisiana Tech home economics graduates enrolled in graduate study.

Awards through private funding grants are occasionally available. Address requests for applications for scholarships and the Helen Graham loan fund to the College of Home Economics.

Upper class students majoring in institution management (dietetics) may enlist in certain branches of the Armed Forces and receive financial support for the remainder of their college education. Details of the programs may be obtained from the recruiters for the various Armed Forces.

CURRICULA

Curricula in home economics are designed to satisfy requirements for employment in home economics related professions. They include a diversity of subject matter within the home economics areas and therefore no minor is necessary. The family life option is an exception and has been so planned that the students may elect minors outside the field of home economics.

Entering students should indicate the curriculum and specify the option, if appropriate, in which he holds the greatest interest at the time of registration even though he is not certain he expects to continue in that program. A change in option, or even curriculum, may occur at any time by reporting the desired change to the adviser and changing the designation on the registration card.

CORE CURRICULUM

The core curriculum is required of all home economics majors and uses the resources of the entire campus to provide a broad cultural education. The home economics courses are chosen to provide a background for family life and a foundation for specialization, in the various fields of home economics employment.

General Education	Semester Hours
English	12
Speech	3
Art	4
Science	6
Social Science	9
(3 must be in American History)	
Physical Education	4
Home Economics	Semester Hours
Child Development	3
Family Relations	3
Foods and Nutrition	9
Home Management ¹	6
Textiles and Clothing	6

¹Special offerings in Home Management residence are provided for the experienced homemaker or married student.

GENERAL CURRICULUM REQUIREMENTS

Freshman Year	Semester Hours	
Art 175, 176	4	
English 101, 102	6	
Health and Physical Education	3	
Home Economics 100	3	
Home Economics 107	1	
Home Economics 112	3	
Home Economics 118	2	
Speech 110	3	
Courses from Selected Option	6	
<hr/>		
31		
Sophomore Year		
Courses from Selected Option	6	
Electives	3	
English 201, 202	6	
Health and Physical Education	1	
History, American	3	
Home Economics 128	2	
Home Economics 203	3	
Home Economics 212	3	
Home Economics 219	2	
Psychology	3	
<hr/>		
32		
Junior Year		
Courses from Selected Option	18	
Economics 315	3	
Electives	3	
Home Economics 301	3	
Social Science Electives	6	
<hr/>		
33		
Senior Year		
Courses from Selected Option	20	
Electives	6	
Home Economics 407	1	
Home Economics 436	4	
Home Economics 456	2	
<hr/>		
33		
TOTAL SEMESTER HOURS		129

OPTIONS FOR GENERAL CURRICULUM
FAMILY LIFE

	Semester Hours
Foreign Language	6
Foreign Language or Advanced English or Speech	6
Home Economics Jr/Sr Electives	6
Minor Subjects or Other Electives	26
Science	6
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50	

HOME SERVICE

	Semester Hours
Electives	9
Foreign Language	6
Foreign Language or Advanced English or Speech	6
Home Economics 236	3
Home Economics 302	3
Home Economics 426	3
Home Economics 427	2
Home Economics Electives	3
Mathematics 107, 108, 109	6
Physics or Chemistry	6
Speech Elective	3
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50	

FASHION MERCHANDISING

	Semester Hours
Electives	11
Foreign Language	6
Foreign Language or Advanced English or Speech	6
Home Economics Jr/Sr Electives	6
Marketing 300, 435	6
Marketing 420 or 425 or Journalism 360	3
Mathematics 107, 108, 109	6
Science	6
Recommended Electives:	
Art	
Home Economics 218, 338, 428, 438, 458, 498	
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50	



HOME ECONOMICS EDUCATION

The Home Economics Education Curriculum has two options: Teacher Education and Early Childhood Education: Nursery-Kindergarten. The Teacher Education Option prepares a student to teach vocational home economics in Louisiana under the provisions of the federal Vocational Education Act of 1963 as outlined in the State Plan. The Early Childhood Option prepares the student for careers involved with nursery-kindergarten and day care programs.

HOME ECONOMICS EDUCATION CURRICULUM

Freshman Year	Semester Hours
Art 175 or 101	2
Courses from Selected Option	2
Elective	2
English 101, 102	6
Health and Physical Education	2
Home Economics 100	3
Home Economics 112	3
Home Economics 118	2
Home Economics 128	2
Science, Biological	3
Social Science Elective	3
Speech 110	3
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33	

Sophomore Year	
Courses from Selected Option	11
Education 200	3
English 201, 202	6
History 201 or 202	3
Home Economics 212	3
Psychology 204	3
Science, Physical	3
	<hr/>
	32
Junior Year	
Courses from Selected Option	25
Home Economics 301	3
Science Elective	6
	<hr/>
	34
Senior Year	
Courses from Selected Option	19
Electives	5
Home Economics 407 or 417	1
Home Economics 436	4
Home Economics 456	2
	<hr/>
	31
TOTAL SEMESTER HOURS	130

Electives in Art, Children Literature, First Aid, La. History or Geography, Music, Speech, or Teaching Reading	5
Health and Physical Education 321	2
History 460	3
Home Economics 203 or 303	3
Home Economics 218 or 219	2
Home Economics 401	3
Home Economics 411	3
Home Economics 421	4
Home Economics 426 or 236	3
Library Science 271 or 450	3
Mathematics 303	3
Mathematics 304	3
Music	2
Social Science Elective	6

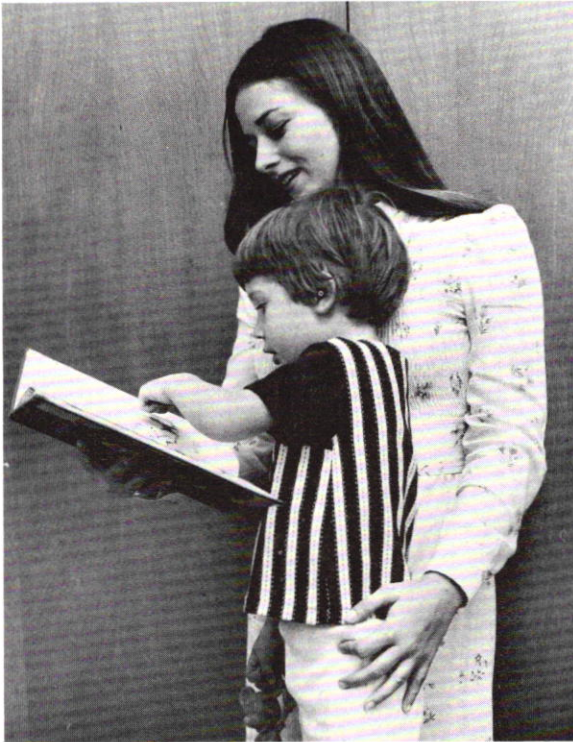
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TEACHER EDUCATION

	Semester Hours
Art 176	2
Economics 315	3
Education 390	1
Education 402	2
Education 415 ¹	1
Education 416	7
Electives	5
Government	3
Mathematics 107, 108, 109	6
Home Economics 107	1
Home Economics 218	2
Home Economics 219	2
Home Economics 236	3
Home Economics 303	3
Home Economics 338 or 438	2
Home Economics 405	3
Home Economics 412	3
Home Economics 426	3
Health and Physical Education	2
Psychology 206	3

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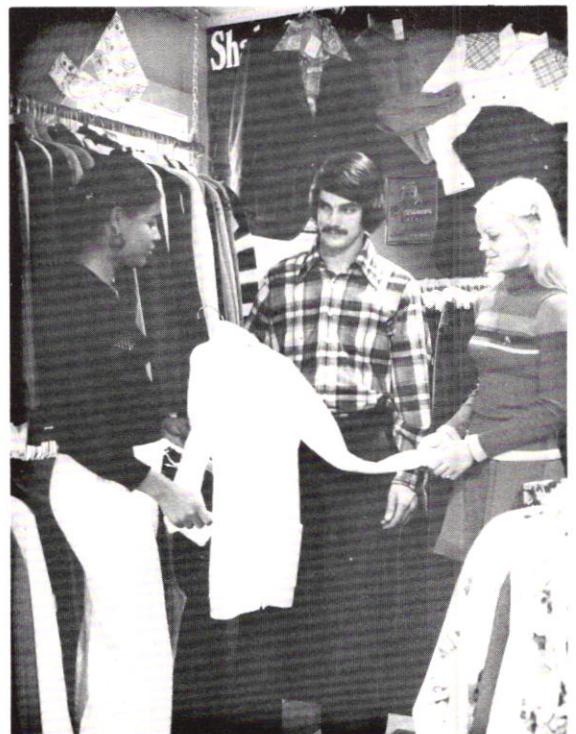
¹Home Economics 405 is a necessary prerequisite to student teaching in Home Economics rather than Education 306 or 320.



**OPTIONS FOR HOME ECONOMICS
EDUCATION CURRICULUM**

**EARLY CHILDHOOD EDUCATION: NURSERY-
KINDERGARTEN**

	Semester Hours
Education 324	3
Education 441	3
Education 442	3
Electives in Prof. Courses for Teaching Children Under Six (Education 431 or Education 432 recommended)	3



INSTITUTION MANAGEMENT

Graduates of the program meet the educational requirements established by A.D.A. for membership in that organization. Experience requirements for A.D.A. membership may be met by an A.D.A. approved internship or traineeship or by a master's degree and six months of continuous full time experience in some area of dietetics.

The institution management curriculum is intended as a four-year curriculum and is designed for spring graduation. Work experience in food service or clinical nutrition are strongly recommended for the summer quarter, especially between the junior and senior years. Students who desire to complete the four-year program in less time may find it difficult to schedule required courses at the junior, senior level.

INSTITUTION MANAGEMENT CURRICULUM

Freshman Year	Semester Hours
Chemistry 120, 121, 122, 123, 124	8
English 101, 102	6
Health and Physical Education	3
Home Economics 100	3
Home Economics 107	1
Home Economics 112	3
Home Economics 118	2
Mathematics 107	2
Zoology 111	3
	<hr/>
	31

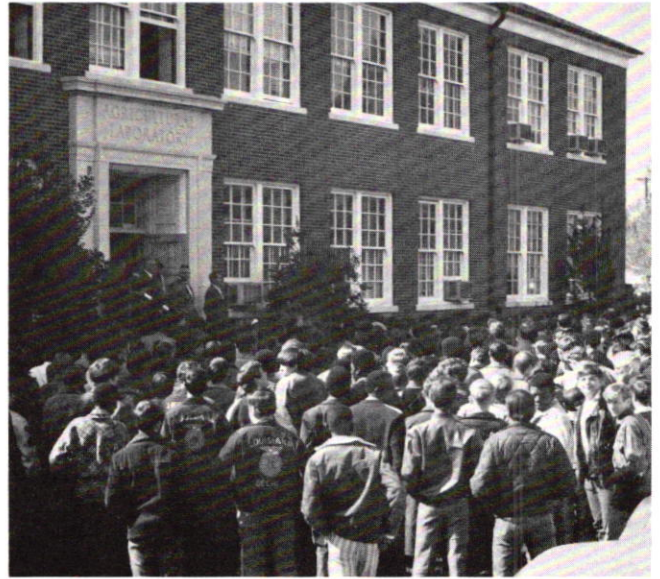
Sophomore Year	Semester Hours
Art 175, 176	4
Bacteriology 210	3
Chemistry 220	4
English 201, 202	6
Health and Physical Education	1
Home Economics 128	2
Home Economics 212	3
Mathematics 108, 109	4
Psychology 102	3
Zoology 225	3
	<hr/>
	33

Junior Year	Semester Hours
Accounting 203	2
Chemistry 351	4
Economics 315	3
Home Economics 219	2
Home Economics 301	3
Home Economics 302	3
Home Economics 303	3
Home Economics 342	4
Psychology 204	3
Speech 110	3
Sociology	3
	<hr/>
	33

Senior Year	Semester Hours
Electives	6
History, American	3
Home Economics 403	3
Home Economics 407	1
Home Economics 412	3
Home Economics 413	3
Home Economics 436	4
Home Economics 442	4
Home Economics 456	2
Psychology 465 or Management 470	3
	<hr/>
	32
TOTAL SEMESTER HOURS	129

THE GRADUATE PROGRAM

Students may earn a Master of Science Degree with a major in Home Economics and an option in General Home Economics, Home Economics Education or Institution Management (Dietetics). An applicant for admission to the graduate program must have a bachelor's degree from an accredited college or university with a major in home economics or in a related field. More complete details concerning the graduate programs in home economics can be found in the current University Graduate School Bulletin.



College of Life Sciences

College of Life Sciences

HAL B. BARKER, Dean

JOHN A. WRIGHT, Associate Dean

AIM

The aim of the College of Life Sciences is to give the student a scientific knowledge of the world in which he lives, stressing the all-important role of animals and plants in the economy of nature, and to broaden and deepen the student's understanding and appreciation of our environment, thus preparing him for a professional career and for a happier, more complete, satisfying, and productive life.

ORGANIZATION AND CURRICULA

The College of Life Sciences is organized into the Departments of Agricultural Engineering, Agronomy-Horticulture, Animal Industry, Botany-Bacteriology, Vocational Agricultural Education, Zoology, the School of Forestry, and the Division of Research. It offers twelve four-year curricula leading to the degree of Bachelor of Science and in addition a two-year Pre-Veterinary Medicine Curriculum. The curricula offered are:

AGRICULTURE-BUSINESS
 AGRICULTURAL EDUCATION
 AGRICULTURAL ENGINEERING
 AGRONOMY - (Soil Science Option)
 ANIMAL SCIENCE
 BOTANY
 DAIRYING - (Science Option)
 FORESTRY - (OPTIONS - Forestry-Business, Forestry Mechanization, Forestry-Recreation, Forestry-Science, Forestry-Wildlife, Wood Utilization)
 HORTICULTURE - (Design Option)
 MICROBIOLOGY (BACTERIOLOGY)
 WILDLIFE CONSERVATION - (Biology Option)
 ZOOLOGY - (Pre-Medical and Pre-Dental Options)

The curricula are designed to furnish a well-balanced educational program based on the cultural needs, the practical interests, and the citizenship responsibilities of young men and women. They offer essential instruction in the sciences; namely, botany, bacteriology, chemistry, zoology, physics and business, and the humanities and social studies, as well as a comprehensive education in one or more of the special fields of the College.

Students entering the Professional Officer's Course in Air Force ROTC may use credits earned in the POC (300-400 level) to satisfy general elective requirements. Thus, with proper planning and pre-arrangement with the head of the department, all Air Force aerospace studies courses may be used in satisfying degree requirements.

The Master of Science degree is offered in the fields of agricultural engineering, bacteriology, botany and zoology.

INTERNSHIP

J. Y. TERRY, Adviser

Students majoring in animal husbandry, agriculture-business, agronomy, dairying, horticulture, wildlife management, and vocational agriculture education may

elect to participate in an internship program during one term near the completion of their regular course work. In curricula employing this approach, students will register for 9 semester hours of course work, and be placed on cooperating farms or with business firms where they will receive first-hand practical experiences. In addition to credit received, the student becomes an employee of the cooperating agency and is paid for his services.

Internships have as their major purpose the development of professional competency, by imparting general and specific skills, basic and applied knowledge and by assisting the student in the transition from school to job.

More and more students without farm backgrounds are enrolling in agriculture; the colleges must assume the responsibility of providing certain practical experiences to such students. Advances are being made very rapidly in all phases of scientific and business agriculture, thus making it difficult to maintain up-to-date laboratory facilities at reasonable costs on college campuses; the internship program can adequately supplement where the on-campus laboratory ceases to be adequate.

Experience in a real-work environment enables the prospective student employee to apply classroom theory on the job under the supervision of a competent university faculty member and an experienced representative of the cooperating agency or business.

Agricultural Technology, a two-year program, offers 27 semester hours of credit for three terms of internship.

SCHOLARSHIPS

Scholarships are available in the College of Life Sciences; some are general and offered to any student in the College of Life Sciences, others are departmental, including several WYLY-ALUMNI FOUNDATION AWARDS. A student wishing to make application for a departmental scholarship should contract the department head in his field of interest.

THE M. HAYNE FOLK, JR., MEMORIAL SCHOLARSHIP of \$150 is awarded annually to a sophomore, within the College of Life Sciences, having high academic achievement and financial need.

ZOOLOGY-PRE-MEDICAL FUND. An annual award of \$300 to one or more beginning Zoology majors pursuing a pre-medical option.

The School of Forestry offers to certain forestry students the scholarships listed below:

THE LOUISIANA TECH FORESTRY ALUMNI ASSOCIATION. An annual award of \$300 to one or more selected forestry students.

SCHOOL OF FORESTRY ALUMNI AWARD. An annual award of \$300 to one or more beginning forestry freshmen.

RICHARD M. SISK TRUST FUND. An annual award of \$300 to one or more beginning forestry freshmen.

THE LOUISIANA FORESTRY FOUNDATION. An annual award of \$1,000 to a selected forestry student.

SEEDLING AND SAPLING CLUB OF THE LOUISIANA FORESTRY ASSOCIATION. An annual award of \$75-\$100 to an outstanding forestry senior.

WILLIAMETTE INDUSTRIES. An annual award of \$825 to a selected forestry student.

THE WALTER KELLOGG FORESTRY SCHOLARSHIP. An annual award of \$500 each to two or more selected forestry students from Ouachita Parish or adjoining area.

THE C. A. REED FORESTRY SCHOLARSHIP. An annual award of \$500 each to two or more selected forestry students from Lincoln-Union parishes or adjoining area.

FACILITIES

The main University campus maintains adequate classroom laboratories, a library, and equipment for effective instruction in the basic sciences and in the other cultural subjects which are required in the various curricula in the College of Life Sciences, whereas the agriculture campus, consisting of approximately 825 acres, provides the facilities which are devoted specifically to instruction, research and demonstrational work in the agricultural sciences. Botany and Zoology are domiciled on the main campus in Carson-Taylor Hall.

Located on the agriculture campus are Reese Hall, which houses offices, classrooms and laboratories; the Agricultural Engineering Building, which houses offices, classrooms and laboratories for the Agricultural Engineering Department; the Dairy Processing Plant, which is equipped for pasteurizing and bottling milk, cheese making, butter making, ice cream making, and manufacturing other dairy products.

Also located on the agriculture campus are greenhouses for the departments of Agronomy and Horticulture, and Forestry; a sawmill, a dry kiln, photographic darkroom, wood utilization laboratories, a wood working shop, a weather station, farm machinery buildings, barns for dairy and meat animals, the farm supervisor's home, fields, forests, nurseries, orchards, vegetable and flower gardens, a 50-acre arboretum, pastures and ponds.

DIVISION OF LIFE SCIENCES RESEARCH

JOHN L. MURAD, Director

The Division of Life Sciences Research was created in order to encourage the conduct of various types of research by members of the faculty, graduate students, and undergraduate students in the College. It is the administrative organization for the coordination of all phases of research conducted by the various departments in the College.

General policies and procedures governing the administration of the Division are formulated and executed by the research committee consisting of the Director of Research for the Division, who is chairman of the group; the Dean of the College; and a representative from each department elected by the faculty within the College.

Financial support of research projects is derived from state and federal funds and granting agencies.

BASIC LIFE SCIENCES DIVISION

JOHN A. WRIGHT, Adviser

The Basic Life Sciences Division is designed for the student who knows that he is interested in some area of Life Sciences but who does not know what department to choose or what curriculum to pursue. The Associate Dean will advise this student after a counseling session.

BASIC LIFE SCIENCES CURRICULUM

Freshman Year	Semester Hours
English 101, 102	6
Mathematics (111 & 112) or (107, 108, 109)	6
Science - Botany 101 and Zoology 111, 112	8
Life Sciences 101	1
Professional or Technical Courses	8
Free Elective	3
TOTAL SEMESTER HOURS	32



AGRICULTURAL TECHNOLOGY

The Agricultural Technology Curriculum, a two-year program (with options), leading to the Associate of Science Degree is presented in the Division of Admissions, Basic and Career Studies section of this bulletin.

DEPARTMENT OF AGRICULTURAL EDUCATION

J. Y. TERRY

Professor and Head of The Department

The curriculum in vocational agricultural education is organized to prepare students who desire to teach agriculture in secondary schools.

The agriculture teacher training section is administered by the College of Life Sciences in cooperation with the College of Education. Students in agricultural education must meet the same general requirements outlined for those seeking admission to teacher education in the College of Education's upper division.

Service courses in technical agriculture are provided to give the student thorough training in the areas of plant science, animal science, soils, farm management, and farm mechanics.

The curriculum in agricultural education leading to a Bachelor of Science degree requires 134 semester hours, eight of which are earned in selected high schools in the area as apprentice teachers.

Agricultural education graduates have employment opportunities in many other fields such as the cooperative extension service, banking, farm management, federal government, research, sales and service for agricultural businesses, and higher education.

The department sponsors an active collegiate chapter of Future Farmers of America to provide practical experience in this important leadership activity.

AGRICULTURAL EDUCATION CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agriculture 101	4
Animal Science 101	3
Botany 101	4
English 101, 102	6
Health and Physical Education	2
Life Sciences 101	1
Mathematics 107, 108, 109	6
Speech 110	3
Zoology 111	3
	32
Sophomore Year	
Agricultural Engineering 211 or 215	2
Bacteriology 210	3
Chemistry 120, 121, 122, 123, 124	8
Dairying 201 or Animal Science elective	3
Education 200, 250	6
English 201, 202	6
Health and Physical Education	1
Political Science 201	3
Poultry Science 201 or Animal Science elective	3
	35

Junior Year

Agronomy 202, 211	7
Economics 320	3
Education 390 and 402	3
Forestry 213 or other Plant Science elective	3
Health and Physical Education	1
History 201, 202	6
Horticulture 220 or other plant studies	3
Psychology 204, 206	6
Sociology 201 or Social Studies elective	3

35

Senior Year

Agricultural Engineering 320 or Engineering elective	3
Animal Science 301	3
Animal Science electives	6
Economics 402 or 430	3
Education 301, 306	6
Education 415, 416	8
Veterinary Science 401 or 301	3

32

TOTAL SEMESTER HOURS 134



DEPARTMENT OF AGRICULTURAL ENGINEERING

JACKIE W. D. ROBBINS

Professor and Head of The Department

ASSOCIATE PROFESSORS: CLYDE G. VIDRINE, CHARLES W. WILSON

The Department of Agricultural Engineering is administered by the College of Life Sciences with the cooperation of the College of Engineering. The Agricultural Engineering curriculum is accredited by the Engineer's Council for Professional Development and prepares students to become professional engineers. The same general scholastic requirements that apply to other engineering students (see College of Engineering) are applicable to Agricultural Engineering students.

Agricultural Engineering serves exclusively the engineering needs of the world's largest and most basic industry—agriculture. It is engineering that applies energy, materials and mechanisms to multiply the effectiveness of man's activities. And it is Agricultural Engineering that applies these to improve the effectiveness of the food and fiber industry.

Since agriculture is founded upon living systems, Agricultural Engineering basically involves environmental control of biological materials. The Agricultural Engineering curriculum is designed to give the student basic training in both engineering and agriculture; broad education in the biological, physical and social sciences; and fundamental experience in the application of engineering principles to the diverse and unique requirements of biological systems. The curriculum is organized to present a general knowledge of all major phases of Agricultural Engineering: power and machinery; structures and environment; soil and water conservation; electric power and processing; and food engineering. By selecting electives judiciously, the student can specialize in such areas as forest engineering, biological engineering, aquacultural engineering, ecological engineering, land use engineering, food engineering, environmental engineering and safety engineering.

Graduates of the Agricultural Engineering curriculum are broadly trained to understand natural phenomenon and to apply the fundamentals of engineering, plant, soil and animal sciences to the production, transportation, processing and distribution of agricultural products and to the conservation of our natural resources. Their unique background in pure and applied life sciences combined with a strong preparation in mathematical, physical, earth and engineering sciences qualifies them to creatively deal with the growing engineering challenge of producing more and better food and fiber for an increasing population at reasonable costs while maintaining the quality of our environment at a high level.

Graduates of the Department's curriculum work as engineers in a wide variety of governmental agencies and private industries. They are also prepared to study toward higher degrees in Agricultural Engineering. Some pursue advanced training in professional schools such as law, medical, business and in other branches of engineering.

AGRICULTURAL ENGINEERING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 161, 186	2
Botany 101	4
Chemistry 101, 102, 103, 104	8
Engineering 151	2
English 101, 102	6
Mathematics 230	3
Humanities and Social Sciences Electives	6
Agricultural Engineering Elective	1
	32
Sophomore Year	
Agricultural Engineering 266, 276, 286	4
Agronomy 202	4
Engineering Mechanics 201, 202, 203	6
Mathematics 231, 232, 330	9
Physics 201	4
Humanities and Social Sciences Electives	3
Technical Elective	2
	32

Junior Year

Agricultural Engineering 301, 307, 308	7
Electrical Engineering 213	3
Engineering Mechanics 301, 321	5
Mathematics Elective (300 or 400 level)	3
Mechanical Engineering 315, 316	4
Physics 202	4
Speech 377	3
Technical Elective	3
	32

Senior Year

Agricultural Engineering 4C3, 405	6
Humanities and Social Sciences Elective	8
Free Elective	3
Technical Elective	15
	32
TOTAL SEMESTER HOURS	128

All electives must effect a rationale and be approved by the Head of the Department.

DEPARTMENT OF AGRONOMY AND HORTICULTURE

CHARLES W. WINSTEAD

Professor and Head of The Department

PROFESSORS: MONTICELLO J. HOWELL, JOHN A. WRIGHT
ASSOCIATE PROFESSOR: BENJAMIN F. GRAFTON
LABORATORIES SUPERVISOR: ROBERT M. TURLEY

The Department of Agronomy and Horticulture offers four years of university training in crops, soils, fruits, flowers, vegetables, and landscape and floral design. In addition to these areas of training, a general Agriculture-Business Curriculum is offered within the Department.

General Agriculture-Business

The general Agriculture-Business Curriculum is designed to train students in the basic agricultural sciences, business, and the operation of a farm. Students are qualified for employment in the agricultural-related businesses, and the many specialized jobs in industry requiring fundamental knowledge of these two fields.

Agronomy

The courses offered in the field of agronomy are divided between crops and soils. Students have two options. The general option provides the student with a knowledge of production and utilization of crops and a knowledge of the fundamentals of soils and their uses. The soil science option contains more chemistry and physics and offers training in the physical, chemical, and biological characteristics of soil.

The Department sponsors the Agronomy Club, which is a student section of the American Society of Agronomy. The club sponsors soil and crop judging teams and promotes closer and professional relationships among students and faculty.

Horticulture

The Horticulture Curriculum offers two options: (1) general horticulture, to give students both scientific and practical training in the production, utilization, and marketing of fruits, vegetables, flowers and ornamental plants; and (2) design, placing emphasis on floral and landscape design.

GENERAL AGRICULTURE—BUSINESS CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 206	3
Agriculture 101	4
Animal Science 101	3
Botany 101	4
English 101, 102	6
Life Sciences 101	1
Mathematics 107, 108, 109	6
Zoology 111, 112	4

31

Sophomore Year

Accounting 203, 204	4
Agricultural Engineering 210	2
Agronomy 211	3
Bacteriology 210	3
Chemistry 120, 121, 122, 123, 124	8
Technical Agriculture	5
Forestry 213	3
History 201 or 202	3
Speech 110 or 377	3

34

Junior Year

Agronomy 202	4
Animal Science 301, or Agronomy 315	3
Business Law 350, 351	5
Technical Agriculture	6
Economics 315, 320	6
Electives	6
Life Sciences 300	3

33

Senior Year

Agriculture 411	1
Animal Science 401, or Agronomy 409	3
Technical Agriculture	7
Economics 402, 430	6
English 303	3
Life Sciences 420	3
Management 311 or Marketing 300	3
Zoology 414	3
Electives	3

32

TOTAL SEMESTER HOURS130

AGRONOMY CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agriculture 101	4
Animal Science 101	3
Botany 101	4
Chemistry 120, 121, 122, 123, 124	8
English 101, 102	6
Life Sciences 101	1
Mathematics 111, 112	6

32

Sophomore Year

Agricultural Engineering 215	2
Agronomy 202, 211	7
Bacteriology 210	3
Botany 205 or 223, 220	6
Chemistry 220	4
Dairying 201	3
Physics 205	3
Speech 110	3
Electives	2

33

Junior Year

Agronomy 307, 315, 330	10
Animal Husbandry 301	3
Bacteriology 315	3
Directed Electives	5
Economics 315	3
History 201 or Political Science 201	3
Life Sciences 300	3
Electives	3

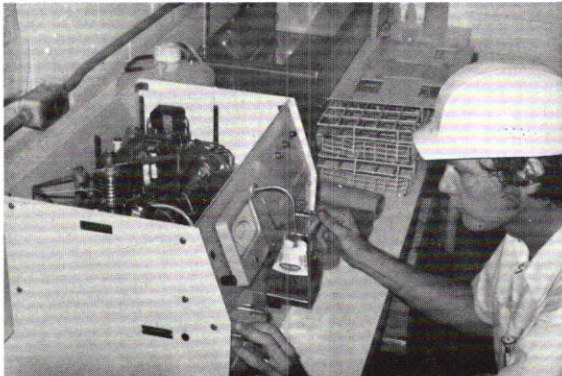
33

Senior Year

Agriculture 411	1
Agronomy 312, 408, 409, 421	13
Botany 330	3
Economics 402	3
Electives	6
Life Sciences 420	3
Zoology 414	3

32

TOTAL SEMESTER HOURS130



AGRONOMY CURRICULUM

SOIL SCIENCE OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agriculture 101	4
Animal Husbandry 101	3
Botany 101	4
Chemistry 120, 121, 122, 123, 124	8
English 101, 102	6
Life Sciences 101	1
Mathematics 111, 112	6

32

Sophomore Year

Agricultural Engineering 215	2
Agronomy 202, 211	7
Bacteriology 210	3
Botany 205, 220	6
Chemistry 250, 251, 253	5
Geology 111	3
Speech 110	3
Zoology 414	3

32

Junior Year

Agronomy 307, 315, 330	10
Bacteriology 315	3
Chemistry 252, 254	3
Dairying 201	3
Life Sciences 300	3
Physics 209, 210	8
Electives	3

33

Senior Year

Agriculture 411	1
Agronomy 405, 408, 409, 410	13
Animal Husbandry 301	3
Botany 330	3
Economics 315, 402	6
Electives	4
Life Sciences 420	3

33

TOTAL SEMESTER HOURS130

HORTICULTURE CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agriculture 101	4
Botany 101	4
English 101, 102	6
Horticulture 131, 132, 133, 205, 219	6
Life Sciences 101	1
Mathematics 107, 108, 109	6
Speech 110 or 377	3

30

Sophomore Year

Agricultural Engineering 110, 215	3
Agronomy 205	2
Animal Science 101	3
Bacteriology 210	3
Botany 223	3
Chemistry 120, 121, 122, 123, 124	8
Horticulture 201, 210, 220, 231, 232, 233	9
Elective	2

33

Junior Year

Botany 220, 330	6
Chemistry 220	4
Economics 315	3
History 202	3
Horticulture 302, 307, 315, 331, 332, 333	10
Life Sciences 300	3
Zoology 414	3
Elective	2

34

Senior Year

Agriculture 411, 412, 413	3
Agronomy 312, 315, 409	10
English 303 or 336	3
Horticulture 409, 410, 416, 417, 418	5
Life Sciences 420	3
Electives	9

33

TOTAL SEMESTER YEAR130

HORTICULTURE CURRICULUM

DESIGN OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agriculture 101	4
Architecture 115, 116	6
Botany 101	4
English 101, 102	6
Horticulture 131, 132, 133, 219; and 103, 215 or 220	5
Life Sciences 101	1
Speech 110 or 377	3
Electives	3

32

Sophomore Year

Accounting 203, 204	4
Agronomy 205	2
Architecture 125, 126, 240	9
Botany 223	3
English 303 or 336	3
History 201 or 202	3
Horticulture 210, 231, 232, 233	5
Electives	3

32

Junior Year

Architecture 215, 216	6
Economics 315	3
Horticulture 302, 315, 331, 332, 333; and 307, 311, 403 or 412	10
Management 311, 312	6
Marketing 300	3
Electives	5

33

Senior Year

Agriculture 411, 412, 413	3
Business Law 350	3
Horticulture 416, 417, 418; and 404 or 409, 2 Hours Elective in Horticulture	6
Management Elective (300 or 400 level)	3
Science or Art Electives	6
Electives	12

33

TOTAL SEMESTER YEAR130

DEPARTMENT OF ANIMAL INDUSTRY

C. REID McLELLAN, JR.

Professor and Head of the Department

PROFESSORS: HAL B. BARKER, R. L. BAILEY, GLENN E. CLARK

ASSOCIATE PROFESSOR: GORDON STEWART

ASSISTANT PROFESSORS: HASKELL R. McCLINTON, KENNETH SANDERLIN

LABORATORY SUPERVISOR: DAVID L. HAYS

The Department of Animal Industry is comprised of the fields of animal science, dairying, poultry science, and veterinary science.

The main objective of the Department is to give instruction and practical experience in the judging, breeding, feeding, and management of the different kinds of livestock, and in the processing, preservation and utilization of animal products.

The curricula in animal science and dairying give students essential courses in the fundamental sciences and other fields of agriculture. The courses leading to a major in animal science and dairying afford the students a good foundation for graduate study in their chosen major, or for employment in the special lines of work for which they are qualified.

The Department of Animal Industry has a chapter of the National Block and Bridle Club. The club promotes the improvement and increases the interest of students in animal sciences and brings about closer relationships among students pursuing animal science as a profession.

Animal Science

Opportunities are afforded majors in animal science to obtain practical experience in livestock farm operation and management. On the University farm are herds of registered beef cattle, including the Aberdeen Angus and the Hereford breeds; swine, including the Landrace and the Poland China breeds; flocks of Hampshire and Suffolk sheep; flock of White Leghorn chickens, barns, poultry houses, feed lots, crop lands, and pastures. A meats laboratory is maintained in Reese Hall for the study of meat and its cutting, curing, preservation, storage, and utilization.



Graduates in animal science are qualified to manage livestock farms; to enter commercial and industrial fields which are associated with the meat animal industry; to go into research work; and to enter graduate school for advanced study toward higher degrees.

Dairying

The curriculum in dairying is designed to give the students a broad education with emphasis on the basic sciences; the selection, care, feeding, breeding, and management of dairy cattle; and the production, processing, and marketing of dairy products.

A herd of 300 registered Jersey and Holstein-Friesian cattle; a milking barn; a calf barn; storage rooms; and the Dairy Processing Plant, which is equipped for manufacturing various dairy products, such as butter, cheese, ice cream—all provide the students with ample opportunities for acquiring a scientific and practical education in the different phases of dairying.

Graduates are prepared to become operators and managers of dairy farms, dairy cattle breeders, dairy farm inspectors, supervisors of dairy herd improvement association, dairy feed salesmen, dairy equipment salesmen, and operators and technicians in dairy manufacturing plants; they may also do graduate work toward advanced degrees in dairy production or in one of its related fields.

ANIMAL SCIENCE CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agriculture 101	4
Animal Science 101, 204	6
Botany 101	4
Dairying 201	3
English 101, 102	6
Life Sciences 101	1
Mathematics 107, 108, 109	6
	30
Sophomore Year	
Accounting 203	2
Agricultural Engineering 206	3
Bacteriology 210	3
Chemistry 120, 121, 122, 123, 124	8
English 303	3
History 201	3
Poultry Science 201	3
Speech 377	3
Zoology 111, 112	4
	32
Junior Year	
Agronomy 202, 211	7
Animal Science 301, 310, 315	10
Chemistry 220	4
Economics 315	3
Life Sciences 300	3
Political Science 201	3
Veterinary Science 301	3
	33
Senior Year	
Agriculture 411	1
Animal Science 308, 311, 318, 401, 405	15
Economics 320	3
Life Sciences 420	3
Veterinary Science 401	3
Electives	10
	35
TOTAL SEMESTER HOURS	130

DAIRYING CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agriculture 101	4
Animal Science 101	3
Botany 101	4
Dairying 201	3
English 101, 102	6
Life Sciences 101	1
Mathematics 107, 108, 109	6
Zoology 111, 112	4

31

Sophomore Year

Accounting 203	2
Agricultural Engineering 210	2
Agronomy 202	4
Bacteriology 210	3
Chemistry 120, 121, 122, 123, 124	8
Dairying 301	3
English 303	3
History 201	3
Speech 377	3

31

Junior Year

Animal Science 301	3
Bacteriology 305	3
Chemistry 220	4
Dairying 307, 310, 318	9
Economics 315	3
Life Sciences 300	3
Political Science 201	3
Veterinary Science 301	3
Elective	3

34

Senior Year

Agriculture 411	1
Animal Science 318, 401, 405	9
Dairying 401, 430	6
Economics 320	3
Life Sciences 420	3
Electives	12

34

TOTAL SEMESTER HOURS 130

DAIRYING CURRICULUM**SCIENCE OPTION**

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Animal Science 101	3
Botany 101	4
Chemistry 120, 121, 122, 123, 124	8
Dairying 201	3
English 101, 102	6
Life Sciences 101	1
Mathematics 111, 112	6

31

Sophomore Year

Agronomy 202	4
Animal Science 301	3
Bacteriology 210	3
Chemistry 250, 251, 252, 253, 254	8
English 303	3
Physics 209, 210	8
Zoology 111, 112	4

33

Junior Year

Bacteriology 301	3
Chemistry 311, 312, 313, 314	8
Dairying 301, 307	6
History 201	3
Mathematics 230	3
Political Science 201	3
Speech 377	3
Veterinary Science 301	3

32

Senior Year

Agriculture 411	1
Animal Science 401, 405	6
Dairying 310, 318, 401, 430	12
Economics 315	3
Life Sciences 300, 420	6
Veterinary Science 401	3
Electives	3

34

TOTAL SEMESTER HOURS 130

PRE-VETERINARY MEDICINE

The course offering in the two-year pre-professional program in Veterinary Medicine at Louisiana Tech parallels that offered in the same program at the Louisiana State University in Baton Rouge. Even though it is possible to complete the program in two academic years, many students prefer to extend the period of time by one or more terms. Competition for enrollment in Colleges of Veterinary Medicine is keen; therefore, a high academic average is essential. Students are admitted to the Colleges of Veterinary Medicine only at the beginning of the fall term; requirements for admission must be completed by the previous spring term. Application for admission to Louisiana State University is in January for enrollment in the fall semester class.

PRE-VETERINARY CURRICULUM

Freshman Year	Semester Hours
Botany 101	4
Chemistry 120, 121, 122, 123, 124, or 101, 102, 103, 104	8
English 101, 102	6
Life Sciences 101	1
Mathematics 111, 112	6
Zoology 111, 112	4
Electives	6

35

Sophomore Year

Animal Science 301	3
Chemistry 250, 251, 252, 253, 254	8
Economics 315	3
English 303	3
Life Sciences 300	3
Physics 209, 210	8
Speech 377	3
Electives	3

34

TOTAL SEMESTER HOURS 69

Elective hours must be chosen from the following courses:

Health and Physical Education or Basic ROTC, Animal Science 101, Dairying 201, History 201 or 202, Political Science 201, Poultry Science 201, Sociology 201, 330, 340.

DEPARTMENT OF BOTANY AND BACTERIOLOGY

DALLAS D. LUTES

Professor and Head of the Department

PROFESSORS: WINSTON P. HACKBARTH, JAMES C. WHITE

ASSOCIATE PROFESSORS: JAMES A. CHRISTIAN, HAROLD G. HEDRICK, ALBERT W. LAZARUS, DONALD G. RHODES

ASSISTANT PROFESSORS: CARL DAVIS, JR., RAYMOND E. JONES, and STANLEY J. VIATOR

The Department of Botany and Bacteriology offers work leading to the degree of Bachelor of Science in Botany, in Microbiology, and in Wildlife Conservation and Management. Also, the Department offers graduate courses leading to the degree of Master of Science in Botany and the degree of Master of Science in Microbiology (Bacteriology).

In order to broaden the education programs in the Department, the curricula provide for a substantial amount of required and elective courses outside the major fields of study.

Courses are offered in the Department, not only for majors in botany, in microbiology, and in wildlife conservation and management and minors in botany and in bacteriology, but in fulfillment of the requirements of the curricula in other departments. As botany is the basic science for students entering the applied botanical fields of agronomy, bacteriology, forestry, horticulture, plant breeding, plant pathology, forest pathology, and wildlife conservation, the Department emphasizes the phases of plant science which are fundamental for these applied fields. The Department, recognizing the need for natural science in the elementary and secondary schools, has worked with the College of Education to provide work for prospective teachers that will enhance the presentation of basic science concepts in the lower educational programs.

Botany

Each student who plans to have a major in botany is required to take 40 semester hours of botany, at least 20 hours of which must be in advanced courses, i.e., courses bearing numbers above 300. Before the end of the sophomore year he must, with the approval of the head of the Department, choose his minor program of study.

For the minor program of study, the student majoring in botany must take 21 semester hours of course work in some related field, such as agronomy, bacteriology, chemistry, forestry, horticulture, or zoology.

Students doing work toward a major in other departments and electing botany or bacteriology as a minor are required to take 21 semester hours in botany or bacteriology, the courses to be chosen in consultation with the head of the Department of Botany and Bacteriology.

The opportunities for graduates in botany are too varied to permit a complete enumeration. In general, graduates are qualified for the following types of work: further study in graduate school; teaching and research in colleges; and positions in experiment stations, in federal agencies—notably the United States Bureau of Plant Industry, the National Park Service, the United States Forest Service, and the United States Bureau of Plant Quarantine—and in commercial greenhouses, nurseries, and florist shops.

Microbiology (Bacteriology)

The program in microbiology is designed for students who are interested in the study of microorganisms. It is arranged both for those students who plan to secure employment after receiving the Bachelor of Science degree and for those who plan to pursue graduate work in microbiology, which is essential for preferred employment in the field.

The curriculum offers, in addition to the general training in microbiology, fundamental training in chemistry, physics, and mathematics, which is necessary for effective work in modern microbiology.

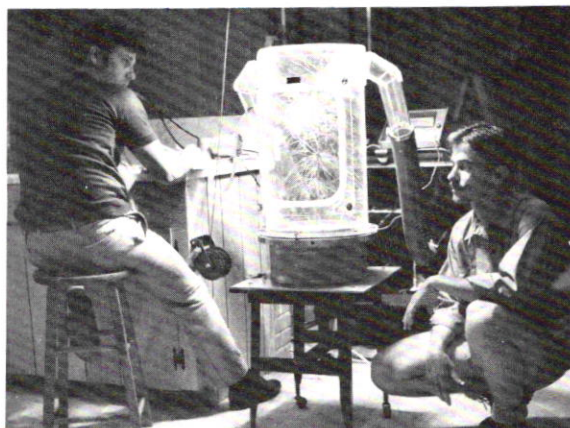
Graduates of this curriculum are eligible to enter graduate schools for advanced training in microbiology and to specialize in one or more of its various branches such as: General Bacteriology, including physiology, instrumentation, and antibiotics; Sanitary Bacteriology, including antiseptics and disinfectants, food storage, and water and sewage; Agricultural Bacteriology, including food, dairy, and soil bacteriology; and Pathogenic Bacteriology, including mycology, immunology, serology, and virology.

Graduates are qualified for positions in federal, state, and municipal laboratories; positions in the fields of medical and public health microbiology; bacteriology work in sanitary, food, dairy, soil, and industrial technology; food preservation work; and positions in experimental stations; research institutions, colleges, or universities.

Wildlife Conservation

The Wildlife Conservation Management Option is designed both for those students who desire a scientific knowledge of the conservation and management of wildlife and for those who expect to make a living in the wildlife field. It is planned further to provide a knowledge of the importance to man of natural resources and to add to the understanding of some of the relationships of these resources to one another. It is designed to train conservation workers as managers, naturalists, and researchers.

The Wildlife Conservation Biology Option is designed to give the student fundamental training in the life sciences. It is arranged to give a broad background in other areas of concentration. This option is planned to train students for employment as general biologists in sales, research, or service in industry or government agencies. It is also suitable as a base for those students who desire to take further work at the graduate level and thus prepare themselves to teach or conduct independent research in the basic or applied biological sciences.



BOTANY CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Bacteriology 212	4
Botany 101	4
English 101, 102, 202	9
Mathematics 111, 112	6
Life Sciences 101	1
Social Science Elective	3
Zoology 111, 112	4
	<hr/>
	31
Sophomore Year	
Botany 205, 221, 222, 223	12
Chemistry 120, 121, 122, 123, 124	8
English 303	3
Physics 205, 206	6
Social Science Elective	3
	<hr/>
	32
Junior Year	
Botany 220, 350, 351	11
Chemistry 250, 251, 252, 253, 254	8
Foreign Language	6
Electives	9
	<hr/>
	34
Senior Year	
Bacteriology Elective	3
Botany 320, 330, 415, 416	8
Life Sciences 300, 420	6
Electives	16
	<hr/>
	33
TOTAL SEMESTER HOURS	130

MICROBIOLOGY (BACTERIOLOGY) CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Bacteriology 212	4
Botany 101	4
Chemistry 120, 121, 122, 123, 124	8
English 101, 102	6
Mathematics 111, 112	6
Life Sciences 101	1
Zoology 111, 112	4
	<hr/>
	33
Sophomore Year	
Bacteriology Elective	4
Bacteriology 306	3
Botany 350	4
Chemistry 250, 251, 252, 253, 254	8
Physics 209, 210	8
Social Science Elective	3
Elective	3
	<hr/>
	33
Junior Year	
Bacteriology 330	4
Bacteriology Electives	7
Chemistry Elective	4
English 202, 303	6
Life Sciences 300	3
Social Science Elective	3
Electives	5
	<hr/>
	32
Senior Year	
Bacteriology 406, 415, 416	6
Bacteriology Elective	4
Foreign Language	6
Life Sciences 420	3
Zoology 401	3
Electives	10
	<hr/>
	32
TOTAL SEMESTER HOURS	130

WILDLIFE CONSERVATION CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 215	2
Bacteriology 210	3
Botany 101, 212	7
English 101, 102	6
Life Sciences 101	1
Mathematics 107, 108, 109	6
Social Science Elective	3
Zoology 111, 112	4
	<hr/>
	32
Sophomore Year	
Botany 221, 222, 223	9
Chemistry 120, 121, 123, 124	8
Forestry 213, 214	6
Zoology 430	3
Elective	6
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	32
Junior Year	
Bacteriology 401	3
Botany 345	3
Chemistry 220	4
Life Sciences 300	3
Veterinary Science 301, 401	6
Zoology 317, 429, 433	9
Electives	6
	<hr/>
	34
Senior Year	
Botany 320, 415, 416, 441, 442, 443	14
Life Sciences 420	3
Zoology 313, 432, 434	9
Electives	6
	<hr/>
	32
TOTAL SEMESTER HOURS	130

**WILDLIFE CONSERVATION
BIOLOGY OPTION**

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Bacteriology 210	3
Botany 101, 212	7
English 101, 102, 202	9
Life Sciences 101	1
Mathematics 107, 108, 109	6
Social Science Elective	3
Zoology 111, 112	4
	<hr/>
	33
Sophomore Year	
Botany 221, 222, 223	9
Chemistry 120, 122, 123, 124	8
English 303	3
Forestry 213, 214	6
Physics 205, 206	6
	<hr/>
	32
Junior Year	
Botany 220, 345	6
Chemistry 220	4
Social Science Elective	3
Zoology 201, 202, 225, 313, 433	17
Elective	3
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	33
Senior Year	
Bacteriology 401	3
Botany 415, 416	2
Life Sciences 300, 420	6
Zoology 432, 434	6
Electives	15
	<hr/>
	32
TOTAL SEMESTER HOURS	130



SCHOOL OF FORESTRY

LLOYD P. BLACKWELL

Professor and Director

PROFESSORS: EDWARD R. ANDRULOT, Forest Management; J. EDWIN CAROTHERS, Forest Economics; F. F. JEWELL, Forest Protection

ASSOCIATE PROFESSORS: ODIE L. FITZGERALD, Wood Utilization; HAROLD EUGENE GARRETT, Silviculture; DONALD G. RHODES, Summer Camp; CLYDE G. VIDRINE, Agricultural Engineering and Forestry.

ASSISTANT PROFESSOR: JAMES G. DICKSON, Forestry
PLANT SCIENCE LABORATORIES SUPERVISOR: HEINRICH KRUSE

The forestry program at Louisiana Tech University provides a fundamental and professional education of four years leading to the degree of Bachelor of Science.

A student may pursue the Forestry Program in one of the following seven options:

1. General Forestry
2. Forestry-Business
3. Forestry-Mechanization
4. Forestry-Recreation
5. Forestry-Science
6. Forestry-Wildlife
7. Wood Utilization

These programs are arranged so that a graduate will have both a firm foundation of technical knowledge and a broad educational background upon which to build a satisfying and constructive career in forestry or in allied fields. A student may qualify for graduate work in either program.

Employment opportunities are varied. Graduates are employed by both private industries and governmental agencies. Private industries include pulp and paper companies, wood preservation companies, the lumber industry, other industrial owners, forestry consulting firms, and private land owners who need professional service in forestry, land use, and conservation. Governmental agencies include federal agencies such as the Soil Conservation Service, National Park Service, United States Forest Service, and similar agencies of the states with work not only in technical forestry but also in the professional aspects of land use management, conservation, and wood utilization.

Junior Year Summer Programs

Two summer programs are offered. Successful completion of one of these at the end of the junior year is a prerequisite for senior standing. Those students who have completed all curriculum requirements through the junior year and have not less than an over-all "C" average are eligible to participate in these summer programs. General forestry students attend a summer camp where residence is required. The summer session for the Wood Utilization students is conducted from the campus.

Summer Camp

The Louisiana Tech Forestry Camp has dormitory, dining, and classroom facilities equipped, owned and operated by the University. It is located about 30 miles north of Ruston near Corney Lake. Eighteen thousand acres of diverse forest types are made available for use by a longterm agreement with the U. S. Forest Service. The camp program is arranged to give students field experience in the forest in addition to classroom instruction.

A Land Use Seminar is conducted in conjunction with the summer camp. This includes a tour of five to seven days in the Lower Mississippi Valley and allows students to view and discuss the major uses of land in this area.

Satisfactory completion of this summer camp includes the teamwork and sharing of responsibility necessary for successful group activity.

Wood Utilization Summer Session

The session includes considerable plant, forest, and laboratory work as well as classroom instruction. Applied problems in plywood manufacturing, drying, and other wood processing and testing techniques are studied. Visits are made to forests and to a diversity of wood-using plants where analysis and comparisons of operations in logging and processing are made.

Senior Field Trips

During the senior year all day Friday of each week is reserved for required laboratory trips to forest areas or wood-using plants. This enables the senior students to observe and to take part in numerous forestry, research, and wood-using activities being carried on by private companies and governmental agencies. Practically all of the important forest types, patterns of ownership, and a wide variety of wood-using industries are located within traveling distance of the campus. Trips are made to Urania, Louisiana, to conduct research studies on loblolly and longleaf pines begun in 1917 by Professor H. H. Chapman of Yale University. Other field trips are made with the Southern Hardwood Forestry Group to areas of managed bottomland hardwoods. A comprehensive typewritten report is required for each trip.

Expenses

In addition to the regular expenses listed in the catalog, each student is required to purchase for use during his junior and senior years the following: a drawing set, slide rule, and a hand lens. These must be of a quality approved by the School. All students should have access to a typewriter for the purpose of preparing laboratory and other reports. The School recommends, but does not require, that each student have his own camera for use on field trips and for the special work done in photography during the summer camp.

Field trips can not always be arranged within the scheduled laboratory hours which, in some cases, means leaving the campus earlier and returning later than the published schedule. Arrangements for lunches, the purchasing of meals, and the payment of lodging in those instances where overnight trips are necessary are the responsibility of the individual student. This includes the special summer program. In addition to regular summer session expenses, a special fee is charged each student who attends the summer camp or the wood utilization summer session. Summer camp

students are charged the dormitory cost on the basis of the regular quarter and do not qualify for any reduced residence hall cost applicable during the summer.

Each student registering for any forestry course involving field laboratory work should have, for his own protection an accident insurance policy. Policies are available during registration to all students for a reasonable rate per quarter.

A number of student assistants are employed by the School each year. This enables the students to work part time while attending school.

Professional Organization

The School sponsors the Louisiana Tech Chapter of the Society of American Foresters for social and professional activity of forestry students and faculty and with representatives of governmental and industrial organizations.



FORESTRY CURRICULUM

GENERAL FORESTRY OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 110	1
Botany 101	4
Economics 315	3
English 101, 102	6
Forestry 101	2
Life Sciences 101	1
Mathematics 111, 112	6
Political Science 201	3
Zoology 111, 112	4
	30
Sophomore Year	
Agronomy 302	4
English 303	3
Chemistry 120, 121, 122, 123, 124	8
Forestry 202, 205, 206	6
Electives	9
	30

Junior Year

Civil Engineering 304	2
Forestry 301, 302, 305, 306, 312, 313	17
Horticulture 307	3
Physics 205	3
Speech 377	3
Zoology 317	3
	31

Summer Session — Forestry Camp

Forestry 315, 316, 320, 321, 322	11
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Senior Year

Forestry 401, 402, 403, 407, 409, 410, 411, 416, 420B, 422	22
Life Sciences 420	3
Electives	3
	28
TOTAL SEMESTER HOURS	130

FORESTRY CURRICULUM

BUSINESS OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 110	1
Botany 101	4
Economics 315	3
English 101, 102	6
Forestry 101	2
Life Sciences 101	1
Mathematics 111, 112	6
Political Science 201	3
Zoology 111, 112	4
	30
Sophomore Year	
Accounting 203, 204, 310	7
Quantitative Analysis 220	3
English 303	3
Forestry 205, 206, 305	7
Physics 205	3
Electives	6
	29

Junior Year

Forestry 301, 302, 306	9
Horticulture 307	3
Management 305, 311	6
Marketing 300	3
Quantitative Analysis 335, 336	4
Speech 377	3
Electives	3
	31

Summer Session — Forestry Camp

Forestry 315, 316, 320, 321, 322	11
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Senior Year

Business Law 441	3
Forestry 401, 402, 403, 407, 409, 410, 411, 416, 420B, 422	22
Electives	4
	29
TOTAL SEMESTER HOURS	130

FORESTRY CURRICULUM
MECHANIZATION OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 110, 211, 214	5
Botany 101	4
Chemistry 120, 121, 123	5
English 101, 102	6
Forestry 101	2
Life Sciences 101	1
Mathematics 111, 112	6
	29

Sophomore Year	
Accounting 203, 204	4
Agricultural Engineering 210, 216, 320	8
Chemistry 122, 124	3
Civil Engineering 304	2
Economics 315	3
Forestry 202, 205	4
Physics 209	4
Political Science 201	3
	31

Junior Year	
Accounting 310	3
English 303	3
Forestry 301, 306	6
Management 311, 312, 440	9
Quantitative Analysis 220	3
Speech 377	3
Electives	3
	30

Summer Session — Forestry Camp

Agricultural Engineering 318, 340 415	7
Electives	3
	10

Senior Year	
Agricultural Engineering 431	2
Forestry 401, 403, 407, 409, 416, 420B	16
Industrial Engineering 409	3
Life Sciences 420	3
Electives	6
	30
TOTAL SEMESTER HOURS	130

FORESTRY CURRICULUM
RECREATION OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 110	1
Botany 101	4
Economics 315	3
English 101, 102	6
Forestry 101	2
Life Sciences 101	1
Mathematics 111, 112	6
Political Science 201	3
Zoology 111, 112	4
	30

Sophomore Year

Botany 212, 223	6
Civil Engineering 304	2
English 303	3
Forestry 202, 205, 206	6
Geology 111, 121	4
Health and Physical Education 113	1
Physics 205	3
Psychology 102	3
Sociology 201	3
	31

Junior Year

Forestry 301, 302, 306	9
Geography 260	3
Health and Physical Education 225	3
Horticulture 307	3
Sociology 304, 330, 340	9
Speech 377	3
	30

Summer Session — Forestry Camp

Forestry 315, 316, 320, 321, 322	11
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Senior Year

Forestry 401, 407, 409, 410, 411, 420B, 422	16
Geology 201	3
Health and Physical Education 226	3
Life Sciences 420, 456	6
	28
TOTAL SEMESTER HOURS	130

FORESTRY CURRICULUM

SCIENCE OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Agricultural Engineering 110	1
Botany 101	4
Economics 315	3
English 101, 102	6
Forestry 101	2
Life Sciences 101	1
Mathematics 230	3
Political Science 201	3
Zoology 111, 112	4
Electives	3
	30

Sophomore Year

Agronomy 302	4
Civil Engineering 304	2
Chemistry 101, 102, 103, 104	8
Forestry 202, 205, 206	6
Physics 209	4
Speech 377	3
Electives	3
	30

Junior Year

Botany 220	3
Chemistry 250, 253	3
Forestry 301, 302, 305, 306, 312, 313	17
English 303	3
Zoology 317	3
	29

Summer Session — Forestry Camp

Forestry 315, 316, 320, 321, 322 11

OR

Quantitative Analysis 220 3

Forestry 321, 322 4

Electives 4

11

Senior Year

Forestry 401, 402, 403, 407, 409, 410, 411,

416, 420B, 422 22

Life Sciences 420 3

Electives 5

30

TOTAL SEMESTER HOURS 130

FORESTRY CURRICULUM

WILDLIFE OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year Semester Hours

Agricultural Engineering 110 1

Botany 101 4

Economics 315 3

English 101, 102 6

Forestry 101 2

Life Sciences 101 1

Mathematics 111, 112 6

Political Science 201 3

Zoology 111, 112 4

30

Sophomore Year

Agriculture 101 4

Agronomy 302 4

Botany 220, 223 6

Chemistry 120, 121, 122, 123, 124 8

Journalism 101 3

Forestry 202 2

Zoology 202 4

31

Junior Year

Botany 320, 345 6

Civil Engineering 304 2

English 303 3

Forestry 301, 302, 306 9

Physics 205 3

Zoology 317, 313 6

29

Summer Session — Forestry Camp

Forestry 315, 316, 320, 321, 322 11

Senior Year

Forestry 401, 409, 410, 411, 416, 420B 14

Life Sciences 420 3

Speech 377 3

Zoology 429, 432, 433 9

29

TOTAL SEMESTER HOURS 130

FORESTRY CURRICULUM

WOOD UTILIZATION OPTION

(Leading to the Degree of Bachelor of Science)

Freshman Year

Semester Hours

Agricultural Engineering 110 1

Botany 101 4

Economics 315 3

English 101, 102 6

Forestry 101 2

Life Sciences 101 1

Mathematics 111, 112 6

Political Science 201 3

Zoology 111, 112 4

30

Sophomore Year

Chemistry 120, 121, 122, 123, 124 8

Forestry 205 2

History 201 3

Industrial Engineering 301 3

Marketing 300 3

Mathematics 220 3

Physics 209 4

Electives 4

30

Junior Year

Chemistry 220 4

Civil Technology 206 3

English 303 3

Forestry 305, 306 6

Management 311, 312 6

Quantitative Analysis 220 3

Quantitative Analysis 335 2

Electives 4

31

Summer Session

Forestry 340, 341 6

Industrial Engineering 410 3

9

Senior Year

Civil Technology 207 3

Forestry 408, 414, 416, 420B 9

Industrial Engineering 409, 425 6

Quantitative Analysis 336 2

Speech 377 3

Electives 7

30

TOTAL SEMESTER HOURS 130

DEPARTMENT OF ZOOLOGY

ROLAND ABEGG

Professor and Head of the Department

PROFESSORS: B. J. DAVIS, ROBERT W. FLOURNOY, J. W.

GOERTZ, J. L. MURAD, S. M. WEATHERSBY

ASSISTANT PROFESSOR: LARRY G. SELLERS

Students desiring to complete a degree program in the Department of Zoology will consult with the head of the department.

During the sixth quarter of residence (and later as may be necessary) students will present to their advisers, for discussion and approval, the program of study they intend to pursue during their junior and senior years.

Degree Programs

The degree programs offered through the Department of Zoology are:

- (1) Bachelor of Science in zoology: Students who have a primary interest in zoology will follow the curriculum for zoology majors.
- (2) Bachelor of Science in zoology with options in pre-medicine or pre-dentistry. Pre-medical and pre-dental students who decide to complete a degree program at Louisiana Tech in the field of zoology will pursue the curriculum outlined for this purpose under the direction of the Head of the Department of Zoology. See also option 2, a three plus one program.
- (3) Master of Science with a major in zoology.

Requirements For A Major In Zoology

All students majoring in zoology and its options will satisfactorily complete the courses specified in the curriculum of their choice. The elective subjects will be selected with the advice and approval of the adviser.

ZOOLOGY CURRICULUM

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Chemistry 120, 121, 122, 123, 124, or 101, 102, 103, 104	8
English 101, 102	6
Life Sciences 101, 300	4
Mathematics 230, 231, or 111, 112	6
*Zoology 111, 112, 115	8
	32
Sophomore Year	
Botany 101	4
**Chemistry 250, 251, 252, 253, 254, or 220 plus 4 hours in a complementary field, e.g.: geology	8
English 201, 202	6
Social Science	6
*Zoology 202, 313	7
	31
Junior Year	
Chemistry 205 or 330	4
Foreign Language (Six hours in the same language)	6
Speech 110	3
*Zoology 320	4
**Zoology Elective	6
**Elective, Advanced Science, Mathematics, or continuation of Foreign language	6
Elective	3
	32
Senior Year	
Bacteriology 212	4
Life Sciences 420	3
Physics 209, 210	8
Social Science	6
Zoology 480 (2 quarters)	2
**Zoology elective	5
Elective	6
	34
TOTAL SEMESTER HOURS	129

*Core courses should be completed in the first 77 hours.

**To be selected only with the advice and approval of the adviser.



ZOOLOGY CURRICULUM

OPTIONS IN PRE-MEDICINE AND PRE-DENTISTRY†

(Leading to the Degree of Bachelor of Science)

Freshman Year	Semester Hours
Botany 101	4
Chemistry 120-124 or 101-104	8
English 101, 102	6
Life Sciences 101	1
Mathematics 230, 231 or 111, 112	6
*Zoology 111, 112, 115	8
	33
Sophomore Year	
Bacteriology 212	4
Chemistry 250-254, 271	12
English 201 or 202	3
Life Sciences 300	3
Physics 209, 210	8
*Zoology 202	4
	33
Junior Year	
Foreign Language	6
Life Sciences 420	3
Psychology 102	3
Social Science	6
Speech 110	3
*Zoology 313, 320, 411	11
	32
Senior Year	
Chemistry 205 or 330	4
Elective	3
**Elective Zoology	6
**Elective, Advanced Science, Mathematics or continuation of Foreign Language	6
English, Advanced	3
Social Science	6
Zoology 480 (2 quarters)	2
	30
TOTAL SEMESTER HOURS	129

†Option 1: Completion of all four years.

†Option 2: Students having a high G.P.A. may wish to apply to Medical school or Dental school for admission after their Junior year. If they have completed the first three years of the curriculum outlined above and the first year of medical or dental school they may become candidates for the degree of Bachelor of Science.

*Core courses should be completed in the first 77 hours.

**To be selected with the advice and approval of the adviser.

Courses
of
Instruction

Courses of Instruction

Courses numbered 100 are designed for freshmen, 200 courses are for sophomores, 300-400 courses are for juniors and seniors, and 500 courses are for graduate credit. In some cases, 300 and 400 level courses may carry graduate credit; in such cases, students undertake additional work to bring the courses up to graduate level.

Descriptions of exclusively Graduate Courses (500) may be found in the Graduate Bulletin.

The numerical listing after the course title gives the following information: first number, laboratory hours per week; second, lecture periods per week (90-minute periods with break included); third, credit value in semester hours.

The following abbreviations indicate the quarters of the calendar the course will be offered: Su—Summer Quarter, F—Fall Quarter, W—Winter Quarter, and Sp—Spring Quarter. Where courses are offered on alternate years only, the words "even" or "odd" will indicate which years the course will be offered.

NOTE: Course offerings by quarter are subject to change to accommodate needs of students.

ACCOUNTING

- 203-204: **Elementary Accounting.** 2½-1-2 each. Basic understanding of concepts and methods of accounting; recording and control processes of purchases, sales, cash, and inventories; significance of such information to the sole proprietor and corporate entity. Su, F, W, Sp.
- 205: **Elementary Accounting.** 2½-1-2. Preq., Accounting 204. Accounting for manufacturing, partnerships, investments, long-term liabilities, flow of funds, departmentalization and control, tax considerations, and an analysis and interpretation of financial statements. Su, F, W, Sp.
- 303-304-305: **Intermediate Accounting.** 0-2-2 each. Preq., Accounting 205 or 310. Balance sheet valuations; income and retained earnings statements errors and their corrections; statement analysis; statements from incomplete records; and long-term debt. Su, F, W, Sp.
- 307: **Income Tax.** 0-3-3. Preq., Accounting 205, 310 or consent of instructor. A study of Federal income tax laws and state income tax laws and their effect on individual income. Su, F, W, Sp.
- 308: **Managerial Cost Accounting.** 0-3-3. Preq., Accounting 205 or 310. A study of cost systems; accounting peculiar to manufacturing enterprises; making cost statements; and solving cost problems. Su, F, W, Sp.
- 310: **Administrative Accounting.** 0-3-3. Preq., Accounting 204. This course considers the use of accounting and financial statements in business, finance, administrative control and decision making. Su, F, W, Sp.
- 312: **Municipal and Government Accounting.** 0-3-3. Preq., Accounting 305. Accounting procedures of the Federal, municipal, and state governments. Attention is given to the preparation of budgets, financial statements, and to budgetary control. F.
- 406: **Advanced Income Tax.** 0-3-3. Preq., Accounting 307. A continuation of Accounting 307 with further study into tax problems of fiduciaries, partnerships, and corporations; solutions of problems. Su.
- 411: **Advanced Accounting.** 0-3-3. Preq., Accounting 305. A study of higher accountancy; problems met in practical accounting; fiduciary accounting; partnerships and joint ventures; and installment sales. Su, F, W, Sp.
- 412: **Advanced Accounting.** 0-3-3. Preq., Accounting 305 and preferably Accounting 411. A continuation of Accounting 411. Consolidated statement. Su, F, W, Sp.
- 413: **Auditing.** 0-3-3. Preq., Accounting 305 and credit for or registration in Accounting 308. Auditing procedures; working papers and reports. Su, F, W, Sp.
- 433: **Accounting Systems.** 0-3-3. Preq., Accounting 411. A study of accounting systems and systems installations. W.
- 451: **Advanced Cost Accounting.** 0-3-3. Preq., Accounting 308. A study of the advanced phases of cost accounting: standard costs; distribution costs; cost analysis. F.
- 485: **Controllership.** 0-3-3. Preq., credit for or registration in Accounting 411. Duties and responsibilities of the chief accounting officer of an organization. Includes application of accounting and statistical data in formation of business and financial policies. Su.
- 488: **Budgetary Accounting.** 0-3-3. Preq., permission of adviser. Budget preparation in an industrial concern. Cost and income controls. Sp.
- 490: **C.P.A. Problems.** 0-3-3. Preq., permission of adviser. An intensive problem course in C.P.A. examinations. Sp.
- 491: **Advanced Theory of Accounting.** 0-3-3. Preq., permission of adviser. Intensive study of current advanced accounting theory. W.
- 493: **Advanced Auditing.** 0-3-3. Preq., Accounting 413. Intensive study of professional conduct, auditing standards, auditor's liability, reports, and internal auditing. Sp.
- 505: **Accounting Analysis for Decision Making.** 0-3-3.
- 506: **Seminar in Financial Accounting.** 0-3-3.
- 507: **Contemporary Accounting Theory.** 0-3-3.
- 508: **Advanced Accounting Analysis and Controls.** 0-3-3.
- 517: **EDP in Accounting.** 0-3-3.
- 521: **Cases and Problems in Income Taxes.** 0-3-3.
- 567: **Special Problems in Accounting.** 0-3-3.

ADMINISTRATION AND BUSINESS

- 520: **Directed Research and Readings.** 0-3-3.
- 551: **Research and Thesis,** 3 hours credit. Maximum credit allowed is 6 hours.
- 590: **Research and Dissertation.** 3 hours credit. Maximum credit allowed is 30 hours.

AEROSPACE ENGINEERING

- 301: **Astronautics.** 0-2-2. Preq., credit or registration in Engineering Mechanics 203. Introductory course in aerospace engineering that deals with fundamentals of aerospace vehicle missions. Analysis of trajectory, performance, propulsion, control, guidance, terminal, trajectories, and reentry. W.
- 321: **Foundations of Fluid Mechanics.** 0-3-3. Preq., Mathematics 350, Mechanical Engineering 315, credit or registration in Engineering Mechanics 203. Fluid properties and fluid statics. Fluid flow kinematics, theory of stress and strain, flow dynamics, conservation equations, and applications to one-dimensional, inviscid, incompressible flow. W.
- 323: **Aerodynamics of Incompressible Flow.** 0-3-3. Preq., Aerospace Engineering 321. Fundamental conservation equations and applications to incompressible flow. Inviscid and potential flows. Viscous flows, laminar boundary layer flow, turbulence, and turbulent flow. Complications of compressibility. Sp.

- 401: **Aerospace Structures.** 0-2-2. Preq., Mechanical Engineering 309. Fundamentals of aerospace structures, inertia loads, statically determinate and indeterminate structures. Basic theories of bending, torsion, and deflections with applications to thin-walled sections. F.
- 402: **Aerospace Structures.** 0-2-2. Preq., Aerospace Engineering 401. Introduction to aircraft stress analysis of wings, fuselage, and structural components. Thermoelasticity and vehicle materials and properties. Structural elements, composite structures, and detail design. W.
- 403: **Aeroelasticity.** 0-3-3. Preq., Aerospace Engineering 323, Mechanical Engineering 423, Aerospace Engineering 402. Fundamental considerations in structural dynamics. Static aeroelasticity, analysis of various flutter problems in aerospace vehicles, dynamic response methods and loads, and simulation techniques. Sp.
- 409: **Aerospace Design.** 6-1-3. Preq., Mechanical Engineering 423, Aerospace Engineering 402, Aerospace Engineering 411, Aerospace Engineering 435. Principles of fluid mechanics, structures, propulsion, and vehicle dynamics applied to the design of an aerospace vehicle system subject to specifications of certain mission requirements. Sp.
- 411: **Aerospace Vehicle Dynamics, Stability, and Control.** 0-3-3. Preq., Aerospace Engineering 323. Static and dynamic stability of vehicles, influence of propulsion system, aerodynamic components, and control system. Equations of motion, stability derivatives, and problems of vehicle missions. W.
- 424: **Aerospace Seminar.** 0-1-1. Preq., senior standing. Provides student with experience in communication of technical work pertaining to his field of interest. Emphasis placed upon formal presentation of oral and written material. Sp.
- 435: **Aerospace Propulsion.** 0-3-3. Preq., Mechanical Engineering 423. Analysis, performance, and application of air breathing engines, chemical rockets, nuclear rockets, and electrical rocket propulsion. Emphasis on design of a propulsion system. F.
- 451: **Aerodynamics Laboratory.** 3-0-1. Preq., Aerospace Engineering 323, credit or registration in Mechanical Engineering 423. Laboratory study of methods for experimental measurements of engineering variables. Emphasis on application and interpretation of results in aerospace experiments of a dynamical nature. F.
- 215: **Land Drainage and Terracing.** 6-0-2. Elementary surveying. Layout and construction of erosion control structures, and drainage systems. Su, F, W, Sp.
- 216: **Forest Machinery.** 3-1-2. The principles of selection, operation, maintenance of machines used in timber harvesting, planting and woodland operation.
- 217: **Microclimatology.** 3-0-1. A study of climatic elements in relation to agriculture and forestry. Modification of microclimates by sheltering, shading, ground cover, frost protection devices, windbreaks and irrigation. W, even.
- 266: **Soil and Water Management.** 6-0-2. Engineering principles of location, design and construction of drainage and erosion control facilities. Hydrological, hydraulic and surveying principles used in the management of agricultural lands and waters. F.
- 276: **Engineering Properties of Bio-Materials.** 3-0-1. Engineering properties of plant and animal materials related to harvesting, processing, storage and distribution. W.
- 286: **Bio-Machinery Principles.** 3-0-1. Engineering analysis of force, motion and similar phenomenon associated with gears, universal-joints and other mechanisms encountered in farm and forest machinery. Sp.
- 301: **Agricultural Structures.** 3-2-3. Preq., consent of the department head. Heat transfer; airwater vapor mixtures; ventilation; systems analysis; functional design of agricultural structures. F.
- 333: **Farm Buildings.** 3-1-2. The location, arrangement, design, construction, care, and repair of farm buildings. Su, even.
- 307, 308: **Farm Power Units.** 3-1-2 each. Preq., Consent of the department head. Engineering principles of farm power units. W, Sp.
- 315: **Advanced Farm Machinery.** 3-2-3. Preq., Engineering Mechanics 201. Basic principles in the design of farm machinery, including aspects of materials, elements of machines, hydraulic systems, functional operations, force analysis, and power transmission. W.
- 320: **Electricity Applied to Bio-Systems.** 3-2-3. Practical application of electricity to farm and forest operations including electric motors, power rates, safety, wiring, lighting, and heating. Sp.
- 325: **Dairy Engineering.** 3-2-3. Basic principles of dairy machinery; instruments, and plant layout. F, even.
- 340: **Logging Roads.** 3-1-2. Principles of planning, layout and construction of forest roads, including culverts and drainage.
- 401: **Farm Utilities.** 3-1-2. Preq., consent of the department head. Well hydraulics, water supply, plumbing and sewage disposal systems as applied to the farm and home. Sp.
- 403: **Soil and Water Conservation Engineering.** 3-2-3. Preq., consent of the department head. An advanced study of the engineering principles and practices involved in conserving soil and water. Irrigation design. Sp.
- 405: **Rural Electrification.** 3-2-3. Preq., Electrical Engineering 213. The engineering application of electricity to problems in agriculture. Design of wiring; controls and machinery needed in crop drying; lighting; and agricultural processing. F.
- 407: **Advanced Farm Structures Design.** 3-2-3. Preq., Engineering Mechanics 301 and Agricultural Engineering 301. The structural design of farm buildings including load estimates, stress analysis, allowable unit stress, and the design of columns, beams, and connections. Su, even.
- 409: **Special Problems.** 0-3-3. Preq., senior standing or consent of the department head. Special problems in the field of agricultural engineering. W.
- 411: **Seminar.** 0-1-1. Preq., senior standing or consent of the department head. Reviews and discuss-

AGRICULTURAL ENGINEERING

- 105: **Agricultural Drawing.** 6-0-2. The basic principles of drafting as applied to agriculture. Lettering and sketching, working drawings, and blueprints. W, odd.
- 110: **Elementary Drafting.** 3-0-1. Introductory drafting, free-hand lettering, care and use of drawing instruments. Su, F, W, Sp.
- 161: **Introduction to Agricultural Engineering.** 3-0-1. Characteristics of the profession, engineering methods and engineering "tools." F.
- 186: **Bio-Machinery Analysis.** 3-0-1. Engineering principles of constructing, adapting, scheduling, replacing, servicing and cost analysis of forest and farm machinery. Systems analysis. W.
- 206: **Agricultural Machines.** 3-2-3. The selection, adaptation, operation, care, and repair of farm machinery. Su, odd; F.
- 210: **Farm Tractors.** 3-1-2. Principles of engines. Selection, maintenance and adjustment of power units used in forest and farm operations. Sp.
- 211: **General Shop.** 6-0-2. Care and use of tools, gas and electric welding, cold metal work and woodwork. Su, F, W, Sp.
- 214: **Machinery Principles.** 3-1-2. Power and energy relationships applied to machines in the biologically related industry. Machine components and lubrication.

- sions of current scientific literature and recent developments in agricultural engineering. Sp.
- 415: **Fluid Power and Controls.** 3-1-2. Preq., consent of the department head. Analysis and design and fluid power and control systems. Study of components and their agricultural and industrial application. Sp.
- 418: **Problems.** 1 to 4 semester hours credit. Problems in planning and mechanization of bio-systems.
- 431: **Soil Trafficability.** 3-1-2. Factors affecting traction and flotation of off-the-road machinery.
- 515: **Agricultural Processing Systems.** 3-2-3.
- 520: **Instrumentation.** 0-3-3.
- 560: **Seminar on Water Pollution Control.** 0-1-1.
- 561: **Seminar on Water Pollution Control.** 0-1-1.
- 562: **Seminar of Water Pollution Control.** 0-1-1.

AGRICULTURE

- 101: **Crop Science.** 3-3-4. Principles of production and management of forage, grain, fiber, fruit, vegetable, and ornamental crops. F, Sp.
- 241, 242, 243: **Agricultural Internship.** 3 hours credit each, 40 hours per week. Actual work experience in developing skills and acquiring technical knowledge in on-the-job situations. May be repeated for a total of 27 semester hours. Su, F, W, Sp.
- 411-412-413: **Seminar.** 0-1-1 each. Reviews, reports, and discussion of current problems of agriculture and related fields. F, W, Sp.
- 441-442-443: **Agricultural Internship.** 3 hours credit each, 40 hours per week. Work experience in the intern's major field of Agronomy, Horticulture, Animal Science, Dairying or Agriculture-Business. Su, F, W, Sp.

AGRONOMY

- 202: **Soils.** 3-3-4. Preq., Chemistry 101. A general study of soil science, emphasizing the relation of soil properties and processes to plant growth. Su, W.
- 205: **Garden Soils.** 0-2-2. Soil in its relation to the home gardener with special emphasis on flowers and ornamentals.
- 211: **Forage Crops and Pasture Management.** 0-3-3. A study of the growth adaptation and culture of forage plants including types of plants, methods of establishment and improvement and use of forage plants. W.
- 302: **Forest Soils.** 3-3-4. The fundamentals of soil science in its relation to the growth and distribution of forest trees. F, Sp.
- 307: **Field Crops.** 3-2-3. A study of fundamentals of production, harvesting, storage, marketing, and utilization of grain, fiber, oil, and sugar crops. W, even.
- 312: **Turf Management.** 3-2-3. Establishment, maintenance, and management of turf grasses for homes, athletic fields, golf courses, playgrounds, parks, highways, airfields, and other uses. F, even.
- 315: **Soil Fertility.** 3-3-4. Preq., Agronomy 202. Fundamentals of soil fertility and plant nutrients. W, odd.
- 330: **Soil Conservation and Crop Management.** 0-3-3. The causes and control of soil and water losses and the maintenance of soil productivity. W, even.
- 405: **Soil Physics.** 3-2-3. Preq., Agronomy 202. A study of the physical properties of soils and their relation to soil utilization. Sp, even.
- 408: **Fertilizer Technology.** 0-3-3. Preq., Chemistry 102. Source, manufacturing, processing, use, properties and characteristics of chemical fertilizers. F.
- 409: **Plant Breeding.** 3-2-3. Preq., Life Sciences 300. A study of the application of the fundamental principles of genetics to the development and maintenance of improved plant varieties. Sp, even.
- 410: **Soil Development and Classification.** 6-2-4. Prep., Agronomy 202. The genesis morphology, and classification of the soils of the United States, with particular reference to classification and mapping of Louisiana soils. Sp, odd.
- 421: **Weed Control.** 3-2-3. A study of weed control in agricultural crops, including weed ecology, mechanisms of herbicidal action, and practical application techniques. W, odd.

AIR FORCE AEROSPACE STUDIES

- 125: **U. S. Air Force Organization and Strategic Offensive Forces (GMC).** 1-1-1. Mission and organization of USAF and functions of Strategic Offensive Force. Laboratory on basic military drill, customs and courtesies of the USAF. F.
- 126: **Strategic Defensive and General Purpose Forces (GMC).** 1-1-1. Defenses against aerospace threats and functions of General Purpose Forces. Laboratory of classroom presentations by advanced cadets on variety of aspects of Air Force life. W.
- 127: **U. S. Aerospace Support Forces (GMC).** 1-1-1. Airlift, logistics, research and development, education and training, and other support components of the USAF. Laboratory includes participation in military ceremonies and continued USAF orientation. Sp.
- 225: **The Development of Air Power (GMC).** 1-1-1. The beginnings of manned flight from balloons and dirigibles, to the Wright Brothers, World War I and the interwar years. Laboratory includes practice in drill and ceremonies. F.
- 226: **The Development of Air Power (GMC).** 1-1-1. Continuation of 225. A study of air power during World War II, the Berlin Airlift and Korea. Laboratory consists of leadership training and career orientation. W.
- 227: **The Development of Air Power (GMC).** 1-1-1. Continuation of 226. A study of U.S. air power in the international arena from 1955 to the present. Laboratory consists of preparation for summer field training. Sp.
- 335: **The Military in Contemporary Society (POC).** 1-2-2. Military service as a profession. Institutional, social, and economic aspects of civilian-military interaction. Lab provides leadership experience through instruction of first year cadets. F.
- 336: **Defense Organization and Policy (POC).** 1-2-2. Structure functioning of the defense policy making establishment. International and domestic considerations. Arms control agreements. Lab provides administrative experience through various staff assignments. W.
- 337: **Defense Strategy and Conflict Management (POC).** 1-2-2. Conceptual foundations of strategy. Impact of technology on strategy. Politics and defense strategy. Case studies. Lab provides further experience through rotation of staff assignments. Sp.
- 425: **Flight Instruction Program (POC)** 3-2-2. Required for designated pilot candidates. Theory of Flight; Federal Aviation Regulations, meteorology, navigation, and radio communication. Flying training preq: must be within 12 months of commissioning. 36.5 flying hours. Completion of Aerospace Studies 425 may qualify student for the FAA private pilot certificate. F, W.
- 435: **Air Force Leadership (POC).** 1-2-2. Concepts of human behavior relating to leadership. Leadership problems and practices at the junior officer level. Laboratory provides practical leadership experience. F.
- 436: **Military Management (POC).** 1-2-2. Management principles applicable to the duties of the junior officer. Laboratory places cadets in command and administrative positions to employ managerial techniques. W.
- 437: **Military Justice and Preparation for Commissioned Service (POC).** 1-2-2. Use of military justice for commanders. Practical details of initial Air Force duty. Laboratory emphasizes evaluation and improvement of managerial procedures. Sp.

ANIMAL SCIENCE

- 101: **General Animal Science.** 3-2-3. A study of the types, breeds, market grades and classes of beef cattle, dairy cattle, swine, sheep, and horses. F, Sp.
- 204: **Meat Animal and Carcass Evaluation.** 3-2-3. Selection of carcasses and wholesale cuts of beef, pork, and lamb; factors influencing grades, yields, and values in cattle, hogs, and sheep. W.
- 301: **Principles of Animal Nutrition.** 0-3-3. Preq., Animal Science 101 and Chemistry 102. The source, chemical composition, characteristics, and nutritive value of farm animal feeds; rations. F.
- 303: **Livestock Judging.** 2-1-2. Preq., Animal Science 101. The theory and practice in the judging of beef cattle, swine, sheep, and horses. Sp, even.
- 308: **Swine Production.** 3-2-3. Preq., Animal Science 301. The principles and practices in the breeding, feeding, and management of swine. F, odd.
- 310: **Ruminant Production.** 3-3-4. The breeding, feeding, marketing and management of beef cattle and sheep. Sp.
- 311: **Horses and Horsemanship.** 3-2-3. Breeding, feeding, management and handling of light horses. Su, Sp.
- 315: **Meats** 6-1-3. Preq., Animal Science 101 and Bacteriology 210. Methods and practices involved in the processing and preservation of meats. W.
- 318: **Animal Reproduction.** 3-2-3. The physiology of reproduction of domestic farm animals. W.
- 401: **Animal Breeding Principles.** 3-2-3. Preq., Life Sciences 300. The application of the basic principles of genetics to the improvement of animals. Sp.
- 403: **Advanced Livestock Judging.** 3-1-2. Preq., Animal Science 303. An advanced course in comparative judging of beef cattle, swine, sheep, and horses. F, odd.
- 405: **Applied Animal Nutrition.** 0-3-3. Preq., Animal Science 301 and Chemistry 220. Growth, reproduction, lactation, fattening, and work production as it relates to the chemistry and physiology of nutrition. Sp.

ARCHAEOLOGY

- 462: **Christian Archaeology.** 3-2-3. Preq., History 101 or consent of instructor or junior standing. A study of the archaeology, architecture, and inscription in early Christian sites in and nearby Rome. Su.
- 463: **Etruscan Archaeology.** 3-2-3. Preq., History 101 or consent of the instructor or junior standing. A study of the art, architecture, archaeology, history and inscriptions of the Etruscans. Offered only on location in Central and Northern Italy. Su.
- 466: **Egyptian Archaeology.** 3-2-3. Preq., History 101 or consent of instructor or junior standing. The study of the archaeology, art, architecture, history, and inscriptions of the ancient Egyptians. Field work in museums. Su.

ARCHITECTURE

- 115: **Design.** 6-1-3. Formal problems of the theory and practice in the elements and principles of design. F, Sp.
- 116: **Design.** 6-1-3. Continuation of Architecture 115. W.
- 125: **Drawing.** 6-1-3. A study of the principles underlying all creative and representation drawing. Su, F, Sp.
- 126: **Drawing.** 6-1-3. A continuation of Architecture 125. F, W, Sp.
- 215: **Design.** 6-1-3. The study of color and the interaction of color in design. F, W, Sp.
- 216: **Design.** 6-1-3. Problems in three-dimensional design with increased emphasis on the development of individual ideas through various materials such as clay, plaster, fiber glass, wood, and plastics. F, W, Sp.

- 226: **Drawing.** 6-1-3. Problems in both free-hand and measured drawing involving use of drawing tools; mechanical representation of one- and two-point perspective; orthographic and isometric projection. Su, W, Sp.
- 227: **Drawing.** 6-1-3. Continuation of Architecture 226. Su, Sp.
- 350: **Visual Studies.** 6-1-3. Design theory and methods with form study in physical environment. Studio exercises in visual perception, organization, structure and communication. May be repeated for a total of nine credit hours.
- 354: **Design.** 6-1-3. Intermediate design problems emphasizing the concept, methods and materials of construction. W.
- 355: **Design.** 6-1-3. Continuation of Architecture 354. Sp.
- 356: **Design.** 6-1-3. Architectural and planning problems relating architecture, landscape architecture, city and regional, and other related fields. F.
- 357: **Design.** 6-1-3. Continuation of Architecture 356. W.
- 366: **History of Art.** 0-3-3. A survey of the painting, sculpture, architecture, minor arts of ancient, medieval, and modern periods. W.
- 367: **History of Art.** 0-3-3. A continuation of Architecture 366. Sp.
- 368: **History of Art.** 0-3-3. Travel to the art centers of Europe visiting the galleries and museums in cities such as London, Amsterdam, Paris, Rome, Florence, etc. Su.
- 380: **Applied Studio Practices.** 6-1-3. Open only to second year Associate Degree candidates. This course offers students in each of the options practical problems in graphic and visual communications. May be repeated two times for credit.
- 402: **Design.** 6-1-3. Advanced architectural design problems. Sp.
- 403: **Design.** 6-1-3. Continuation of Architecture 402. F.
- 458: **Specifications and Working Drawings.** 6-1-3. Detailed specifications, supervision, and superintendence. Sp.
- 464: **History of Architecture.** 0-3-3. Historical study of development of Architecture from Gothic through Post-Renaissance periods. F.
- 465: **History of Architecture.** 0-3-3. Historical study of development of Architecture from Post-Renaissance through contemporary. W.
- 466: **History of Modern Art.** 0-3-3. Historical and critical appraisal of art in the 19th and 20th centuries. F.
- 468: **History of American Art.** 0-3-3. Historical and critical appraisal of art in America from the colonial era to the present. W.
- 469: **History of Italian Art.** 0-3-3. An in-depth study of the art and architecture located in Rome and Florence. Su.
- 554: **Design.** 12-2-6.
- 555: **Structural Systems.** 6-1-3.
- 556: **Problems.** 12-2-6.
- 557: **Professional Practice.** 0-3-3.
- 558: **Seminar.** 0-3-3.

ART

- 101: **Art Structure.** 3-1-2. (For education majors) Foundation course for art study. Theory and practice in the elements of art as a basis for appreciation of fine arts and crafts of the past and present. Su, F, W, Sp.
- 102: **Art Structure.** 3-1-2. (For education majors) A continuation of Art Structure 101 in the elements and principles of art structure. Problems in drawing, painting, design, lettering, poster composition. Su, F, W, Sp.
- 120: **Painting.** 6-1-3. Creative approach to the problems in painting with emphasis on observation and representation. Su, F, Sp.
- 121: **Painting.** 6-1-3. Continuation of Art 120. Su, F, W.

- 170: **Introduction to Photography.** 6-1-3. Introduction to photographic principles and techniques, history of photography, familiarization with terminology and equipment. Su, F.
- 171: **Camera Technique.** 6-1-3. The teaching of proficiency with all camera types and formats and the mastery of camera control. W.
- 172: **Darkroom Technique.** 6-1-3. The teaching of proficiency with darkroom equipment utilizing manual and automatic color and black-and-white processing. Sp.
- 173: **Photography.** 6-1-3. Survey course in photography for non-majors. Sp.
- 175: **Art Structure for Home Economics.** 3-1-2. Problems supplementary to work in the College of Home Economics: art structure and costume design problems of home and community life. F, W.
- 176: **Art Structure for Home Economics.** 3-1-2. Continuation of Art 175. W, Sp.
- 201: **Art Education.** 3-1-2. A continuation of Art 162 with emphasis on craft materials and their use in the elementary grades. Ways in which art activities contribute to the social studies. Su, F, Sp.
- 220: **Painting.** 6-1-3. Creative approach to the problems in painting with emphasis on the human figure. Su, F, Sp.
- 221: **Painting.** 6-1-3. Continuation of Art 220. Su, W, Sp.
- 225: **Drawing.** 6-1-3. The study of human anatomy as related to problems of art. Su, F, Sp.
- 228, 229: **Figure Drawing.** 6-1-3, each. Drawing in media from models. F, W, Sp.
- 240: **Craft Survey.** 6-1-3. Survey of the elementary process of weaving, metal crafts, ceramics, and wood-construction as a basis for advanced study in one or more of these media. F, even.
- 241: **Craft Survey.** 6-1-3. Continuation of Art 240. W, even.
- 270: **Darkroom Technique.** 6-1-3. The application of techniques learned to produce a desired photographic result. F.
- 271: **Advertising Photography.** 6-1-3. The study of trends, photomotivation, and introduction to advertising photo techniques. W.
- 272: **Advertising Photography.** 6-1-3. Preq., Art 271. Application of techniques in lighting, composition and printing to produce creative advertising photographs. Sp.
- 273: **Advertising Photography.** 6-1-3. Preq., Art 272. Advanced application to taking, printing, and layout technique in advertising photography. F.
- 274: **Photojournalism.** 6-1-3. The study of principles and techniques given to the production of creative photographs for news and features. F.
- 308: **Lettering.** 6-1-3. Designed to provide a knowledge of styles of letters and their uses; practice with lettering tools and techniques of advertising, show card and poster design. Sp.
- 309: **Lettering.** 6-1-3. Continuation of Art 308. F.
- 315: **Advertising Design.** 6-1-3. A basic knowledge of design to give the student all phases of layout with a series of lectures, experimental design studies, and layout problems. F.
- 316: **Advertising Design.** 6-1-3. Continuation of Art 315. W.
- 320: **Painting.** 6-1-3. Creative approach to the problems in painting with emphasis on experimentation in various media, subjects, and techniques. Su, F, Sp.
- 321: **Painting.** 6-1-3. Continuation of Art 320. Su, W, Sp.
- 325: **Illustration.** 6-1-3. Introduction to illustration with emphasis on black and white line-cut and screen reproduction. F.
- 326: **Illustration.** 6-1-3. Continuation of Art 325. W.
- 330: **Printmaking.** 6-1-3. An experimental study of technique and design in relief intaglio and planographic methods of producing prints. W, odd.
- 331: **Printmaking.** 6-1-3. Continuation of Art 330. Sp, odd.
- 340: **Metal Work.** 6-1-3. The execution of jewelry in silver and gold and of bowls, bookends, flat ware and the like, in copper, brass, pewter, and silver, using original designs. Sp, even.
- 344: **Weaving.** 6-1-3. Advanced problems in weaving on the following looms: two- and four-harness, Indian, Hungarian, etc. Sp, even.
- 345: **Display.** 6-1-3. The design and construction of three-dimensional forms using a variety of materials, with direction and adaption to window and store display, exhibits, booths, etc. Sp, odd.
- 346: **Ceramics.** 6-1-3. An advanced course in pottery-making, including coiling, pressing, modeling and glazing techniques with special emphasis upon decorative processes. Su, Sp.
- 347: **Ceramics.** 6-1-3. A continuation of Art 346. Su, Sp.
- 352: **Interior Design.** 6-1-3. Problems in designing and drawing plans and elevations of interiors and furniture; development of measured perspective drawings from plans and elevations; free-hand renderings. F.
- 353: **Interior Design.** 6-1-3. A continuation of Art 352. W.
- 354: **Interior Design.** 6-1-3. Continuation of Art 353. Sp.
- 364: **Art Appreciation.** 0-3-3. Study and enjoyment of art in its various expressions. Principles for critical judgment. Art in dress, the home, furniture, textiles, pottery, painting, graphic arts, and civic art. Su, F, Sp.
- 370: **Portraiture.** 6-1-3. Techniques in taking the portrait in black-and-white and color. W.
- 371: **Portraiture.** 6-1-3. Preq., Art 370. Techniques in painting and finishing black-and-white and color portraits. Sp.
- 372: **Commercial Photography.** 6-1-3. Principles and techniques in the production of photographs of buildings, areas, and objects for sale. W.
- 373: **Commercial Photography.** 6-1-3. Preq., Art 372. Continuation of above; advanced techniques. Sp.
- 380: Same as Architecture 380.
- 412: **Studio Problems.** 6-1-3. Advanced problems in advertising art. May be repeated two times for credit. F, Sp.
- 415: **Studio Problems.** 6-1-3. Advanced problems in design. May be repeated two times for credit. F, Sp.
- 420: **Studio Problems.** 6-1-3. Advanced problems in painting. May be repeated two times for credit. F, Sp.
- 427: **Advanced Drawing.** 6-1-3. Interpretive approach to Drawing. May be repeated two times for credit. F, W, Sp.
- 430: **Studio Problems.** 6-1-3. Advanced problems in printmaking. May be repeated two times for credit. F, Sp.
- 440: **Studio Problems.** 6-1-3. An elective course in advanced crafts. May be repeated two times for credit. Su, F, W, Sp.
- 452: **Interior Design.** 6-1-3. Advanced problems in development of plans, elevations, and perspective views of interiors. Mechanical and freehand renderings. Lectures, laboratory, field trips, illustrated reports. May be repeated two times for credit. W.
- 455: **Interior Design.** 0-3-3. A study of various woven materials as they relate to interiors. Sp.
- 456: **Professional Practices.** 6-1-3. Problems in choosing and measuring drapery and carpeting material as related to interiors. Su, F.
- 467: **History of the Arts.** 0-3-3. A survey of the arts: furniture; weaving and textiles; tools and weapons; ornament, both domestic and personal; artifacts of daily life such as painting, sculpture, etc. Offered only on the Rome campus. Su.
- 470: **Motion Picture.** 6-1-3. Introduction to motion picture techniques and equipment; production of basic sequences. F.
- 471: **Motion Picture.** 6-1-3. Preq., Art 470. Study of creative effects and the production of a feature film. May be repeated two times for credit. W.
- 472: **The Photo Story.** 6-1-3. Techniques of taking, printing, and layout for creative production of the photo sequence. Sp.

- 473: **Design by Photography.** 6-1-3. The use of photographic technique for pure art; abstract creative expression using camera and darkroom. May be repeated two times for credit. Sp.
- 474: **Special Problems in Photography.** 6-1-3. This course is designed for the already advanced photographer. It will involve an extensive term project in photography, keyed to the student's special interests. Sp.
- 510-511-512: **Graduate Design.** 6-1-3. each.
- 513-514-515: **Master's Project.** 6-1-3 each.
- 520-521-522: **Advanced Painting.** 6-1-3 each.
- 540-541-542: **Advanced Crafts.** 6-1-3 each.
- 550: **Photographic Projects.** 6-1-3.
- 572: **Portfolio.** 9-0-3.

ARTS AND SCIENCES

- 101: **Orientation.** 0-1-1. Basic rules, policies, history, and organization of the University with special application to Arts and Sciences. F.
- 551: **Research and Thesis.** 3 hours credit or multiple thereof. Maximum credit allowed is 6 hours. Su, F, W, Sp.
- 590: **Research and Dissertation.** Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is 30 semester hours. Su, F, W, Sp.

BACTERIOLOGY

- 210: **Introduction to Microbiology.** 3-2-3. Basic concepts and laboratory procedures involving microorganisms. Su, F, W, Sp.
- 212: **Health Related Microbiological Survey.** 3-3-4. Fundamental concepts and techniques used in medically oriented microbiological studies. Su, F, W, Sp.
- 225: **Microbiology and the Human Environment.** 0-2-2. Relationship of microbial activities to man's daily life habits. Offered for students not majoring in microbiology.
- 306: **Determinative Bacteriology.** 3-2-3. Preq., Bacteriology 210 or 212. Nomenclature and recent concepts of bacterial classification. W.
- 315: **Soil Microbiology.** 3-2-3. Preq., Bacteriology 210 or 212. Microorganisms and microbial activities in soil. Sp.
- 330: **Microbial Physiology.** 3-3-4. Preq., Bacteriology 210 or 212 and Chemistry 250. Basic biochemical and physiological activities of microorganisms. Sp.
- 401: **Sanitary Microbiology.** 3-2-3. Preq., Bacteriology 210 or 212. Microbiology of water and sewage. Su, F.
- 405: **Food and Dairy Microbiology** 3-3-4. Preq., Bacteriology 210 or 212. Microorganisms in the food and dairy industries including those that are utilized in dairy and food processing; spoilage and its control. W.
- 406: **Pathogenic Bacteriology.** 6-2-4. Preq., Bacteriology 210 or 212. Bacteria pathogenic to man; principles of infection and immunity in man and other animals. F, Sp.
- 411: **Virology.** 3-2-3. Preq., Chemistry 250. Viruses and their relationship to disease in plants, animals, and bacteria. W.
- 412: **Immunology.** 3-3-4. Preq., Bacteriology 210 or 212 and advanced standing. A qualitative and quantitative study of antigens and antibodies including the chemical basis of antigen-antibody specificity, mechanisms of hypersensitivity, hypersensitive-like states, and immunological diseases. W.
- 413: **Petroleum Microbiology.** 3-2-3. Preq., Bacteriology 210 or 212 and Chemistry 250. Microorganisms of petroleum products and their effects on the petroleum industry. Sp.
- 415-416: **Seminar.** 0-1-1 each. Preq., consent of the instructor. Selected topics in microbiology and related fields. Su, F, W, Sp.
- 418: **Industrial Microbiology.** 3-3-4. Preq., Bacteriology 210 or 212 and Chemistry 250. Microorganisms of industrial importance, their isolation and identification; stock and starter culture, their maintenance and efficient industrial use; microbial activities in industry. F.
- 425: **Special Problems.** 1-3 hours credit. Preq., consent of the instructor. Credit depends on the nature of the problem and work accomplished. Su, F, W, Sp.
- 505: **Advanced Microbial Physiology.** 3-2-3.
- 506: **Advanced Microbial Physiology.** 3-2-3.
- 507: **Genetics of Microorganisms.** 3-2-3.
- 512: **Advanced Immunology.** 6-1-3.
- 513: **Microbial Degradation.** 6-1-3.
- 514: **Advanced Applied Microbiology.** 3-2-3.
- 520: **Advanced Mycology.** 3-2-3.
- 525: **History and Literature of Microbiology** 0-3-3.

BIOMEDICAL ENGINEERING

- 200: **Biomedical Engineering.** 0-3-3. Science elective for non-engineering students. Emphasis is placed on the basis of interaction between the field of engineering and medicine and on recent developments in the application of biomedical engineering principles.
- 201: **Introduction to Biomedical Engineering.** 0-2-2. Preq., Chemistry 102, credit or registration in Mathematics 230. Basic qualitative and quantitative principles of biomedical engineering are presented. The general field of biomedical engineering is reviewed with respective fundamentals emphasized. F.
- 210: **Biomedical Engineering Instrumentation.** 3-2-3. Preq., Biomedical Engineering 201. Biomedical instrumentation techniques are presented in an applied manner. Basic circuitry, electronics, and laboratory techniques are explored. Sp.
- 301: **Biomedical Fluid Mechanics and Biomedical Energy Transport.** 0-3-3. Preq., Biomedical Engineering 201. The principles of fluid mechanics and thermal energy exchange in living systems are presented from a quantitative viewpoint. W.
- 320: **Bioenergetics.** 0-3-3. Preq., Mathematics 231 and Physics 201. The student is introduced to the concept of bioenergetics—the thermodynamics of living systems. The laws of thermodynamics are emphasized and applied to biological systems. Sp.
- 401: **Biomedical Mass Transport.** 0-3-3. Preq., Biomedical Engineering 301. The transport of liquids, solids and gases between blood flowing through the organs of the body and the surrounding intercellular and intracellular tissue is presented. F.
- 402: **Artificial Internal Organs and Biocompatible Materials.** 0-3-3. Preq., Biomedical Engineering 401. Optimum design, construction and operation parameters are presented and quantitative calculations are conducted. The biocompatibility of different materials is explored. W.
- 403: **Physiological Control Systems.** 0-3-3. Preq., Mathematics 350. Feedback control mechanisms by which the human body maintains its internal environment are presented qualitatively and quantitatively. Sp.
- 440: **Computer Applications for Biomedical Engineers.** 0-3-3. Preq., Mathematics 111 and 112. The course is designed specifically to train the student in the use of the digital computer for the solution of problems related to Biomedical Engineering.
- 501: **Biotransport Phenomena.** 0-3-3.
- 502: **Biotransport Phenomena.** 0-3-3. (Continuation of 501)
- 510: **Bioinstrumentation.** 3-2-3.
- 520: **Design of Artificial Internal Organs.** 0-3-3.
- 540: **System Analysis and Mathematical Modeling of Physiological Phenomena.** 0-3-3.
- 550: **Special Topics.** 0-3-3.

BOTANY

- 101: **General Botany.** 3-3-4. An introduction to the fundamental facts and principles of plant life. Su, F, W, Sp.

- 205: **Plant Anatomy.** 3-2-3. Preq., Botany 101. A comparative study and interpretation of the internal structure of vascular plants. F, Sp.
- 212: **Wildlife Conservation and Management.** 0-3-3. An introduction to the wildlife resources of North America and their interrelations with other natural resources. F, W, Sp.
- 220: **Plant Physiology.** 3-2-3. Preq., Botany 101 and Chemistry 102. Study of life processes and functions of plants. F, Sp.
- 221: **Taxonomy and Morphology of Early Vascular Plants.** 3-2-3. Preq., Botany 101. Survey of most primitive vascular plants through fern allies. F.
- 222: **Taxonomy and Morphology of Ferns and Gymnosperms.** 3-2-3. Preq., Botany 221. Survey of ferns and gymnosperms. W.
- 223: **Taxonomy and Morphology of Angiosperms.** 3-2-3. Preq., Botany 222 or consent of the instructor. Survey of the flowering plants. Sp.
- 225: **General Science.** 0-3-3. A general course embracing the principles of the biological and physical sciences, designed especially for students who are preparing to become elementary teachers. Su, F, W, Sp.
- 320: **Plant Ecology.** 3-2-3. Preq., Botany 220 and Botany 223. A study of plants and plant communities in relation to their environment. W, Sp.
- 330: **Plant Pathology.** 3-2-3. Preq., Botany 101. A study of the nature of plant diseases and disorders. F.
- 345: **Food Plants of Game Animals.** 3-2-3. Preq., Botany 223. Study of higher forms of land plants that supply food for game animals. Su.
- 350: **Mycology.** 3-3-4. Preq., Botany 101. Morphology, taxonomy, development and phylogeny of fungi. F.
- 351: **Phycology.** 3-3-4. Preq., Botany 101. Morphology, taxonomy, development and phylogeny of algae. Sp.
- 352: **Bryology.** 3-2-3. Preq., Botany 101. Morphology, taxonomy, development and phylogeny of mosses and allies. W.
- 401: **Advanced Plant Pathology.** 3-2-3. Preq., Botany 220 and Botany 330. A course concerned with basic phytopathological techniques. W.
- 410: **Medical Mycology.** 3-2-3. Preq., Botany 350. Fungi pathogenic to man and other animals. W.
- 411: **Nature Study.** 0-3-3. Preq., junior standing. A study of flowers, shrubs, trees, birds, and insects. This course is offered especially for elementary teachers. Su.
- 412: **Plant Microtechnique.** 3-2-3. Preq., consent of the instructor and junior standing. Techniques of preparing slides of plant tissues for microscopic study. Su, W.
- 413: **Economic Botany.** 0-3-3. Preq., junior standing. Principal plants of economic importance to man. Su, W.
- 415-416: **Seminar.** 0-1-1 each. Preq., approval of the head of the department. A review of current literature and problems under investigation in plant science. Su, F, W, Sp.
- 425: **Special Problems.** 1-3 hour(s) credit. Preq., consent of department head, for departmental majors only. Su, F, W, Sp.
- 441-442-443: **Wildlife Management Internship.** 3 hours credit each. 40 hours per week. Work experience in the use of the equipment, materials, and procedures in wildlife management.
- 505: **Advanced Plant Physiology.** 3-2-3.
- 507: **Advanced Plant Taxonomy.** 3-2-3.
- 508: **Field Botany.** 3-2-3.
- 515: **Advanced Plant Ecology.** 3-2-3.
- 520: **Advanced Mycology.** 3-2-3.
- 525: **Advanced Plant Anatomy.** 3-2-3.
- 535: **History and Literature of Botany.** 0-3-3.

BUSINESS LAW

- 350: **Legal Environment of Business.** 0-3-3. Preq., junior standing. Designed to introduce the student to the legal environment in which business decisions are made with an introduction to business organization, torts, government regulations, taxation, and legal profession. Su, F, W, Sp.
- 351: **Contracts and Agency.** 0-2-2. Preq., Business Law 350 with an emphasis on contracts and agency. Su, F, W, Sp.
- 352: **Negotiable Instruments.** 0-2-2. Preq., Business Law 350. Sales, negotiable instruments, the Uniform Commercial Code, and bankruptcy. Su, F, Sp.
- 441: **Real Property.** 0-3-3. Preq., Business Law 351 or 352. Estates in land, titles, deeds, mortgages, leases, land contracts, minerals, easements and successions. F.
- 445: **Legal Aspects of Government and Business.** 0-3-3. Preq., Business Law 351 or 352 or special permission of the instructor. A study of landmark law cases with special emphasis placed on guideline interpretive decisions of significance to management. W.
- 447: **Labor Law.** 0-3-3. A survey of landmark cases involving the labor movement, federal and state wage and hour laws, industrial relations and current issues in labor law. Sp.

CHEMICAL ENGINEERING

- 201: **Introduction to Chemical Engineering.** 0-2-2. Preq., Chemistry 102, credit or registration in Mathematics 230. Broad perspective of field. Human relations, mathematical tools, important concepts of physics and chemistry. Introduction of economics, material and energy balances, and equipment and machinery. Su, F.
- 202: **Chemical Engineering Calculations.** 0-3-3. Preq., Chemical Engineering 201. Problems and recitation in material and heat balances involved in chemical processes. Application of chemical engineering and chemistry to manufacturing in chemical industries. W.
- 254: **Laboratory Measurements and Report Writing.** 3-0-1. Preq., Chemistry 102. A study of applied analytical procedures and measurement of process variables in chemical processing—and an introduction to technical report writing. W, Sp.
- 301: **Unit Operations.** 0-2-2. Preq., Chemical Engineering 202. Quantitative problems to develop the principles and applications of crushing, grinding, classification, size separation, fluid flow and fluid metering. F.
- 303: **Unit Operations.** 0-2-2. Preq., Chemical Engineering 301. Quantitative problems to develop the principles and applications of heat transmission, evaporation, and crystallization. W.
- 306: **Chemical Engineering Materials.** 0-2-2. A study of the basic principles which relate the properties of materials to their internal structures and environments; and of the behavior of materials in service. Su, W.
- 321: **Chemical Engineering Thermodynamics.** 0-2-2. Applications of the laws of thermodynamics to chemical engineering process. F, Sp.
- 322: **Chemical Engineering Thermodynamics.** 0-2-2. Preq., Chemical Engineering 321. Application of activity, fugacity and chemical equilibria to chemical engineering processes. Su, W.
- 350: **Chemical Engineering Problems.** 3-0-1. Preq., Math 350, credit or registration in Chemical Engineering 301. Solution of chemical engineering problems using basic analog and digital computing techniques. W, Sp.
- 351: **Unit Operations Laboratory.** 3-0-1. Preq., Chemical Engineering 301. Laboratory work demonstrating the principles and applications of crushing, grinding, classification, size separation, fluid flow and fluid metering. W.

- 352: **Unit Operations Laboratory.** 3-0-1. Preq., Chemical Engineering 303. Laboratory work demonstrating the principles and applications of heat transmission, evaporation and crystallization. Sp.
- 401: **Unit Operations.** 0-3-3. Preq., Chemical Engineering 303, credit or registration for Chemistry 311. Quantitative problems to develop the principles and applications of humidification, drying, distillation, absorption, and extraction. F.
- 402: **Chemical Engineering Kinetics.** 0-2-2. Preq., Chemical Engineering 303. Kinetics of heterogeneous reactions including catalysis and absorption and catalytic vapor phase reactions. Acquisition and interpretation of rate data. Homogeneous reactor design. Mass and heat transfer in catalytic beds. Su, W.
- 407: **Instrumentation and Automatic Process Control.** 3-2-2. Preq., senior standing in engineering. Characteristics, limitations, and control of process variables by automatic instruments. Analog computer applications. W, Sp.
- 410: **Industrial Waste Treatment.** 0-3-3. Methods of treating and/or disposal of industrial solid, liquid and gaseous wastes. Emphasis placed on fundamental physical, chemical and biological processes. Su, W, Sp.
- 412: **Applied Problems in Chemical Engineering.** 0-3-3. Preq., junior standing. Methods of handling rate processes, graphical treatment of data, nomography and numerical analysis. Sp.
- 414: **Industrial Radioactive Isotopes.** 3-2-3. Preq., junior standing. A survey of the industrial applications of radioactive isotopes. Basic concepts in nuclear physics, measurement techniques, radiation safety and instrumentation are presented. F, Sp.
- 420: **Introduction to Nuclear Engineering.** 0-3-3. Preq., junior standing. An introduction to nuclear reactor technology. Engineering concepts in reactor design, fuel preparation, economics, shielding, instrumentation, construction and safety are presented. W.
- 421: **Reactor Engineering.** 0-3-3. Preq., Chemical Engineering 420. Advanced concepts in nuclear reactor design. Mechanical and nuclear properties of solid and fluid reactor systems. Thermal and structural problems are presented. Sp.
- 424: **Seminar.** 0-1-1. Open to seniors. Opportunity is offered for technical discussion, reading of assigned papers and informal presentations. Seminar further serves to bring the student abreast of current engineering thought. W, Sp.
- 432: **Chemical Plant Design.** 0-2-2. Preq., senior standing in chemical engineering. Comprehensive problems are assigned, the solution of which enables one to calculate dimensions and capacities of required plant equipment. Computer applications. F, Sp.
- 434: **Chemical Plant Design continued.** 3-1-2. Preq., Chemical Engineering 432. Su, W.
- 440: **Theoretical Models in Engineering.** 0-3-3. The methodology of constructing, treating, and operating with theoretical models in order to draw objective conclusions concerning physical, chemical, and economic systems and interactions. Su, W.
- 441: **Advanced Engineering Computations.** 0-3-3. Preq., senior standing. Emphasis is placed on the digital, simulation computer solutions of mathematical models in engineering analysis, design, and operation. Sp.
- 442: **Process Optimization.** 0-3-3. Preq., senior standing. An objective study of the present status of optimization methodology as applied to the chemical process industries. Both deterministic and non-deterministic systems are considered. Sp.
- 445: **Pulp and Paper Manufacturing.** 0-3-3. Preq., senior standing. An introduction to engineering applications and techniques in the pulp and paper industry. Chemical, semichemical, and unconventional paper making and conveying operations. Sp.
- 451: **Unit Operations Laboratory.** 6-0-2. Preq., senior standing in chemical engineering. Laboratory work in humidification, drying, distillation, absorption, and extraction. W, Sp.
- 452: **Special Projects Laboratory.** 3-0-1. Preq., senior standing in Chemical Engineering. Selected comprehensive problems. Study and/or laboratory development of: industrial unit operations; new chemical processes; improvement of established processes; economic evaluations. Theoretical studies. Su, Sp.
- 470: **Sanitary Engineering Processes.** 2-0-2. Theory and techniques of physical and chemical processes used for water quality control. Topics considered include aeration, coagulation, flocculation, sedimentation, ion exchange, filtration, sorption, and chlorination. W.
- 501: **Advanced Unit Operation.** 0-3-3.
- 503: **Advanced Heat Transfer.** 0-3-3.
- 504: **Advanced Chemical Engineering Kinetics.** 0-3-3.
- 505: **Petroleum Refining.** 0-3-3.
- 509: **Theoretical and Empirical Mass Transfer.** 0-3-3.
- 510: **Industrial Applied Research.** 0-3-3.
- 511: **Transport Phenomena.** 0-3-3.
- 512: **Advanced Data Correlations.** 0-3-3.
- 513: **Transport Phenomena.** 0-3-3.
- 514: **Advanced Fluid Mechanics.** 0-3-3.
- 515: **Process Dynamics.** 0-3-3.
- 516: **Advanced Process Dynamics and Automatic Control.** 0-3-3.
- 522: **Advanced Thermodynamics.** 0-3-3.
- 524, 525, 526: **Seminar.** 0-1-1 each.
- 545: **Engineering Practice Laboratory.** 6 hours credit.
- 546: **Engineering Practice Laboratory.** 6 hours credit.
- 550: **Special Problems.** 1-4 semester hours.

CHEMISTRY

- 101: **General Chemistry.** 0-3-3. Coreq., Chemistry 103 or 105. Fundamental principles of chemistry. Su, F, W, Sp.
- 102: **General Chemistry.** 0-3-3. Preq., Chemistry 101 plus either Chemistry 103 or Chemistry 105. Coreq., either Chemistry 104 or Chemistry 106. Continuation of Chemistry 101. Su, F, W, Sp.
- 103: **General Chemistry Laboratory.** 4¼-0-1. Coreq., Chemistry 101. Laboratory practice in general chemistry. Su, F, W, Sp.
- 104: **Qualitative Inorganic Analysis.** 4¼-0-1. Coreq., Chemistry 102. An introductory course in the identification of common cations. Su, F, W, Sp.
- 105: **General Chemistry Laboratory.** 8½-0-2. Coreq., Chemistry 101. Laboratory work in general chemistry including an introduction to quantitative inorganic analysis. W.
- 106: **Qualitative Inorganic Analysis.** 8½-0-2. Coreq., Chemistry 102. An introductory course in the identification of common cations and anions. Sp.
- 111: **Cultural Chemistry.** 0-3-3. A non-mathematical introductory course in chemistry for non-science majors. Su, F, W, Sp.
- 120: **General Chemistry.** 0-2-2. Fundamental principles of chemistry with emphasis on applications to the life sciences. F, Sp.
- 121: **General Chemistry.** 0-2-2. Preq., Chemistry 120; coreq., Chemistry 123. A continuation of Chemistry 120. W, Sp.
- 122: **General Chemistry.** 0-2-2. Preq., Chemistry 121; coreq., Chemistry 124. A continuation of Chemistry 121. W, Sp.
- 123: **General Chemistry Laboratory.** 4¼-0-1. Coreq., Chemistry 121. Laboratory practices in general chemistry with particular emphasis on life science problems. W, Sp.
- 124: **General Chemistry Laboratory.** 4¼-0-1. Preq., Chemistry 121 and 123; coreq., Chemistry 122. A continuation of Chemistry 123. W, Sp.
- 205: **Quantitative Analysis.** 8½-2-4. Preq., Chemistry 102 or 122. Theory and practice in gravimetric and volumetric analysis for inorganic materials. Su, F, Sp.
- 212: **Radiochemistry.** 4¼-2-3. Preq., Chemistry 102 or 122. Fundamental principles of radiochemistry. F, Sp.

- 220: **Organic Chemistry.** 4¼-3-4. Prep., Chemistry 102 or 122. A general one-quarter course in the chemistry of the carbon compounds. Su, F, Sp.
- 221: **Chemistry.** 0-3-3. Preq., Chemistry 220 and Medical Technology 341. A survey of organic chemistry with emphasis on physiological applications.
- 250: **Organic Chemistry.** 0-2-2. Preq., Chemistry 102 or 122. Introduction to organic chemistry with emphasis on structure and reactivity. F, Sp.
- 251: **Organic Chemistry.** 0-2-2. Preq., Chemistry 250; coreq., Chemistry 253. Continuation of Chemistry 250 with emphasis on aliphatic compounds and reaction mechanisms. Su, W.
- 252: **Organic Chemistry.** 0-2-2. Preq., Chemistry 251; coreq., Chemistry 254. Continuation of Chemistry 251 with emphasis on aromatic compounds and reaction mechanisms. Su, Sp.
- 253: **Organic Chemistry Laboratory.** 4¼-0-1. Preq., Chemistry 102 and 122; coreq., Chemistry 251. Basic techniques in organic chemistry. Su, W.
- 254: **Organic Chemistry Laboratory.** 4¼-0-1. Preq., Chemistry 250 and 253; coreq., Chemistry 252. Introduction to organic syntheses. Su, Sp.
- 255: **Organic Qualitative Analysis.** 8½-0-2. Preq., Chemistry 251 and 254; coreq., Chemistry 252. Systematic separation and identification of organic compounds. F.
- 260: **Chemistry of Natural Products.** 0-2-2. Preq., Chemistry 250 or 220 and consent of the instructor. Chemistry of carbohydrates, amino acids, proteins and lipides.
- 261: **Chemistry of Natural Products.** 0-2-2. Preq., Chemistry 260 or consent of the instructor. Chemistry of terpenes, steroids, plant pigments, nucleic acids and other compounds of biological significance.
- 271: **Outlines of Biochemistry.** 0-4-4. Preq., Chemistry 220 or 250-251, and concurrently with Chemistry 252. Chemistry 205 recommended. General survey of biochemical principles and of the chemistry of biological systems. Also an introduction to metabolic pathways in plants, animal, and microbial systems. Sp.
- 301: **Introduction to Methods of Chemical Research.** 4¼-0-1. Preq., Chemistry 220 or 251, and permission of instructor. Closely supervised undergraduate research in chemistry. Su, F, W, Sp.
- 302: **Introduction to Methods of Chemical Research.** 8½-0-2. Preq., Chemistry 220 or 251, and permission in instructor. Closely supervised undergraduate research in chemistry. Su, F, W, Sp.
- 303: **Introduction to Methods of Chemical Research.** 12¾-0-3. Preq., Chemistry 220 or 251, and permission of instructor. Closely supervised undergraduate research in chemistry. Su, F, W, Sp.
- 311: **Physical Chemistry.** 0-3-3. Preq., Mathematics 231 and Physics 202. Basic theories of chemistry with emphasis on the atomic-molecular theory and thermodynamics. F, Sp.
- 312: **Physical Chemistry.** 0-3-3. Preq., Chemistry 311. Basis theories of chemistry with emphasis on chemical thermodynamics, chemical kinetics, and electrochemistry. Su, W.
- 313: **Physical Chemistry Laboratory.** 4¼-0-1. Preq., Chemistry 102 or 122. Laboratory experiments in physical chemistry. F, Sp.
- 314: **Physical Chemistry Laboratory.** 4¼-0-1. Preq., Chemistry 311 and 313 and simultaneous registration in Chemistry 312. Continuation of Chemistry 313. Su, W.
- 330: **Physical Chemistry.** 4¼-3-4. Preq., one of the following courses: Chemistry 205, 220, or 250, also Mathematics 111 and 112, plus either Physics 202 or Physics 210. A course in physical chemistry not requiring calculus. Emphasis is placed on the physical chemistry of living organisms. W.
- 351: **General Biochemistry.** 4¼-3-4. Preq., Chemistry 102 or 122, plus either Chemistry 220 or 250. The chemistry of biologically important compounds including fats, carbohydrates, proteins, enzymes, vitamins, and hormones. F, Sp.
- 352: **General Biochemistry.** 4¼-3-4. Preq., Chemistry 351. A continuation of Chemistry 351. W.
- 381: **Intermediate Organic Chemistry.** 8½-2-4. Preq., Chemistry 252 and 255; coreq., Chemistry 311. A more advanced study of organic syntheses and reaction mechanisms.
- 401: **Chemical Research.** 4¼-0-1. Preq., Chemistry 250, 252 and 312. Su, F, W, Sp.
- 402: **Chemical Research.** 8½-0-2. Preq., Chemistry 250, 252 and 312. Su, F, W, Sp.
- 403: **Chemical Research.** 12¾-0-3. Preq., Chemistry 250, 252 and 312. Su, F, W, Sp.
- 409: **Advanced Organic Chemistry.** 0-3-3. Preq., Chemistry 252 and 312. A study of theoretical organic chemistry with emphasis on reaction mechanisms. F.
- 414: **Advanced Organic Chemistry.** 0-3-3. Preq., Chemistry 252 and 312. A study of theoretical organic chemistry with emphasis on chemical bonding.
- 420: **Chemical Thermodynamics.** 0-3-3. Preq., Chemistry 312. The thermodynamics of gases, solutions, galvanic cells, surface systems, and irreversible processes. An introduction to statistical thermodynamics and the estimation of thermodynamic functions from spectrographic data. W.
- 423: **Colloid Chemistry.** 0-3-3. Preq., Chemistry 312. The chemistry of organic and inorganic dispersions and physicochemical methods for their study. F.
- 424: **Advanced Physical Chemistry.** 0-3-3. Chemistry 312. or Physics 410 and Mathematics 350. A continuation of Chemistry 311-312, including the study of the structure of atoms and molecules, an introduction to statistics, and selected topics in modern physical chemistry. F.
- 458: **Advanced Food Chemistry.** 0-2-2. Preq., Organic Chemistry (including laboratory) and consent of the instructor. Chemistry 351 or 261 recommended. Chemistry of natural food toxicants, mutagenic compounds and food additives.
- 459: **Advanced Techniques in Food Chemistry.** 4¼-1-2. Preq., Chemistry 205, 255, 458 and 465 are recommended. Detection, isolation and characterization of trace constituents in foods.
- 465: **Analytical Chemistry.** 8½-2-4. Theory and practice of volumetric, gravimetric, and electro-metric methods of analysis.
- 466: **Analytical Chemistry.** 8½-2-4. Preq., Chemistry 312. Theory and practice of optical methods of analysis, advanced electrical techniques, and modern separation methods. Sp.
- 481: **Advanced Inorganic Chemistry.** 0-3-3. Preq., Chemistry 252, 312. An advanced study of the periodic classification of elements, their reactions, and other inorganic principles. Sp.
- 501: **Physical Organic Chemistry.** 0-3-3.
- 502: **Selected Topics in Organic Chemistry.** 0-3-3.
- 504: **Chemistry of Heterocyclic Compounds.** 0-3-3.
- 520: **Molecular Spectroscopy.** 0-3-3.
- 523: **Special Topics in Physical Chemistry.** 0-3-3.
- 524: **Quantum Chemistry.** 0-3-3.
- 553: **Plant Biochemistry.** 0-3-3.
- 554: **Chemistry of Microorganisms.** 0-3-3.
- 555: **Special Topics in Biochemistry.** 0-3-3.
- 556: **Protein Chemistry.** 0-3-3.
- 563: **Advanced Analytical Chemistry.** 0-3-3.
- 584: **Chemistry of Coordination Compounds.** 0-3-3.
- 585: **Inorganic Preparations.** 8½-0-2.

CIVIL ENGINEERING

- 232: **Geometric Design of Routes.** 4-2-3. Preq., Civil Engineering 254. Theory and computations for horizontal and vertical curves; calculation of earthwork quantities; analysis of earthwork distribution. F.
- 254: **Plane Surveying.** 8-2-4. Preq., Mathematics 112. Theory, field measurements, and computation, and error analysis associated with land, traverse, and topographic surveys. F, Sp.

- 255: **Advanced Surveying.** 4-1-2. Preq., Civil Engineering 254. Precise horizontal and vertical control, celestial observations, electronic measurements, state plane coordinate systems. Sp, even.
- 256: **Computer Methods in Surveying Calculations.** 3-1-2. Preq., Civil Engineering 254. Programming surveying calculations for the digital computer. Problem oriented languages with emphasis on COGO. Use of smaller office computers. W.
- 257: **Practical Surveying.** Three semester hours. Preq., Civil Engineering 254. (Pass-Fail Basis). An on-the-job training program where the student is employed by a registered surveyor for a minimum period of 300 working hours in a program of work approved by the department head.
- 302: **Engineering Materials.** 4-1-2. Preq., credit or registration in Engineering Mechanics 301. Mechanical behaviour of engineering materials, determination of strength and other properties of materials, conventional and true stress-strain, failure mechanisms. Su, W.
- 304: **Remote Sensing.** 4-1-2. Preq., Mathematics 112. Basic introduction to remote sensing. Measurements and mapping from aerial photographs. Photo interpretation. Height determination by parallax. F, Sp.
- 310: **Hydrology.** 0-2-2. The occurrence and movement of water on and below the surface of the earth. Precipitation, runoff and stream flow; infiltration and ground water. Su, W.
- 314: **Environmental Engineering.** 3-3-4. Preq., Civil Engineering 391. Introduction to principles of water and waste water treatment, air pollution and public health engineering. Sp.
- 324: **Soils Engineering.** 4-2-3. Preq., Engineering Mechanics 301 and Geology 111. Introduction to soil mechanics and its application in civil engineering. Exploration and soil testing required for design of foundations, retaining walls, and other engineering structures. Sp.
- 332: **Transportation Engineering.** 0-3-3. Preq., Engineering Mechanics 202. Introduction to transportation facilities; urban transportation planning; land, air, and water transportation facilities; future developments in transportation. Sp.
- 346: **Theory of Simple Structures.** 0-2-2. Preq., Engineering Mechanics 202. Reactions, shears, moments; influence lines, maximum shears, moments due to live loads; dead and live load stresses in simple roof and bridge trusses. Sp.
- 391: **Hydraulics.** 4-1-2. Preq., Engineering Mechanics 321. Elements of flow in open channels and in pipelines; general fluid mechanics laboratory; fluid measurements; and hydraulic models. W.
- 400: **City Planning.** 0-3-3. Preq., junior standing. Objectives and main elements of a master plan for an urban community. Special physical, social, legal, economic and administrative problems of villages and metropolitan areas. Su, W.
- 413: **Water Resources Design.** 3-2-3. Preq., Civil Engineering 310 and 314. Design of water supply and pollution control facilities. F.
- 414: **Public Health Engineering.** 0-3-3. Preq., senior standing. Public health engineering practices. Characteristics of disease, means of transmission and preventive measures through control of the environment. Sp, even.
- 415: **Water Resources Practices.** 0-3-3. Preq., Civil Engineering 314. Introduction to water resources management, natural and man modified resource systems. Water management legislation and introduction to water resources economic analysis. F.
- 416: **Hydraulic Facilities Design.** 0-2-2. Preq., Civil Engineering 456. Hydraulic design of spillways, stilling basins, canals, transitions, culverts, and bends. W.
- 417: **Groundwater Hydrology.** 0-3-3. Preq., Civil Engineering 310. Groundwater occurrence, movement and quality, well hydraulics, basin development, and model studies. Sp, odd.
- 418: **Water and Wastewater Engineering.** 0-2-2. (Not open to Civil Engineering majors). Introduction to principles of hydrology and of water resource development and management for municipal and industrial use.
- 424: **Seminar.** 0-1-1. Open to seniors. Opportunity is offered for discussion, reading of assigned papers, informal talks by instructors and professional engineers, debates on matters of current interest. Su, F, W, Sp.
- 425: **Traffic Engineering.** 0-3-3. Preq., Civil Engineering 332. Traffic characteristics, vehicle operating characteristics, traffic control, and design of traffic facilities. Basic traffic studies, capacity, signing and signalization, speed regulation and parking. F.
- 427: **Design of Highway and Airport Pavements.** 0-3-3. Preq., Civil Engineering 332. Flexible and rigid pavement types. Factors affecting stresses and strains in pavement layers. Design criteria and structural design methods for highway and airport pavements. W.
- 433: **Land Surveying.** 0-3-3. Preq., Civil Engineering 254. Legal principles and terms related to the establishment of real property boundaries. Property descriptions and layout, mineral claims. W.
- 443: **Analysis of Continuous Structures.** 0-2-2. Preq., Engineering Mechanics 301. Applications of area-moment theorems, slope deflection, moment distribution, limit design theory. F.
- 444: **Reinforced Concrete.** 0-3-3. Preq., Civil Engineering 346. Principles underlying the design of integral parts of reinforced concrete structures: beams, girders, slabs, columns, retaining walls. Ultimate strength design. Su, W.
- 446: **Indeterminate Structures.** 0-2-2. Preq., Civil Engineering 346, or consent of instructor. Deflection of structures by virtual work, least work, area-moment methods and graphically by the Williot-Mohr diagram. Analysis of statically indeterminate structures. W.
- 447: **Prestressed Concrete Structures.** 0-3-3. Preq., Civil Engineering 444. Materials and prestressing systems; analysis and design of sections for flexure, shear, bond, and bearing; beam deflections and layout. Continuous beams. Sp.
- 450: **Special Problems.** 1-4 hours credit. Preq., senior standing and consent of instructor. Planning, organization, and solution of problems in Civil Engineering. Su, F, W, Sp.
- 456: **Hydraulics of Open Channels.** 0-2-2. Preq., Civil Engineering 391. Basic concepts of open channel flow. Energy and momentum principles. Computation of uniform and nonuniform flow. F.
- 465: **Structural Design and Theory.** 4-2-3. Preq., Civil Engineering 346. Design of members and connections in metals and timber. F.
- 501: **Frame Analysis.** 0-3-3.
- 502: **Computer Methods of Structural Analysis.** 0-3-3.
- 503: **Advanced Reinforced Concrete.** 0-3-3.
- 504: **Stress Analysis & Models.** 4-2-3.
- 505: **Plastic Analysis and Design.** 0-3-3.
- 510: **Advanced Soil Mechanics.** 0-3-3.
- 516: **River Hydraulics.** 0-2-2.
- 525: **Hydrologic Techniques.** 0-2-2.
- 526: **Advanced Hydrology.** 0-2-2.
- 530: **Water Quality Improvement.** 3-2-3.
- 535: **Water Supply Systems.** 3-2-3.
- 536: **Wastewater Disposal Systems.** 3-2-3.
- 541: **Advanced Hydraulics Laboratory.** 8-1-3.
- 542: **Hydraulic Engineering.** 0-3-3.
- 550: **Special Problems.** 1-4 hours credit.

CIVIL TECHNOLOGY

- 102: **Introduction to Engineering Technology.** 3-0-1. An introductory study of the characteristics and "tools" of the field of engineering technology: the slide rule, visual presentation of data, technical reporting and the fundamental steps of engineering design. F.
- 205: **Applied Mechanics:** 0-3-3. Preq., Mathematics 112. A study of the application of the principles

- of physics: force systems, equilibrium, center of gravity, kinematics, kinetics, work and energy.
- 206: **Applied Statics.** 0-3-3. Preq., Mathematics 112. Mechanics of rigid bodies. Force systems. Fundamental concepts of static equilibrium. Centroids, moments of inertia and friction. Su, F, W, Sp.
- 207: **Strength of Materials.** 0-3-3. Preq., Civil Technology 206. Mechanics of deformable bodies. Stresses and strains. Beam deflections. Column theory. Torsion. Su, F, W, Sp.
- 210: **Basic Hydraulics.** 4-2-3. Preq., Civil Technology 205. Physical phenomena of hydraulics with application of the fundamental laws and empirical formulae. Pressure forces on submerged areas, buoyancy, flow in closed conduits and open channels and fluid measurements. Su, Sp.
- 211: **Water Supply and Wastewater Control.** 4-3-4. Preq., Civil Technology 210. An introduction to the engineering aspects of water supply and distribution and wastewater collection, removal and disposal.
- 220: **Water Analysis: Bacteriology.** 8-1-3. Preq., Chemistry 103 and Bacteriology 210 or 212. A study of laboratory procedures as applied to water analysis for water purification and waste treatment process control.
- 221: **Wastewater Treatment.** 8-2-4. Preq., Civil Technology 220. An introduction to the elementary engineering aspects of the design, operation, and maintenance of wastewater treatment plants.
- 222: **Water Purification.** 4-2-3. Preq., Civil Technology 220. An introduction to the elementary engineering aspects of the design, operation and maintenance of water purification plants.
- 231: **Air Pollution Control.** 0-3-3. Preq., Civil Technology 205. An introduction to the elementary engineering aspects of the design and operation of air pollution control systems.
- 232: **Solid Waste Disposal.** 0-3-3. Preq., Civil Technology 205. A study of the procedures, equipment and systems for collection and disposal of solid wastes.
- 326: **Foundation Design.** 0-3-3. Preq., Civil Technology 344. Design of footings, slabs, caissons and pile foundations. W.
- 340: **Materials of Construction.** 4-2-3. A study of materials of construction, their properties and use in modern construction, with emphasis on codes and specifications. Su, F.
- 341: **Construction Equipment and Methods.** 0-3-3. Construction procedures and equipment, selection and efficient use of equipment. Su, F.
- 342: **Elementary Structures.** 0-2-2. Preq., Civil Technology 207. Interaction of structural members under conditions of loading, theory and practice of design of structures. Su, W.
- 343: **Construction Management.** 0-3-3. A study of all aspects of construction management which contribute directly to the successful accomplishment of a project. Organization, planning and scheduling, with emphasis on CPM and PERT. Su, W.
- 344: **Reinforced Concrete Design.** 3-2-3. Preq., Civil Technology 342. Analysis and design of concrete slabs and structural framing members. Su, F.
- 432: **Estimating.** 0-3-3. Material takeoff from blueprints and specifications. Detailed labor and material estimates for various types of construction. Preparation of bids for construction contracts. Sp.
- 459: **Roof Structures.** 0-2-2. Preq., Civil Technology 342. Analysis and design of roof systems. Su, W.
- 464: **Design of Structures.** 3-2-3. Preq., Civil Technology 459. Design of elementary structures in timber and steel. Su, Sp.
- 102: **Introduction to Computing Laboratory.** 0-2-2. Continuation of Computer Science 101, with emphasis on numerical algorithms. Su, W.
- 104: **Introduction to Computing Laboratory.** 3-0-1. Programming in higher level languages with emphasis on non-numerical algorithms. Su, Sp.
- 106: **Introduction to Computing Laboratory.** 3-0-1. Preq., Computer Science 101 or consent of instructor. Programming in higher level languages with emphasis on numerical and non-numerical algorithms using the PL/1 language. Su, W.
- 190: **FORTRAN IV Programming.** 0-1-1. Computer programming using the FORTRAN (FORmula TRANslator) compiler language. Designed to provide a comprehensive background in scientific oriented programming.
- 191: **COBOL Programming.** 0-1-1. Computer programming using the COBOL (COmmon Business Oriented Language) compiler language. Designed to provide a comprehensive background in business oriented programming.
- 192: **PL/1 Programming.** 0-1-1. Computer programming using the PL/1 (Programming Language-1) compiler language. Designed to provide a comprehensive background in a language that combines some of the features of both FORTRAN and COBOL languages.
- 193: **Assembly Programming.** 0-1-1. Computer programming using the IBM 360-370 assembly language code. Designed to provide a comprehensive background in assembly language coding for the IBM 360/370 computers.
- 194: **Simulation Programming.** 0-1-1. Computer programming using the simulation language of G.P. S.S. (General Purpose Simulation System). Designed to provide a comprehensive background in using the computer to simulate real systems.
- 201: **Information Processing.** 0-2-2. Preq., Computer Science 101, 102, and 104. Principles and application of digital computers in solution of data reduction, information retrieval, and large scale data processing problems. F.
- 206: **Introduction to Computing Laboratory.** 3-0-1. Preq., Computer Science 101. Functional characteristics of digital computer and assembly language. Su, W.
- 214: **Systems Programming.** 0-3-3. Preq., Computer Science 201 and 206. Assembly systems with macro facilities, program segmentation and linkage considerations, system data management services, program design and debugging facilities. Sp.
- 303: **Introduction to Discrete Structures.** 0-2-2. Preq., Computer Science 214 and Mathematics 308. Topics from mathematical logic that relate to Computer Science, introduction to combinatorics and graph theory; turing machines and Markov algorithms. F.
- 424: **Seminar.** 0-1-1. Preq., senior standing in Computer Science. Preparation and presentation of reports on projects and topics relating to Computer Science. Sp.
- 450: **Information Structures.** 0-3-3. Preq., Computer Science 214 and 303, or consent of the instructor. Relations between data, storage media structures and processing systems; storage allocation; lists, strings, arrays, trees; linked structures; ordering and search techniques. W.
- 451: **Language and Compilers.** 0-3-3. Preq., Computer Science 214 and 303, or consent of instructor. Formal definition of programming languages; notation and precedence of statements; global properties; run-time representation of program and data structures. F.
- 452: **Systems: Hardware.** 0-3-3. Preq., Computer Science 214 and 303, or consent of instructor. Functional organization of computing systems; investigation of various functional design choices; design and simulation of a simple computer. Sp.
- 453: **Systems: Software.** 0-3-3. Preq., Computer Science 450, 451, and 452 or consent of instructor. Components, characteristics, limitations of systems pro-

COMPUTER SCIENCE

- 101: **Introduction to Computing.** 0-2-2. Introduction to the concepts of algorithmic problem solving; basic programming; data representation and manipulation; organization and characteristics of computers. F, Sp.

grams; I/O-processing overlap and interrupts; multiprogramming, multi-processing configurations; system control, interfaces, and communication. W.

- 460: **Computer Systems Engineering.** 0-3-3. Preq., Computer Science 453 or concurrent, or consent of instructor. Interaction of hardware, software and personnel in a computing system; evaluation of functional properties, capabilities and limitations of system components. Sp.
- 461: **Data Base Systems.** 0-2-2. Preq., Computer Science 450 or consent of instructor. Concepts of data design for efficiency and utility in construction, maintenance, and processing; design and implementation of a simple data base. F.
- 462: **Problem Oriented Languages.** 0-2-2. Preq., Computer Science 451 or consent of instructor. Principles of design of languages oriented to solution of a particular class of problems; design and implementation of a simple language. W.
- 490: **Applied Computing Project.** 0-1-1. Preq., junior standing in Computer Science or equivalent. Independent investigation of a problem, to lead to designing, programming, debugging, and documenting a solution. May be taken a maximum of three times. F, Sp.
- 501: **Real-Time Computer Systems.** 0-3-3.
- 503: **Data Processing Systems.** 0-3-3.
- 504: **Automated Systems.** 0-3-3.
- 511: **Design and Construction of Compilers.** 0-3-3.
- 521: **Computer Systems Organization.** 0-3-3.
- 531: **Systems Programming.** 0-3-3.
- 550: **Special Problems.** 1-4 semester hours credit.

COUNSELING

- 500: **Administration and Organization of Guidance Services.** 0-3-3.
- 505: **Analysis of the Individual.** 5-2-3.
- 508: **Introduction to Counseling Theories.** 0-3-3.
- 513: **Education and Occupational Information.** 0-3-3.
- 514: **Career Education: Vocational Guidance.** 0-3-3.
- 515: **Career Education: Orientation of the World of Work.** 0-3-3.
- 516: **An Introduction to Group Processes.** 0-3-3.
- 518: **Techniques of Counseling.** 3-2-3.
- 519: **Advanced Theories in Counseling.** 0-3-3.
- 520: **Case Studies in Counseling.** 1-3 hours credit.
- 521: **Seminar: Current Psychological Literature.** 1-3 hours credit.
- 522: **Field Work in Counseling.** 8-0-3.
- 523: **Elementary School Guidance.** 0-3-3.
- 524: **Group Counseling Practicum.** 0-3-3.
- 526: **Problems in Guidance.** 5-1-3.
- 530: **Practicum.** 5-1-3.

DAIRYING

- 201: **Dairying.** 3-2-3. The fundamentals of dairy production and manufacturing. F, Sp.
- 301: **Testing Dairy Products.** 3-2-3. Preq., Dairying 201. A chemical and bacterial test of milk and milk products. W.
- 303: **Dairy Products Judging.** 3-0-1. Preq., Dairying 301. The grades and market standards of dairy products. F.
- 307: **Milk Secretion.** 0-3-3. Development, structure, and functional processes of the mammary gland. F.
- 310: **Market Milk.** 3-2-3. Preq., Dairying 201 and Bacteriology 210. The sanitary production, transportation, processing, distribution, and public health inspection of milk and related products. Sp.
- 318: **Ice Cream.** 3-2-3. Preq., Dairying 310. The manufacture of ice cream and frozen dairy products. Sp, even.
- 322: **Butter and Cheese.** 6-1-3. Manufacture of butter and various types of cheese. Defects, packaging, and merchandising of butter and cheese. Su, even.
- 401: **Dairy Cattle Feeding and Management.** 6-1-3. Preq., Dairying 201 and Animal Science 301.

The application of feeding and management of dairy cattle. Sp.

- 430: **Dairy Plant Management.** 6-1-3. The management problems of dairy processing and manufacturing plants. W, even.

ECONOMICS

- 203: **American Industrial Development.** 0-3-3. Impact of the development of the economy of the United States upon present life. Su, F, W, Sp.
- 201-202: **Economic Principles and Problems.** 0-3-3 each. (Not open to students who have had Economics 203-204-205.) A study of basic economic principles and problems, with particular reference to the operation and social implications of the American economic system.
- 203-204-205: **Economic Principles and Problems.** 0-2-2. (Not open to students who have had Economics 201-202.) A study of basic economic principles and problems, with particular reference to the operation and social implications of the American economic system. Su, F, W, Sp, each.
- 312: **Monetary Economics.** 0-3-3. Preq., Economics 202, 205, or 315. A study of the causes of changes in the supply of money and rate of spending and the effects of these changes on production, employment and the price level. Su, F, W, Sp.
- 315: **Fundamentals of Economics.** 0-3-3. (Not open to students who have had Economics 203-204-205 or 201-202.) A survey of the major principles of economics designed for the student whose curriculum requires only one quarter of economic principles. Su, F, W, Sp.
- 320: **Principles of Agricultural Economics.** 0-3-3. Preq., Economics 204 or 315. Economic theory with applications to production, marketing, and financing in agribusiness. Institutions such as cooperatives, farm credit systems, foreign agricultural trade, and government will be emphasized. Sp.
- 330: **World Economic Resources.** 0-3-3. Preq., Economics 202 or 204 or 315. A study of the economic resources involved in the various regions of the world, including extractive, manufacturing, service industries. Sp.
- 344: **International Economics.** 0-3-3. Preq., Economics 204 or 315 or consent of instructor. Introduction to modes of business operations and the economic factors which affect international trade. Study of principles, practices, and theory of how and why nations trade. F.
- 401: **History of Economic Thought.** 0-3-3. Preq., Economics 205 or 202 or 315. This course is designed to acquaint the student with leading economic theorists who have contributed to the body of scientifically developed principles of economics. F.
- 402: **Economics of Farm Management.** 0-3-3. Economics principles applied to individual farm organization and management and study of farm accounting systems. F.
- 406: **Comparative Economic Systems.** 0-3-3. Preq., Economics 202 or 205 or 315. A study of alternative economic systems such as capitalism, socialism, communism, and "mixed" in theory and practice. W.
- 408: **Intermediate Economic Theory.** 0-3-3. Preq., Economics 202 or 204 or 315, or consent of instructor. Microeconomics; intensive study of price, production, and distribution theories. Su, W.
- 409: **Managerial Economic Analysis.** 0-3-3. Preq., senior standing or consent of instructor. Lectures and cases emphasizing economic principles as used in managerial decision-making. Includes analysis of demand, cost and price relationships, price decisions, risk and uncertainty, and capital investment. F, Sp.
- 410: **Public Finance.** 0-3-3. Preq., Economics 205 or 202 or 315. An introduction to the principles and theory of financing local, state, and federal governments. W.

- 411: **Mathematical Economics.** 0-3-3. Preq., Mathematics 222 or Economics 408. Application of mathematical techniques to economic problems of price and output determination, input utilization, and national income. F.
- 418: **Labor Economics** 0-3-3. Preq., Economics 203 and 204 or 315 or consent of instructor. Fundamentals of labor market operations, economic analysis of labor legislation; impact of American unions upon the firm's decision making and the national economy. F, Sp.
- 419: **Collective Bargaining.** 0-3-3. Preq., Economics 203 and 204 or 315 or consent of instructor. History of American labor union movement; collective bargaining, labor-management problems, and government and labor relations. Considerable emphasis is given to case studies. Su, Sp.
- 430: **Principles and Practices of Agricultural Marketing.** 0-3-3. Methods and channels of agricultural marketing; marketing principles; governmental action concerned with the marketing process; analysis and evaluation of marketing problems. W.
- 437: **Aggregate Economic Analysis.** 0-3-3. Preq., Economics 312. Macro-economics; intensive study of economic theory of national income analysis, economic growth, interest, employment, and fiscal policy. F, Sp.
- 446: **Transportation.** 0-3-3. (Same as Management 446.) Development of domestic transportation systems, rate theory and rate-making practices; principles and practices of transport regulation by governmental agencies. F.
- 448: **Economic Development.** 0-3-3. Preq., Economics 204 or 315. Analysis of the theories and problems of economics development. Sp.
- 449: **Latin America: Business and Economic Development.** 0-3-3. International trade, international business and economic patterns in Central and South America. Selected issues of major current importance and their backgrounds. F.
- 472: **Consumer Economics.** 0-3-3. Nature of consumer demand; management of individual consumer purchases and personal finances. Su, W.
- 510: **Managerial Economics.** 0-3-3.
- 512: **Current Economic Policies.** 0-3-3.
- 513: **Macroeconomic Theory.** 0-3-3.
- 514: **Macroeconomic Theory.** 0-3-3.
- 520: **Theory of Value & Market Structures.** 0-3-3.
- 521: **Factor Pricing and Resource Allocation Theory.** 0-3-3.
- 522: **Welfare Theory.** 0-3-3.
- 524: **Advanced History of Economic Thought.** 0-3-3.
- 526: **Regional and Urban Economics.** 0-3-3.
- 527: **International Economic Development and Growth.** 0-3-3.
- 529: **International Financial Economics.** 0-3-3.
- 530: **Seminar in International Economics.** 0-3-3.
- 532: **Econometric Methods.** 0-3-3.
- 536: **Theory and History of Comparative Labor Movements.** 0-3-3.
- 537: **Theory of Wages and Employment.** 0-3-3.
- 538: **Seminar on Manpower Policy and Programs.** 0-3-3.

EDUCATION

- 101: **Orientation.** 0-1-1. Basic rules, policies, history, and organization of the University with special application to education. Su, F, W, Sp.
- 102: **Reading Skills for College Freshmen.** 9-0-3. The course provides individually prescribed instruction in reading skills for college freshmen. The course objective is to help alleviate reading deficiencies which inhibit effective learning. May be repeated for credit. Non-degree credit. F.
- 103: **Specific Diagnosis of Individual Learning Deficiencies.** 9-0-3. The course provides individual diagnosis of both reading and speech deficiencies. (Open only to Special Services Project Students.) Non-degree credit.
- 200: **Introduction to Education.** 0-3-3. A study of

- American and Louisiana systems to give the future teacher an understanding of the problems, requirements, and opportunities of the profession. Su, F, W, Sp.
- 250: **Fundamentals of Vocational Agricultural Education.** 0-3-3. A course concerned with the history and development of vocational education as applied to agriculture, with emphasis upon recent legislation and state plan requirements. W.
- 300: **Driver Education and Highway Safety.** 3-2-3. Preq., Health and Physical Education 290 and 300. Course is designed to acquaint the student with principles and practices of good driving and with traffic problems. Su.
- 301: **Materials and Methods in Teaching Vocational Agricultural Education.** 0-3-3. Preq., junior standing. Specific techniques in organization and presentation of vocational agricultural subject matter to the high school agriculture student. Sp.
- 306: **Secondary School Curriculum.** 0-3-3 Preq., Psychology 204. A study will be made of the secondary curriculum and the work of the secondary teacher. Su, F, W, Sp.
- 320: **Elementary School Curriculum.** 0-2-2. Preq., Psychology 204. A course for the study of teaching, organizing and curriculum development. Emphasis placed on planning and teaching in science and social studies. Su, F, W, Sp.
- 322: **Materials and Methods of Teaching Mathematics In Elementary Schools.** 0-3-3. Preq., Psychology 204. An examination of the characteristics and objectives of the modern elementary mathematics program combined with experiences in content, methods, and organizations. Su, F, W, Sp.
- 323: **Materials and Methods in Language Arts for the Elementary Schools.** 0-2-2. Preq., Psychology 204. A course to enable students to use current principles, research, methods and materials to teach oral and written communication skills. Su, F, W, Sp.
- 324: **Methods and Materials in Teaching Reading in Elementary Schools.** 0-3-3. Preq., Psychology 204. Principles, methods, and research pertaining to the teaching of reading will be emphasized. Su, F, W, Sp.
- 350: **Materials and Methods in Teaching English.** 0-3-3. Preq., Education 306. The student will be introduced to the best techniques of organizing and presenting English material. W.
- 351: **Materials and Methods in Teaching Modern Language.** 0-3-3. Preq., 12 hours of modern languages and Education 306. The student will be introduced to the latest techniques of organizing materials and presenting them to the high school pupils. W.
- 352: **Materials and Methods in Teaching Science.** 0-3-3. Preq., Education 306. A careful examination of the most advanced methods of organizing and presenting materials in sciences for the secondary school. W.
- 353: **Materials and Methods in Teaching Social Studies.** 0-3-3. Preq., Education 306. An examination of the character and purpose of social studies is followed by presentation of appropriate teaching suggestions. W.
- 354: **Materials and Methods in Teaching Speech.** 0-3-3. Preq., Education 306. An examination of materials and methods for teaching speech in elementary and secondary schools. W.
- 356: **Materials and Methods in Teaching Mathematics.** 0-3-3. Preq., Education 306 and Mathematics 230. The nature of mathematics and methods of teaching. Special emphasis will be placed on the interpretation and solving of reading problems. W.
- 357: **Materials and Methods in Teaching Health and Physical Education.** 5-2-4. Preq., Education 306. To introduce students to the latest materials and methods used in teaching health and physical education. F, W, Sp.
- 358: **Materials and Methods in Teaching Business Edu-**

- cation. 0-3-3. Preq., Office Administration 307. Accounting 310, Quantitative Analysis 220. A course designed to acquaint the student with the best practices in teaching commercial subjects. W.
- 360: **Materials and Methods in Teaching Art.** 0-3-3. Preq., Education 306. The planning of a course of art and the methods of presentation of such a course in the elementary and high schools. W.
- 390: **Audio-Visual Lab.** 1¼-1-1. Preq., Education 306 or 320 and 90 semester hours. A course to instruct the prospective teacher in the operation of various types of audio-visual equipment. Su, F, W, Sp. (Pass-Fail)
- 400: **Audio-Visual Methods of Teaching.** 1-3-3. To acquaint teachers with the interrelated uses of audio-visual materials and techniques, including laboratory experience. (Additional credit may not be earned in Education 390.) Su, F, W, Sp.
- 402: **Measurement in Education.** 0-2-2. Preq., Education 306 or 320. Includes principles of measurement, construction and utilization of teacher-made and standardized tests. Shall be taken prior to or concurrently with student teaching. Su, F, Sp.
- 403: **Materials and Methods of Teaching Reading in the Secondary School.** 0-3-3. Deals with problems of teaching reading in the secondary school. Includes emphasis on remedial and developmental reading as well as reading instruction in content areas. Su, F, W, Sp.
- 406: **Educational Innovations in the Current and Emerging Schools.** 0-3-3. Study of educational innovations and their implications. Topics include nongraded schools, team teaching, educational television, and flexible scheduling. W.
- 410: **Business and Office Occupations.** 0-2-2. Methods and procedures in developing and coordinating a cooperative office education program in the secondary school. F.
- 411: **Distributive Education.** 0-2-2. Methods and instructional materials used in teaching distributive occupations, procedures in development lesson plans, student activities and projects. F.
- 415: **Directed Student Teaching Experience.** 3¼-0-1. Preq., Education 306 or 320, and a 2.0 over-all earned average; to be scheduled immediately preceding Education 416. Directed observation, participation, and critique related to the field in which the student plans to teach. F, W, Sp.
- 416: **Observation and Student Teaching.** 35-1-7. Preq., Education 415 and meet all qualifications listed for student teaching in this catalog. Student teachers are given supervised experience in observing, planning, directing, and evaluating experience of students. F, W, Sp.
- 426: **Improving Instruction in Music.** 0-3-3. Preq., senior standing. Analysis of varied materials, methods and techniques; titles available from different publishers, rental libraries, and the State Department of Education; attention to evaluation and selection for different levels of attainment. Su, Sp.
- 428-429: **Improving Instruction in Music.** One semester hour each.
428: Clinics and observations in conjunction with the Summer Music Camp, two weeks; chorus, band, woodwind, strings, according to interest. Su.
429: Discussions, observation, and participation in the Tech Opera Workshops two weeks. Su.
- 431: **School Readiness.** 0-3-3. Preq., Psychology 204. Designed to acquaint the student with the appropriate theory, understanding, and methods necessary for successful school achievement. Particular emphasis will be on readiness in Language Arts. F, Sp.
- 432: **Kindergarten Education.** 0-3-3. Preq., Psychology 204. Course will involve readings as background for a study of the development of kindergarten education and curriculum planning based on principles of child development. Su, W.
- 433: **Special Problems in School Curriculum.** 0-3-3. Preq., consent of the instructor. This course is designed to deal with selected problems in elementary and secondary schools. (May be repeated for a maximum of 6 hours credit.) Su, F, W, Sp.
- 441: **Methods of Teaching Kindergarten Children.** 0-3-3. Preq., Psychology 205, Library Science 201, and Education 432. Practical problems in the selection and organization of the curriculum to promote the child's learning. Emphasis on planning, selecting equipment, teaching aids, and teaching procedures. F, Sp.
- 442: **Practicum in Teaching Kindergarten.** 10-1-3. Preq., Education 416 and 441. Students are given supervised experiences in observing, planning, directing, and evaluating kindergarten children. Su, Sp.
- 445: **Materials and Methods of Teaching Data Processing.** 0-3-3. A course to introduce the student to the use of data processing machines, with particular emphasis on teaching the subject at the secondary school level. May be repeated for credit. Su.
- 446: **Instructional Classroom Materials.** 0-3-3. Designed to acquaint teachers with the selection, preparation, utilization and evaluation of audio-visual instructional materials. Su, W.
- 450: **Improving Instruction in Art.** 0-3-3. Problems of teaching art in elementary and junior high school with emphasis upon philosophy, art materials and techniques, evaluation and curriculum planning. Su, even.
- 452: **Administration of Instructional Materials Centers.** 0-3-3. Techniques organization, management and selection of printed and non-book materials in multi-media instructional materials centers. Su, even.
- 462: **Principles and Problems of Cooperative Education.** 0-3-3. The basic principles and philosophies of cooperative vocational education. History and development of cooperative education. F.
- 465: **Materials and Methods of Teaching Vocal Music.** 0-3-3. Examines problems which confront the secondary teacher and supervisor of vocal music; e.g., program building, contests, festivals, requisitions, grading, materials, scheduling, and rehearsing. Sp.
- 466: **Materials and Methods of Teaching Instrumental Music.** 0-3-3. See Education 465 for description; emphasis on the instrumental aspects. Sp.
- 485: **Child Study.** 0-3-3. Emphasis is placed on observing the dynamic interrelations between all processes in the behavior and development of an individual. F.
- 486: **Child Study.** 0-3-3. A continuation of Education 485.
- 487: **Child Study Leadership.** 0-3-3. Offers apprenticeship in training persons to become staff members in human development workshops and consultants to Child Study Field Programs. Sp.
- 490: **Adult Education.** 0-3-3. The role of the public school in adult basic education; teaching techniques, testing and evaluation, and methods of structuring adult education classes. F.
- 495: **Methods and Materials in Teaching Aerospace Education.** 0-3-3. The course is designed to familiarize students with the contribution that aerospace education can make in the development of the school curriculum. Su.
- 500: **Foundations of Curriculum Construction.** 0-3-3.
501: **Problems in Teaching Elementary Science.** 0-3-3.
502: **Problems in Teaching Language Arts in the Elementary School (Other than Reading).** 0-3-3.
503: **Problems in Teaching Reading.** 0-3-3.
504: **Problems in Teaching Mathematics in Elementary School.** 0-3-3.
- 506: **Improving Instruction in English.** 0-3-3.
507: **Improving Instruction in High School Mathematics.** 0-3-3.

- 508: Improving Instruction in Science. 0-3-3.
 509: Improving Instruction in the Social Studies. 0-3-3.
 510: The Principalship. 0-3-3.
 511: Improving Instruction in Speech. 0-3-3.
 512: Philosophy of Education. 0-3-3.
 513: Philosophy of Music Education. 0-3-3.
 518: History of Education. 0-3-3.
 524: Supervision of Student Teaching. 0-3-3.
 525: Seminar in Business Education. 0-3-3.
 526: Educational Supervision. 0-3-3.
 527: Public School Organization and Administration. 0-3-3.
 528: Evaluating Pupil Growth. 0-3-3.
 533: Problems in Education. 0-3-3.
 534: Diagnosis and Evaluation of Reading Difficulties. 0-3-3.
 535: Clinical Reading. 7-1-3.
 536: Clinical Reading. 7-1-3.
 537: Seminar, Problems in Reading. 0-3-3.
 538: Supervision and Curriculum Development in Reading. 0-3-3.
 539: Advanced Laboratory Practicum in Reading. 7-1-3.
 540: Comparative Education. 0-3-3.
 541: Introduction to Graduate Study and Research. 0-3-3.
 542: Statistical Methods in Education. 0-3-3.
 543: Adjudication of Instrumental Ensembles. 0-2-2.
 545: The New Media in Education. 2-2-3.
 548: Improving Instruction in Shorthand, Typewriting, and Clerical Office Practice. 0-3-3.
 549: Improving Instruction in Bookkeeping, Basic Business, and Related Areas. 0-3-3.
 551: Research and Thesis. Three hours credit or multiples thereof. Maximum credit allowed is six hours.
 561: Research Design and Analysis. 0-3-3.
 564: The Reading Process. 0-3-3.
 570: Field Problem and Internship. 0-3-3.
 571: Research and Readings in Business Education. 0-3-3.
 580: Specialist and Research. Thesis. Three hours credit or multiples thereof. Maximum credit allowed is six hours.

ELECTRICAL ENGINEERING

- 202: **Electrical Circuits.** 0-3-3. Preq., credit or registration in Mathematics 231. Fundamental electrical concepts and units. Basic laws of electrical circuits. Equivalent circuits. Power and energy in resistive networks.
- 203: **Digital Computer Programming.** 3-1-2. Preq., Mathematics 111. The use of the digital computer for the solution of engineering problems. Su, F, W, Sp.
- 204: **Electrical Circuits.** 0-2-2. Preq., Electrical Engineering 202 and credit or registration in Mathematics 232. Time response of R-L, R-C, and R-L-C circuits. Response of networks to steady-state sinusoidal sources. Complex numbers, phasors, and impedances. Power and RMS values. Network theorems.
- 205: **Electrical Circuits Laboratory.** 3-0-1. Preq., credit or registration in Electrical Engineering 204. An introduction to methods, instruments and devices for measurements in electrical networks.
- 213: **Electrical Circuits.** 3-2-3. Preq., Credit or registration in Mathematics 232. Circuit Theorems. Topology. Loop and Nodal analysis. Equivalent circuits and parameters. Transients. Complex power. Polyphase circuit analysis. Su, F, W, Sp.
- 214: **Electrical Circuits.** 0-3-3. Preq., Electrical Engineering 213 and credit or registration in Mathematics 232. Circuit Theorems. Topology. Loop and Nodal analysis. Equivalent circuits and parameters. Transients. Complex power. Polyphase circuit analysis. Su, F, W, Sp.
- 301: **Introduction to Electric and Magnetic Fields.** 0-2-2. Preq., Electrical Engineering 302 and Physics 202. Electric and magnetic fields. Capacitors and electromagnetic concepts and units. The magnetic circuit. Electromagnetic induction and forces. Su, F, W, Sp.
- 302: **Electrical Circuits.** 0-2-2. Preq., Electrical Engineering 204 and credit or registration in Mathematics 330. A study of resonant circuits. Graphical techniques. Coupled circuits and transformers. Polyphase circuits. F, W, Sp.
- 303: **Electrical Circuits Laboratory.** 3-0-1. Preq., Electrical Engineering 205 and credit or registration in Electrical Engineering 302. Measurements of voltage, current and power in single-phase and polyphase networks having alternating current sources. F, W, Sp.
- 308: **Electrical Machinery.** 0-3-3. Preq., Electrical Engineering 301 and 302. Electromagnetic energy storage and conversion. Principles of electromechanical energy conversion. Power transformers. Analysis of rotating machines. F, Sp.
- 309: **Electrical Machinery Laboratory.** 3-0-1. Preq., Electrical Engineering 303 and credit or registration in Electrical Engineering 308. Laboratory testing of basic electromechanical devices and machines. F, Sp.
- 313: **Electrical Circuits.** 0-3-3. Preq., Electrical Engineering 302 and credit or registration in Mathematics 350. A study of nonlinear elements. Fourier analysis. Fourier transforms. Laplace transforms and convolution. Two-port networks. Filter theory. F, Sp.
- 315: **Electronics.** 3-3-4. Preq., Physics 202 or 210. Basic electronic circuits for electrical measurement and modern scientific instrumentation. Characteristics and use of test equipment. Amplifier circuits. Timing and counting. F.
- 323: **Electrical Systems.** 3-2-3. Preq., Physics 202 and credit or registration in Mathematics 231. Direct-current circuits. Network theorems. Magnetic circuits. Transients. Alternating voltage, current, and power. Alternating-current circuits. Polyphase systems. Instruments and measurements.
- 324: **Electrical Machinery.** 3-2-3. Preq., Electrical Engineering 323. A study of direct-current and alternating-current machines. Generators, motors, and transformers. Analysis of the operating characteristics of machines. F, Sp.
- 325: **Industrial Electronics.** 0-3-3. Preq., Electrical Engineering 323. Characteristics of vacuum tubes, gaseous tubes, and transistors. Electronic rectifiers, amplifiers, and oscillators. Application of electronic circuits to measurement and automatic control equipment. Su, F, W, Sp.
- 326: **Electrical Equipment for Buildings.** 0-3-3. Preq., Mathematics 220 and Physics 210. Not available for electrical engineering majors. A study of the problems of the design and application of electrical wiring and lighting systems for buildings. W.
- 353: **Electronics.** 0-3-3. Preq., Electrical Engineering 302. Basic semiconductor theory. Diodes and power supplies. Characteristics of field-effect (FET) and junction (BJT) transistor amplifiers. Small-signal models. F, W.
- 354: **Electronics.** 0-3-3. Preq., Electrical Engineering 353. Thermionic devices. Frequency characteristics of electronic amplifiers. Multistage amplifiers. Feedback and stability. Tuned amplifiers. Power amplifiers. W, Sp.
- 355: **Electronics Laboratory.** 3-0-1. Preq., credit or registration in Electrical Engineering 354. Laboratory work with basic electronic circuits. W, Sp.
- 400: **Special Problems.** 0-3-3. Preq., senior standing. Electrical engineering problems designed to meet the student's need and to promote initiative and self-reliance. Su, F, W, Sp.
- 401: **Electric and Magnetic Fields.** 0-3-3. Preq., Electrical Engineering 301 and 302, Mathematics 350. Static and dynamic electromagnetic fields. Currents. Vector analysis. Maxwell's equations. F, Sp.
- 402: **Design of Electrical Devices.** 0-2-2. Preq., Electrical Engineering 308 and 354. Problems of analysis and design of selected components and devices involving electric, magnetic, mechanical and thermal phenomena.

- 403: **Electronics Laboratory.** 3-0-1. Preq., credit or or registration in Electrical Engineering 353. Closely supervised laboratory study of electronic circuits. Opportunity for individual investigation and construction of electronic apparatus. F, Sp.
- 404: **Electronics Laboratory.** 3-0-1. Preq., Electrical Engineering 403. Continuation of Electrical Engineering 403. Su, W.
- 408: **Linear Systems.** 0-2-2. Preq., Electrical Engineering 313 or consent of the instructor. An introduction to the theory of linear systems. Time domain analysis and state-variable methods. F, Sp.
- 409: **Linear Systems.** 0-2-2. Preq., Electrical Engineering 408 or permission of the instructor. Stability theory, periodic systems, macroscopic system theory and transform analysis. Su, W.
- 410: **Nonlinear Analysis.** 0-2-2. Preq., Electrical Engineering 432 or permission of the instructor. Basic principles of nonlinear analysis. Series approximation methods for small nonlinearities. Graphical analysis. Phase plane methods.
- 416: **Illumination.** 0-2-2. Preq., Electrical Engineering 302 and Mathematics 231. Requirements and production of modern lighting systems. Design of commercial, industrial, school, residence, and special lighting systems. W.
- 420: **Modulations Systems.** 0-2-2. Preq., Electrical Engineering 354. Fourier theory. Analog and digital modulation and demodulation systems. Signal comparison, multiplexing. F.
- 421: **Power Circuit Analysis.** 0-2-2. Preq., Electrical Engineering 302. Single-phase and three-phase power circuits. Sources and loads, balanced and unbalanced. Distribution circuits and transformer connections. Pre-unit representation. Power transfer equation. Control of watts and vars. F.
- 424: **Seminar.** 0-1-1. Preq., senior standing. Promotion of interest in the exchange of ideas through discussion, informal talks, and debate on contemporary thought and trends. Su, F, W, Sp.
- 426: **Electrical Transmission.** 0-2-2. Preq., Electrical Engineering 302 and Mathematics 350 or consent of the instructor. Distributed transmission line parameters—single-phase and three-phase. Current and voltage on long lines. Generalized circuit constants. Circle diagrams. W.
- 427: **Power Systems.** 0-2-2. Preq., Electrical Engineering 308 or consent of the instructor. Load flow studies. Economic operation of power systems. Symmetrical faults. Symmetrical components. Unsymmetrical faults. System stability. Sp.
- 428: **Electrical Machinery.** 0-2-2. Preq., Electrical Engineering 308. Advanced topics in electromechanical machines and devices.
- 429: **Direct Energy Conversion.** 0-2-2. Preq., Electrical Engineering 308 and 313, Mechanical Engineering 316 or permission of the instructor. Principles of direct energy conversion. Thermionic and thermoelectric generators. Magneto-hydrodynamic generators. Fuel cells.
- 430: **Communication Electronics.** 0-2-2. Preq., Electrical Engineering 420 or consent of the instructor. Tuned voltage and power amplifiers transmitters and receivers. Radio and television systems. Sp.
- 431: **Guided Waves.** 3-3-4. Preq., Electrical Engineering 401. Transmission line parameters, lumped-constant lines. Analytical and graphical impedance matching. Plane and guided electromagnetic waves. Microwave networks. Antennas. W.
- 432: **Automatic Control Systems.** 3-3-4. Preq., Electrical Engineering 308 and 354, Mathematics 350. Analysis and design of linear feedback systems. Transfer functions. Transfer function plots. Transient and steady-state characterization. Stability determination. Closed-loop compensation. F, Sp.
- 433: **Control System Design.** 0-2-2. Preq., Electrical Engineering 432 or consent of the instructor. Automatic control system specifications. Improvement of system performance through compensation. Design. W.
- 434: **Electronics.** 0-3-3. Preq., Electrical Engineering 354. High-frequency amplifiers. Microwave amplifiers and oscillators. Radiation. Antenna systems.
- 435: **Integrated Circuit Electronics.** 0-3-3. Preq., Electrical Engineering 354. Transistor biasing and stability. Hybrid π and high frequency a.c. models. Feedback differential amplifiers. Introduction to linear integrated circuits. Operational amplifier analysis. Digital circuits. W.
- 436: **Analog Computers.** 0-2-2. Preq., Mathematics 350 or consent of the instructor. An introduction to the use of the electronic analog computer for solving linear and non-linear ordinary differential equations. Su, W.
- 437: **Digital Logic Fundamentals.** 0-2-2. Preq., sophomore standing. Boolean Algebra applied to switching circuits. Simplification methods for combinational logic. Number systems. Codes. Iterative networks. Trees. Hazards. Applications. F, Sp.
- 438: **Electrical Measurements.** 0-2-2. Preq., Electrical Engineering 313 or permission of the instructor. Statistics of measurements. Types of instrument movements. Special voltage and current detection devices. Potentiometers.
- 439: **Random Signal Analysis.** 0-2-2. Preq., Electrical Engineering 420 or consent to the instructor. Statistical communication theory. Random processes. Noises. Linear system analysis. Performance evaluation of analog and digital communication systems. W.
- 440: **Computer-Aided Design.** 3-2-3. Preq., Electrical Engineering 203 or permission of the instructor. A study of figures of merit. Computer requirements. Organization of problem-oriented languages.
- 441: **Digital Computer Systems.** 3-2-3. Preq., Electrical Engineering 437 or consent of the instructor. The organization of stored program digital computers and information processing systems. The logical design for arithmetic, control, and input-output functions.
- 442: **Computer Organization and Machine Language Programming.** 3-3-4. Preq., consent of the instructor. Introduction to the operational organization of computers, machine codes, and programming in machine and symbolic-assembler languages. Su, W.
- 443: **Hybrid Digital-Analog Computer Systems.** 0-3-3. Preq., Electrical Engineering 436 and 437 or consent of instructor. Introduction to iterative and digital differential analyzers. Programming systems. Mode control and track hold devices. Pulse modulation representation of variables. Digital computers with fast analog subroutines.
- 444: **Special Computer Topics.** 0-3-3. Preq., consent of instructor. Advanced topics in computer design, systems, and applications will be selected for study to enable the students to keep up with new developments in computers.
- 445: **Computer Electronics.** 3-1-2. Preq., Electrical Engineering 353 and Electrical Engineering 437 or consent of the instructor. An introduction to digital integrated circuits. W.
- 447: **Advanced Digital Logic.** 0-2-2. Preq., Electrical Engineering 437. Sequential logic theory and applications. Synchronous (clocked) logic design. Asynchronous logic design methods. Hazards. Practical applications of sequential circuits.
- 450: **Selected Topics.** 0-2-2. Preq., permission of instructor. Work in an area of recent progress in electrical engineering of immediate interest or need. Topic selected will vary from term to term. Su, F, W, Sp.
- 501: **Servomechanisms.** 0-3-3.
- 502: **Network Synthesis.** 0-3-3.
- 503: **Information Theory.** 0-3-3.
- 504: **Systems Engineering.** 0-3-3.
- 505: **Solid-State Electronics.** 0-3-3.
- 506: **Electromechanical Energy Conversion.** 0-3-3.
- 507: **Digital Computer Circuits.** 0-3-3.
- 508: **Selected Techniques.** 1-4 semester hours.
- 509: **Sampled-Data Systems.** 0-3-3.
- 510: **Nonlinear Systems.** 0-3-3.
- 511: **Design of Optimum Systems.** 0-3-3.

- 522: **Active Network Synthesis.** 0-3-3.
 523: **Active Network Synthesis.** 0-3-3.
 524-525-526: **Seminar.** 0-1-1 each.
 530: **Electromagnetic Waves.** 0-3-3.
 531: **Antennas and Radiation.** 0-3-3.
 540: **Digital Filter Theory.** 0-3-3.
 541: **Finite-State Machines.** 0-3-3.
 550: **Special Problems.** 1-4 semester hours.

ELECTRO TECHNOLOGY

- 160: **Basic Electricity.** 0-3-3. An introduction to the fundamental concepts of electricity. F.
 161: **Basic Electricity Lab.** 3-0-1. Coreq., Electro-Technology 160. Practical laboratory exercises to illustrate the material in Electro-Technology 160. F.
 170: **Basic Circuit Theory.** 0-3-3. Preq., Electro-Technology 160, Math 111. Introduction to D.C. circuit theory; loop and node equations. The magnetic circuit. W.
 171: **Basic Circuit Lab.** 3-0-1. Coreq., Electro-Technology 170, Laboratory companion to Electro-Technology 170. W.
 180: **A-C Circuits.** 0-3-3. Preq., Electro-Technology 170, Math 112. An extension of the concepts developed in Electro-Technology 170, to include alternating current circuits for sinusoidal steady-state analysis. Sp.
 181: **A-C Circuits Laboratory.** 3-0-1. Coreq., Electro-Technology 180. Laboratory companion to Electro-Technology 180. Sp.
 182: **Technical Problems.** 0-2-2. Preq., Math 112. Practical problems in electricity and circuit theory designed to illustrate the use of mathematics as an aid, and to develop judgment in the interpretation of results. F.
 260: **Electronics.** 0-3-3. Preq., Electro-Technology 180. An introductory treatment of solid state devices, concentrating on the ordinary diode and the bipolar and field effect transistors. F.
 261: **Electronics Laboratory.** 3-0-1. Coreq., Electro-Technology 260. Introductory electronics laboratory, a companion to Electro-Technology 260. F.
 262: **Technical Problems.** 0-2-2. Preq., Electro-Technology 182, Math 220. A continuation of Electro-Technology 182, concentrating primarily on problems utilizing the techniques taught in Math 220, applied calculus. F.
 264: **Personal and Occupational Guidance.** 0-2-2. Applied organizational theory. This course will seek to prepare the student to operate most effectively in an organization from the standpoints of both the employer and employee. W.
 270: **Instrumentation I.** 0-3-3. Preq., Electro-Technology 180. Basic measuring devices, meters, bridges, etc. An introduction to the methods used in making accurate measurements. W.
 272: **Electronics Applications I.** 0-3-3. Preq., Electro-Technology 260. Continuation of Electro-Technology 260. The study of semiconductor devices imbedded in passive RLC networks, and their applications in practical situations. F.
 273: **Electronics Applications Laboratory.** 3-0-1. Coreq., Electro-Technology 272. Training in the construction and troubleshooting of solid state electronics circuits. F.
 274: **Computer Programming.** 0-3-3. Preq., Math 111. The logic of computer solutions to problems. Basic programming utilizing Fortran and other popular languages. Applications of computer usage in electro-technology. Sp.
 280: **Electrical Power I.** 0-3-3. Preq., Electro-Technology 180. A survey of the power field; the aims, problems and techniques. Future trends. Sp.
 282: **Electronics Application II.** 0-3-3. Preq., Electro-Technology 272. A continuation of Electro-Technology 272 through feedback, high frequency and switching circuits.
 283: **Electronics Applications Laboratory.** 3-0-1. Coreq., Electro-Technology 282. Companion laboratory to Electro-Technology 282 lecture course.
 284: **Computers.** 0-3-3. Preq., Electro-Technology 272. Digital and analog computer systems, circuits, and maintenance. Sp.
 285: **Computers Laboratory.** 3-0-1. Coreq., Electro-Technology 284. Practical laboratory exercises in computer circuitry and maintenance techniques. Sp.
 360: **Electrical Power II.** 0-3-3. Preq., Electro-Technology 280. Study of techniques and solution to fundamental problems in the electric power industry. Emphasis on practical applications. F.
 361: **Electrical Power Laboratory.** 3-0-1. Coreq., Electro-Technology 360. Companion laboratory to 360. F.
 362: **Electrical Machines.** 0-3-3. Preq., Electro-Technology 180. Characteristics, applications, and theory of A.C. and D.C. machines. Training in specifying and maintaining electrical machines.
 363: **Electrical Machines Laboratory.** 3-0-1. Coreq., Electro-Technology 362. Electrical machinery applications workshop.
 370: **Integrated Circuits.** 0-3-3. Preq., Electro-Technology 272. Applications of integrated circuits, both linear and discrete, in a variety of amplifiers, switching circuits and functional operations. W.
 371: **Integrated Circuits Laboratory.** 3-0-1. Coreq., Electro-Technology 370. Practical laboratory work in the utilization of integrated circuits in active networks, both linear and discrete. W.
 380: **Power Systems.** 0-2-2. Preq., Electro-Technology 360. The study of the generation, transmission and distribution of electric power, with practical techniques of analysis for forecasting requirements and meeting consumer needs.
 382: **Computer Servicing.** 0-2-2. Preq., Electro-Technology 284. Techniques of fault isolation and repair of digital and analog computers. Preventive maintenance techniques. The theory of maintainability.
 383: **Computer Servicing Laboratory.** 3-0-1. Coreq., Electro-Technology 382. Practical troubleshooting of computer systems.
 390: **Electrical Drafting.** 6-0-2. Preq., Engineering 151. A course in drafting with emphasis on wiring diagrams, electrical standards, codes, etc. F.
 460: **Communication Circuits.** 0-2-2. Preq., Electro-Technology 370. The study of circuits used in AM and FM radio, television, and digital data transmission. F.
 461: **Communication Circuits Laboratory.** 3-0-1. Coreq., Electro-Technology 460. Companion laboratory to lecture Electro-Technology 460. Construction of RF amplifiers, modulators, etc. F.
 462: **Power Systems Cost Analysis.** 0-3-3. Preq., Electro-Technology 380. The economics of power systems. Determination of the optimum system improvements from a cost standpoint.
 464: **Data Communication Systems.** 0-3-3. Preq., Electro-Technology 460. Theory of binary data communication over several common channels. Practical calculations to determine system performance parameters. Sp.
 470: **Control Systems I.** 0-2-2. Preq., Electro-Technology 272. Introductory control systems. A survey of the field, with emphasis on the problems, current solutions, and analytical methods. W.
 471: **Control Systems Laboratory.** 3-0-1. Coreq., Electro-Technology 470. Field trips and laboratory experiments in principles of automatic control systems. W.
 472: **Seminar.** 0-1-1. Preq., senior standing. Discussion of employment, current job market, preparation of personal data sheets, application forms, other placement activities. W.
 474: **Instrumentation II.** 0-3-3. Preq., Electro-Technology 270. Theory of errors. Advanced instrument usage, measurement techniques. Experiment planning, data recording and interpretation.
 475: **Instrumentation Laboratory.** 3-0-1. Coreq., Electro-Technology 474. Workshop for Electro-Technology 474.
 476: **Control Systems II.** 0-3-3. Preq., Electro-Technology 470. A continuation of Electro-Technology

- 470 with emphasis on the study of the characteristics of analog systems.
- 477: **Control Systems Laboratory.** 3-0-1. Coreq., Electro-Technology 476. Laboratory of Electro-Technology 476.
- 480: **Electronic Computers.** 0-3-3. Preq., Electro-Technology 284. Organization, operation, and programming of digital computers on a more advanced level. Basic numerical techniques.
- 481: **Electronic Computers Laboratory.** 3-0-1. Coreq., Electro-Technology 480. A workshop in computer methods intended to provide applications of the theory in Electro-Technology 480 lecture.
- 482: **Electronic Computers.** 0-3-3. Preq., Electro-Technology 480. Advanced application of computers to technical problems.
- 483: **Electronic Computers Laboratory.** 3-0-1. Coreq., Electro-Technology 482. Laboratory for problem sessions in computer solutions.
- 484: **Control Systems III.** 0-3-3. Preq., Electro-Technology 470. Digital control systems. Numerically controlled machines, characteristics and applications.
- 485: **Control Systems Laboratory.** 3-0-1. Coreq., Electro-Technology 484. Workshop for Electro-Technology 484 lecture.
- 490: **Special Problems.** 1-4 hours credit. Preq., consent of instructor. A course to be arranged for the purpose of covering a selected topic of current importance or special interest. May be repeated for credit. Su, F, W, Sp.

ENGINEERING

- 102: **Introduction to Engineering.** 0-2-2. Preq., credit in or registration in Mathematics 111 and 112. Characteristics of the engineering profession, slide rule and digital computer computations, and introduction to engineering. Su, F, W, Sp.
- 151: **Engineering Graphics.** 6-0-2. Beginning graphics for engineers. Su, F, W, Sp.
- 152: **Engineering Drawing.** 6-0-2. Preq., Engineering 151, or Technical Drafting 101. Engineering drawing for Civil Engineering. Drawing of maps, topographic conventions, plans and profiles. W.
- 162: **Engineering Graphics.** 0-2-2. Preq., Engineering 151. Advanced engineering graphics. Sp.
- 300: **European Influence on Engineering.** 0-3-3. Preq., Sophomore standing or consent of instructor. European influence on Engineering theory and practice. Engineering accomplishments in Europe. Impact of engineering on western civilization. Su.
- 401: **Engineering Economy.** 0-3-3. Preq., Mathematics 230. Economical analysis of engineering alternatives. Su, F, W, Sp.
- 431: **Contracts and Specifications.** 0-2-2. Open to seniors. Legal documents of construction contracts. W.
- 551: **Research and Thesis.** Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is 6 semester hours.
- 590: **Research and Dissertation.** 3 hours credit or multiples thereof. Maximum credit is 30 hours.

ENGINEERING MECHANICS

- 201: **Statics.** 0-2-2. Preq., Mathematics 230. Systems of forces and couples; concept and fundamental concepts of static equilibrium and centroids. Su, F, W, Sp.
- 202: **Strength of Materials.** 0-2-2. Preq., Engineering Mechanics 201. Moment of inertia for areas. Principles of dry friction. Normal, shear, and bearing stresses. Torsion. Stress-strain relationship. Su, F, W, Sp.
- 203: **Dynamics.** 0-2-2. Preq., Engineering Mechanics 201 and Mathematics 231. Kinematics and Kinetics of rectilinear, rotational, and plane motion. Moment of inertia of mass. Work and power. Principles of impulse and momentum. Su, F, W, Sp.
- 301: **Strength of Materials.** 0-2-2. Preq., Engineering

Mechanics 202. Stress, strain and mechanical properties of materials. Deflections in beams, buckling and column theory. Su, F, W, Sp.

- 321: **Elementary Fluid Mechanics.** 0-3-3. Preq., Engineering Mechanics 201 and Mathematics 231 or Mathematics 220. Properties of fluids, fluid statics. Basic hydrodynamics. Continuity, energy and momentum equations. Steady flow in pipes and open channels. Fluid measurements. Su, F, W, Sp.
- 407: **Advanced Strength of Materials.** 0-3-3. Preq., Engineering Mechanics 301. The torsion problem, membrane analogy, cylindrical shells, beams on elastic foundations and the energy methods used in indeterminate structural analysis.

ENGLISH

- 101-102: **Freshman Composition.** 0-3-3 each. Su, F, W, Sp.
- 201-202: **Sophomore English—Introduction to English and American Literature.** 0-3-3 each. Preq., English 101-102. Su, F, W, Sp.
- All courses above 202 have 201 or 202 as a prerequisite.
- 303:* **Technical English.** 0-3-3. Primarily for engineering students. The writing of technical reports. Su, F, W, Sp.
- 308: **The Short Story.** 0-3-3. A reading course. Opportunities to write short stories for those who wish to do so. Sp.
- 309: **Parliamentary Law.** 0-2-2. Sp.
- 321: **Comparative Literature.** 0-3-3. Classics of foreign literatures in translation. F, Sp.
- 322: **Greek Drama.** 0-3-3. Preq., English 201 and 202. W.
- 325: **Contemporary English and American Poetry.** 0-3-3. Sp.
- 332:* **Advanced English Grammar.** 0-3-3. Su, F, W, Sp.
- 336:* **Advanced Composition.** 0-3-3. Chiefly expository writing. Su, F, W, Sp.
- 350: **Materials and Methods in Teaching English.** 0-3-3. (Same as Education 350.) F, Sp.
- 352: **Hebrew Literature in Translation.** 0-3-3. W.
- 401: **The American Mind.** 0-3-3. (Same as Philosophy 401). Important currents of ideas that have found expression in American literature. F, Sp.
- 402: **The European Mind.** 0-3-3. A travel tour of approximately three weeks in Western Europe with visits to places of literary interest. Required readings for those seeking college credit. Su.
- 403: **Chaucer.** 0-3-3. Sp.
- 404: **Milton.** 0-3-3. W, Sp.
- 405: **Studies in Renaissance Literature.** 0-3-3. W, Sp.
- 407: **Principles and Techniques of Literary Criticism.** 0-3-3. Sp.
- 410: **The English Novel.** 0-3-3. Sp.
- 411: **The Major English Poets** (excluding Chaucer, Shakespeare, and Milton). 0-3-3. Su, F, W, Sp.
- 413: **English Poetry of the Romantic Period.** 0-3-3. F, Sp.
- 414: **English Poetry of the Victorian Period.** 0-3-3. F, Sp.
- 415: **Shakespeare.** 0-3-3. The major plays and the poems. (Same as Speech 415.) Su, F, W, Sp.
- 416: **Major American Authors (before 1865).** 0-3-3. Su, W.
- 417: **Major American Authors (since 1865).** 0-3-3. Sp.
- 419: **Contemporary Drama.** 0-3-3. American, English, and European. (Same as Speech 419.) W, Sp.
- 420: **The Continental Novel.** 0-3-3. Sp.
- 422: **The English Language.** 0-3-3. Primarily a course in the history of the language. Su, F, W, Sp.
- 423: **English Words and Idioms.** 0-3-3. (Same as Philosophy 423.) Rhetoric and logic as applied to critical thinking. Semantics. Exercises in propaganda analysis. Vocabulary building. Su, F, W, Sp.
- 424: **Contemporary Southern Authors.** 0-3-3. F, Sp.
- 428: **American Fiction before the Twentieth Century.** 0-3-3. Su, W.
- 429: **American Fiction in the Twentieth Century.** 0-3-3. Sp.
- 438: **Sixteenth Century English Literature** (excluding

- Shakespeare). 0-3-3. W.
- 439: **Seventeenth Century English Literature** (excluding Milton). 0-3-3. W.
- 440: **Eighteenth Century English Literature**. 0-3-3. Su, W, Sp.
- 450: **Nineteenth Century English Prose** (excluding the novel). 0-3-3. Su, F, W, Sp.
- 452: **Elizabethan Drama** (excluding Shakespeare). 0-3-3. (Same as Speech 452). Sp.
- 477-478: **Advanced Honors**. 0-3-3 each. Preq., permission of instructor. Studies in literature; seminar plan. Su, F, W, Sp.
- 481: **Linguistics**. 0-3-3. An approach to the various scientific analyses of the language, past and present, including the study of transformational grammar. Su, Sp.
- 482: **Folklore and Mythology**. 0-3-3. A study of myth and folklore, especially in Louisiana and the South, and their impact and relationship to other kinds of literature. Su, Sp.
- 484: **Creative Writing**. 0-3-3. A study of the creative processes involved in style, diction and patterns of writing. Emphasis is upon prose creativity with the possibility of publishable material. F, Sp.
- 485: **English Teachers' Workshop**. 0-3-3. Designed primarily for public school teachers of English. A review of modern methods and developments, literary genres, and movements. Sp.
- 490: **Introduction to Literary Research and Bibliography**. 0-3-3. Su, W.
- 492: **Restoration and Eighteenth Century Drama**. 0-3-3. A study of major dramatic works of Dryden, Wycherly, Sheridan, etc. Sp.
- 505: **The History of English Literature**. 0-3-3.
- 506: **The History of American Literature**. 0-3-3.
- 507: **Anglo-Saxon**. 0-3-3.
- 571-572: **Studies in English Literature**. 0-3-3. each.
- 581-582: **Studies in American Literature**. 0-3-3. each.
- 595: **Problems in Communication**. 0-3-3.
- * Students may take only one of the following courses for credit: English 303, English 332, English 336.

FINANCE

- 201: **Basic Sales Financing**. 0-3-3. Financing consumer sales including sources of credit, interest and payout computations, wholesale financing, truth in lending, bad debts, and legal aspects. (Associate degree credit only in CAB)
- 203: **Insurance Policy Programming**. 0-3-3. A study of the basic types of life insurance, policy interpretation and preparation, establishing a total program for individuals of varying needs. (Associate degree credit only in CAB)
- 205: **Insurance Underwriting and Rating**. 0-3-3. The types of insurance coverages available, the appraisal of various risks, and the selection of the optimum rate category. (Associate degree credit only in CAB)
- 207: **Insurance Claims and Adjustments**. 0-3-3. The interpretation and implementation of policy claims and an introduction to adjusting techniques and procedures. (Associate degree credit only in CAB)
- 318: **Business Finance**. 0-3-3. Preq., Economics 202, 205, or 315 and Accounting 205 or 310. A study of the methods of financing a business firm, including sources and applications of funds. Su, F, W, Sp.
- 330: **Risk and Insurance**. 0-3-3. A comprehensive study of risk and riskbearing, including insurance and non-insurance methods of handling risk; introduction to the fields of life, disability, property, and casualty insurance. W.
- 412: **International Finance**. 0-3-3. Preq., Economics 344 or consent of instructor. A study of the various modes of financing international trade, including international financial organizations; an analysis of exchange rates, foreign investments, multinational firm, and international banking. Su, W.
- 414: **Investments**. 0-3-3. Preq., Finance 318. Analysis of investments in common stocks, bonds, and other financial assets; sources of information for the investor; analysis of firms' financial statements; classes of investments. F, Sp.

- 422: **Bank Management**. 0-3-3. Preq., Finance 318. Problems in organization, operation, and management of commercial banks, with special emphasis on credit granting. Su, W.
- 425: **Money Markets Capital Markets and Financial Institutions**. 0-3-3. Preq., Finance 318. A survey of the markets in which funds are traded; a survey of the lending and investing characteristics of selected financial institutions. Sp.
- 427: **Financial Forecasting**. 0-3-3. Preq., Economics 205 or 315 and Finance 318. Financial forecasting under conditions of economic fluctuations involving sales in industries and firms within those industries and their effect on the financial needs and liquidity of firms. W.
- 431: **Life Insurance**. 0-3-3. A comprehensive study of personal and group life, accident and health, hospitalization, old age, survivors and disability insurance, and annuities. F.
- 432: **Property Insurance**. 0-3-3. A comprehensive study of fire, burglary, robbery, forgery, inland and ocean marine insurance, and surety and fidelity bonds. F, Sp.
- 433: **Casualty Insurance**. 0-3-3. A study of automobile direct loss and liability, credit, title, aviation, workmen's compensation, and unemployment compensation insurance. W.
- 442: **Principles of Real Estate and Land Economics**. 0-3-3. Land utilization, city growth, land development, legal processes and transactions, real estate marketing, financing and financial institutions, taxes, condemnation, planning and zoning. F.
- 443: **Appraisal**. 0-3-3. Application of value theory and principles to real estate values; professional appraisal principles and methodology. Corresponds to Appraisal I, American Institute of Real Estate Appraisers. W.
- 444: **Appraisal of Urban Properties**. 0-3-3. Preq., Finance 443. Appraisal case studies and practice in appraisal of commercial and industrial properties; generally corresponds to Appraisal II, Urban Properties, American Institute of Real Estate Appraisers. Sp.
- 515: **Financial Management**. 0-3-3.
- 520: **Seminar in Financial Theory and Problems**. 0-3-3.
- 525: **Seminar in Investments**. 0-3-3.

FORESTRY

- 101: **General Forestry**. 0-2-2. An introduction to forestry, wood utilization, relations to land management, and the uses of natural resources in furnishing goods and services. Su, F, Sp.
- 202: **Forest Fire**. 0-2-2. Forest fire management, protection, and control. W, Sp.
- 205: **Dendrology**. 3-1-2. Preq., Botany 101 and Forestry 101. The identification, classification, characteristics, and distribution of the principal forest trees of the United States, with emphasis on conifers. F.
- 206: **Dendrology**. 3-1-2. A continuation of Forestry 205, with emphasis on hardwoods and spring and summer characteristics. Sp.
- 213: **Forestry Principles**. 3-2-3. For non-forestry majors. Study of forestry with emphasis on its application and correlation with agriculture, wildlife, and other fields. F.
- 214: **Forestry Principles**. 3-2-3. Preq., Forestry 213. Forestry practices and special study in the field of interest of the student. W.
- 301: **Silviculture; Silvics**. 3-2-3. Preq., Agronomy 302. Factors affecting the growth of trees and stands. F.
- 302: **Silviculture; Practice**. 3-2-3. Preq., Forestry 301. Reproduction methods, treatments, and improvements of trees and stands. W.
- 305: **Wood Technology**. 3-2-3. Preq., Botany 205. Identification, properties, and uses of commercial woods. F, Sp.

- 306: **Forest Measurements.** 3-2-3. Preq., Mathematics 111 and 112. Measurements of tree and forest volume, growth and yield, and products. F, W.
- 312: **Forest and Forest Products Entomology.** 3-1-2. The study of forest entomology in relation to forest management and forest protection. F.
- 313: **Forest and Forest Products Pathology.** 3-2-3. The important diseases of forests and forest products. Sp.
- 315: **Forest Measurements.** 2 credit hours. Preq., Forestry 306. Execution of forest surveys; techniques of growth measurement; determination of volume of trees and stands. Su.
- 316: **Forest Surveying.** 3 credit hours. Preq., Mathematics 112. Property surveys; topographic mapping; layout of forest roads and trails; lumber structures. Su.
- 320: **Tree and Forest Development.** 2 credit hours. Forest trees and forest stands, methods of improvement. Su.
- 321: **Land Use.** 2 credit hours. Land use in the Southern Forest Region. Su.
- 322: **Bottomland Hardwoods.** 2 credit hours. Silviculture management and utilization of hardwoods of the Southern Forest Region. Su.
- 340: **Wood Processes.** 3 credit hours. Conversion of trees into usable products, harvesting techniques, machinery, and milling methods. Su.
- 341: **Bonding and Finishing of Wood.** 3 credit hours. Adhesive and cohesive properties of glues and finishes. Su.
- 401-402: **Forest Management.** 3-1-2, each. Preq., Summer Camp. Principles and planning in forest management. F, Sp.
- 403: **Forest Finance.** 0-2-2. The economic and financial considerations applying to forestry. F, Sp.
- 407: **Forest Products.** 3-2-3. The uses of the forest crop other than lumber and its conversion into finished commodities. F.
- 408: **Seasoning and Preservation.** 3-2-3. Preq., Forestry 305 and 407. Theory and practice of air seasoning and kiln drying of forest products. The basis of wood preservation, preservatives, and methods of application. W.
- 409: **Forest Economics.** 0-3-3. Forests and their relation to economic, industrial, and social problems. W.
- 410: **Forest Policy.** 0-3-3. The basic principles and policies of federal, state, and private forestry. Sp.
- 411: **Forest Recreation.** 0-2-2. Forestry and nonforestry majors. Recreational use of forests and wild lands. Social, physical, and spiritual benefits of forest recreation. Forest recreation in the economy of the nation. W.
- 414: **Lumber and Plywood.** 3-1-2. Preq., Forestry 305 and 407. Manufacturing plant layout, veneers, ply and laminated products, hardwood and softwood lumber grades, and utilization of residues. W.
- 416: **Logging.** 3-1-2. Preq., Forestry 305 and 407. Logging methods, felling and bucking, skidding, loading, and hauling. Sp.
- 420: **Problems.** 1-3 semester hours credit. Preq., approval of the school director. Special problems in forestry and wood utilization correlated with management of land and natural resources. W, Sp.
- 422: **Seminar.** 0-1-1. Preq., senior standing. Review of research methods and programs. W.
- 300: **Phonetics and Oral Reading.** 0-3-3. Preq., French 202 or permission of instructor. Required for major in French. Sp, odd.
- 301-302: **French Conversation and Composition.** 0-3-3. each. Preq., French 202 or permission of instructor. Required for major in French. F, W, odd.
- 305: **Contemporary French Literature.** 0-3-3. Preq., French 202 or permission of instructor. A survey of French literature from 1914 to the present, with reading of selective works. F, even.
- 320-321: **Survey of French Literature.** 0-3-3 each. Preq., French 202 or permission of instructor. Required for major in French. A survey of French literature from the Middle Ages up to 1914. F, W, even.
- 351: **The Novel in France.** 0-3-3. Preq., French 202 or permission of instructor. A study of the novel in France up to 1914, with reading of outstanding examples. Sp, odd.
- 400: **The Drama in France.** 0-3-3. Preq., French 202 or permission of instructor. A study of the drama in France up to 1914, with reading of outstanding examples. F, odd.
- 450: **The French Language.** 0-3-3. Preq., French 202 or permission of instructor. General characteristics of the language and intense review of grammar. Sp, odd.

GEOGRAPHY

- 203: **Physical Geography.** 0-3-3. Fundamentals of physical and biogeography with an emphasis on world-wide distributions of patterns and processes. Su, F, W, Sp.
- 225: **World Human Geography.** 0-3-3. A survey of the peoples and places of Europe and the New World. Su, F, W, Sp.
- 226: **World Human Geography.** 0-3-3. Continuation of Geography 225; Africa, Asia, Australia, and the Pacific Islands. F, W, Sp.
- 250: **Geographical Methods and Techniques of Research.** 0-3-3. An introduction to the fundamentals of library, graphic, and field methods and techniques utilized in the field of geographical research. Sp.
- 260: **Conservation of Natural Resources.** 0-3-3. A study of the conservation of soils, minerals, forests, water, wildlife, human resources. F, W, Sp.
- 300: **The Eastern United States.** 0-3-3. By permission of the instructor. Course includes a 21-day field study involving approximately 5,000 miles of travel and observation of the United States east of the Mississippi River, and certain amount of required reading. Su, odd.
- 301: **The Western United States.** 0-3-3. By permission of the instructor. This course treats the region west of the Mississippi River similar to that of Geography 300 for the United States east of the Mississippi. Su, even.
- 305: **Geography of Anglo-American.** 0-3-3. A study of the natural environment, resources, and cultural patterns of the major geographic regions of the United States and Canada. F, even.
- 310: **Geography of Louisiana.** 0-3-3. Open only to junior, senior, and graduate students. The climate, natural regions, and resources of Louisiana; cultural development; sources and distribution of the population; settlements and agriculture. Su, W.
- 314: **Geography of Middle America and the West Indies.** 0-3-3. Physical, human, and economic geography of Mexico, Middle America, and the West Indies. F, even.
- 315: **Geography of South America.** 0-3-3. Physical, human, and economic geography of South America. W, even.
- 320: **Geography of Asia.** 0-3-3. Physical and human geography of Asia. Sp, even.
- 324: **Geography of Africa.** 0-3-3. Physical and human geography of Africa. Sp, odd.
- 330: **Geography of Australasia.** 0-3-3. Physical and human geography of Australia, New Zealand, and the Pacific Islands. F, odd.
- 335: **Commercial and Industrial Geography.** 0-3-3. A
- 101-102: **Elementary French.** 0-3-3. each. No credit for 101 unless 102 is taken. Elements of French grammar. Su, F, W, Sp.
- 201-202: **Intermediate French.** 0-3-3 each. Preq., French 102 or equivalent. A continuation of elementary French, with emphasis upon reading. Su, F, W, Sp.
- 251: **The Short Story in France.** 0-3-3. Preq., French 202 or permission of instructor. A study of the short story in France up to 1914, with reading of outstanding examples. Su, F, W, Sp.

FRENCH

- world survey of economic geography. W, odd.
- 360: **Geography of Europe.** 0-3-3. Physical and human geography of Western and Central Europe, and the Mediterranean basin. Sp, even.
- 365: **Geography of the Soviet Union.** 0-3-3. Physical and human geography of the Soviet Union. W, odd.
- 374: **Elements of Weather and Climate.** 0-3-3. A survey of the basic elements of weather and climate including temperature, barometric pressure, precipitation, and the interaction of these elements. F, odd.
- 375: **Climatology.** 0-3-3. Preq., Geography 203, 374, or permission of the instructor. A survey of the climatic regions of the world and the controlling factors of weather. W, even.
- 380: **Cartography.** 0-3-3. Elements of map interpretation and construction; interpretation, use and construction of graphs. Sp, odd.
- 403: **Field Methods.** 4-1-3. By permission of the instructor. A study of the tools and techniques for field research in geography with emphasis on special research problems in Louisiana geography. Su, odd.
- 501: **Physical and Cultural Elements of Geography.** 0-3-3.

GEOLOGY

- 111: **Physical Geology.** 0-3-3. Igneous, sedimentary, and metamorphic rocks; erosion of the earth by streams, oceans, winds, glaciers; phenomena of mountains, volcanoes, earthquakes; and the earth's interior. Su, F, W, Sp.
- 112: **Historical Geology.** 0-3-3. Preq., Geology 111. History of the earth as revealed in the character and fossil content of rocks. Su, F, W, Sp.
- 121: **Physical Geology Laboratory.** 3-0-1. Preq., registration or credit in Geology 111. Identification of minerals and rocks. Study of topographic maps and physiographic features shown thereon. Su, F, W, Sp.
- 122: **Historical Geology Laboratory.** 3-0-1. Registration or credit in Geology 112 and 121. Introduction to fossils, geologic maps, and the geologic history of selected portions of North America. Su, F, W, Sp.
- 200: **Introduction to Oceanography.** 0-3-3. A survey of the oceans; their nature, structure, origin, physical features, circulation, composition, natural resources, and relationships to the atmosphere and solid earth. Su, F, W, Sp.
- 201: **Introduction to Minerals and Rocks.** 3-2-3. Preq., Geology 111, Chemistry 101. (Not open to geology majors.) Origin, occurrence, character, and classification of common minerals and rocks and their identification. W.
- 206: **Map Interpretation.** 3-1-2. Preq., Geology 112. Interpretation of topographic maps, aerial photographs, geologic maps and geologic cross section. Sp.
- 209: **Mineralogy.** 3-2-3. Preq., Geology 112, Chemistry 102. Crystallography and descriptive mineralogy. Occurrence, associations, and uses of minerals. F.
- 210: **Mineralogy.** 3-2-3. Preq., Geology 209. Continuation of descriptive mineralogy with emphasis on the study of minerals under the petrographic microscope. W.
- 211: **Petrology.** 3-2-3. Preq., Geology 210. Introduction to the formation and classification of rocks. Identification of rock types in hand specimen and in thin section under the petrographic microscope. Sp.
- 230: **Environmental Geology.** 0-3-3. Preq., Geology 111 or consent of the instructor. An introductory course stressing the relationships between geology and the environment. F, W, Sp.
- 302: **Introduction to Paleontology.** 3-2-3. Preq., Geology 111, 112. Survey of invertebrate paleontology; phylum Protozoa through phylum Arthropoda. History of the science, rules of nomenclature, and environment of lower animals. W.
- 305: **Principles of Stratigraphy and Sedimentation.** 0-3-3. Preq., Geology 111 and 121. Classification, composition, properties, and origin of sediments, environmental factors, sedimentary processes, facies, and principles of correlation. W.
- 315: **Structural Geology.** 3-2-3. Preq., Geology 112, Mathematics 112. The recognition, representation, interpretation, and mechanics of rock deformation. F.
- 320: **Summer Field Course.** 6 hours credit. Preq., Geology 111, 112. Course work at the Louisiana Tech geology camp, or the camp of any accredited college or university with the approval of the student's adviser. Su.
- 401: **Optical Mineralogy.** 3-2-3. Preq., Geology 210. Theory and practice of mineral identification with the petrographic microscope. W.
- 402: **Petrography.** 6-1-3. Preq., Geology 401. Study of rocks in thin section using the petrographic microscope. Sp.
- 408: **Subsurface Methods.** 3-2-3. Preq., Geology 305 and Computer Science 102. Correlation of subsurface horizons utilizing drill cores and cuttings, mechanical well logs, seismic exploration methods and computer technology. Sp.
- 412: **Geomorphology.** 0-3-3. Preq., Geology 112. Origin, development and classification of land forms. Readings in classical and current geomorphic studies. W.
- 413: **Petroleum Geology.** 0-3-3. Preq., Geology 111 and 315. Study of the origin, migration, and accumulation of petroleum. Reservoir characteristics and types of petroleum-bearing rock structures emphasized. F.
- 420: **Directed Study of Geologic Problems.** 0-3-3. Preq., senior standing. Special topics within the student's field of interest. May be repeated for credit. Su, F, W, Sp.
- 421: **Micropaleontology.** 3-2-3. Preq., Geology 302. Study of microfossils used in correlation of well cuttings and outcrop samples, especially foraminifera. Sp.
- 425: **General Studies in Earth Sciences.** 0-3-3. Preq., consent of the instructor. Open to education majors and experienced elementary and secondary school teachers. Student may elect to repeat the course number to take advantage of a variety of earth science studies. Su, F, W, Sp.
- 428: **Computer Applications in Geology.** 0-3-3. Preq., Geology 305 and Computer Science 102. Use of the computer in geological mapping, trend surface analysis, and simulation models. Sp.
- 442: **Geophysical Methods.** 0-3-3. Preq., Physics 210 or consent of instructor. Introduction to the elementary theory, computation fundamentals, and basic field practice for gravity, seismic, magnetic, and electrical methods of geophysical exploration. Sp.
- 445: **X-Ray Crystallography.** 3-1-2. Preq., Geology 209 and 210. Fundamentals of X-Ray crystallography. Analysis of minerals by power diffraction method. W.
- 450: **Seminar.** 0-1-1. Preq., senior standing in geology. Written or oral reports in various phases of geology. Su, F, W, Sp.
- 505: **Advanced Structural Geology.** 3-2-3.
- 507: **Stratigraphy and Structure of the Gulf Coast.** 0-3-3.
- 508: **Advanced Paleontology.** 3-2-3.
- 509: **Economic Geology of the Gulf Coast Region.** 0-3-3.
- 521: **Special Problems.** 1-4 hours credit.

GERMAN

- 101-102: **Elementary German.** 0-3-3 each. No credit for 101 unless 102 is taken. Pronunciation, reading, and grammar. The chief emphasis is upon reading. 101-F, Sp; 102-Su, W.
- 201-202: **Intermediate German.** 0-3-3 each. Preq., German 102 or equivalent. A continuation of elementary German, with chief emphasis upon reading. The students will read a good deal of technical prose in their major fields. 201-F; 202-W.
- 301-302: **Survey of German Literature.** 0-3-3 each. Preq., German 201 or equivalent. A survey of German literature from the beginning until 1800. 301-F, Sp; 302-Su, W.

- 303: **Classical German Literature.** 0-3-3. Preq., German 201 or equivalent. A study of German classicism with special reference to Lessing, Goethe, Schiller. Su, Sp.
- 305: **Advanced German Grammar.** 0-3-3. Preq., German 201 or equivalent. An intensive course in German grammar designed especially for students who need an advanced proficiency in technical German. W.

HEALTH & PHYSICAL EDUCATION

- 100: **Exercises for Physical Development.** 3¼-0-1. May be repeated for degree credit on Pass-Fail basis. F, W, Sp.
- 101: **First Quarter Team Sports.** 3¼-0-1. F.
- 102: **Second Quarter Team Sports.** 3¼-0-1. W.
- 103: **Team Sports.** 3¼-0-1. The course includes fundamental skills, rules, and play of soccer, speedball and field hockey. F.
- 104: **Team Sports.** 3¼-0-1. The course includes fundamental skills, rules, and play of volleyball, basketball and softball. Sp.
- 105: **Weight Training Wrestling, and Isometrics.** 3¼-0-1. Su, W.
- 106: **Adaptive Physical Education.** 3¼-0-1. This course is for those who are not able to take Physical Education 101-102 and 201-202. Su, F, W, Sp.
- 108: **Tumbling.** 3¼-0-1. Beginning tumbling. F.
- 109: **Advanced Tumbling and Gymnastics.** 3¼-0-1. Designed to assist the high school teacher with special problems in teaching gymnastics. W.
- 110: **Restricted Activities.** 3¼-0-1. For students not physically able to participate in regular activity courses. Statement from physician listing restrictions is required. May be repeated for credit. W.
- 113: **Outdoor Recreation.** 3¼-0-1. Emphasis is on the modern principles of camping, hunting, and fishing. Su, F, Sp.
- 115-116: **Physical Education Activity Credit.** 3¼-0-1. each. For non-physical education majors who are given credit for varsity participation in a sport. Not more than four hours may be acquired in this manner. F, W, Sp.
- 119: **Basketball and Volleyball.** 3¼-0-1. Designed for non-majors with emphasis on fundamental techniques, rules and team play. W.
- 121: **Recreational Sports.** 3¼-0-1. Instruction in table tennis, shuffleboard, bounceball, aerial tennis, table games and other recreational games. F.
- 130: **Physical Education Activities for Children in the Elementary School.** 3¼-0-1. Opportunities are provided for students to participate in and teach a variety of physical education activities designed for children in the elementary school physical education program. F, W, Sp.
- 201: **Third Quarter Team Sports.** 3¼-0-1. Sp.
- 202: **Fourth Quarter Team Sports.** 3¼-0-1. Su.
- 205: **Gymnastic Apparatus.** 3¼-0-1. Basic instruction in the use of the balance beam, longhorse, uneven parallel bars, trampoline, springboard and traveling rings. Sp.
- 207: **Elementary Instruction in All Minor Sports.** 0-2-2. F, Sp.
- 215-216: **Physical Education Activity Credit.** 3¼-0-1. each. For non-physical education majors who are given credit for varsity participation in a sport. Not more than four hours may be acquired in this manner. F, W, Sp.
- 220: **Creative and Rhythmic Activities for Children.** 3¼-0-1. Emphasis on developing skill and knowledge of creative and rhythmic activities for preschool and elementary school children.
- 225: **Outdoor Education and Recreation.** 3¼-2-3. Designed to acquaint recreation leaders, teachers, and administrators with the values, programs, opportunities, and relationships of outdoor education and recreation. F.
- 226: **Recreation Leadership Theory.** 0-3-3. Developing individual competency in leading recreational activities. W.
- 230: **Modern Dance I.** 3¼-0-1. Conditioning exercises and techniques that provide a vocabulary of movement leading into dance composition. F.
- 231: **Modern Dance II.** 3¼-0-1. Preq., Physical Education 230, or comparable dance experiences. Intermediate techniques of modern dance movements and choreography. Opportunities for production of dance programs and teaching choreography. W.
- 232: **Modern Dance III.** 3¼-0-1. Preq., Physical Education 231, or comparable dance experience. Advanced techniques of modern dance movements, choreography and production of dance programs. W.
- 233: **Fundamentals and Foundations of Movement.** 3¼-0-1. Includes body mechanics, conditioning exercises, and figure control. F.
- 234: **Development Conditioning.** 3¼-0-1. Preq., Physical Education 233 or permission of instructor. Circuit training, interval training, calisthenics, isometrics are utilized preparing individuals to advance from one fitness level to another. Methods stress attaining and maintaining fitness. W.
- 240: **International Folk Dance.** 3¼-0-1. Dances from various countries of the world are presented along with a study of the country and the people where the dances originated. F.
- 241: **Golf.** 3¼-0-1. Basic techniques, skills and rules of golf are presented. Students provide own transportation to public course used for play. Green fee. Sp.
- 243: **Fencing.** 3¼-0-1. The fundamental techniques, skills and rules of bouting are presented. W.
- 245: **Social Dance.** 3¼-0-1. Instruction and practice in the fundamental social dance steps such as the waltz, foxtrot, rhumba, cha cha cha, in addition to currently popular dances. F.
- 250: **Stunts, Tumbling, Floor Exercise.** 3¼-0-1. Instruction in basic stunts and tumbling skills and floor exercise composition. W.
- 261: **American Folk Dance.** 3¼-0-1. Square and round dances that are a part of American dance are included in the course. W.
- 262: **Bowling I.** 3¼-0-1. Instruction in the fundamental techniques, rules, and etiquette of bowling with provision for practical application. Lane fee required. F.
- 271: **Tennis I.** 3¼-0-1. Techniques, skills, and rules are presented for the beginning player. Su, F.
- 272: **Badminton I.** 3¼-0-1. The course is designed to include techniques, skills, and rules of the game for the beginning player. W.
- 273: **Archery I.** 3¼-0-1. Basic techniques, skills and rules of archery are presented to the beginning student. F.
- 280: **Swimming I.** 3¼-0-1. Open to students who do not know how to swim or who are unable to swim safely in deep water. Su.
- 281: **Swimming II.** 3¼-0-1. Instruction for the student in the basic swimming strokes, endurance swimming and survival swimming. Su.
- 284: **Life Saving and Water Safety.** 3¼-0-1. Preq., Physical Education 281 or skill in the basic swimming strokes. The Red Cross Senior Lifesaving course is taught, followed by the Red Cross Water Safety Instructors Course. Su.
- 286: **Physical Education for Occupational Therapy.** 0-3-3. To familiarize individuals in the field of therapy for handling children of limited physical or mental resources as compared to normal children. F.

- 287: **Occupational Therapy for the Handicapped.** 0-3-3. Utilization of therapy procedures for the needs of the individual who is physically handicapped and the social implications of these handicaps. W.
- 288: **Field Archery.** 3¼-0-1. Preq., Target Archery 273. Instruction in instinctive and free style shooting. Repair, upkeep, and maintenance of equipment. Students will be required to furnish their own equipment. Sp.
- 290: **Personal Health for College Students.** 0-3-3. To assist the student in acquiring accurate information regarding personal health and in understanding the relationship of health to everyday living. Su, F, W, Sp.
- 291: **School and Community Health and Safety.** 0-3-3. To familiarize the student with the school health program, the organization, facilities, and services of community health. W.
- 300: **Safety Education.** 0-3-3. A survey of the accident problem, the social and emotional aspects involved, and the application to home, community, and industrial life. Su, Sp.
- 304: **Organization and Administration of Intramural Sports.** 0-3-3. This course covers the organization and administration of high school and college intramural programs. The student is required to assist in intramurals at Tech. W.
- 305: **Materials and Methods in Health Education in Secondary Schools.** 0-3-3. Preq., Physical Education 290. Includes information relative to school health education program with emphasis on methods of instruction and use of materials in secondary schools. F, Sp.
- 306: **Principles and Practices of Football Coaching.** 0-2-2. This course is designed to familiarize the student with various offensive and defensive systems that are used by coaches. F.
- 308: **Principles and Practices of Baseball Coaching.** 0-2-2. Fundamentals: (1) throwing, batting, and fielding; (2) position play; (3) offensive and defensive team strategy; (4) training and practices; (5) officiating. Sp.
- 310: **History and Principles of Physical Education.** 0-3-3. Preq., sophomore standing. A study of the history of physical education and of the principles upon which the teaching of physical education is based. F.
- 312: **Principles and Practices in Basketball Coaching.** 0-2-2. Fundamentals of team offense and defense. Training and practice; scouting and strategy; officiating. W.
- 313: **Techniques in Coaching Team Sports.** 0-3-3. Preq., Physical Education 103 and 104. Study of team sports from viewpoint of teacher and coach. Sp.
- 314: **Principles and Practices in Track and Field.** 0-2-2. Fundamental movements involved in the different events: (1) staffing for the different events; (2) training and practice; (3) officiating. Sp.
- 317: **Camp Leadership.** 0-3-3. Preq., Sophomore standing. A study of duties and responsibilities of camp counselors, leadership techniques in program activities and camp organization. Sp, odd.
- 320: **Organization and Administration of Physical Education.** 0-3-3. Treatment of practical factors involved in administering large units of health and physical education including tests and measurements utilized in evaluation of results. Junior standing. F, Sp.
- 321: **First Aid.** 0-2-2. Lectures, discussions, and practical demonstrations of Red Cross methods in First Aid. Su, F, W, Sp.
- 326: **Applied Anatomy and Kinesiology.** 0-3-3. This course includes the theory of body movement in relation to Physical Education activities. F, W.
- 340: **Materials and Methods in Physical Education and Health Education for Elementary Schools.** 0-3-3. Designed to prepare the teacher for the direction of children in physical education and for developing in children desirable knowledge, skills, and attitudes in health. F, W, Sp.
- 355: **Community Centers and Playgrounds.** 0-3-3. The specific problems and programs unique to recreation centers and playgrounds, emphasizing techniques for administration and operation. W.
- 392: **Bowling II.** 3¼-0-1. Instruction for individuals who know the fundamentals of bowling. Lane fee required. W.
- 370: **Techniques and Methods of Teaching Rhythms.** 3¼-0-1. Preq., Physical Education 230 and 240. Techniques, methods and materials related to teaching rhythms in the elementary and high school. W.
- 371: **Tennis II.** 3¼-0-1. Preq., Physical Education 271 or skill in basic tennis techniques. Advanced skills and game strategy are stressed. Sp.
- 372: **Badminton II.** 3¼-0-1. Preq., Physical Education 272 or skill in basic badminton techniques. Advanced skills and game strategy are stressed. W.
- 404: **Introduction to Community Recreation.** 0-3-3. A survey of the type of community recreation programs and of recreation facilities. Sp.
- 405: **Athletic Injuries Prevention, Diagnosis, and Treatment.** 0-2-2. Physical Education majors only. A course for men and women in the prevention, diagnosis, and treatment of injuries in the gymnasium and on athletic fields. W.
- 410: **Building and Maintaining Recreational Facilities.** 0-3-3. An advanced course to enable students to design, build, and maintain recreational facilities, including baseball, basketball, track, football, swimming and facilities for minor sports. F, odd.
- 411: **Current Theories and Practices in the Teaching of Rhythms.** 0-3-3. Basic theories, techniques, materials, and practices in the teaching of the various forms of movement to music are included in the course. F, even.
- 412: **History of Sports.** 0-3-3. A study of sports from ancient to modern times. W, odd.
- 414: **Teaching Physical Education to the Mentally Retarded.** 0-3-3. To familiarize students with the instruction or physical education for children of limited physical or mental resources. Sp, even.
- 415: **Camp Counseling and Administration.** 15-3-6. Preq., junior or senior standing. The study of duties and responsibilities of camp counselors, leadership techniques in program activities and camp organization. Su.
- 433: **Special Problems in Health and Physical Education.** 0-3-3. (Maximum of three semester hours credit.) Designed to deal with selected problems in Health and Physical Education.
- 509: **Tests and Measurement in Physical Education.** 0-3-3.
- 516: **Education for Fitness.** 0-3-3.
- 517: **Organization and Administration of Physical Education.** 0-3-3.
- 518: **Recent Literature and Research in Physical Education and Recreation.** 0-3-3.
- 519: **Alcohol and Narcotics Education.** 0-3-3.
- 520: **Problems in Motor Learning.** 0-3-3.
- 525: **Supervision of Physical Education.** 0-3-3.
- 526: **Physiology of Exercise.** 0-3-3.
- 527: **Foundations of Physical Education.** 0-3-3.
- 528: **Administration and Organization of Physical Education in Elementary Schools.** 0-3-3.
- 529: **Curriculum Construction in Physical Education.** 0-3-3.
- 530: **Administration of Recreation.** 0-3-3.
- 531: **Physical Education for the Handicapped.** 0-3-3.
- 532: **Interscholastic Athletics.** 0-3-3.
- 533: **Problems in Health, Physical Education, Recreation and Athletics.** 0-3-3.
- 534: **Mechanical Analysis of Motor Skills.** 0-3-3.
- 550: **Current Trends in Health, Physical Education, and Recreation.** 0-3-3.

HISTORY

- 101: **World History to 1500.** 0-3-3. A survey of civilizations of the world to 1500. Major emphasis on Western Civilization. Su, F, W, Sp.
- 102: **World History since 1500.** 0-3-3. A survey of civilization of the world since 1500. Major emphasis on Western Civilizations. Su, F, W, Sp.
- 201: **History of the United States, 1492-1877.** 0-3-3. A survey of American history from discovery through Reconstruction. Su, F, W, Sp.
- 202: **History of the United States, 1877 to the Present.** 0-3-3. A survey of American history from Reconstruction to the present. Su, F, W, Sp.
- 300: **The Eastern United States.** 0-3-3. By permission only. A 21-day field study of the region east of the Mississippi River, with lectures and required reading. Su, odd.
- 301: **The Western United States.** 0-3-3. By permission only. A 21-day field study of the region west of the Mississippi, with lectures and required reading. Su, even.
- ALL OF THE 300 AND 400 COURSES LISTED BELOW CARRY PREREQUISITES: HISTORY 101 AND 102 FOR ALL ADVANCED COURSES IN NON-AMERICAN HISTORY AND HISTORY 201 AND 202 FOR ALL ADVANCED COURSES IN AMERICAN HISTORY.**
- 310: **American Military History.** 0-3-3. A survey of the major wars and campaigns of the United States together with events leading to the conflicts and their historical significance. Sp.
- 318: **The French Revolution and Napoleon.** 0-3-3. A study of the French Revolution and the Napoleonic era. Sp.
- 319: **Europe from 1815 to 1870.** 0-3-3. A survey of Europe from the Congress of Vienna to the unification of Italy and Germany. Su.
- 320: **Europe from 1870 and 1919.** 0-3-3. A study of the events in Europe from 1870 to the Treaty of Versailles. F.
- 321: **Europe Since 1919.** 0-3-3. A survey of Europe from the Treaty of Versailles to the present. W.
- 328: **History of the Ancient Near East.** 0-3-3. A survey of the civilization of Egypt and Mesopotamia from earliest times to the Arab conquest in the 7th century. F, even.
- 329: **History of the Ancient Near East.** 0-3-3. A survey of the civilizations of the Hittites, Hebrews, Canaanites, Philistines, Phoenicians, Carthaginians, Lydians, and Persians to the middle of the 7th century. W, even.
- 330: **The Intellectual and Cultural History of the Western World from the Hellenic Era to the End of the Middle Ages.** 0-3-3. A survey of the philosophical, cultural, religious, scientific, artistic, and literary thought and achievement of western man from the Greeks to the beginning of the Renaissance. F, odd.
- 331: **The Intellectual and Cultural History of the Western World in Modern Times.** 0-3-3. A survey of the philosophical, cultural, religious, scientific, artistic, and literary thought and achievement of western man from the Renaissance to the present. W, odd.
- 332: **History of Greece.** 0-3-3. A political, economic, social, and cultural study of Greek history from earliest beginnings through the Hellenistic era. F, odd.
- 333: **History of Rome.** 0-3-3. A survey of the political, economic, social, and cultural history of Rome from earliest beginnings through the fifth century A.D. W, odd.
- 334: **Medieval Europe.** 0-3-3. A survey of Europe from the decline of Rome to the advent of the Renaissance. F, even.
- 335: **Renaissance and Reformation.** 0-3-3. A study of the political, economic, and cultural evolution of Europe from 1300 to 1648. W, even.
- 336: **History of the Modern Near East.** 0-3-3. A history of the Arabic world from the fifteenth century to the present. Sp.
- 340: **History of Latin America to 1824.** 0-3-3. A survey of Latin American history from European and Indian backgrounds to 1824. F.
- 341: **History of Latin America Since 1824.** 0-3-3. A survey of political, economic, and social developments in Latin America since 1824. W.
- 342: **History of Mexico.** 0-3-3. The history of Mexico from pre-Columbian Indian civilizations to the present with emphasis on those forces which shaped modern day Mexico. Sp, odd.
- 343: **The A B C Powers: Argentina, Brazil, and Chile.** 0-3-3. A history of the major countries of South America, from their independence in 1823 to the present. Sp, even.
- 344: **History of the Caribbean Area.** 0-3-3. A survey of the Caribbean area from 1492 to the present. W.
- 350: **The American Frontier.** 0-3-3. A study of the American frontier from the colonial period to 1890, with special emphasis on social and economic growth. Su.
- 360: **History of Traditional China.** 0-3-3. A study of the development of political, social, and cultural institutions of China from antiquity to the establishment of the Manchu dynasty. F, even.
- 361: **History of Modern China.** 0-3-3. A history of China from 1644 to the present with emphasis on China's response to Western influence. W, even.
- 370: **History of Traditional Japan.** 0-3-3. A study of the historical development of Japan from the earliest times to 1603. F, odd.
- 371: **History of Modern Japan.** 0-3-3. A study of the political, social, and intellectual history of Japan from 1603 to the present. W, odd.
- 380: **History of England to 1688.** 0-3-3. A study of the development of the English people from the earliest times to the accession of William and Mary. F.
- 381: **History of England Since 1688.** 0-3-3. A study of English political, social, and economic institutions and policies in the eighteenth, nineteenth, and twentieth centuries. W.
- 385: **History of Modern Germany.** 0-3-3. A study of German history since 1648 with special emphasis on major developments in the nineteenth and twentieth centuries. W.
- 400: **Diplomatic History of the United States to 1898.** 0-3-3. A study of American foreign policy from colonial beginnings through the Spanish American War. F, odd.
- 401: **Diplomatic History of the United States Since 1898.** 0-3-3. A study of American foreign policy from our emergence as a world power to the present. W, odd.
- 410: **History of Modern Russia.** 0-3-3. A survey of Russian history with special emphasis on twentieth century developments. F.
- 440: **Seminar in Latin American History.** 0-3-3. Preq., History 340 and 341 or permission of the instructor. An intensive study of a subject in Latin American history to be chosen by the instructor. Sp.
- 445: **Seminar in Asian History.** 0-3-3. An intensive study of selected historical developments in China, Japan, and Southeast Asia. Sp.
- 450: **History of the Old South.** 0-3-3. A study of the political, economic, and social development of the ante-bellum South. Su, odd; Sp, even.
- 451: **History of the New South.** 0-3-3. A study of the political, economic, and social development of the South since the Civil War. Su, even; Sp, odd.
- 460: **History of Louisiana.** 0-3-3. A study of Louisiana history from early explorations to the present. Su, F, W, Sp.
- 465: **Recent American History.** 0-3-3. A study of the twentieth century America. Sp.
- 470: **Social and Intellectual History of the United States to 1865.** 0-3-3. A survey of the major forces and ideas that shaped American history to 1865. F, even.
- 471: **Social and Intellectual History of the United States Since 1865.** 0-3-3. A survey of the major forces and ideas that have shaped American history since 1865. W, even.
- 500: **American Historiography.** 0-3-3.
- 520: **Colonial America.** 0-3-3.
- 521: **The Federal Period, 1783-1825.** 0-3-3.
- 522: **The Middle Period, 1825-1860.** 0-3-3.

- 523: **The Civil War and Reconstruction.** 0-3-3.
 524: **The Emergence of Modern America, 1876-1900.** 0-3-3.
 530: **Seminar in Ancient History.** 0-3-3.
 535: **Seminar in Medieval History.** 0-3-3.
 540: **Recent European History.** 0-3-3.
 545: **Seminar in Near East History.** 0-3-3.
 548: **Seminar in East Asian History.** 0-3-3.
 550: **Seminar in British History.** 0-3-3.

HOME ECONOMICS

- 100: **Marriage and Family Living.** 0-3-3. Significant factors for successful marriage, marital adjustment, and family living. Su, F, W, Sp.
 103: **Nutrition and Weight Control.** 2-0-1. Designed for non-majors. Health and Physical Education 233 is recommended as parallel of this course. A personalized program of weight control based on recommended balance between energy intake and output. Dietary plans for providing nutrients recommended for normal health. F, W, Sp.
 107: **Introduction of Home Economics.** 0-1-1. Introduction to policies and practices fundamental to optimum performance at the University level. A brief survey of careers in home economics. Su, F.
 112: **Food Study and Preparation.** 6-1-3. Study of food preparation approached from the standpoint of composition and basic preparation procedures. F, W, Sp.
 118: **Clothing Construction.** 6-0-2. Development of principles of basic construction and fitting and the use of commercial patterns to create clothing suitable to the individual. F, W, Sp.
 128: **Clothing Selection.** 0-2-2. Consideration of appropriate and becoming clothing for individuals with recognition of social, economic, and psychological factors. Design and manufacture of clothing. F, W, Sp.
 201: **Introduction to Child Development and Early Childhood Education.** 0-2-2. A survey of child development and early childhood education with emphasis on history, occupational possibilities and recent developments in the field. F, Sp.
 203: **Nutrition.** 0-3-3. Functions of various nutrients and their interrelationships in children and adults with emphasis on personal food habits and selection. F, W, Sp.
 212: **Meal Management.** 6-1-3. Preq., Home Economics 112. Family meal management including food purchasing and storage. Preparation in terms of basic methods and composition. Functional adaptation of traditional food service procedures. F, W, Sp.
 213: **Group Nutrition.** 0-3-3. Preq., Home Economics 203. Nutrition for the pre-school and school age child, the elderly and the ill.
 218: **Intermediate Clothing Construction.** 6-0-2. Preq., Home Economics 118. Development of judgment, originality, and skill in construction. Emphasis on pattern selection, use of uncommon fabrics, decorative and special techniques for oneself and other family members. F, Sp.
 219: **Textiles.** 0-2-2. Study of properties and production of textile fibers. Consumer approach to fabric selection, use and care. Credit will not be given for 219 if student has had Home Economics 209. F, W.
 222: **Food Cost Control.** 0-2-2. Records and analysis as applied in food cost control in the food service organization. W.
 236: **Household Equipment.** 0-3-3. Proper selection, use, and care of equipment. Wiring and lighting of the home, kitchen planning. F, Sp.
 242: **Food Service Supervision.** 3-2-3. Problems in directing, supervising and controlling personnel, sanitation, purchasing, and storage for small food service organizations.
 272: **Food Service Field Experience.** 24-0-6. Supervised experience in a commercial institutional food service.
 282: **Food Service Field Experience.** 36-0-9. Supervised experience in a commercial institutional food service.
 301: **Early Childhood Development.** 3-2-3. Preq., Psychology or Home Economics 201. The development of young children. Theory and practice are correlated through readings, class discussions, and nursery school laboratory experiences. F, W, Sp.
 302: **Advanced Meal Management.** 6-1-3. Preq., Home Economics 212. Problems of management for group activities and special occasions. Sp.
 303: **Nutrition.** 3-2-3. Preq., Chemistry 220, Zoology 225. Physiological and chemical significance of various nutrients and interrelationships to personal and family food selection. Laboratory experiences reinforce class discussions. W.
 338: **Tailoring.** 6-0-2. Preq., Home Economics 218 or consent of instructor. Fundamental construction processes reviewed and basic principles of tailoring applied in the construction of tailored garments. F, Sp.
 342: **Quantity Cookery.** 6-2-4. Preq., Home Economics 212. Experience in food preparation and service, menu planning, and methods of purchasing for institutions. F.
 373: **Nutrition Clinic Experience.** 3-0-1. Supervised participation in providing nutrition instruction for patients in a clinical setting.
 401: **Creative Activities and Organization of Preschool Programs.** 0-3-3. Preq., Home Economics 301 or consent of instructor. Organization of preschool programs with emphasis on creative activities, materials and facilities. F.
 403: **Nutrition and Diet Therapy.** 0-3-3. Methods of adapting and modifying principles of normal nutrition for periods of stress and treatment of disease. W.
 405: **Home Economics Methods.** 0-3-3. An understanding of the home economics education program with emphasis on philosophy, principles and methods of teaching home economics. F, Sp.
 406: **Special Problems in Home Economics.** 4-1-3. Special offerings may be selected by the student with approval of his adviser. Laboratory and lecture to be arranged by the supervising professors. May be repeated for credit with Dean's permission. Su, F, W, Sp.
 407: **Seminar.** 0-1-1. May be repeated for total of two hours. Investigation of current literature in the various fields of home economics. F, Sp.
 411: **Methods in Early Childhood Education.** 3-2-3. Preq., Home Economics 301. Important factors in planning for preschool children. Emphasis on objectives, planning nursery school experiences, and evaluation. W.
 412: **Food Science and Technology.** 6-1-3. Preq., Home Economics 112 and 212. An experimental approach to studying the chemical and/or physical nature of foods. Recent developments in technology. Individual investigations of selected problems including literature review, laboratory experiments and written reports. F.
 413: **Advanced Nutrition.** 0-3-3. The biological and physiological roles of the nutrients; recent research in the field of nutrition. Sp.
 417: **Seminar.** 0-1-1. May be repeated for total of two hours. Current readings emphasizing the family and the consumer. Su, W.
 421: **Student Teaching in Early Childhood Education: Nursery School.** 9-1-4. Preq., Home Economics 301 and 411. An intensive practical experience in supervised nursery school teaching. Sp.
 426: **Housing.** 0-3-3. Study of the physical aspects of planning a house. History of housing. Social aspects such as zoning, government regulations, etc. W.
 427: **Demonstration.** 6-0-2. Preq., Speech 110. Improvement of communication by practical application of demonstration techniques. For teachers or home economists in business. F.
 428: **Dress Design and Pattern Construction.** 6-1-3.

- Preq., Art 175, Home Economics 338, or consent of instructor. Flat pattern and draping techniques in developing original design. Emphasis on appropriate use of line, color and texture. Sp.
- 436: **Home Management House Residence.** 18-2-4. Preq., Home Economics 212, and advanced junior standing. Residence in the home management house where students plan, coordinate, and evaluate all phases of homemaking. (Six weeks only.) Su, F, W, Sp.
- 433: **Historic Costume.** 0-2-2. Development of costume from ancient Egypt through the 19th century, with emphasis on social, economic, and aesthetic influences of its design. F, W.
- 442: **Food Service Administration.** 3-3-4. Preq., Home Economics 342. Principles of organization and management applied to food service administration. Sp.
- 456: **Family Management.** 0-2-2. Processes of management as applied to getting jobs done through people in the home. Decision making related to consumer problems. F, Sp.
- 458: **Fashion Merchandising.** Three hours credit. Preq., Marketing 335 or consent of instructor. Supervised experience in salesmanship and other phases of merchandising in retail firms cooperating with the College of Home Economics. F, Sp.
- 498: **Fashion Merchandising International.** 3 to 12 Semester hours. Travel study in European fashion centers (3 hrs). Supervised, paid work experience in metropolitan fashion center (9 hrs). Graduate or undergraduate credit. Applications required. F, Sp.
- 500: **Improving Instruction in Family Relations.** 0-3-3.
- 502: **Advanced Experimental Food Problems.** 6-1-3.
- 503: **World Nutrition Problem.** 0-3-3.
- 504: **Methodology in Home Economics Research.** 0-3-3.
- 505: **Vocational Home Economics Supervision.** 0-3-3.
- 506: **Special Problems in Home Economics.** 4-1-3.
- 503: **Advanced Tailoring.** 6-1-3.
- 509: **Advanced Textiles.** 0-3-3.
- 512: **Food Science and Technology.** 0-3-3.
- 522: **Quantity Food Purchasing.** 0-3-3.
- 532: **Food Service Organization and Management.** 0-3-3.
- 542: **Quantity Food Equipment.** 0-3-3.
- 541: **Research and Thesis.** 3 hours credit or multiples thereof. Maximum credit is 6 hours.
- additional credit. Su, F.
- 219: **Introduction of Landscape Design.** 0-1-1. A survey of the field of landscape design as it applies to home and city beautification. F, even.
- 220: **Elementary Landscape Design.** 0-2-2. Elements and principles of landscape design as applied to the home grounds. W.
- 231, 232, 233: **Design Laboratory.** 3-0-1 each. A series of exercises in floral and/or landscape design relating to home planning and development and the use of cut plant material for home decoration. Su, F, W, Sp.
- 332: **Ornamental Plants.** 0-2-2. Woody and herbaceous ornamental plants and their use in landscape. Sp, odd.
- 337: **Landscape Design.** 3-2-3. Elements and principles of design as applied to small parks, institutional grounds, and other large areas. F, Sp.
- 311: **Japanese Flower Arranging.** 0-1-1. Classical and modern Japanese flower arranging as it is practiced by Americans. W, even.
- 315: **Plant Propagation.** 0-2-2. Principles and practices of sexual and asexual methods of propagating horticultural plants. F, add.
- 331-332-333: **Advanced Horticulture Laboratory.** 9-0-1. Field trips to experiment stations, large wholesale florists and nurseries, and large horticultural production areas. F, W, Sp, odd.
- 403: **Commercial Floral Design.** 0-1-1. Principles and practices of commercial floral design as practiced by the florist industry. F, even.
- 404: **Creative Floral Design.** 6-1-3. Original designs executed by the students. Mechanics are devised and sketched, directions for construction are formulated and written for a portfolio. Sp, even.
- 409: **Nursery Management.** 0-1-1. Production practices, management, grading, and marketing of fruit, vegetable, and ornamental nursery plants. F, even.
- 410: **Greenhouse Management.** 0-1-1. Principles and practices of greenhouse management. May be given as a 3-day short course in the summer. Su, W, odd.
- 412: **Flower Shop Management.** 0-1-1. Principles and practices of retail flower shop management. Sp, odd.
- 416, 417, 418: **Special Problems in Horticulture.** 3-0-1 each. Preq., senior standing as a horticulture major or consent of instructor. Must be taken in sequence. F, W, Sp, even.

HONORS

- 498-499: **Readings and Research—Major Field.** 9-0-3 each. Preq., admission to Honors Program. Departmental honors course for independent research and reading. Offered by each department in the College of Arts and Sciences. Su, F, W, Sp.

HORTICULTURE

- 103: **Basic Floral Design.** 0-1-1. Design, mechanics and construction of simple floral pieces for retail floristry. F, odd.
- 131, 132, 133: **Horticulture Laboratory.** 3-0-1 each. A series of exercises, planned on a seasonal basis, to provide experience in horticultural practices. F, W, Su, even.
- 201: **Vegetable Growing.** 0-2-2. Methods and practices of home and commercial vegetable production, with special emphasis on those produced in the South. Sp.
- 205: **Fruit Growing.** 0-2-2. Home and commercial production of tree fruits, small fruits, and nuts adapted to the South. W, odd.
- 210: **Flower Growing.** 0-2-2. Principles and practices involved in growing garden and green house flower crops. F, odd.
- 215: **Flower Arranging.** 0-1-1. Element and principles of contemporary American amateur flower arranging. Horticulture 231, 232, may be taken for

INDUSTRIAL ENGINEERING

- 201: **Introduction to Industrial Engineering.** 0-3-3. Preq., sophomore standing. Introduction to machine system. F.
- 301: **Industrial Cost Analysis.** 0-3-3. Analysis and control of manufacturing costs. Sp.
- 400: **Engineering Statistics.** 0-3-3. Preq., Mathematics 231. Application of probability and distribution theory to various branches of engineering. F, Sp.
- 401: **Engineering Statistics.** 0-3-3. Preq., Industrial Engineering 400. Inferences concerning proportions, regression analysis, analysis of variances, quality control, reliability, and life testing. W.
- 402: **Introduction to Operations Research.** 0-3-3. Preq., Industrial Engineering 400. Inventory theory, replacement theory, waiting lines, game theory, allocation and sequencing. W.
- 404: **Operations Research.** 0-3-3. Preq., Industrial Engineering 402. Industrial engineering applications of dynamic programming, critical path methods, projects evaluation review technique (PERT), and computer simulation of large systems. Sp.
- 408: **Facilities Planning.** 0-3-3. Preq., Mechanical Engineering 251 and Industrial Engineering 201. Detail planning for plant location, buildings, services, materials handling and transportation. Sp.
- 409: **Production Engineering.** 3-2-3. Preq., Mechanical Engineering 251. Methods engineering, work

- measurement, and production standards. F, Sp.
- 410: **Industrial Engineering Design.** 0-3-3. Preq., Industrial Engineering 409. Principles of plant layout related to the design of man-machine systems. Su, W.
- 411: **Operations and Facilities Design.** 0-2-2. Preq., Industrial Engineering 400, 408 and 409. Introduction to industrial engineering systems design. Selection and analysis of an engineering problem from industry or any other field where industrial engineering techniques are applied. W.
- 412: **Operations and Facilities Design.** 0-2-2. Preq., Industrial Engineering 411. The development of a solution to the engineering problem started in Industrial Engineering 411. Sp.
- 420: **Introduction to Human Factors Engineering.** 0-3-3. Preq., junior standing. Human biological and psychological capabilities and limitations. Man-machine-environment systems. W.
- 421: **Human Engineering for Equipment Design.** 0-3-3. Preq., Industrial Engineering 420 and credit or registration in Industrial Engineering 422. Engineering design for the man-machine interface. Design of controls, displays, work stations. System evaluation and testing. Sp.
- 422: **Human Factors Laboratory.** 3-1-2. Preq., junior standing. Laboratory methods and techniques for deriving design criteria applicable to human engineering. Sp.
- 424: **Seminar.** 0-1-1. Preq., senior standing. Instruction and practice in conference-type discussions of technical and professional matters of interest to industrial engineers. Sp.
- 425: **Industrial Safety.** 0-3-3. Preq., junior standing. Principles of domestic and industrial safety. Su, W.
- 426: **Materials Handling.** 0-3-3. Preq., Industrial Engineering 408. Modern materials handling methods, systems, equipment and control. F.
- 427: **Construction Safety.** 0-3-3. Preq., junior standing or consent of instructor. Fundamentals of construction safety. F.
- 429: **Industrial Hygiene.** 0-3-3. Fundamentals of Industrial Hygiene. Sp.
- 451: **Tool Design.** 4½-1-2. Preq., Industrial Engineering 409, Mechanical Engineering 251. Analysis and design of production tools. W.
- 501: **Operations Research.** 0-3-3.
- 502: **Operations Research.** 0-3-3.
- 504: **Systems Simulation.** 0-3-3.
- 505: **Queuing Theory.** 0-3-3.
- 506: **Dynamic Programming.** 0-3-3.
- 507: **Engineering Administration.** 0-3-3.
- 508: **Human Factors in Engineering Systems.** 0-3-3.
- 509: **Advanced Engineering Economy.** 0-3-3.
- 510: **Advanced Work Measurement.** 0-3-3.
- 512: **Reliability Engineering.** 0-3-3.
- 513: **Inventory Control.** 0-3-3.
- 514: **Industrial Statistics.** 0-3-3.
- 520: **Graph and Network Analysis.** 0-3-3.
- 521: **Methods of Optimization.** 0-3-3.
- 524-525-526: **Graduate Seminar.** 0-1-1 each.
- 550: **Special Problems.** 1-4 semester hours credit.

INSTRUMENTATION TECHNOLOGY

- 201: **Instrument Maintenance and Calibration.** 3-2-3. Preq., Electro-Technology 270. Instruction and practical laboratory experience in the mechanical and electrical maintenance and calibration of industrial instruments. Introduction to the standards laboratory, and awareness of the importance of traceable calibrations. Sp.

INTERNATIONAL AND AMERICAN STUDIES

- 300: **Study Tour of the Soviet Union.** 0-2-2. Preq., Consent of Director, Rome Winter Program. A

tour of the Soviet Union, with emphasis on the study of Soviet Russian institutions, civilization and on culture. Sp. (Rome)

- 360: **Selected Topics in International Studies.** 0-3-3. Preq., consent of instructor. An undergraduate seminar dealing with varying significant topics in international studies. (May be repeated. Maximum credit of 6 hours.) F, Sp (Rome).
- 395-396: **Junior Colloquium.** 0-3-3 each. Preq., consent of instructor. A full year sequence of seminars designed to introduce the student to interdisciplinary and comparative techniques in international studies. F, Sp. (Rome)
- 397-398-399: **Junior Colloquium.** 0-2-2 each. Preq., consent of instructor. A year-long sequence to introduce the student to interdisciplinary techniques in international area studies. (May be repeated. Maximum credit of 6 hours.) F, W, Sp.
- 460: **Readings in International Studies.** 0-3-3. Preq., consent of instructor. A course of directed readings in international affairs. (May be repeated. Maximum credit of 6 hours.) F, Sp.
- 495-496: **Senior Colloquium.** 0-3-3 each. Preq., consent of instructor. A full year sequence requiring the application of interdisciplinary and comparative techniques to the study of international affairs. F, Sp. (Rome)
- 497-498-499: **Senior Colloquium.** 0-2-2 each; Preq., consent of instructor. A year-long sequence requiring application of interdisciplinary and comparative techniques to the study of international affairs. F, W, Sp.

ITALIAN

- 101-102: **Elementary Italian.** 0-3-3 each. Italian pronunciation, grammar, and the vocabulary of the fine arts, history, economics, and current affairs. No credit for 101 unless 102 is taken. 101-Su, Sp, (Rome); 102-Su (Rome). F.
- 201-202: **Intermediate Italian.** 0-3-3 each. Preq., Italian 102 or its equivalent. Conversation and vocabulary building with emphasis on contemporary Italian literature and individual study of Italian works in student's major field. 201-W, 202-Sp.

JOURNALISM

- 101: **News Writing.** 0-3-3. May be taken with English 101. Beginning course in news writing. Work on "leads" and other newspaper writing basics. F, Sp.
- 310: **Copy Editing.** 0-3-3. Preq., Journalism 101. Course dealing with methods of editing copy and the writing of headlines. Su, W.
- 320: **Feature Writing.** 0-3-3. Preq., Journalism 101. Practical instruction in gathering material for "human interest" and feature articles of various types for magazines as well as newspapers. F, Sp.
- 330: **Editorial Writing.** 0-3-3. Preq., Journalism 101. Course in the study of fundamentals and practice in editorial writing. Course includes units on recent history and current events. W.
- 350: **Practical Reporting.** 6-0-2. Open only to journalism majors or minors. Preq., Journalism 101, and 310. Writing of articles for the university newspaper upon assignment or consultation with faculty supervisor. May be repeated for two additional semester hours credit. Su, F, W, Sp.
- 353: **General Newspaper Work.** 6-0-2. Open only to journalism majors or minors. Preq., Journalism 101. Practical lab work on university newspaper. May be repeated for two additional semester hours credit. F, W, Sp.
- 355: **Practical Reporting.** 6-0-2. Preq., Journalism 101. Open to majors and minors only. Practical lab work on The Tech Talk. May be repeated for two additional semester hours credit. F, W, Sp.
- 360: **Advertising.** 0-3-3. Fundamental study of advertising principle, including information on major media. F.

- 364: **News for Radio and Television.** 0-3-3. Preq., Journalism 101 or equivalent experience. The gathering and preparation of news and editorial material for broadcast by radio and television. F.
- 374: **Industrial Publications.** 0-2-2. Study of the purposes, style, content and means of producing house organs and business periodicals of several types. W.
- 375: **People and Events.** 0-3-3. Creative writing, as it applies to magazines and newspapers. A "how-to-get-published" primer, with oral and written critiques of work. F.
- 376: **Sports News Coverage.** 0-2-2. Preq., junior or senior standing. Course designed to include keeping box scores, statistics, preparation of brochures and program pamphlets, publicizing athletic events and reporting of games. W.
- 450: **Public Relations.** 0-3-3. Comprehensive approach into diverse functions of the practitioner as a specialist, analyst and counselor relevant to public relations' role involving monitoring public opinion. Sp.
- 451: **Advanced Practical Reporting.** 6-0-3. Junior and senior majors only and by permission of instructor. Consists of practical work on a daily newspaper, work ranging from headline writing to basic beat coverage. Su, F, W, Sp.
- 455: **Scholastic Journalism.** 0-3-3. Preq., Journalism 101 or permission of instructor. A practical course in basic techniques designed to aid secondary school journalism curriculum development with emphasis on advising publications. Su, W.

LIBRARY SCIENCE

Library Science courses numbered 300 and 400 are open only to junior and seniors.

- 201: **Books and Materials for the Elementary School.** 0-3-3. A study of the reading interests of children. Selection and evaluation, sources and use of materials with children. Extensive reading of children's books. Su, F, W, Sp.
- 210: **Libraries and Librarianship.** 0-3-3. Introductory survey of libraries and librarianship designed for students entering the profession. F.
- 301: **School Library Administration.** 0-3-3. Administration of the school library with emphasis on planning for effective use of library services and materials in cooperation with instructional staff. Su, even; F
- 302: **Acquisition and Organization of Library Materials.** 0-3-3. Preq., Library Science 301 or consent of instructor. Basic principles of cataloging and classifying print and non-print materials. Study of Dewey Decimal Classification System. Su, odd; W, Sp.
- 303: **Introduction to Reference Materials and Service.** 0-3-3. Selection, evaluation and use of basic reference works. Practice in solution of typical reference problems. Emphasis on school library as learning center. Su, F, Sp.
- 305: **Books and Materials for the Young Adult.** 0-3-3. Selection and evaluation, sources and use of print and non-print materials that meet the needs of the young adult. Extensive reading of books for the young adult. Su, F, W, Sp.
- 315: **Advanced Reference and Bibliography.** 0-3-3. A study of important reference works in all fields of knowledge with emphasis on bibliography.
- 330: **Problems in Librarianship.** 0-3-3. Preq., 12 hours of Library Science. Investigation of problems relating to school library learning centers. Sp.
- 404: **Library Practice Work.** 7½-1-3. Preq. Library Science 301, 302 or consent of instructor. Provides actual work experiences in the school library. Su, F, W, Sp.
- 410: **Selection of Books and Audio-Visual Materials.** 0-3-3. Methods and criteria for selection of print and non-print materials in all types of libraries. W.

- 440: **Library Automation.** 0-3-3. Preq., Library Science 210, 302 or consent of instructor. Planning and implementing automated library procedures using the COBOL programming language and IBM 360 series computer. W.
- 453: **Literature for Children.** 0-3-3. Designed to relate understanding of child development to knowing and using print and non-print materials with children. Practical experience in story-telling and creative drama. Su, Sp.
- 451: **Workshop in School Librarianship.** 0-3-3. Preq., professional school experience and consent of instructor. An in-depth study of school library learning center programs. May be repeated for credit when topics vary. Su.

LIFE SCIENCES

- 101: **Orientation.** 0-1-1. Basic rules, policies, history, and organization of the University with special application to life sciences. F, Sp.
- 200: **Introduction to Environmental Sciences.** 0-3-3. Basic laws, principles and issues related to the causes, effects and controls of environmental problems. Man-environment interaction. Su, F, W, Sp.
- 300: **Principles of Genetics.** 0-3-3. Fundamental laws of heredity as applied to plants, animals and man. A basic course for students in all fields of study. Su, F, W, Sp.
- 301: **Basic Genetics Laboratory.** 3-0-1. Fundamental experiments designed to show application of laws of inheritance in selected organisms. Su, F, W, Sp.
- 420: **Statistical Methods.** 0-3-3. Prep., consent of the instructor. Methods of designing experiments and analyzing biological data. Su, F, W, Sp.
- 456: **Technology and the Bioenvironment.** 0-3-3. Principles of waste management, pollution control and environmental conservation. Topics include sources, effects, extent and control of air, water, soil and solid waste pollution. Su, F, W, Sp.
- 509: **Life Sciences Seminar.** 0-1-1.
- 530: **Life Sciences Special Problems.** 1-6 hours credit.
- 551: **Research and Thesis.** Three credit hours or multiples thereof. Maximum credit allowed is six hours.

MANAGEMENT

- 105: **Introduction to Business.** 0-3-3. The university organization, curricula, learning process, educational practices; careers in business; society and administration of the business firm. (Open only to freshmen and sophomores). Su, F, W, Sp.
- 201: **Supervisory Techniques.** 0-3-3. Basic supervision of small employee groups including employee hiring and dismissal, planning and organizing work assignments, evaluating performance, necessary records, and legal aspects. (Associate degree credit only in CAB) F, Sp.
- 305: **Communications.** 0-3-3. Preq., Office Administration 202 and English 102. Practice in analyzing and composing all types of business letters and business reports. Su, F, W, Sp.
- 311: **Organizational Behavior. Planning and Control.** 0-3-3. Preq., Psychology 102 and Sociology 201. Nature and development of management theory, individual and group behavior, leadership, communications and organizational design, organizational planning and control. Su, F, W, Sp.
- 312: **Production.** 0-3-3. Preq., Quantitative Analysis 335. An introduction to the production function in business firms, including elementary decision models. Su, F, W, Sp.
- 340: **Small Business Management.** 0-3-3 Preq., Management 311. Organizing and operating the small business, with special attention to personal qualifications, capital requirements, location, sources

- of assistance. F, Sp, even.
- 444: **Business Simulation.** 0-1-1. Preq., senior standing. College of Administration and Business. Sequential decision-making structured around a model of a business operation in which the student assumes the role of managing a simulated firm. Su, F, W, Sp.
- 446: **Transportation.** 0-3-3. (Same as Economics 446). Development of domestic transportation systems; rate theory and rate-making practices; principles and practices of transport regulation by government agencies. F.
- 460: **Purchasing and Materials Controls.** 0-3-3. Preq., Marketing 300. Principles of procurement and analysis of purchasing problems, with emphasis on quality and quantity control, pricing policy inspection, and standards of performance.
- 465: **Industrial Traffic Management.** 0-3-3. Preq., senior standing. Analysis of functions comprising physical distribution; interaction of system components with emphasis on carrier types, rates, regulation and services. Sp.
- 470: **Personnel Management.** 0-3-3. A study of the functions and procedures in personnel management with emphasis on the procurement, development, maintenance and utilization of the work force. Su, F, Sp.
- 472: **Compensation Systems.** 0-3-3. Design of total compensation system with emphasis on compensation policies, programs, and practices including job analysis, position descriptions, job evaluation and job design. W.
- 475: **Industrial Management.** 0-3-3. Preq., Management 312. Management principles as applied to industrial production introducing such topics as production costs, quality control, time study, work simplification, scheduling, plant layout, and labor-management relations. F, Sp.
- 476: **Systems and Operations Management.** 0-3-3. Preq., Quantitative Analysis 430. Advanced studies and case problems in the design, management and control of industrial operations. Topics include OR techniques, inventory and queueing models, forecasting, scheduling, and optimization. W.
- 480: **Administrative Office Management.** 0-3-3. Preq., (See Office Administration 480). F, Sp.
- 494: **International Administrative Problems.** 0-3-3. Preq., senior standing. Case studies and special research reports by students, stressing the interrelationships of the different fields of business and economics. Administrative decision-making in international and multinational companies.
- 485: **International Business Management.** 0-3-3. Preq., Management 311. Readings and cases in international business: governmental activities, regionalism, market opportunities, structure of international companies, company intelligence, human relations, operating policies, procedures and problems. Sp, odd.
- 495: **Administrative Policy.** 0-3-3. Preq., all other Common Body of Knowledge courses and senior standing in the College of Administration and Business. Administrative policy determination through integration and application of knowledge gained in previous courses; emphasizes interrelationships of major functions of business under conditions of uncertainty; utilizes case approach. Su, F, W, Sp.
- 500: **Organizational Theory and Policies.** 0-2-2.
- 501: **Production Management and Policies.** 0-2-2.
- 521: **Administrative Policy.** 0-3-3.
- 526: **Advanced Industrial Management.** 0-3-3.
- 527: **Manpower Management.** 0-3-3.
- 528: **Seminar in Management Theory.** 0-3-3.
- 529: **Seminar in Current Management Issues.** 0-3-3.
- 530: **Organization and Administration of Health Institutions.** 0-3-3.
- 532: **Financial Administration of Health Institutions.** 0-3-3.

- 534: **Legal Aspects of Health Services Administration.** 0-3-3.
- 536: **Health Services and Administrative Policy.** 0-3-3.
- 533: **Seminar in Comprehensive Health Planning.** 0-3-3.
- 543: **Seminar in Contemporary Issues in Health Services Administration.** 0-3-3.
- 563: **Seminar in Administration.** 0-3-3.
- 571: **Organizational Behavior.** 0-3-3.
- 572: **Organizational Behavior.** 0-3-3.

MARKETING

- 201: **Public Relations and Sales Promotion.** 0-3-3. Techniques for communicating the firm's function and image to the public, including effective use of various advertising media. (Associate degree credit only in CAB) F.
- 300: **Marketing Principles and Policies.** 0-3-3. Preq., Economics 201, 203 or 315. Marketing functions; institutions; policies and strategies with their business, economic, and social implications. Su, F, W, Sp.
- 307: **Salesmanship.** 0-3-3. Preq., junior standing. A study of the selling process with emphasis on the economic aspects of salesmanship and the role of the salesman in buyer-seller relationships. W.
- 320: **Consumer Behavior.** 0-3-3. Preq., junior standing. A study of the consumer and his relation to the marketing process. Su, F, W, Sp.
- 335: **Fundamentals of Retail Store Operation.** 0-3-3. Preq., Junior Standing: not designed for students in the marketing option. An introduction to operations of retail stores; retail salesmanship, purchasing control, and supervision. F, Sp.
- 420: **Business Advertising.** 0-3-3. Preq., Marketing 300. A study of the analysis of principles of successful advertising enabling the student to appraise their effectiveness as marketing tools and their social and economic significance. Su, W.
- 425: **Sales Management.** 0-3-3. Preq., Marketing 300. Relation of sales department to other departments; types of sales organizations, management of sales force; market analysis; price policies, sales budgets; distribution costs. Sp.
- 435: **Retailing Management.** 0-3-3. Preq., Marketing 300 and senior standing. Merchandise distribution by retail organization; emphasis on retailing in the distributive system and problems of management and control. W.
- 440: **Credit Management and Collections.** 0-3-3. Preq., Marketing 300. Credit and collection policies and procedures; sources of credit information and its analysis and evaluation; determination of credit limits; relation of credit to sales.
- 473: **Marketing Administration.** 0-3-3. Preq., Marketing 320, 420, or 435, or consent. An in-depth analysis and use of marketing principles to construct marketing plans and decisions utilizing current studies and readings. Su, odd; F, Sp.
- 482: **Marketing Research.** 0-3-3. Preq., Quantitative Analysis 337. A consideration of marketing research as a tool management; application of research techniques to various marketing problems. Su, even; F, W, Sp.
- 485: **International Marketing.** 0-3-3. Preq., Marketing 300. International marketing opportunities and principles; marketing tools as a means of adapting the individual domestic business firm and its marketing methods to the international environment. Sp., even. (except 1974)
- 500: **Marketing Concepts and Policies.** 0-2-2.
- 530: **Marketing Management.** 0-3-3.
- 531: **Marketing Theory.** 0-3-3.
- 532: **Seminar in Price Policies.** 0-3-3.
- 533: **Advanced Marketing Research.** 0-3-3.
- 534: **Marketing Dynamics.** 0-3-3.
- 535: **Seminar in Marketing.** 0-3-3.

MATHEMATICS

- 105: **Basic Mathematics.** 0-3-3. A review of the basic concepts of arithmetic and algebra. Designed for students who have an inadequate mathematical background. Su, F, W, Sp.
- 107: **General Mathematics.** 0-2-2. Sets and natural numbers, the arithmetic and algebra of integers, rational numbers, first degree equations and inequalities, equations with two variables. Su, F, W, Sp.
- 108: **General Mathematics.** 0-2-2. Preq., Mathematics 107. Further extensions of the number system; polynomials; relations, function, and graphs; ratio, proportion, and variation; basic trigonometry. Su, F, W, Sp.
- 109: **General Mathematics.** 0-2-2. Preq., Mathematics 108. Logarithms; compound interest and annuities; permutations, combinations, and probability; binomial theorem; some topics in statistics. Su, F, W, Sp.
- 111: **College Algebra.** 0-3-3. (Preq., dependent on ACT scores). Sets, inequalities, functions, systems of equations, determinants, permutations and combinations, quadratic equations. Su, F, W, Sp.
- 112: **Trigonometry.** 0-3-3. Solution of right triangles, reduction formulas, functions of several angles and of multiple angles, trigonometric equations, inverse functions, and complex numbers. Su, F, W, Sp.
- 113: **Plane and Solid Geometry.** 0-3-3. An integrated course in plane and solid geometry for a student who has not taken plane geometry in high school, or for a student who needs demonstrative solid geometry. F, W.
- 220: **Applied Calculus.** 0-3-3. Preq., Mathematics 111 and Mathematics 112. For students in the Architecture and Construction Technology curriculums. Functions and graphs, the derivative, applications of derivatives, indefinite integrals, definite integrals, application of definite integrals. F, W, Sp.
- 222: **Calculus for Business Administration and Economics.** 0-3-3. Preq., Mathematics 111. Functions and graphs, the derivative, the indefinite integral and the definite integral; applications as applied to business and economics. F, W, Sp.
- 228: **Introductory Probability Theory.** 0-3-3. Preq., Mathematics 111 or consent of instructor. Probability from an elementary set theory standpoint in discrete probability spaces; and introductory statistical terminology and techniques. Su, F, W.
- 230: **Analytic Geometry and Calculus.** 0-3-3. Preq., Mathematics 111 and 112; also dependent on ACT scores and placement test. Introduction to analytic geometry, differentiation of algebraic functions, applications of the derivative. Su, F, W, Sp.
- 231: **Analytic Geometry and Calculus.** 0-3-3. Preq., Mathematics 230. Applications of integration, curve sketching, trigonometric functions, logarithmic and exponential functions. Su, F, W, Sp.
- 232: **Analytic Geometry and Calculus.** 0-3-3. Preq., Mathematics 231. Methods of integration, vectors in the plane, indeterminate forms and improper integrals, polar coordinates. Su, F, W, Sp.
- 303: **Mathematics for Elementary Teachers.** 0-3-3. Preq., Mathematics 107 or 111. Development of the structure of the real number system, from the concept of sets through the systems of natural numbers and algorithms. Su, F, W, Sp.
- 304: **Mathematics for Elementary Teachers.** 0-3-3. Preq., Mathematics 303. A continuation of the study of real number systems from integers to rational numbers to real numbers to abstract number systems; topics from geometry. Su, F, W, Sp.
- 307: **Contemporary Mathematics for Secondary School Teachers.** 0-3-3. Preq., Mathematics 109, 112, or 113. Sets, relations, functions, equations, inequalities, proofs, structure of algebra, evaluation of experimental programs in mathematics. F, W.
- 308: **Introduction to Linear Algebra.** 0-3-3. Preq., Mathematics 230. Matrices, systems of linear equations, vectors, vector spaces, linear transformations, eigenvalues and eigenvectors. Su, F, W, Sp.
- 313: **Introductory Numerical Analysis.** 0-3-3. Preq., Mathematics 231 and Computer Science 102. Introduction to numerical techniques in finding roots of equations, solving systems of equations, approximating functions, derivatives and integrals. F, Sp.
- 318: **Introduction to Abstract Algebra.** 0-3-3. Preq., Mathematics 231. Fundamental set concepts, groups, rings integral domains, fields, polynomials. Su, F, Sp.
- 330: **Analytic Geometry and Calculus.** 0-3-3. Preq., Mathematics 232. Infinite series, vectors and solid analytic geometry, applications to physical problems, partial differentiation, multiple integral. Su, F, W, Sp.
- 340: **Introduction to Real Analysis.** 0-3-3. Preq., Mathematics 330. A rigorous introduction to the calculus of functions of one real variable. W.
- 350: **Ordinary Differential Equations.** 0-3-3. Preq., Mathematics 330 or consent of instructor. Equations of first order and first degree, singular solutions, applications to geometry and physics, linear equations of higher order. Su, F, W, Sp.
- 375: **Mathematical Methods in Engineering.** 0-3-3. Preq., Mathematics 350. Selected topics from Partial Differential Equations, Fourier Analysis, Numerical Methods and Statistics and Probability with applications to engineering problems. W, Sp.
- 401: **College Geometry.** 0-3-3. Preq., Mathematics 230 or consent of instructor. Logical systems and basic laws of reasoning, axiomatic geometry, selected Euclidean geometry, harmonic elements and cross ratio, non-Euclidean and metric projective geometries. F, W, Sp.
- 405: **Linear Algebra.** 0-3-3. Preq., Mathematics 308 or consent of instructor. Study of linear systems, matrices, and algebra of matrices, determinants, vector spaces and subspaces, linear transformations and representations by matrices. F.
- 407: **Partial Differential Equations.** 0-3-3. Preq., Mathematics 350. Techniques for solving linear first order equations in several variables. Formation and solution of second order initial boundary-value problems using Fourier series, Fourier integral methods, F, Sp.
- 410: **Advanced Engineering Mathematics.** 0-3-3. Preq., Mathematics 330. Power series, Taylor's formula, applications, complex series, Fourier series, functions of several variables. F, W, Sp.
- 411: **Advanced Engineering Mathematics.** 0-3-3. Preq., Mathematics 330. Vectors, fundamental operations and applications, linear vector spaces and matrices, coordinates and function, transformation theorems, application. F, W, Sp.
- 412: **Vector and Tensor Analysis.** 0-3-3. Preq., Mathematics 411 or consent of instructor. The algebra of vectors, differential vector calculus, differential geometry, integration, static and dynamic electricity, mechanics, hydrodynamics, and electricity, tensor analysis and Riemann geometry, further applications of tensor analysis. Sp.
- 413: **Foundations and Fundamental Concepts.** 0-3-3. Preq., Mathematics 231 or consent of instructor. Mathematics before Euclid, Euclid's "elements," non-Euclidean geometry, Hilbert's "Grundlagen," algebraic structure, the modern mathematical method, sets, logic and philosophy. W.
- 414: **Numerical Analysis.** 0-3-3. Preq., Math 308, Knowledge of FORTRAN, or consent of instructor. Roots of polynomial and other nonlinear equations. Solution of systems of simultaneous equations. Numerical applications of matrix theory and linear algebra. Interpolating polynomials. F, Sp.
- 415: **Numerical Analysis.** 0-3-3. Preq., Math 350, Math 414, or consent of instructor. Curve fitting techniques. Function approximation techniques. Numerical differentiation. Numerical integration. Numerical solution of differential equations and systems of differential equations and boundary value problems. W.
- 416: **Abstract Algebra.** 0-3-3. Preq., Mathematics 318 or consent of instructor. Number theory, equal-

- ences, and congruences, groups, ideals. F.
- 418: **Introduction to Statistical Procedures.** 0-3-3. Preq., Mathematics 228 or consent of instructor. Sampling, normal population, group-comparisons, tests of hypotheses, t-test, F-ratios, correlation, regression and one-way analysis of variance. F, W, Sp.
- 428: **Experimental Design.** 0-3-3. Preq., Mathematics 418. Multiway analysis of variance to include randomized block design, Latin square design, Graeco-Latin square design, factorial analysis, repeated measures design, and split-plot design. W, Sp.
- 430: **Projective Geometry.** 0-3-3. Preq., Mathematics 308, 330 or consent of instructor. Ideal elements, duality, harmonic sets, projectivity, projective theory of conics, theory of poles and polars. Sp.
- 440: **Linear Programming.** 0-3-3. Preq., Mathematics 230 and 308 or consent of instructor. Characteristics of linear programming problems, properties of linear programming solutions, the simplex method with variations, optimality analysis, the dual problem, the transportation problem. F, W.
- 441: **Non-linear Programming.** 0-3-3. Preq., Mathematics 440. Advanced topics in linear programming, quadratic programming, dynamic programming. Sp.
- 445: **Theory of Functions of Complex Variables.** 0-3-3. Preq., Mathematics 330. Complex numbers, analytic functions, elementary functions, mapping elementary functions, integrals, power series, residues, poles, conformal mappings, applications of conformal mappings. W.
- 448: **Theory of Probability.** 0-3-3. Preq., Mathematics 330 or consent of instructor. Discrete and continuous density functions, expected value moments and moment generating functions, central limit theorem. F.
- 449: **Theory of Statistics.** 0-3-3. Preq., Mathematics 448 or consent of instructor. Sampling distributions, estimation of parameters, inference, maximum likelihood estimators. Sp.
- 450: **Ordinary Differential Equations.** 0-3-3. Preq., Mathematics 340 and 350 or consent. First-order equations, second-order linear equations, general linear equations and systems, existence and uniqueness theorems, plane autonomous systems. W.
- 460: **Number Theory.** 0-3-3. Preq., Mathematics 318. Divisibility properties of integers, prime numbers, congruences, number theoretic functions. F.
- 470: **Introduction to Topology.** 0-3-3. Preq., consent of instructor. Introduction of concepts, metric spaces, countability axioms, separation axioms, connectedness, compactness, product spaces, continuous mappings and homeomorphisms, homotopy, quotient spaces. W.
- 480: **Introductory Analysis.** 0-3-3. Preq., Mathematics 340. A study of functions in metric spaces-limits, continuity, integration, uniform convergence, approximations. Sp.
- 490: **Topics in Mathematics.** 0-3-3. Various topics in the field of Mathematics. May be repeated for credit.
- 502: **Special Functions in Applied Mathematics.** 0-3-3.
- 507: **Partial Differential Equations.** 0-3-3.
- 510: **Functional Analysis.** 0-3-3.
- 511: **Functional Analysis.** 0-3-3.
- 515: **Numerical Analysis.** 0-3-3.
- 520: **Theory of Ordinary Differential Equations.** 0-3-3.
- 530: **Algebraic Topology.** 0-3-3.
- 544: **Modern Operational Mathematics.** 0-3-3.
- 545: **Complex Analysis.** 0-3-3.
- 546: **Complex Analysis.** 0-3-3.
- 550: **Algebraic Geometry.** 0-3-3.
- 558: **Linear Statistical Models.** 0-3-3.
- 562: **Advanced Linear Algebra.** 0-3-3.
- 566: **Advanced Abstract Algebra.** 0-3-3.
- 568: **Experimental Design.** 0-3-3.
- 570: **Stochastic Processes.** 0-3-3.
- 578: **Probability Theory.** 0-3-3.
- 580: **Mathematical Analysis.** 0-3-3.
- 581: **Mathematical Analysis.** 0-3-3.
- 584: **Topics in Algebra.** 0-3-3.
- 586: **Topics in Analysis.** 0-3-3.

- 587: **Topics in Applied Mathematics.** 0-3-3.
- 588: **Topics in Topology.** 0-3-3.

MECHANICAL ENGINEERING

- 200: **Fundamentals of Energy.** 0-3-3. Preq., Mathematics 108. Science Elective for non-engineering students. Study of energy: sources; scientific laws governing conversions; environmental effects; economic, social and political developments; and individual consumer's role. Su, F, W, Sp.
- 201: **Mechanisms.** 3-1-2. Preq., Mathematics 230. Kinematic analysis of mechanisms. The use of analytical and graphical methods in determining velocities and accelerations in mechanism motions. Applications to machines. Gears and cams. F, W, Sp.
- 251: **Manufacturing Processes.** 3-1-2. A study of the processes of manufacture of machine parts. Lectures describe processes. Laboratory is operational practice and demonstration of machine tools, foundry, and welding. F, W, Sp.
- 307: **Materials of Engineering.** 3-1-2. Preq., Chemical Engineering 306, Chemistry 102, 104 and Mechanical Engineering 251. The properties of engineering materials are evaluated and correlated with their internal structures. F, W, Sp.
- 309: **Machine Design.** 0-2-2. Preq., Engineering Mechanics 301 and credit or registration in Engineering Mechanics 203. Further study in strength of materials and properties of materials. Combined stresses and strains, curved beams, Castigliano's theorem, and theories of failure. F, W, Sp.
- 315: **Thermodynamics.** 0-2-2. Preq., Mathematics 231 and Physics 201. No credit for Mechanical Engineering 315 unless Mechanical Engineering 316 is taken. Fundamental concepts and definitions, properties of a pure substance, work and heat, first and second laws of thermodynamics. Su, F, W, Sp.
- 316: **Thermodynamics.** 0-2-2. Preq., Mechanical Engineering 315. Entropy, irreversibility and availability, vapor and air-standard power and refrigeration cycles. Su, F, W, Sp.
- 317: **Thermodynamics.** 0-2-2. Preq., Mechanical Engineering 316. Ideal gas mixtures, thermodynamic relations, flow through nozzles and blade passages, chemical reactions, and chemical equilibrium. F, W, Sp.
- 326: **Mechanical Equipment for Buildings.** 0-3-3. Preq., Physics 210. Not available to mechanical engineering majors. Principles of water supply, plumbing, heating, and air conditioning and their application to practical design problems. F.
- 351: **Instrumentation and Measurements.** 3-0-1. Preq., Electrical Engineering 213 and Mechanical Engineering 315. Experimental methods, report writing, characteristics of instruments with emphasis on pressure and temperature; the use of statistical methods in analyzing data. F, W, Sp.
- 353: **Mechanical Engineering Problems.** 3-0-1. Preq., Mathematics 350 and credit or registration in Mechanical Engineering 315. Solution of mechanical engineering problems using basic analog and digital computing techniques. F, W, Sp.
- 354: **Mechanical Engineering Problems.** 3-0-1. Preq., Mechanical Engineering 353. A continuation of Mechanical Engineering 353. Solution of mechanical engineering problems using numerical methods and digital computing techniques. F, W, Sp.
- 402: **Machine Design.** 3-2-3. Preq., Mechanical Engineering 201, 307, 309, 353. Application of mechanics, kinematics, and stress analysis in design of machine elements. Use of mechanical measuring techniques, analog computer, and experimental stress analysis as design tools. Su, F, W, Sp.
- 403: **Machine Design.** 0-2-2. Preq., Mechanical Engineering 402. A continuation of Mechanical Engineering 309. Further study of energy methods, plates and shells, vibrations and impact loading, conjugate beams, introduction to stress fields. Su,

- F, W, Sp.
- 404: **Mechanical Systems Design.** 3-1-2. Preq., Mathematics 375 and Mechanical Engineering 402. The analysis and design of a complete mechanical system. Su, F, W, Sp.
- 405: **Thermal Engineering.** 3-2-3. Preq., Mechanical Engineering 317, 351, and credit or registration in Mechanical Engineering 421. Analysis and testing of thermal components and systems. Su, F, W, Sp.
- 409: **Thermal Design.** 0-2-2. Preq., Mechanical Engineering 405. Methodology of design; the design and selection of thermal components. Su, F, W, Sp.
- 410: **Thermal Systems Design.** 3-1-2. Preq., Mathematics 375 and Mechanical Engineering 409. The analysis and design of complete thermal systems. Su, F, W, Sp.
- 413: **Combustion Engineering Processes and Design.** 0-3-3. A study of the chemistry and the dynamics of combustion processes and their application to the design of combustion devices.
- 418: **Transport Phenomena.** 0-3-3. Preq., Engineering Mechanics 321 and Mechanical Engineering 421. A study of the principles and equations governing the transfer of heat, mass, and momentum with emphasis on similarities.
- 421: **Heat Transfer.** 0-3-3. Preq., Mathematics 350, Mechanical Engineering 316, and credit or registration in Engineering Mechanics 321 and Mechanical Engineering 354. Fundamental laws of heat transfer by conduction, convection, and radiation; steady and unsteady states; application to heat transfer equipment. Digital and analog computer solutions. F, W, Sp.
- 423: **Gas Dynamics.** 0-2-2. Preq., Engineering Mechanics 321 or Aerospace Engineering 321. A study of the fundamental laws applied to compressible fluid flow. Isentropic flow, normal shocks, Fanno flow, Rayleigh flow and finally generalized compressible flow. F.
- 424: **Seminar.** 0-1-1. Preq., senior standing. Conference type technical discussions, reading assigned papers, informal talks by students, instructors and professional engineers on subjects of current technical interest. Instruction in oral delivery. Su, F, W, Sp.
- 429: **Experimental Stress Analysis.** 3-2-3. Preq., Mechanical Engineering 309 or Civil Engineering 346 and Electrical Engineering 213. A thorough study of bonded resistance strain gages and photoelasticity and a survey study of other areas of experimental stress analysis. F.
- 431: **Feedback Control Systems.** 3-2-3. Preq., senior standing or consent of the instructor. The analysis, design, and synthesis of mechanical systems employing feedback control. Methods of determining system stability. Typical mechanical control elements and their transfer functions. F, Sp.
- 433: **Mechanical Vibrations.** 0-3-3. Preq., Mathematics 350, Engineering Mechanics 203 and 301. Single and multiple degrees of freedom systems. Rayleigh's method, normal modes, dynamic balancing, vibration isolation and absorption in machines. Vibration of elastic bodies. Sp.
- 435: **Internal Combustion Engines.** 0-3-3. Preq., Mechanical Engineering 316. The study of principles of operation of internal combustion engines. Theories of combustion and detonation. Injection and carburetion. Engine timing and lubrication theories. W.
- 437: **Engineering Analysis.** 0-3-3. Preq., Mathematics 350 and senior standing. Development and application of analytical, graphical and approximate methods for solving engineering problems. Use of dimensional analysis, models, relaxation techniques, and development of alignment charts.
- 439: **The Finite Element Method.** 0-3-3. Introduction of matrix algebra, basic equations of elasticity, energy theorems, matrix displacement method, stiffness properties of structural elements, structural synthesis, non-linear structural analysis. W.
- 441: **Air Conditioning and Refrigeration.** 0-3-3. Preq., senior standing or consent of the instructor. A study of psychrometric processes, heating and cooling load calculations, and systems, and the thermodynamics of refrigeration cycles. Design of air conditioning and refrigeration systems. Sp.
- 445: **Cryogenic Systems.** 0-3-3. Preq., Mechanical Engineering 316 or consent of instructor. A study of systems which produce, maintain, and utilize very low temperatures. F.
- 447: **Engineering Acoustics.** 0-3-3. Preq., Physics 202, Mathematics 350. A study of acoustical radiation, transmission, and absorption; noise control; acoustic measurements. Su.
- 452: **Senior Mechanical Laboratory.** 3-0-1. Preq., Mathematics 375 and credit or registration in Mechanical Engineering 405. Groups perform experiments or investigate problems related to heat transfer, refrigeration and air conditioning, compressible fluid flow, and special problems involving other areas of study. Su, F, W, Sp.
- 502: **Advanced Machine Design.** 0-3-3.
- 503: **Advanced Heat Transfer.** 0-3-3.
- 506: **Theory of Elasticity.** 0-3-3.
- 508: **Theory of Plates and Shells.** 0-3-3.
- 510: **Photoelasticity.** 3-2-3.
- 513: **Principles of Heat Exchangers.** 0-3-3.
- 515: **Advanced Thermodynamics.** 0-3-3.
- 517: **Thermal Stresses.** 0-3-3.
- 519: **Potential Flow Theory.** 0-3-3.
- 523: **Advanced Gas Dynamics.** 0-3-3.
- 524-525-526: **Graduate Seminar.** 0-1-1 each.
- 527: **Boundary Layer Theory.** 0-3-3.
- 529: **Two-Phase Flow.** 0-3-3.
- 533: **Dynamics of Machinery.** 0-3-3.
- 535: **Design of Momentum Transfer Machinery.** 0-3-3.
- 539: **Advanced Computing Techniques in Mechanical Engineering.** 0-3-3.
- 550: **Special Problems.** 1-4 semester hours.

MECHANICAL TECHNOLOGY

- 101: **Introduction to Mechanical Technology.** 0-3-3. The Mechanical Technology Curriculum; a study of units, dimensions, the use of the sliderule, handbooks, technical tables, charts, graphs and manufacturers catalogs. F.
- 151: **Pressure, Temperature, and Flow Measurement.** 3-1-2. A study of the principles and devices used in the measurement of pressure, temperature and flow. W.
- 201: **Mechanisms and Motion.** 3-1-2. Preq., Mathematics 112. Kinematic analysis of mechanisms. The use of analytical and graphical methods in determining velocities and accelerations in mechanism motions. Applications to machines. Gears and cams.
- 204: **Technical Writing and Creativity.** 3-1-2. Preq., Mechanical Technology 201. Fundamentals of technical writing; technical reports; principles used in generating ideas; characteristics of creative people; practice in written expression of ideas.
- 206: **Materials Science.** 3-2-3. A study of the properties of materials and the way these properties affect the behavior and use in engineering technology.
- 215: **Thermal Science.** 0-3-3. Preq., Mathematics 112. Temperature; heat; work; first law of thermodynamics; basic principles of heat transfer.
- 221: **Fluids Technology.** 0-2-2. Coreq., Mathematics 220. Fluid properties, basic laws of fluid behavior; principles of hydraulics and pneumatics.
- 226: **Mechanical Equipment.** 3-1-2. Preq., Mechanical Technology 201 and 221. Coreq., Mechanical Technology 215. A study of the types and uses of mechanical equipment such as pumps, engines, compressors, boilers, heat exchangers, etc.
- 231: **Instruments and Controls I.** 3-2-3. Preq., Sixth quarter standing. A study of principles and devices used in controlling process plant equipment, fluid transmission system equipment, machine tools, etc. Sp.

- 251: **Manufacturing Processes.** 3-1-2. A study of the processes of manufacture of machine parts. Lecture describes processes. Laboratory in operational practice and demonstration of machine tools, foundry and welding. Sp.
- 252: **Fabricating Processes.** 3-1-2. Preq., Mechanical Technology 251. A continuation of Mechanical Technology 251 with special emphasis on forming and welding of mechanical components.
- 253: **Tool Design.** 6-0-2. Preq., Mechanical Technology 251. Design of jigs and fixtures, cutting tools and handling equipment.

MEDICAL RECORD ADMINISTRATION

- 101: **Introduction to Medical Terminology.** 0-3-3. A basic study of the languages of medicine including word construction, definition and use of terms. W.
- 201: **Medical Terminology & Transcription.** 0-3-3. Preq. Medical Record Administration 101 and Office Administration 201 or equivalent. Introduction to medical transcription with emphasis on medical terminology. Sp.
- 202: **Medical Terminology & Transcription.** 3-0-1. Coreq., Medical Record Administration 201. Advanced course in medical transcription and terminology practice in various specialties. Sp.
- 301: **Medical Record Science.** 0-3-3. An introduction to the field of medical record science, including history of medical records, professional ethics and function of a medical record department. F.
- 302: **Medical Record Science Lab.** 3-0-1. Coreq., Medical Record Administration 301. Laboratory practice of the functions of a medical record department. F.
- 303: **Medical Record Science.** 0-3-3. Preq., Medical Record Administration 301. An in depth study of the medical record, its components, development and use. W.
- 304: **Medical Record Science Lab.** 3-0-1. Coreq., Medical Record Administration 303. Laboratory practice in analyzing medical records, coding, indexing and research techniques. W.
- 305: **Legal Concepts of the Health Fields.** 0-2-2. A study of the principles of law as applied to the health field and medical record practice. W.
- 308: **Fundamentals of Medical Science.** 0-2-2. A study of the nature and cause of disease, treatment and management of patients necessary for Medical Information Management. W.
- 309: **Fundamentals of Medical Science.** 0-2-2. A continuation of the study of disease as listed in 308. Sp.
- 310: **Fundamentals of Medical Science.** 0-2-2. Preq., Medical Record Administration 309. A continuation of the study of diseases by system. Sp.
- 401: **Medical Record Science.** 0-3-3. Preq., Medical Record Administration 303. The study of health statistics, preparation and uses. The composition of the medical staff and committees. F.
- 402: **Medical Record Science Laboratory.** 3-0-1. Coreq. Medical Record Administration 401. Laboratory practice in accumulating medical statistics, research methods and comparison of various medical information systems. F.
- 403: **Trends in Health Care Delivery.** 0-3-3. A review of trends and changes in the health care field with special emphasis on legislation and governmental intervention in health care. W.
- 404: **Directed Experience.** 12-0-2. Preq., Consent of Director of Medical Record Administration Program. A supervised learning experience to develop insight, understanding and skill in the basic medical record procedures. W.
- 405: **Directed Experience.** 30-0-5. A supervised learning experience to develop insight, understanding and skill in specialized medical record procedures and management. Sp.

- 406: **Affiliation.** 30-0-5. A planned program to give the student a broad background in various procedures and types of equipment in a variety of health care institutions. Su.
- 407: **Problems in Medical Record Administration.** 0-2-2. A discussion of topics arising from students' study and experience in Medical Record Administration. Su.
- 408: **Organization and Administration of Health Care Services.** 0-3-3. Organization and administration of medical record department. Analysis of organizational patterns in hospitals and other health care facilities. Sp.

MEDICAL TECHNOLOGY

- 110: **Orientation in Medical Technology.** 0-1-1. An introduction to the field of medical technology: professional ethics, a brief survey of laboratory procedures, and discussions concerning career opportunities. F.
- 242: **Histological Sectioning.** 8½-0-2. Preq., Zoology 115 or equivalent. Methods of preparing tissues for microscopic examination.
- 245: **Clinical Analysis.** 4¼-2-3. Preq., Zoology 115 and Chemistry 102. A study of the qualitative and quantitative laboratory methods used to demonstrate the physiological state of the body.
- 341: **Hematology.** 4½-2-3. Preq., Zoology 115. Quantitative and qualitative methods for determining the condition of cellular blood and a study of its histology, morphology and physiology.
- 346: **Medical X-Ray Technology.** 4½-1-2. Preq., Zoology 111 and 112. Methods of obtaining routine radiographs, stressing proper positions and dark room techniques.
- 351: **Medical Technology Problems.** 4¼-0-1. Preq., standing and permission of instructor. An introduction to the principles of research.
- 352: **Medical Technology Problems.** 8½-0-2. Preq., junior standing and permission of instructor. An introduction to the principles of research.
- 353: **Medical Technology Problems.** 12¾-0-3. Preq., junior standing and permission of instructor. An introduction to the principles of research.
- 448: **Serology.** 4¼-2-3. Preq., Zoology 115. A study of the body defenses against viral and bacterial diseases and serodiagnostic procedures based on the antigen-antibody reactions.
- 449: **Biological and Clinical Applications of Radioisotopes.** 8½-0-2. Preq., Chemistry 212 and Zoology 202. Intensive training in the use of specialized equipment for measuring ionizing radiations used in biological systems.
- 452: **Medical Technology Seminar.** 0-1-1. Preq., junior standing and permission of the instructor. Medical technology ethics, trends, state requirements, new developments in the field, and student reports.
- 453: **Medical Technology Internship.** 8 semester hours; 40 contact hours per week. Includes lectures and laboratories in the branches of medical technology. Credit will not be given until Medical Technology 454, 455, and 456 are completed. Su, F, W, Sp.
- 454: **Medical Technology Internship.** 8 semester hours; 40 contact hours per week. Includes lectures and laboratories in the branches of medical technology. Credit will not be given until Medical Technology 455 and 456 are completed. Su, F, W, Sp.
- 455: **Medical Technology Internship.** 8 semester hours; 40 contact hours per week. Includes lectures and laboratories in the branches of medical technology. Credit will not be given until Medical Technology 456 is complete. Su, F, W, Sp.
- 456: **Medical Technology Internship.** 6 semester hours; 40 contact hours per week. Includes lectures and laboratories in branches of medical technology. Credit will be given on completion of this course for Medical Technology 453, 454, and 455. Su, F, W, Sp.

MUSIC

- 101: **Introduction to Music Literature.** 0-2-2. A broad survey of the history of music and its literature at the freshman level. Su, F.
- 102: **Theory.** 3-2-2. Beginning study of fundamentals of music covering the areas of notation, ear-training, sight singing, and functional keyboard. F.
- 103: **Theory.** 3-2-2. Preq., Music 102. Continuation of 102 with increasing emphasis on common-practice harmonic vocabulary. W.
- 104: **Theory.** 3-2-2. Preq., Music 103. Continuation of 103. Sp.
- 107: **Hymnology.** 0-3-3. The development of Christian hymnody; an appreciation of its value and an appraisal of suitability for worship. F.
- 201: **Theory.** 3-2-2. Continuation of first year course with emphasis on the organization and interaction of melodic, harmonic and rhythmic concepts and musical forms. Aural training and functional keyboard is intensified in proportion to the depth of course content. F.
- 202: **Theory.** 3-2-2. Preq., Music 201. Continuation of 201.
- 203: **Theory.** 3-2-2. Preq., Music 202. Continuation of 202.
- 204: **Conducting.** 1-1-1. Elementary methods, principles and practice of conducting. F.
- 207: **Introduction to Church Music.** 0-3-3. History of development of sacred music with emphasis on liturgies. Sp.
- 215-216: **Techniques of Musical Stage Production.** 3-1-2 each. Practical study of theories, practices and techniques of musical stage production. Su, Sp.
- 230: **School Music.** 0-2-2. Fundamentals of music, study of rhythm and sight-singing for the elementary education major. Su, F, W, Sp.
- 234: **School Music.** 0-2-2. Preq., Music 230. For juniors and seniors. Designed to give prospective classroom teacher materials and methods for teaching music in elementary grades. Review of fundamentals, study of rhythm and singing. Su, F, W, Sp.
- 303: **Choral Arranging.** 0-3-3. A study of writing for the individual voices and the combinations of voices in choral ensembles. W.
- 304: **Composition.** 0-3-3. A survey of some of the techniques of 20th century composition with projects consisting of the writing of short compositions illustrating these techniques. Su, F, W, Sp.
- 305: **Conducting.** 1-2-2. Preq., Music 201 and 204. Principles of interpretation, score reading with emphasis on choral conducting laboratory experience with the choral ensembles. W.
- 306: **Conducting.** 1-2-2. Preq., Music 201 and 204. Emphasis on instrumental conducting experience. W.
- 307: **American Church Music.** 0-3-3. A comprehensive study of hymnody through the colonial era to the 20th century.
- 310: **Form and Analysis.** 0-3-3. A study of specific examples of the major forms of composition to show the relative importance of detail to the over-all comprehension of a composition. F.
- 314: **Instrumental Arranging.** 0-3-3. A study of writing for the individual instruments of the band and orchestra, the combinations of instruments in the various sections, and the combination of all the sections. Sp.
- 317: **History of Music.** 2-2-2. An in-depth study of the specific periods of music and its literature, from antiquity through the baroque. F.
- 318: **History of Music.** 2-2-2. Continuation of Music 317, from the rococo and into the romantic era. W.
- 319: **History of Music.** 2-2-2. Continuation of Music 318, from the late romantic to the present time. Sp.
- 330: **Music Appreciation.** 0-2-2. Designed to provide students not majoring in music with materials allowing him to develop a higher degree of understanding and enjoyment of music literature by many composers. Su, F, W, Sp.
- 401: **Counterpoint.** 0-3-3. A study of contrapuntal practice of the 18th and 19th centuries with emphasis on the understanding of counterpoint within a harmonic context. W.
- 402: **Problems in Theory for the Music Educator.** 0-2-2. A functional approach in music theory designed to assist the teacher in applying more theory to classroom teaching. Sp.
- 407: **Organization and Administration of Church Music.** 0-3-3. The ministry of music with reference to materials, and organization. Field work with faculty supervision and evaluation is required. F.
- 408: **Survey of Oratorio Solo Literature.** 1-1-1. Study, preparation, and performance of basic oratorio solos from the standpoint of vocalist and organist. F.
- 409: **Survey of Organ Literature.** 3-0-1. A review of six centuries of organ literature for the organ major or musicologist. Su.
- 445: **Instrument Maintenance and Repair.** 2-1-2. Practical methods of maintenance, adjustment, and repair of musical instruments. A course designed for students with experience in instrumental music.
- 450: **Special Problems.** 1-4 semester hours. Preq., consent of adviser. Credit depends on the nature of the problem. May be repeated for credit.
- 464: **Piano Methods, Materials, and Practice Teaching.** 0-2-2. Methods and materials used in teaching piano to beginners. Required by the State Department of Education for teachers wishing their pupils to be eligible for high school credit in piano. W.
- 465: **Piano Methods, Materials, and Practice Teaching.** 0-2-2. Continuation of 464. Sp.
- 474: **Seminar.** 0-1-1. Discussions and guided research based upon professional problems which confront the musician and the teacher. Su, F, W, Sp.
- 475: **Seminar.** 0-1-1. Continuation of 474. Su, F, W, Sp.
- 476: **Vocal Pedagogy and Materials.** 1-2-2. Procedures, materials, and methods. Designed for those planning specialization in teaching of voice. Su.
- 501: **Canon and Fugue.** 0-3-3.
- 502: **Composition.** 0-3-3.
- 517: **Advanced History and Literature of Music.** 0-3-3.
- 518: **Advanced History and Literature of Music.** 0-3-3.
- 519: **Music in the Humanities.** 0-3-3.
- 520: **Supervision in the School Music Program.** 0-3-3.
- 524: **Conducting.** 0-3-3.
- 540: **Bibliography and Research Sources in Music.** 0-2-2.
- 550: **Special Problems.** 1-4 semester hours.
- 555: **Graduate Recital.** 3 semester hours.
- 560: **Selected Topics.** 1-4 semester hours (for a maximum of 6 semester hours).
- 564: **Piano Literature.** 0-3-3.
- 565: **Organ Literature.** 0-3-3.
- 566: **Vocal Literature.** 0-3-3.
- 567: **Instrumental Literature.** 0-3-3.

MUSIC (APPLIED)

Music performance courses are divided into seven principal divisions:

Organ	Voice
Piano	
Strings	
(Violin, Viola, Violoncello and Double Bass)	
Woodwinds	Brass
Percussion	

The first digit of an applied music course number signifies the year 1, 2, 3, or 4.

The second digit denotes one of eight principal divisions as follows:

1 Piano	5 Strings
2 Organ	6 Woodwinds
3 Voice	7 Brass
4 Theory & Composition	8 Percussion

The final digit indicates the number of hours credit. Each course number may be repeated for credit as necessary in order to complete requirements for

freshman, sophomore, junior, and senior level.

The student must have the approval of the applied music instructor before registering for these courses.

PIANO

100 courses: Instruction in basic styles and techniques of piano playing. Performance of representative works suited to the individual student and his needs. The extent and difficulty of the repertoire covered will depend on the capacity of the individual student. Assignments become more advanced as the student's playing improves.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

ORGAN

100 courses: Basic manual and pedal techniques from the leading organ methods. A wide acquaintance with organ literature and preparation for church service playing.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

VOICE

100 courses: Application of the principles of voice production and song interpretation through the study of vocalises and the standard vocal literature. Prescribed repertoire to include English, Italian, French, and German songs and arias in advanced studies.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

THEORY

100 courses: Instruction in the basic techniques of music theory. Selected studies in harmonic and melodic dictation-ear training-fundamental study in composition.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

STRING (Violin, Viola, Violoncello, Double Bass)

100 courses: Instruction in the basic techniques of major instrument. Selected scale studies and etudes. Development of repertoire including the standard works of the literature.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

WOODWIND

100 courses: Instruction in the basic techniques of the major instrument. Performance of representative works suited to the individual student and his needs. The extent and difficulty of the repertoire covered will depend on the capacity of the individual student. Assignments become more advanced as the student's playing improves.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

BRASS

100 courses: Instruction in the basic techniques of the major instrument. Performance of the representative works suited to the individual student and his needs.

The extent and difficulty of the repertoire covered will depend on the capacity of the individual student. Assignments become more advanced as the student's playing improves.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

PERCUSSION

100 courses: Instruction in the basic techniques of the major instrument. Performance of the representative works suited to the individual student and his needs. The extent and difficulty of the repertoire covered will depend on the capacity of the individual student. Assignments become more advanced as the student's playing improves.

200 courses: Continuation of 100 courses.

300 courses: Continuation of 200 courses.

400 courses: Continuation of 300 courses.

MUSIC (ENSEMBLE)

144: Choir, 1 credit hour optional

166: Orchestra, 1 credit hour optional

177: Band, 1 credit hour optional

Each course number may be repeated as many times as necessary. Music majors should familiarize themselves with maximum allowable credits and with requirements for Ensemble participation.

NURSING

101: Introduction to Nursing. 0-3-3. An introduction to the basic understanding, knowledge, and skills of technical nursing. Emphasis on interpersonal relationships in meeting patient's basic needs. F.

102: Introduction Laboratory. 3-0-1. Preq., credit or registration in Nursing 101. Application of principles and techniques acquired in Nursing 101. Emphasis on interpersonal skills, communication, interviewing and observation. F.

103: Fundamentals of Nursing. 0-3-3. Preq., Nursing 101 and 102 and credit or registration in Zoology 225 and 226. Acquaints students with fundamental nursing principles of patient care. Emphasis on identification of scientific principles basic to nursing action. W.

104: Fundamentals Laboratory. 9-0-3. Preq., Nursing 101 and 102 and credit or registration in Nursing 103. Application of principles and techniques acquired in Nursing 103 to gain beginning skills in safe, basic nursing care. W.

105: Medical-Surgical Nursing. 0-3-3. Preq., Nursing 103 and 104. A course planned to study and identify basic nursing knowledge and skills related to medical-surgical nursing. Emphasis on patient-centered care using problem-solving techniques. Sp.

106: Medical-Surgical Laboratory. 9-0-3. Preq., credit or registration in Nursing 105. Application of principles acquired in Nursing 105 by giving care to selected patients with medical-surgical problems. Sp.

107: Psychiatric Nursing. 0-3-3. Preq., credit or registration in Psychology 102, Nursing 105 and 106. A course planned to study the psychological and emotional factors in illness as they are related to nursing care. Emphasis on prevention, observation, and communication. Su.

108: Psychiatric Laboratory. 9-0-3. Preq., credit or registration in Nursing 107. Application of principles acquired in Nursing 107 by giving care to selected patients in the hospital, home, and/or clinic who have psychological and emotional problems. Su.

201: Obstetric Nursing. 0-3-3. Preq., Nursing 105 and 106, Zoology 225 and 226. A study of the principles and concepts of family-centered maternity care. Emphasis on the reproductive cycle, including care of the newborn. F.

- 202: **Obstetric Laboratory.** 9-0-3. Preq., credit or registration in Nursing 201. Application of principles acquired in Nursing 201 by caring for patients during the antepartum, intrapartum, postpartum and newborn periods. F.
- 203: **Pediatric Nursing.** 0-3-3. Preq., credit or registration in Psychology 205, Nursing 105 and 106. A course planned to study the child up through adolescence during health and illness. Emphasis on growth and development, the family, and prevention of illness. W.
- 204: **Pediatric Laboratory.** 9-0-3. Preq., credit or registration in Nursing 203. Application of principles acquired in Nursing 203 by caring for selected children in nursery school, clinics, and the hospital. W.
- 205: **Seminar in Nursing.** 0-2-2. Preq., credit or registration in all other nursing courses. A study of current nursing education trends in light of evolving patterns and practices. Emphasis on opportunities and responsibilities. Sp.
- 206: **Advanced Nursing Laboratory.** 24-0-8. Preq., credit or registration in all other nursing courses. Application of previously acquired nursing principles and techniques to gain increased skill in working as a team member with groups of patients. Sp.

OFFICE ADMINISTRATION

- 201: **Basic Typewriting.** 2½-1-2. Beginning course emphasizing operation and care of typewriter. Instruction in fundamental skills and techniques. Typing simple letters, manuscripts, and tabulated reports. Su, F, W, Sp.
- 202: **Typewritten Communications.** 2½-1-2. Preq., Office Administration 201 or equivalent; Office Administration and Business Education students must have at least a grade of "C" in 201 or equivalent. Emphasis on skill in layout and production of typewritten communications such as business forms, correspondence, and reports. (Meets intermediate typewriting requirements for teacher trainees.) Su, F, W, Sp.
- 203: **Advanced Typewritten Communications.** 2½-1-2. Preq., at least a grade of "C" in Office Administration 202 or equivalent. Electric typewriting. Complicated reports, correspondence, forms, legal documents. Introduction to various reproduction processes. Efficiency in handling multiple copies and other typing problems. Su, F, W, Sp.
- 206: **Gregg Theory.** 0-3-3. Theory of Gregg shorthand system. Principles stressed through reading and writing office communications in shorthand. Emphasis on development of vocabulary. Simple dictation. Su, F, W, Sp.
- 207: **Intermediate Shorthand.** 0-3-3. Preq., at least a grade of "C" in Office Administration 206 or equivalent. Development of ability in reading, writing, and transcribing Gregg shorthand. Building recording speed from timed dictation. Su, F, W, Sp.
- 208: **Dictation and Transcription.** 0-3-3. Preq., at least a grade of "C" in Office Administration 206 and 207 or equivalent. Intensive shorthand vocabulary development and business vocabulary development for business communications. Emphasis on speed and accuracy in recording dictation. Su, F, W, Sp.
- 209: **Basic Communication Skill Development.** 0-3-3. Preq., English 101. Emphasis on reviewing and further developing student understanding of and use of written and oral communications as applied to business. (Associate degree credit only in CAB) W.
- 210: **Introduction to Machine Transcription, Dictation and Statistical Typewriting.** 0-3-3. Preq., Office Administration 209. Introduction to machine transcription for producing typewritten materials. Emphasis on good dictation habits, written communication skill and improvement in statistical typewriting. Sp.
- 211: **Machine Transcription Skill Development.** 0-3-3. Preq., Office Administration 210. Refinement of typewritten machine transcription skill. Introduction to forms and styles of communication commonly transcribed from recorded media. Emphasis on speed and accuracy in handling correspondence. Su, F.
- 212: **Specialized Machine Transcription.** 0-3-3. Preq., Office Administration 211. Concentration on development of ability to handle proficiently the vocabulary and problems peculiar to the student's area of specialization; i.e., medicine, law, and other technical areas. F, W.
- 250: **Office Management.** 0-3-3. The role of office management in business institutions; organization of office operations; control of office costs; leadership and motivation of office personnel; business information systems. F, Sp.
- 303: **Advanced Dictation and Transcription.** 2½-2-3. Preq., at least a grade of "C" in Office Administration 203 and 208 or equivalents and demonstrated ability to take sustained dictation at a minimum of 90 words a minute. Shorthand vocabulary expanded. Continued development of speed and fidelity in recorded dictation. Transcription skill developed with emphasis on mailable copy. Electric typewriters. Su, F, W, Sp.
- 304: **Secretarial Recording and Reporting Problems.** 2½-2-3. Preq., at least a grade "C" in Office Administration 303 and demonstrated ability to take dictation at a minimum of 100 words a minute. Transcription of complicated business correspondence and reports. Office-style dictation. Electric typewriters. Su, F, W, Sp.
- 307: **Office Systems and Procedures.** 0-3-3. Reproduction processes; communications systems; transmittal services; transcribing machines; records management and filing; calculating machines; special typewriters and office equipment. Su, F, W, Sp.
- 309: **Professional Development and Problems in Secretarial Administration.** 0-3-3. Preq., Office Administration 303, or can be taken concurrently or permission of Department Head. Administrative career development and professional advancement; a survey of specialized secretarial and business fields; analysis of business problems pertinent to the administrative assistant. F, W, Sp.
- 310: **Secretarial Practicum.** 4½-1-2. Preq., at least a grade of "C" in Office Administration 303 and 307. Experience in transportation of office-style dictation, reproduction processes, demonstration of efficient work habits and office procedures, special typewriters and office equipment. Su, F, W, Sp.
- 400: **C.P.S. Problems and Review.** 0-3-3. Preq., permission of adviser. A review course for those preparing to take the Certified Professional Secretary Examination. W.
- 480: **Administrative Office Management.** 0-3-3. (Same as Management 480) Administrative organizational principles; techniques of organizational analysis; analysis and design of information systems; information technology; communications and records management; physical facilities; performance standards and control. F, Sp.
- 482: **Special Problems in Office Administration.** 0-(1-3)-(1-3). (Maximum of six semester hours credit.) Selected topics dealing with advanced problems in office administration and business education. The problems and projects will be timely and will be treated by current methods of professional practice. Su.

PETROLEUM ENGINEERING

- 200: **Story of Petroleum.** 0-3-3. Science Elective for non-Engineering students. Petroleum industry pictured from land leasing to product marketing. Importance of petroleum in economic, social, and political development reviewed. Su, F, W, Sp.
- 202: **Exploration and Drilling.** 0-2-2. Principles and methods of oil field exploration and drilling with

- emphasis on drilling fluids, power plants and hoisting operations. F.
- 305: **Laboratory.** 6-2-4. Preparation, testing, and alteration of drilling muds and oil well cement; analysis of well formation samples. F.
- 311: **Petroleum Reservoir Fluids.** 3-2-3. Preq., Petroleum Engineering 202. Pressure-volume-temperature behavior of oil field hydrocarbon systems. Gas, gas-condensate and under saturated reservoirs. W.
- 402: **Petroleum Reservoir Engineering.** 0-2-2. Preq., Petroleum Engineering 311. Single drive and multi-drive reservoirs, reservoir fluid flow, and displacement of oil and/or gas. F.
- 403: **Petroleum Reservoir Engineering.** 0-2-2. Preq., Petroleum Engineering 402. Continuation of Petroleum Engineering 402. W.
- 404: **Drilling and Production Design:** 0-3-3. Oil field development and operation, selection of drilling and pumping equipment, casing design and cementing problems. Sp.
- 405: **Well-Logging Methods.** 3-2-3. Preq., credit or registration in Petroleum Engineering 402. Theory, operation and application of modern oil well logging methods, including radioactive and sonic logging. F.
- 406: **Evaluation of Oil and Gas Properties.** 0-2-2. Preq., Petroleum Engineering 405. Factors, principles and processes used in the evaluation of oil and/or gas properties: preparation of valuation reports. Sp.
- 414: **Natural Gas Engineering.** 0-2-2. Production, measurement, compression and transmission of natural gas; well potential and deliverability. Su, W.
- 415: **Natural Gas Engineering Laboratory.** 3-0-1. Preq., credit or registration in Petroleum Engineering 414. Specific gravity and calorific content of gases: testing and calibration of orifices, positive displacement meters, safety valves and regulators. Su, W.
- 425: **Special Problems.** 0-3-3. Preq., consent of instructor. Study of recent developments in petroleum production practices, methods, and equipment with emphasis on secondary recovery. Sp.
- 450: **Computer Applications.** 3-2-3. Preq., consent of instructor. Advanced problems in petroleum engineering assigned according to ability and requirements of the student, with the intent that a computer solution will be forthcoming.
- 475: **Applied Petroleum Engineering.** 0-3-3. Preq., consent of instructor. Application of logging, reservoir, and economic engineering techniques to field cases. Su.
- 503: **Advanced Reservoir Engineering.** 0-2-2.
- 504: **Advanced Reservoir Engineering (continued).** 0-2-2.
- 505: **Advanced Reservoir Engineering (continued).** 0-2-2.
- 525: **Advanced Natural Gas Engineering.** 0-2-2.
- 526: **Advanced Natural Gas Engineering (continued).** 0-2-2.
- 550: **Special Problems.** 1-4 semester hours.

PETROLEUM TECHNOLOGY

- 101: **Petroleum Exploration and Drilling Technology.** 0-3-3. Principles and methods of oil field exploration and drilling with emphasis on drilling fluids, power plants and hoisting operations from a field operations standpoint. Sp.
- 102: **Oil Field Testing and Production Technology.** 3-2-3. Preq., Petroleum Technology 101. Oil field development and operation, single and multi-phase fluid flow; production decline curves; electrical, radio-active, and sonic logging; well testing and deliverability. F.
- 103: **Production Measurement and Transmission.** 3-2-3. Preq., Petroleum Technology 102. Production, measurement, compression and transmission of natural gas; testing and calibration of orifices, positive displacement meters, safety valves and regulators. W.

- 104: **Petroleum Field Practice.** 6-2-4. Preq., Petroleum Technology 103. An application of petroleum technology in the laboratory and in actual field practice. Sp.

PHILOSOPHY

- 201: **Introduction to Philosophy.** 0-3-3. Preq., junior standing or permission of the instructor. Philosophical vocabulary; types and problems of philosophy; major philosophical positions. Su, F, W, Sp.
- 251-252: **Logic and Scientific Method.** 0-3-3 each. Traditional formal logic: inductive logic and scientific method; symbolic logic. F, Sp.
- 305: **Ethics.** 0-3-3. Preq., Philosophy 201 or permission of the instructor. A study of the writings of the major moral philosophers, beginning with the Greeks and continuing to the present. Sp.
- 310: **Philosophy of Religion.** 0-3-3. Preq., Philosophy 201 or permission of the instructor. A comparative study of the philosophical aspects of the major world religions: their doctrines of God, the cosmos, and man. W.
- 311: **Philosophy of Religion.** 0-3-3. A study of the philosophical implications of religious experience and of the varieties of belief and disbelief. Sp.
- 325-326: **Political Philosophy, European and American.** 0-3-3 each. Preq., Philosophy 201 or permission of the instructor. A study of the writings of the major political philosophers, beginning with the Greeks and continuing to the present. F, W.
- 350-351: **History of Philosophy.** 0-3-3 each. Preq., Philosophy 201 or permission of the instructor. A survey of philosophical speculation in the West, from its beginnings in the Mediterranean world to the present. W.
- 401: **The American Mind.** 0-3-3. (Same as English 401.) Important currents of ideas that have found expression in American literature. F, Sp.
- 423: **English Words and Idioms.** 0-3-3. (Same as English 423.) Rhetoric and logic as applied to critical thinking. Semantics. Exercises in propaganda analysis. Vocabulary building. Su, F, W, Sp.
- 424: **Semantics and Linguistic Analysis.** 0-3-3. Preq., Philosophy 350-351 or permission of the instructor. The twentieth century revolt against the philosophical tradition with emphasis on Ayer, Carnap, and Wittgenstein. F, Sp.
- 430: **History of American Philosophy.** 0-3-3. Preq., Philosophy 201. A historical survey of philosophical thinking in America from the seventeenth century to the present. Su, W.
- 450: **Philosophy of History.** 0-3-3. Lectures in the philosophy of history with attention to theories from Augustine to Voegelin. Su.

PHYSICS

- 101: **Introductory Modern Physics.** 4½-2-3. Quantum theory with associated laboratory experiments, relativity with Brehme diagrammatic method, introductory calculus with emphasis on physical interpretations, Fortran computer programming.
- 201: **General Physics.** 4½-3-4. Preq., Mathematics 230. Thorough treatment of fundamental principles and detailed analysis of important physical situations. Su, F, W, Sp.
- 202: **General Physics.** 4½-3-4. Preq., Physics 201 and Mathematics 231. A continuation of Physics 201. Su, F, W, Sp.
- 203: **Optics.** 3-3-4. Preq., Physics 202. This course is an extension of the general physics offerings. It is designed to present geometrical optics and some physical optics in a manner consistent with current optical applications such as laser optics. W.
- 205: **Descriptive Physics.** 0-3-3. For non-science majors interested only in the cultural aspects of the subject. Su, F, W, Sp.
- 206: **Descriptive Physics.** 0-3-3. A continuation of Physics 205. Su, F, W, Sp.

- 207: **Astronomy.** 0-3-3. The earth, moon, sun, planets, coordinate systems, motion in solar system, the seasons, the galactic system. May be accompanied by Physics 208. Su, F, W, Sp.
- 208: **Observational Astronomy.** 3-6-1. To accompany Physics 207. Optional. Identification of principal constellations, bright stars and planets. Telescopic observation of nebulae, double stars, moon and planets. Su, F, W, Sp.
- 209: **Elementary Physics.** 4½-3-4. Preq., Mathematics 111-112. For pre-medical, pre-dental, pre-pharmacy, and science education students. A study of the fundamental principles of physics and their applications. Su, F, W, Sp.
- 210: **Elementary Physics.** 4½-3-4. Preq., Physics 209. A continuation of Physics 209. Su, F, W, Sp.
- 212: **Elements of Quantum Physics.** 0-3-3. Preq., Physics 202. An analysis of the structure of matter preceded by the necessary background in quantum mechanics. Sp.
- 221: **Introduction to Astrophysics.** 0-3-3. Introduction to astronomy, with emphasis on physical principles. Application of mechanics to orbits of planets and multiple stars. Atomic theory applied to stellar spectra. Nuclear reactions in stars. F.
- 222: **Introduction to Astrophysics.** 0-3-3. A continuation of Physics 221. W.
- 304: **Physical Optics.** 0-3-3. Preq., Physics 202. A thorough exposition of the wave theory of light and an introduction to the quantum theory. F.
- 307: **Thermodynamics.** 0-3-3. Preq., Physics 202. Classical thermodynamics and introductory classical and quantum statistical mechanics. F.
- 309: **Introduction to Relativity.** 0-3-3. Preq., Mathematics 230. Einstein's special theory of relativity and applications to physics and astronomy. Elementary general relativity. Su.
- 350: **Introduction to Lasers.** 0-3-3. Preq., six hours of physics. Introduction to modern laser technology. A semi-quantitative approach presents all known types of lasers. Applications such as measurements, instrumentation, communications, biological, medical, and health hazards are concluding topics. Su.
- 351: **Laser Laboratory.** 4½-0-1. Preq., six hours of Physics. The basic mechanisms of lasers are investigated through initial exercises in atomic spectra and coherence effects of helium-neon and ruby lasers. Su.
- 375: **Physics and Chemistry of Solid State Materials.** 9-3-5. Material preparation, crystal growth, and solubility of chemical impurities; thin film studies and electro-optic effects; doping techniques and incorporation mechanisms; purification of compounds and properties of semiconducting compounds. Su, F, W, Sp.
- 401: **Experimental Physics.** 4½-0-1. Preq., Physics 202. This course gives the student an indoctrination in the actual laboratory techniques employed by the research physicist. Su, F, W, Sp.
- 402: **Experimental Physics.** 4½-0-1. Preq., Physics 202. A continuation of Physics 401. Su, F, W, Sp.
- 404: **Electricity and Magnetism.** 4½-3-4. Preq., Physics 202. A study of the fundamental theories of electricity and magnetism. An application of basic principles is stressed. F.
- 405: **Electricity and Magnetism.** 4½-3-4. Preq., Physics 404. A continuation of Physics 404. W.
- 410: **Modern Physics.** 4½-3-4. Preq., Physics 202. An advanced course in general physics stressing the modern developments of the subject. W.
- 411: **Modern Physics.** 4½-3-4. Preq., Physics 410. A continuation of Physics 410. Sp.
- 418: **Solid State Physics.** 4½-3-4. Preq., Physics 202. An elementary treatment of representative aspects of the physics of solids. Sp.
- 422: **Physical Mechanics.** 0-3-3. Preq., Physics 202. Statics, particle dynamics, dynamics of a rigid body, kinetic theory, elasticity, wave motion, and behavior of fluids. Fundamental importance of mechanical principles in all fields of physics emphasized. W.
- 423: **Physical Mechanics.** 0-3-3. Preq., Physics 422. A continuation of Physics 422. Sp.
- 430: **Atomic and Space Physics.** 0-3-3. Preq., Physics 411. A survey of the developments in contemporary theories of atoms, molecules, matter, and radiation and their applications to astrophysics. W.
- 431: **Nuclear and Space Physics.** 0-3-3. Natural and artificial radioactivity methods for the detection of nuclear particles, nuclear fission, and the utilization of nuclear energy and their applications to astrophysics. Sp.
- 460: **Physics of Photography.** 0-3-3. Preq., Physics 205. A descriptive and non-mathematical treatment of the physics and chemistry applicable to photography is presented for photography majors and other non-technical students interested in photography.
- 465: **Physics of Music.** 0-3-3. Preq., Physics 205. Descriptive survey of the technical aspects of the production and reception of musical sounds. Physics will be used to explain the physical processes of music.
- 470: **Seminar.** 1-6 hours credit. Preq., Permission of instructor. An opportunity is given for students to present current topics and actively participate in discussions concerning new developments in physics.
- 479: **Plasma Physics.** 3-3-4. Preq., Physics 411. An introduction to the kinetic and magneto-hydrodynamic approaches to plasma physics is given. The laboratory will explore several types of plasma phenomena using diagnostic techniques.
- 480: **Modern Astrophysics.** 0-3-3. Preq., Physics 411. Astrophysics is discussed in light of the tremendous amount of data accumulated from areas such as high energy experimental physics and elementary particle theory.
- 511: **Electromagnetic Theory.** 0-3-3.
- 512: **X-Rays.** 4½-3-4.
- 521: **Theoretical Mechanics.** 0-3-3.
- 522: **Quantum Mechanics.** 0-3-3.
- 531: **Theories of Physics.** 0-3-3.
- 532: **Theories of Physics.** 0-3-3.

POLITICAL SCIENCE

- 201: **National Government in the United States.** 0-3-3. A study of the development of the national government with emphasis on problems connected with the federal system and separation of powers. Su, F, W, Sp.
- 302: **Comparative Foreign Governments.** 0-3-3. Preq., Political Science 201 or consent of instructor. A study of the political systems and governments of the major European nation-states of the twentieth century. F.
- 303: **State Government and Administration in the United States.** 0-3-3. A study of the role of the state in the American Union including nation-state and interstate relations. W.
- 304: **The Government of Louisiana.** 0-3-3. A study of the functions and structure of the state government of Louisiana including constitutional development. F, Sp.
- 310: **Governmental Regulation of Business.** 0-3-3. A study of public policy toward business including constitutional and administrative problems. W.
- 312: **Public Administration.** 0-3-3. A study of the legal responsibility, organizational structure, personnel policies, and fiscal management of different levels of government in the United States. F.
- 314: **American Municipal Government and Administration.** 0-3-3. A study of the authority, legal limitations and functions of present-day American municipalities; specific current legislative, judicial and administrative problems will be analyzed. W.
- 318: **American Political Parties.** 0-3-3. A study of political parties as an essential factor in democratic government. Sp.
- 320: **Legislation in the United States: Federal and State.** 0-3-3. A study of the legislative process and of the influences that determine the nature of the legislative product. F.

- 325: **History of European Political Theory.** 0-3-3. Preq., one previous course in political science or philosophy and junior class standing, or consent of instructor. A study of Western political philosophy from its beginnings to the nineteenth century. F.
- 326: **American Political Theory.** 0-3-3. Preq., one previous course in political science and junior class standing, or consent of instructor. A study of American political thinking with emphasis on the issues of democracy and the distribution of power in the United States. W.
- 327: **Modern Political Theory and Ideologies.** 0-3-3. A study of nineteenth and twentieth century political theory with emphasis on the principal modern ideologies (Anarchism, Communism, Socialism, Fascism, Democracy). Sp.
- 330: **The American Presidency.** 0-3-3. A study of the American Presidency including its origins, roles, functions, and problems. F.
- 345: **Scope and Methods in Social Sciences.** 0-3-3. An introduction to basic statistics, research design, and the application of the qualitative and quantitative methods to the social sciences. Sp.
- 350: **International Relations.** 0-3-3. Preq., one previous course in political science or consent of instructor. An introductory study of political contacts between modern nation-states, the origin of nationalism and imperialism, and the causes and effects of power politics. W.
- 402: **Comparative Communist Systems.** 0-3-3. A comparative study of the governments and ideological diversities of countries of the communist bloc; particular attention will be paid to domestic affairs. W.
- 403: **Communist Foreign Policies.** 0-3-3. A study of the world communist movement in terms of the foreign policies of individual countries. Sp.
- 412: **Advanced Public Administration.** 0-3-3. The structures and processes of public administration; role of administration in government, trends in American public administration, techniques of management in selected spheres. Sp.
- 420: **Contemporary Problems in Government.** 0-3-3. Preq., One of the following courses: Political Science 201, or 303, or 304, and junior standing. Problems will be selected in conference with the instructor. Sp.
- 426: **American Constitutional Law I.** 0-3-3. Introduction to judicial institutions and processes as well as a case method study of the constitutional issues of judicial review, federalism, government economic regulation, and others. W, Even.
- 427: **American Constitutional Law II.** 0-3-3. A continuation of the case method study of constitutional law, with emphasis on political and civil rights (speech, press, assembly, religion, race, criminal procedure, etc.). Sp, Even.
- 440: **The British Commonwealth.** 0-3-3. A study of the development of the Anglo-American political tradition. Su, odd.
- 445: **Comparative Governments of Southern Asia.** 0-3-3. A study of the governmental and political systems of India and Pakistan as compared and contrasted to China and Japan. Su, even.
- 450: **International Organizations.** 0-3-3. For advanced undergraduates and graduate students. The theory of international organizations, the League of Nations, the United Nations, functions of specialized agencies, and the role of existing regional security agreements. Sp.

POULTRY SCIENCE

- 201: **Poultry Production.** 3-2-3. The principles and practices of breeding, incubation, nutrition, disease control, management practices, and marketing of poultry. F.

PROFESSIONAL AVIATION

- 101: **Introduction to Aviation.** 0-2-2. An introductory study of principles of flight, engines, performance, weather, and navigation. Must be taken concurrently with Professional Aviation 102. Su, F, W, Sp.
- 102: **Introduction to Aviation.** 0-2-2. An introductory study of radio procedures and rules of the air. Prepares the student for the FAA Private Pilot written examination. Concurrent enrollment with Professional Aviation 101 required. Su, F, W, Sp.
- 110: **Introduction to Flight.** 3-0-1. Preq., Professional Aviation 101 and 102 or concurrent enrollment. Provides student with approximately 20 hours of dual and solo flight instruction. Special fee. Su, F, W, Sp.
- 111: **Introduction to Flight.** 3-0-1. Preq., Professional Aviation 110. Provides the student with approximately 20 hours of dual and solo flight instruction. Designed to meet the flight experience requirements for FAA Private Pilot flight check. Special fee. Su, F, W, Sp.
- 120: **Introduction to Airport Administration Flight.** 3-0-1. Preq., Professional Aviation 121 or concurrent enrollment. Provides the student with 10 hours of dual flight instruction as an introduction to flight. Special fee.
- 121: **Introduction to Airport Administration.** 0-2-2. History of aviation and opportunities in the Aerospace field. A study of FAA rules and regulations for the private pilot, aerodynamics of flight and general safety practices.
- 122: **Airframes and Powerplants.** 0-2-2. Preq., Professional Aviation 121. Background course in the study of the various types of airframes and powerplants used in general aviation aircraft. Includes FAA maintenance and inspection requirements.
- 123: **Dead Reckoning Navigation.** 0-2-2. Preq., Professional Aviation 121. Basic elements of air navigation. Use of the plotter, computer and aerial charts. Solves for radius of action, double drift, off course and interception problems.
- 141: **Basic Aircraft Structures.** 6-1-3. Introduction to aircraft major components, aircraft terminology and theory of flight. Federal Aviation regulations. Cost analysis.
- 142: **Basic Powerplant Systems.** 6-1-3. Theory of engines and principles of operation. Internal combustion engines-radial and opposed. Carburetors and direct full injection systems. Research and preparation of technical reports on supercharging and water injection.
- 201: **Intermediate Aviation.** 0-2-2. Preq., Professional Aviation 102. An intermediate study of navigation, the computer, publications, and flight planning. Su, F, W.
- 202: **Intermediate Aviation.** 0-2-2. Preq., Professional Aviation 102. An intermediate study of aircraft and engines, aerodynamics, and weather. Su, F, Sp.
- 203: **Intermediate Aviation.** 0-2-2. Preq., Professional Aviation 201 and 202. An intermediate study of communications, rules of the air, attitude instruments, and physiological flight. Prepares student for FAA Commercial Pilot written examination. F, W, Sp.
- 210: **Intermediate Flight.** 6-0-2. Preq., Professional Aviation 111. Provides student with approximately 40 hours of flight instruction. Special fee. Su, F, W, Sp.
- 211: **Intermediate Flight.** 6-0-2. Preq., Professional Aviation 210. Provides student with approximately 40 hours of flight instruction. Special fee. Su, F, W, Sp.
- 212: **Intermediate Flight.** 6-0-2. Preq., Professional Aviation 211. A continuation of Professional Aviation 211. Provides student with approximately 45 hours of flight instruction. Special fee. Su, F, W, Sp.
- 214: **Intermediate Flight.** 3-0-1. Preq., Professional Aviation 111. This course provides the student with 20.5 hours of dual and solo flight instruction.

- This course, and Professional Aviation 215, may be taken in lieu of 210. Special Fee.
- 215: **Intermediate Flight.** 3-0-1. Preq., Professional Aviation 214. This course provides the student with 20.5 hours of dual and solo flight instruction. This course and Professional Aviation 214 may be taken in lieu of 210. Special fee.
- 216: **Intermediate Flight.** 3-0-1. Preq., Professional Aviation 210 or 215. This course provides the student with 22 hours of dual and solo flight instruction. This course, and Professional Aviation 217 may be taken in lieu of 211. Special fee.
- 217: **Intermediate Flight.** 3-0-1. Preq., Professional Aviation 216. This course provides the student with 22 hours of dual and solo flight instruction. This course and Professional Aviation 216 may be taken in lieu of 211. Special fee.
- 218: **Intermediate Flight.** 3-0-1. Preq., Professional Aviation 211 or 217. This course provides the student with 20.5 hours of dual and solo flight instruction. This course and Professional Aviation 219 may be taken in lieu of 212. Special fee.
- 219: **Intermediate Flight.** 3-0-1. Preq., Professional Aviation 218. Course provides student with 20.5 hours of dual and solo flight instruction. After completion of this course, student will have flight experience requirements for FAA Commercial Pilots flight check. Special fee.
- 221: **Basic Meteorology.** 0-2-2. Preq., Professional Aviation 121. Designed to explain how to read and use the various reports and forecasts published by the U.S. Weather Bureau.
- 222: **Basic Meteorology.** 0-2-2. Preq., Professional Aviation 123. Study in depth of the radio aids and communication facilities required and available in the use and control of air traffic—both ground and airborne components are discussed.
- 223: **Fixed Base Operations.** 0-2-2. Preq., Professional Aviation 123 or permission of department head. Detailed study of the functions and responsibilities of the typical Fixed Base Operator.
- 231: **Air Traffic Rules.** 0-2-2. Preq., Professional Aviation 102 and 111. In-depth study of air traffic rules with emphasis placed on the knowledge requirements of the air traffic control specialist.
- 232: **Operating Procedures.** 0-2-2. Preq., Professional Aviation 231. Flight assistance service and Communication operating procedures.
- 233: **Air Navigation.** 0-2-2. A detailed study of the procedures used in VOR, ILS, AD, TACAN and Areas Navigation systems.
- 241: **Aircraft Systems** 6-1-3. Methods of repair or replacement of aircraft components. Functions of pumps, pressure regulators, valves, actuators, power brakes, steering devices and de-icing systems.
- 242: **Aircraft Electrical Systems.** 6-1-3. Fundamentals of aircraft electrical systems. Ohm's law and impedance formulas. Theory of capacitance and induction.
- 271: **Special Intermediate Flight.** 6-0-2. Preq., permission of department head. Provides student with approximately 35 hours of flight instruction. Designed for the commercial helicopter pilot to obtain his fixed-wing ratings. Special fee. Su, F, W, Sp.
- 272: **Special Intermediate Flight.** 6-0-2. Preq., Professional Aviation 271. Consists of approximately 35 hours of flight instruction. A continuation of Professional Aviation 271. Prepares student for Single-Engine Airplane Commercial Pilot's flight check. Special fee. Su, F, W, Sp.
- 273: **Special Intermediate Flight.** 3-0-1. Preq., permission of department head. Consists of 20 hours of dual and solo single-engine flight to provide a Multi-Engine rated student with a Single-Engine Rating. Special fee. Su, F, W, Sp.
- 300: **Advanced Meteorology.** 0-2-2. Preq., Professional Aviation 203 or concurrent enrollment. An advanced study on aviation weather. Student learns to analyze and interpret U.S. Weather Bureau maps and charts. Su, F, W.
- 301: **Advanced Aviation.** 0-2-2. Preq., Professional Aviation 203 and 300. Study of attitude instrument flying procedures as well as departure, enroute, and arrival instrument flying procedures. Includes a study of FAA Regulations pertaining to instrument flight. F, W, Sp.
- 302: **Advanced Aviation.** 0-2-2. Preq., Professional Aviation 301. A problem-solving course in advanced aviation, recalling and reviewing material covered in Professional Aviation 300 and 301. Prepares the student for the FAA Instrument Pilot's written examination. Su, W, Sp.
- 310: **Advanced Flight.** 3-0-1. Preq., Professional Aviation 212. Provides the student with approximately 22 hours of dual instrument flight instruction, in both attitude and radio instrument flying procedures. Special fee. Su, F, W, Sp.
- 311: **Advanced Flight.** 3-0-1. Preq., Professional Aviation 310. Provides the student with 18 hours of dual instrument flight instruction. Completion of this course provides the student with the flight experience necessary for the FAA Instrument Rating flight check. Special fee. Su, F, W, Sp.
- 321: **Economics of Air Transportation.** 0-2-2. Preq., junior standing. Development and present status of the air transportation industry, the federal regulation of air transportation, and its effect on the development of passenger and cargo business. W.
- 322: **Aviation Law.** 0-2-2. Preq., Business Law 350. Study of legislation covering aviation, air safety, and economic regulations governing the aviation industry. F, Sp.
- 323: **Space Flight.** 0-2-2. Preq., Professional Aviation 122 and Physics 206. Survey course covering the general principles, history and development of space flight. General preview of the vehicles and propulsion systems used as well as future travel and exploration.
- 324: **Advanced Aircraft Systems.** 0-2-2. Preq., Professional Aviation 121. Introduction to jet aircraft and engine nomenclature, design, features, advanced systems components and construction.
- 331: **Airport Traffic Control.** 3-2-3. Preq., Professional Aviation 232. A study of airport traffic control regulations, procedures and separation standards required by the Federal Government.
- 332: **Enroute Traffic Control.** 3-2-3. Preq., Professional Aviation 331. Study of the enroute air traffic control procedures, regulations, separation standards, and communications procedures. On-the-job training.
- 333: **Arrival Traffic Control.** 3-2-3. Preq., Professional Aviation 332. Study of arrival air traffic control procedures in a non-radar environment. Study of regulations, procedures, and separation standards required by the Federal Government.
- 341: **Jet Propulsion Systems.** 6-1-3. Theory of jet propulsion, principles of jet engine operation, study of thrust. Includes disassembly, inspection, reassembly, run-up, test and trouble shooting. Includes turbojet, turbofan and turboprop.
- 342: **Engine and Accessory Overhaul.** 6-1-3. Complete disassembly and overhaul of engines and accessories, including repair and inspection procedures. Powerplant operations, trouble shooting and test-run procedures.
- 401: **Applied Aviation Theory.** 0-2-2. Preq., Professional Aviation 302. Includes concepts of teaching and analysis of flight maneuvers. Prepares the student for the FAA Flight Instructor written examination. Su, F, Sp.
- 405: **Applied Aviation Theory.** 0-2-2. Preq., Professional Aviation 401. Includes concepts of teaching instrument flying techniques and procedures. Prepares the student for the FAA Instrument Flight Instructor written examination. F, Sp.
- 406: **Professional Aviation Theory.** 0-2-2. Preq., Professional Aviation 302. Provides the student with the theory of multiengine flight. F, Sp.
- 407: **Professional Aviation Theory.** 0-2-2. Preq., permission of instructor. Provides the student with the problem solutions and application of theory of flying transport aircraft. Prepares student for the FAA Airline Transport Pilot written examination. W.

- 410: **Applied Flight.** 6-0-2. Preq. Professional Aviation 311. Provides the student with 25 hours of flight instruction, with the student acting as flight instructor. Meets the flight experience requirements for the FAA Flight Instructor flight check. Special fee. Su, F, W, Sp.
- 415: **Applied Flight.** 3-0-1. Preq., Professional Aviation 410 and 405 or concurrent enrollment. Provides the student with 14 hours of dual flight instruction under instrument flying conditions with the student acting as instructor. Prepares the student for the FAA Instrument Instructor flight check. Special fee. Su, F, W, Sp.
- 416: **Professional Flight.** 6-0-2. Preq., Professional Aviation 311 and Professional Aviation 406 or concurrent enrollment. Provides the student with 10 hours of dual flight instruction in a multi-engine aircraft. Meets the flight experience requirements for the FAA Multiengine flight check. Special fee. Su, F, W, Sp.
- 417: **Professional Flight.** 6-0-2. Preq., Professional Aviation 407 and 416 or concurrent enrollment. This course provides the student with the dual flight instruction necessary to meet the experience and proficiency required by the FAA Airline Transport Pilot's flight check. Special fee.
- 421: **Airport Planning.** 0-2-2. Preq., junior standing. Designed to acquaint the student with airport planning and construction. Includes factors influencing airport location within the community. F, Sp.
- 424: **Airport Administration.** 0-2-2. Preq., junior standing. A study of the administration of an airport. Includes lighting, fuel systems, field markings, field buildings, hangars, communications, and other airport facilities. W.
- 425: **Air Cargo Practices and Procedures.** 0-2-2. Preq., junior standing. A study of the problems of handling of cargo, mail, express, and freight are considered as are related problems of marketing and advertising. F, Sp.
- 426: **Airline Administration.** 0-2-2. Preq., Professional Aviation 321. Designed to cover the administrative aspects of airline operation. Includes the administrative and operational airline organizational structure.
- 427: **Aviation Industrial Problems.** 0-2-2. Preq., Professional Aviation 424 and senior standing. Selected readings and topics on current aeronautical administrative problems. Study and analysis of problems facing aviation executives at all levels of the aviation industry.
- 431: **Arrival Traffic Control.** 0-2-2. Preq., Professional Aviation 333. A study of arrival in traffic control procedures in a radar environment.
- 432: **Problems in Air Traffic Control.** 0-2-2. Preq., Professional Aviation 431. Study of air traffic density and future trends with emphasis on air safety and controller fatigue.
- 441: **Aircraft Structures.** 6-1-3. Training and knowledge needed to overhaul and maintain modern aircraft. Study of new aircraft structures and their manufacture.
- 442: **Weight and Balance and Propellers.** 6-1-3. Weight and Balance, Center of Gravity determination. Theory, design and function of propellers.
- 443: **Problems in Maintenance Administration.** 6-1-3. Study of supervisory problems in maintenance including compliance with FAA directive, log keeping and repair estimates.
- 410: **Applied Flight.** 6-0-2. Preq. Professional Aviation 311. Provides the student with 25 hours of flight instruction, with the student acting as flight instructor. Meets the flight experience requirements for the FAA Flight Instructor flight check. Special fee. Su, F, W, Sp.
- 205: **Child Psychology.** 0-3-3. Preq., for Education Majors or Home Economics Education majors. Admission to upper division. A study of the physical and mental growth of the child, his social, emotional, motor development interests, and imaginative activities. Su, F, W, Sp.
- 235: **Adolescent Psychology.** 0-3-3. Preq., for Education Majors or Home Economics Majors. Admission to upper division. A study of the physical and mental growth of youth during the period of adolescence and his transition from childhood to adulthood. Su, F, W, Sp.
- 300: **Elementary Statistical Methods in the Social Sciences.** 0-3-3. A course designed to provide an orientation to statistical concepts used in the behavioral science field. Sp.
- 301: **Fields of Psychology.** 0-3-3. A study of the history of major fields and trends in psychology. Sp.
- 302: **Physiological Psychology.** 0-3-3. Preq., Zoology 225 and 226, 310 (or concurrent enrollment), Psychology 202. An intensive study of the physiology of the nervous system, and its relation to behavior. F.
- 304: **Social Psychology.** 0-3-3. Preq., Psychology 202. A study of the nature of social behavior, social stimulation and response; a psychological analysis of society and social institutions. W.
- 307: **Elementary Experimental Psychology.** 3-2-3. Preq., Psychology 302 and 321. A beginning course in applying the scientific method to the problems of psychology. W.
- 310: **Psychology of Personality.** 0-3-3. Preq., Psychology 202. A study of major theories of personality. Sp.
- 312: **Psychology of Learning.** 0-3-3. A survey of current theories of learning. Sp.
- 321: **Psychological Testing.** 0-3-3. Preq., Psychology 309. An introduction to the principles and practices of psychological testing and evaluation. F.
- 404: **Seminar in Psychology.** 0-3-3. An intensive survey in selected current topics in the field of psychology.
- 407: **Advanced Experimental Psychology.** 3-2-3. Preq., Psychology 307. Emphasis on investigating specific learning, motivation, and perception topics from methodological and historical viewpoints. W.
- 438: **Human Growth and Development.** 0-3-3. A seminar for the study of human growth. W.
- 414: **Dynamics of Adjustment.** 0-3-3. A comprehensive study of the problems of self-adjustment and self-management and the development of a well integrated personality. F, Sp.
- 418: **Abnormal Psychology.** 0-3-3. Preq., Psychology 302 and 310. A study of the nature and development of abnormal behavior from a psychological viewpoint. F.
- 450: **Introduction to Clinical Psychology.** 0-3-3. Preq., Consent of instructor. Introduction to clinical psychology as a science and profession. Lectures, discussions, demonstrations, and field observations are provided for an overview of clinical psychology. W.
- 459: **Research Methods in Psychology.** 0-3-3. Preq., Psychology 300. An examination of the practical problems of designing, conducting, and interpreting research and of the structure and organization of research writing. F.
- 460: **Field Research in Psychology.** (1 to 3 hours credit by arrangement) Preq., Psychology 459. Consent of the instructor. Supervised practice in methods of field research as a basic tool of psychology. Each student develops and executes a field research project.
- 465: **Industrial Psychology.** 0-3-3. The application of psychological findings and concepts to the industrial environment. Sp.
- 490: **Human Relations.** 0-3-3. The application of the behavioral science, methods and techniques, to

PSYCHOLOGY

- 102: **General Psychology.** 0-3-3. A survey of fundamental processes and concepts of human behavior.
- 202: **Advanced General Psychology.** 0-3-3. Preq., Psychology 102. An intensive survey of literature and procedures in general psychology. W.
- 204: **Educational Psychology.** 0-3-3. Education Majors only. A survey course designed to meet the needs of prospective teachers by bringing an application of psychological principles to the instructional setting. Su, F, W, Sp.

the study of human relations. Develops a theoretical rationale for human relations training and provides laboratory experiences for developing interpersonal communications skills.

- 491: **Human Relations.** 0-3 3. Preq., Psychology 490 and consent of instructor. Continued study of human relations plus supervised practice in performing group leadership and other facilitative roles.
- 500: **Individual Testing.** 0-3-3.
- 508: **Psycholinguistic Assessment.** 3-2-3.
- 511: **Advanced Educational Psychology.** 0-3-3.

PULP AND PAPER TECHNOLOGY

- 101: **Orientation.** 0-1-1. Survey of pulp and paper technology, slide rule and digital computers computations applicable to this area. W, Sp.
- 201: **Properties of Wood and Cellulose.** 3-2-3. Preq., Pulp and Paper Technology 101. A study of the chemistry of wood, pulps and processing of by-products. Structure and properties of cellulose and derivatives. F.
- 202: **Pulping Technology.** 3-2-3. Preq., Pulp and Paper Technology 201. A study of the physical and chemical properties of wood as related to the technology involved in commercial processes of pulp manufacture. Cooking, bleaching and testing. W.
- 203: **Paper Technology.** 3-2-3. Preq., Pulp and Paper Technology 202. Introduction of the technology involved in commercial processes of paper manufacture. Refining, sizing, wet strength, filling, coloring, water removal and testing. Sp.
- 220: **Water and Waste Processing.** 3-2-3. Preq., Pulp and Paper Technology 202. Analyses, tests, instrumentation and methods of evaluating water and waste streams used in pulp and paper processing. Sp.

QUANTITATIVE ANALYSIS

- 220: **Introduction to Business Information Systems.** 0-3-3. Preq., Sophomore standing. Concepts of information processing systems for business organizations. Introduction to electronic computers, with emphasis on utilization of computers in business and management information systems in contemporary business. Su, F, W, Sp.
- 310: **FORTTRAN Programming.** 0-2-2. Junior standing, preferably will precede other programming courses. Programming by the FORMula TRANslation (FORTTRAN) common compiler language; applications to business, industry, pure and applied science, mathematics, and other fields depending on student's interest. Su, F, W, Sp.
- 315: **COBOL Programming.** 0-2-2. Preq., Junior standing. Conceptual introduction to computer languages (machine and common), COMMON Business-Oriented Language (COBOL); programming problems and systems of increasing complexity for business, industry, and government. F, Sp.
- 335-336-337: **Business Statistics.** 0-2-2 each. Preq., junior standing. Statistics in business information systems, averages, dispersion, time series, index numbers, statistical inference, probability, estimation, sampling, test of hypothesis, regression, and correlation. Su, F, W, Sp. each.
- 390: **Quantitative Methods for Business and Economics.** 0-3-3. Preq., Junior standing. Presentation and review of pertinent quantitative topics to furnish the necessary background for the DBA quantitative methods field of study.
- 426: **PL/1 Programming.** 0-2-2. Preq., Knowledge of another programming language. Programming Language 1. A general purpose compiler language for programming business and scientific problems. W.

- 428: **Assembler Language Programming.** 0-2-2. Preq., Knowledge of another programming language Programming in machine and symbolic assembler languages for business. Sp.
- 430: **Management Science Methods.** 0-3-3. Preq., Quantitative Analysis 337. Linear programming including sensitivity analysis, the transportation problem, inventory analysis, and PERT. Su, F, W, Sp.
- 431: **Business Statistics and Business Decisions.** 0-3-3. Preq., Quantitative Analysis 337. A study of the more recent developments and applications of statistics in formulating business decisions based on concepts of utility, risk, and personal probability. Su, even; F, odd.
- 432: **Intermediate Business Statistics.** 0-3-3. Preq., Quantitative Analysis 337. Applied statistical methods utilizing the computerized Statistical Analysis System; multiple regression and correlation, chi square, analysis of variance, and non-parametric methods. Su, odd; W.
- 435: **Information Systems Analysis and Design.** 0-3-3. Preq., Quantitative Analysis 220 or equivalent and senior standing. Information systems for management decision making; systems construction and computer utilization, organizational concepts, systems analysis and data systems designed for accounting, marketing, production, personnel, and finance. F, Sp.
- 436: **Advanced Data Management and Computer Analysis.** 0-3-3. Preq., a high level processing language. Advanced application in systems design and utilization of current programming packages. An individual project is required. W.
- 525: **Management Science.** 0-3-3.
- 532: **Econometric Methods.** 0-3-3. (Same as Economics 532.)
- 535: **Advanced Computer Application.** 0-3-3.
- 540: **Advanced Management Science Methods.** 0-3-3.
- 541: **Advanced Management Science Methods.** 0-3-3.
- 550: **Individual Research Problems.** 1-3 hours credit.

RUSSIAN

- 101-102: **Elementary Russian.** 0-3-3 each. Russian orthography, pronunciation, basic grammar, and the reading of simple texts. No credit for 101 unless 102 is taken. 101-F; 102-W.
- 201: **Russian Reading.** 0-3-3. The cultivation of a facility in reading modern literary texts. Sp.
- 202: **Russian Composition.** 0-3-3. A systematic review of Russian grammar, with a view toward improving the student's control of written Russian. Su.
- 203: **Russian Phonetics.** 0-3-3. A detailed study of the sounds of Russian, and the inculcation of proper speech habits. F.

SOCIAL SCIENCE

- 470: **Senior Reading Program.** 0-3-3. A reading course in selected basic works optional for all majors in geography, history, political science, and sociology. Su, F, W, Sp.

SOCIAL WELFARE

- 200: **Introduction to Social Welfare.** 0-3-3. The history of social work as a field: body of knowledge, method and process of operation of the specialized social work services in contemporary society. F, W.

SOCIOLOGY

- 201: **Principles and Elements of Sociology.** 0-3-3. An introduction to the structures and processes of

- group behavior. Su, F, W, Sp.
- 202: **Social Problems.** 0-3-3. Selected social problems in contemporary American society. Su, F, W, Sp.
- 205: **Introduction to Anthropology.** 0-3-3. Introduction to the origin and development of man; the nature and development of culture. Su.
- 304: **Social Psychology.** 0-3-3. (Same as Psychology 304.) Preq., Psychology 102 or 202, and Sociology 201. A study of the nature of social behavior, social stimulation and response; a psychological analysis of society and social institutions. F, Sp.
- 306: **Juvenile Delinquency.** 0-3-3. Preq., Psychology 102, or Sociology 201 or 202. The nature, causes, extent, and methods of treatment of juvenile delinquency. Sp.
- 308: **The Family.** 0-3-3. A study of the family as a social institution with comparisons of family life in various societies. Su, W.
- 310: **Sociology of Adolescence.** 0-3-3. Preq., Sociology 201 or 202, or Psychology 102. Analysis of adolescence in selected societies with emphasis on the contemporary United States. F.
- 312: **Minority Groups.** 0-3-3. Minority/dominant relationships, their formation, stabilization and modifications. Su, W.
- 314: **Criminology.** 0-3-3. Theories of the genesis of crime; analysis of specific types of offenders, prevention, control, and treatment. F, Sp.
- 318: **Social Control.** 0-3-3. Informal and formal regulative processes in social behavior, with reference to techniques and processes of social control. Su.
- 330: **Rural Sociology.** 0-3-3. An examination of rural society with emphasis on its organization, processes and contemporary trends. Su.
- 340: **Urban Sociology.** 0-3-3. The influence of socio-cultural factors and their consequences for urban America. F.
- 401: **Social Theory.** 0-3-3. Preq., junior standing. The development of sociological theory and its relation to research. Sp.
- 415: **Sociology of Industrial Relations.** 0-3-3. Preq., junior standing. Analysis of the relationships between industry and society; work roles, theoretical models, industrial bureaucracy. W.
- 420: **Treatment of Offenders.** 0-3-3. Preq., Sociology 314. A study of principles of treatment of offenders; application of social science principles to treatment of offenders; interviewing, guidance, and counseling of offenders. Sp.
- 424: **Probation and Parole.** 0-3-3. Preq., Sociology 314. Probation and parole as part of a continuum for treating offenders. W.
- 430: **The Modern American Community.** 0-3-3. Preq., junior standing. A study of recent changes in American community life and of social organization in the modern community. Su, odd.
- 460: **Population Problems.** 0-3-3. Preq., junior standing. Scientific analysis of population distribution, composition, growth, migration, and vital processes. F, Sp.

SPANISH

- 101-102: **Elementary Spanish.** 0-3-3 each. No credit for 101 unless 102 is taken. Elementary conversation, reading and grammar. Su, F, W, Sp.
- 103-104: **Spanish in the Language Laboratory.** 3-0-1 each. Su, F, W, Sp.
- 201-202: **Intermediate Spanish.** 0-3-3 each. Preq., Spanish 102, or equivalent. Cultural reading and conversation. Su, F, W, Sp.
- 301-302: **Conversation and Composition.** 0-3-3 each. Preq., Spanish 202, or consent of instructor. Conversation on everyday topics. F, W, even; W, Sp, odd.
- 303-304: **The Novel in Spain.** 0-3-3 each. Preq., Spanish 202, or consent of instructor. A study of the novel in Spain from the sixteenth century to modern times. W, Sp, odd.

- 305-306: **The Drama in Spain.** 0-3-3 each. Preq., Spanish 202 or consent of instructor. A study of the drama in Spain from the sixteenth century to modern times. F, W, odd.
- 307: **The Novel of Latin America.** 0-3-3. Preq., Spanish 202, or consent of instructor. A study of representative novels of Latin America, Mexico excepted. Sp, odd.
- 308: **Spanish Civilization.** 0-3-3. Preq., Spanish 202, or consent of instructor. Lectures and readings in: Spanish history, geography, government, language, music, art, etc. Sp, even.
- 316: **Commercial Spanish.** 0-3-3. Preq., Spanish 202, or consent of instructor. Study of common commercial forms for use in Spanish correspondence and business. Sp, even.
- 325: **The Novel in Mexico.** 0-3-3. Preq., Spanish 202, or consent of instructor. A study of outstanding novels from 1800 to contemporary times. Su.
- 350-351: **Aural Spanish.** 4-2-3 each. Preq., Spanish 202 or consent of instructor. Activities involving practice with spoken Spanish on an advanced level. Su.
- 450: **The Spanish Language.** 0-3-3. Preq., Spanish 202 or instructor's consent. Advanced grammar. General characteristics of the language, including sources, etymology, dialects. F, W odd.
- 451: **The Spanish Language.** 0-3-3. Preq., Spanish 450. Advanced grammar. General characteristics of the language, including sources, etymology, dialects. F, W odd.

SPECIAL EDUCATION

- 310: **Introduction to Exceptional Children.** 0-3-3. A survey of the physical, emotional, social, and learning characteristics of exceptional children; educational programs; incidence and prevalence. Su, F, W, Sp.
- 301: **Learning Disabilities.** 0-3-3. Preq., Special Education 300. Learning principles, issues, models of learning disabilities, assessment and remediation of visual and auditory perception; cognitive processes; receptive and expressive language; gross motor coordination. F, W, Sp.
- 305: **Language Development for the Child with Learning Disabilities.** 0-3-3. The essentials of language needed to guide children with language-learning problems, including word meaning, language interactions, verbal-habit families, concepts and syntactical habits.
- 325: **Introduction to Mental Retardation.** 0-3-3. Preq., Special Education 301. Medical, psychological, social, and educational aspects of mental retardation. Su, F, Sp.
- 335: **Information on Childhood Diseases and Crippling Conditions.** 0-3-3. Emphasis on orthopedic conditions and chronic medical health problems with implications for education, psychology, social work, and occupational, physical, and speech therapy. Sp.
- 340: **Behavior Disorders.** 0-3-3. Preq., Special Education 300. Foundations of behavioral science, operant analysis of human behavior, behavior modification principles and techniques; educational programs. Su, F, W.
- 345: **Childhood and the Community.** 0-3-3. A study of stresses that influence child development through cultural patterning and personal-social conditioning; community services for children; and methods of assessing social competencies. Su, W.
- 360: **Education of the Partially Seeing Child.** 0-2-2. Preq., Special Education 301. Learning behavior, curriculum adaptation, educational programs, environmental movement and control, and behavioral characteristics of children with visual impairment. Sp.
- 375: **Education Procedures and Materials in Special Education.** 4-2-3. Preq., Special Education 325, 335,

- or 340. Specific procedures of educating and re-educating children with retarded development, behavior problems, crippling and special health problems, use of special materials, crafts, art. Guided observation. Su, F, W, Sp.
- 417: **Student Teaching in Special Education.** 35-2-6. Preq., Education 416 and either Special Education 340 or 375. Student teachers are assigned to their area of specialization. Required for state certification. Area of specialization will be listed on transcript. Su, F, W, Sp.
- 450: **Education of Gifted Children.** 0-3-3. The nature and needs of exceptionally able students with special emphasis on curriculum adjustment and research in the field. Sp.
- 475: **Advanced Procedures in Special Education.** 7-1-3. Preq., Special Education 375 or permission of instructor. Individually supervised and systematically organized observation and participation in evaluative and educational procedures with exceptional children. Su, W.
- 490: **Psycho-social and Educational Appraisal of Exceptional Children.** 3-2-3. Concepts of measurement applied to exceptional children; normative assumptions, measures of receptive and expressive language, social maturity, and perceptual-motor functions, observations of procedures. F, Sp.
- 501: **Contemporary Issues in Special Education.** 0-3-3.
- 502: **Psycho-social and Educational Appraisal of Exceptional Children.** 7-1-3.
- 503: **Educationally Disadvantaged.** 0-3-3.
- 520: **Advanced Seminar: Mental Retardation.** 0-3-3.
- 530: **Advanced Seminar: Nonsensory Physically Impaired.** 0-3-3.
- 540: **Advanced Seminar: Behavior Disorders.** 0-3-3.
- 550: **Field Work in the Education of Exceptional Children.** 12-0-3.
- 560: **Administration in Special Education.** 0-3-3.
- 575: **Behavior Technology in Special Education.** 3-2-3.

SPEECH

- 110: **Principles of Speech.** 0-3-3. Designed to develop the principles of effective oral communication in typical speaker-audience situations, through practice in informative and persuasive speaking. (Cannot be taken for credit if student has credit for Speech 377.) Su, F, W, Sp.
- 200: **Discussion and Debate.** 0-3-3. Preq., Speech 110 or equivalent. A study of the principles of group discussion and debate with practical experience in each. W.
- 201: **Introduction to Theatre.** 0-3-3. A comprehensive overview of the elements that comprise the theatre; intended as a basic preparation for an understanding of theatre art. F.
- 210: **Introduction to Speech Pathology.** 0-3-3. Preq., Speech 222. A study of the various speech disorders, their natures, etiology and treatment. W.
- 211: **Public Speaking.** 0-3-3. Preq., Speech 110 or permission of instructor. This course is concerned with developing advanced skill in special occasion speeches, the book review, the entertaining speech, and effective reading from an original speech. F.
- 222: **Phonetics.** 0-3-3. A study of vocal and physical aspects of standard American language and deviations therefrom as found in various regional dialects of the United States. F.
- 315: **Oral Interpretation of Literature.** 0-3-3. Preq., Speech 110. Advised, Speech 211. The development of responsiveness to prose, poetry, and drama, and the ability to communicate the logical emotional and aesthetic elements to others. F.
- 319: **Group Interpretation.** 0-3-3. Preq., Speech 110 and 315. Interpretation of prose, poetry, and drama through the group mediums of Chamber Theatre, Reader's Theatre, and Choral Reading. W.
- 330: **Voice and Diction.** 0-3-3. Preq., Speech 110. Designed to meet the practical needs of the elementary school teacher including training in phonetics, pronunciation, reading to children, and public address. F, Sp.
- 340: **Introduction to Broadcasting.** 3-2-3. Consideration of the fundamentals of broadcasting; includes field trips to observe operations of nearby radio and television stations. W.
- 360: **The Mass Media.** 0-3-3. Consideration of these media from the viewpoint of their audiences; emphasizes the development of objective standards for evaluating mass communications. Open to all students. F.
- 361: **Television Techniques.** 3-2-3. Provides direct experience in the production of television programs, using closed-circuit studio facilities and videotape equipment. Sp.
- 363: **Motion-Picture Techniques.** 3-2-3. Provides direct experience in the production of short motion-pictures; includes consideration of live action, single-frame animation, fictional and documentary styles, and problems of lighting. Sp.
- 377: **Oral Communication.** 0-3-3. Designed to establish a foundation for effective speaking in informative speaking, in the interview, and in the communication from the manuscript. (Cannot be taken for credit if student has credit for Speech 110.) Su, F, W, Sp.
- 406: **Play Production.** 0-3-3. An introductory course in the problems of play production, including directing, scenery construction and painting, stage lighting, backstage organization, stage make-up and costuming. Sp.
- 407: **Advanced Play Production.** 0-3-3. Preq., Speech 406. A seminar course with emphasis on play directing. Each person registering for this course will produce and direct a full-length play for public production. Sp.
- 411: **Diagnostic Procedures.** 0-3-3. Preq., Speech 440. Principles and procedures for differential diagnosis of speech and language disorders. Administration and interpretation of various tests, parent interviewing, and clinical observation of behavior. F, Sp.
- 412: **Clinical Procedures.** 7½-2-4. Preq., Speech 411. Supervised practice of speech therapy in the clinic. May be repeated for a maximum of 16 hours credit. Su, F, W, Sp.
- 413: **Articulation.** 0-3-3. A study of the nature, etiology, and retraining procedures related to defective articulation with emphasis on current research. F.
- 414: **Special Problems in Speech Pathology.** 0-3-3. Registration by permission of instructor. Individual research assignments in selected areas of the field of Speech Pathology. Su, W.
- 415: **Shakespeare.** 0-3-3. The major plays and the poems. (Same as English 415.) Su.
- 416: **Advanced Oral Interpretation of Literature.** 0-3-3. Preq., Speech 315. A continuation of Speech 315 in which the student increases his skill in analyzing literature, and further develops his ability to communicate the author's meaning. Sp.
- 417: **Advanced Clinical Practice.** 7½-2-4. Students are taught principles and procedures involved in clinical supervision. They assist faculty supervisors in their work with beginning student clinicians. May be repeated for a maximum of 16 hours credit. W, Sp.
- 420: **Anatomy and Physiology of the Speech Mechanism.** 0-3-3. Introduction to the study of the structure and function of the systems related to speech production including the respiratory, phonatory, articulatory and nervous systems. Su, Sp.
- 424: **The Development of the Theatre.** 0-3-3. A study of the evolution of the theatre from ancient to modern times. Sp.
- 425: **Stuttering.** 0-3-3. Registration by permission of the instructor. Intensive exploration of theoretical explanations of stuttering; research data and methodologies subserving the respective theories. Su, Sp.

- 440: **Principles of Communicative Interaction.** 0-3-3. The study of principles and processes basic to communicative interaction. Su, F, Sp.
- 441: **Introduction to Audiology.** 0-3-3. Study of the auditory mechanism, physics of sound, the process of hearing, disorders of hearing including administration of the basic audiometric tests. F.
- 442: **Rehabilitation of the Hearing Defective.** 0-3-3. Preq., Speech 441. Symptomatology and life situation of individuals with hearing loss. Problems of differential diagnosis, including auditory training, speech reading, and development and maintenance of Speech. W.
- 449: **Neuro-pathic Disorders of Speech.** 0-3-3. A study of communication problems which result from neuromuscular disorders. Sp.
- 451: **Advanced Discussion and Debate.** 0-3-3. Preq., Speech 200 or equivalent. Designed to prepare students for organizing and conducting a forensic program. Su, W.
- 453: **Rhetorical Theory.** 0-3-3. The evaluation of speech composition from classical to modern times. Sp.
- 454: **American Public Address.** 0-3-3. Preq., Speech 110. Study of American oratory from colonial times to the present. Su, W.
- 460: **Applied Forensics.** 3-0-1. Practical experience in debate and other forms of forensic speaking. May be repeated for a maximum of 4 hours credit. Su, F, W, Sp.
- 465: **Applied Practicum.** 6-0-2. Practical experience in clinical activities related to service programs. May be repeated for a maximum of 6 hours credit. Registration by permission of instructor. Su, F, W, Sp.
- 466: **Group Processes.** 1-1-1. Practical experience in conducting group meetings, group discussions, and parliamentary procedure. Open to all students. Su, F, W, Sp.
- 470: **Language and Speech Development.** 0-3-3. Study of the normal acquisition and maintenance of speech and language; theoretical formulations about speech and language behavior, and approaches to its study. Su, F.
- 501: **Seminar.** 0-3-3.
- 502: **Studies in Scene Design and Stage Costuming.** 0-3-3.
- 509: **British Public Address.** 0-3-3.
- 516: **Studies in the History of Interpretation.** 0-3-3.
- 518: **Interpretation of Contemporary Drama.** 0-3-3.
- 520: **Language Disorders in Children.** 0-3-3.
- 522: **Experimental Phonetics and Linguistics.** 0-3-3.
- 523: **Aphasia.** 0-3-3.
- 524: **Voice Disorders.** 0-3-3.
- 525: **Cleft Palate.** 0-3-3.
- 560: **Communication.** 0-3-3.
- 570: **History of Speech Education.** 0-3-3.

TECHNICAL DRAFTING

- 101: **Elementary Drafting.** 6-1-3. Care and use of drawing equipment. Freehand lettering. Freehand sketching and mechanical drawing of simple objects. F.
- 102: **Machine Drafting.** 6-0-2. Preq., Technical Drafting 101. Continuation of Technical Drawing 101. Sections, auxiliary views and dimensioning. W.
- 103: **Working Drawings.** 6-0-2. Preq., Technical Drafting 102. Assembly drawings. Tolerancing. Threads and fasteners. Mating parts. Sp.
- 201: **Pictorial Drawings.** 6-0-2. Preq., Technical Drafting 102. Axonometric drawings. Oblique drawings. Perspective drawings. F.
- 202: **Advanced Topics in Technical Drawings.** 6-0-2. Preq., Technical Drafting 103. Piping drawings. Welding drawings. Tool design drawings. Structural drawings. Process flowcharts. W.
- 203: **Organization and Administration of the Drafting Function.** 0-2-2. Preq., Technical Drafting 103. Reproduction of drawings. Numbering and filing of drawings. Security of drawings. Sp.

VETERINARY SCIENCE

- 301: **Anatomy and Physiology of Animals.** 3-2-3. The structures and functions of the tissues and organs of animals. Sp.
- 401: **Animal Pathology.** 3-2-3. Preq., Bacteriology 210. The etiology, symptoms, prevention, control, and eradication of the major diseases of farm animals. W.

ZOOLOGY

- 111: **Concepts in Zoology.** 0-3-3. A course for general academic students and beginning science majors. Presents basic concepts and principles in zoology, especially as they relate to man and his environment. Su, F, W, Sp.
- 112: **Laboratory Studies in Zoology.** 3-0-1. Student-oriented experiments integrated with a survey of animal life. Su, F, W, Sp.
- 115: **Animal Diversity.** 4¼-3-4. A study of the diversity of form and function based on the several animal phyla. F, W, Sp.
- 200: **Human Reproduction.** 0-1-1. (Pass-Fail). A factual study for the proper understanding of the physical, emotional, and behavioral aspects of human reproduction. W.
- 202: **Comparative Anatomy of Vertebrates.** 8½-2-4. Preq., Zoology 111, 112, 115. Comparative anatomy and evolution of the vertebrates. F, Sp.
- 225: **Human Anatomy and Physiology.** 0-3-3. Preq., Zoology 111, 112. The structures and functions of the organ systems of the human body, including anatomy of the vocal and hearing mechanisms. (Not open to students in premedicine, predentistry or zoology majors. Su, F, W, Sp.)
- 226: **Anatomy and Physiology Laboratory.** 4¼-0-1. Preq., Credit for or registration in Zoology 225. A laboratory to permit the student to observe through specially designed exercises the physiology and anatomy of mammals. F, W, Sp.
- 313: **Animal Ecology.** 4¼-2-3. Preq., Zoology 111 or 112. The fundamental principles of ecology as they apply to population dynamics, communities and zoogeographic distribution of animals. F, Sp.
- 317: **Game Management Techniques.** 4¼-2-3. Preq., Zoology 111, 112. A study of the principles employed in the management of game birds and mammals and their identification. F, W.
- 320: **Principles of Animal Physiology.** 4½-3-4. Preq., Zoology 111, 112; recommended Zoology 115, 202. A general and comparative approach to the principles and concepts of Physiology which apply to animal systems. F, W.
- 350: **Zoological Problems.** 4¼-0-1. Preq., Junior standing and written permission of instructor. An introduction to the principles of research. May be taken for 1-3 hours credit per quarter for a maximum of 6 hours credit. Su, F, W, Sp.
- 401: **General Parasitology.** 4¼-2-3. Preq., Zoology 111, 112, 115 or equivalent. A comparative study of animal parasites and their relationship to the hosts. Su, F.
- 405: **Histology.** 8½-1-3. Preq., Zoology 111, 112, 115 or equivalent. Microscopic study of animal tissues. W.
- 409: **Animal Genetics Laboratory.** 4¼-0-1. Preq., Life Sciences 300, Zoology 410 or concurrent registration in either of these courses. The study of laboratory techniques in animal genetics demonstrating the laws of heredity using standard laboratory animals and microorganisms. Sp.
- 410: **Animal Genetics.** 0-3-3. Preq., Zoology 111, 112, 115. The fundamental laws of inheritance, their molecular and quantitative bases and the function of the gene in cell physiology, development and evolution.
- 411: **Vertebrate Embryology.** 8½-2-4. Preq., Zoology 202, or permission of instructor. The structure, maturation and fertilization of the germ cells, and early development of vertebrate animals. W.

- 414: **General and Economic Entomology.** 4¼-2-3. Preq., Zoology 111, 112, 115 or equivalent. Study of insect structure, classification, life cycles and control practices, with emphasis on economic pests. F.
- 415: **Medical Entomology.** 0-3-3. Preq., Zoology 111, 112 or equivalent is recommended. Broad treatment of insects and other Arthropods of medical importance to man.
- 420: **Mammalian Physiology.** 4¼-3-4. Preq., 12 hours of zoology including Zoology 320, and organic chemistry. Interrelation of the organs in the mammalian homeostatic system and modern experimental methods. An advanced course for those students wishing specialization in the area of physiology. F, even.
- 421: **General Pharmacology.** 0-3-3. Preq., 12 hours of zoology and 8 hours of chemistry or by permission of the instructor. A study of the physiological and biochemical effects produced by drugs with emphasis on theories of the mode of cellular level action. Sp.
- 423: **Endocrinology.** 0-3-3. Preq., permission of the instructor. A study of the embryological origin, anatomy and physiology of the endocrine glands in various animals. F, odd.
- 425: **Principles of Electron Microscopy.** 4½-1-2. Preq., graduate standing and written permission of the instructor. Essential methods for routine biological electron microscopy: instrument operations, photomicrography, tissue sectioning and knife preparation. W.
- 426: **Evolution.** 0-3-3. Preq., Zoology 111 or equivalent. A study of the concepts, problems and methods involved in the formulation of modern evolutionary theory.
- 429: **Ichthyology.** 4¼-2-3. Preq., Zoology 111, 112, 115 or equivalent. Systematics, anatomy, and ecology of fishes with emphasis on local freshwater species. F.
- 430: **Herpetology.** 4¼-2-3. Preq., Zoology 111, 112, 115 or equivalent. The taxonomy, distribution, life histories, and ecology of the Herptiles, with special emphasis on those species found in Louisiana. Sp.
- 432: **Mammalogy.** 4¼-2-3. Preq., Zoology 111, 112, 115 or equivalent. The identification, taxonomy, characteristics and general biology of mammals with emphasis upon those of North America. W.
- 433: **Ornithology.** 4¼-2-3. Identification, taxonomy, characteristics, and general biology of birds, with emphasis upon those in North America. Sp.
- 434: **Limnology.** 4¼-2-3. Preq., Zoology 111, 112, 115 or equivalent. The study of the chemical, physical and biotic aspects of the freshwater environment. F.
- 436: **Field Zoology for Teachers.** 4¼-2-3. Preq., Zoology 111, 112, or equivalent or permission of instructor. A study of the natural history of cold-blooded vertebrates and aquatic ecology. Not open to majors in Zoology or Wildlife curricula. Su.
- 437: **Field Zoology for Teachers.** 4¼-2-3. Preq., Zoology 111, 112, or equivalent or permission of instructor. A study of the natural history of warm-blooded vertebrates and terrestrial ecology. Not open to majors in the Zoology or Wildlife curricula. Su.
- 440: **Cell Biology.** 4¼-2-3. Preq., Zoology 111, 112. The cell is studied as to the structural and functional organization of the protoplasm, and its relation to metabolism and heredity. F.
- 480: **Undergraduate Seminar.** 0-1-1. Preq., senior standing. May be repeated for two semester hours credit. Required of all senior zoology majors. Supervised study, reports and discussion of current zoological literature. F, W, Sp.
- 510: **Biology of Water.** 4¼-1-2.
- 515: **History of Zoology.** 0-2-2.
- 520: **Principles of Zoological Systematics.** 0-1-1.

NOTE: Courses listed for the summer will be offered only if qualified faculty are on staff.

COUNCILS, COMMITTEES AND COMMISSIONS

(The President and the appropriate Vice President are "ex-officio"

members of all councils and committees.)

- ADMINISTRATIVE COUNCIL:** F. Jay Taylor, Chairman; Hal B. Barker, Ben T. Bogard, George Byrnside, B. J. Collinsworth, June W. Dyson, E. S. Foster, Jr., James L. Hester, Patsy Lewis, S. X. Lewis, Agnes C. Miller, Virgil Orr, Paul J. Pennington, Burton R. Risinger, Chairman of the Faculty Senate, President, Student Association.
- ADMINISTRATIVE REVIEW BOARD:** Vice President for Student Affairs, Chairman; Vice President for Academic Affairs, Dean of the College in which the student is registered.
- ASTRONOMY ADVISORY COMMITTEE:** Charles H. Edwards, Jr., Chairman; Roland Abegg, Joseph H. Barnwell, Anthony J. Galli, Joe Hinton, Wallace Herbert, ex-officio, M. R. Johnson, Jr., G. Clint Miller, Jason Owen, Paul J. Pennington, One junior student, One senior student.
- ATHLETIC COUNCIL:** H. J. Smolinski, Chairman; J. G. Chumley, B. J. Collinsworth, James L. Hester, Maxie Lambright (non-voting), Virgil Orr, Paul J. Pennington, Robert C. Snyder, Milton Williams, A. Huey Williamson, Student Representative.
- CATALOGS AND BULLETINS COMMITTEE:** Bob R. Owens, Chairman; John Edwin Carothers, Robert Doyle Holstead, John Murad, Jack Murphy, Donald R. Nelson, Student (Usually Editor of THE TECH TALK).
- CIVIL DEFENSE COMMITTEE:** Charles H. Smith, Chairman; John D. Calhoun, June W. Dyson, E. S. Foster, Jr., Ben J. Grafton, H. L. Henry, S. S. Kilgore, Charles A. Killgore, Albert Lazarus, P. B. Moseley, Jack A. Murphy, H. C. Pyburn, Richard Smith, Ray Storms.
- COUNCIL OF ACADEMIC DEANS:** Virgil Orr, Chairman; Hal B. Barker, Ben T. Bogard, B. J. Collinsworth, James L. Hester, Patsy Lewis, Agnes C. Miller, Paul J. Pennington, Burton Risinger.
- COMMENCEMENT COMMITTEE:** Bill J. Attebery, Marty Beasley, Marshall Bretz, Charles Edwards, Claudine Kennedy, James Maranto, Homer Ponder, Minnie Mize, J. J. Thigpen, Calvin Lemke, Raymond Young, Ray Janway, James Spencer. One student representative.
- FEE COMMITTEE:** Virgil Orr, Chairman; George Byrnside, Jerry Drewett, S. X. Lewis, President, Student Association.
- GRADUATE COUNCIL:** James L. Hester, Chairman; Francis Brewerton, Buck Brown, Donald Edwards, Jeanne Gilley, Harold Hedrick, Mabel Hemphill, Houston Huckabay, Clint Miller, H. E. Moseley, Donald G. Rhodes, Eleanor Rockett, Nancy Tolman, John Trisler, Jim Williams, Graduate Student.
- GRIEVANCE COMMITTEE:** Tommy Adkins, Chairman; Dino Alberti, Roy Fitzgerald, A. D. Hogan, Milton Johnson, Wade Meade, Jason Owen, Lawrence Smith, Nancy Tolman.
- INSTRUCTIONAL POLICIES COMMITTEE:** John Wright, Chairman; Randall Barron, O. L. Fitzgerald, Charles Foxworth, Billy Gilley, Joe Hinton, Charles Killgore, Addie Knickerbocker, P. B. Moseley, Bob R. Owens, Caroline Paddock, Shirley Reagan, W. R. Rives, President-Student Association, Student.
- INSURANCE AND RELATED BENEFITS COMMITTEE:** Burton R. Risinger, Chairman; Tommy Adkins, Tommy Allen, George Byrnside, J. E. Edwards, S. X. Lewis, Virgil Orr, Reggie Rives.
- LIBRARY ADVISORY COMMITTEE:** Donald Nelson, Chairman; Hal B. Barker, Ben T. Bogard, Norman Byers, B. J. Collinsworth, Sam Dyson ex-officio member, Addie Knickerbocker, S. X. Lewis, Agnes Miller, Virgil Orr, ex-officio member, Paul Pennington, Burton Risinger, Richard A. Smith, J. Y. Terry, Two junior or senior students.
- LOUISIANA TECH CAMPUS PLANNING COMMISSION:** Jack Potter, Chairman; Hal B. Barker, B. J. Collinsworth, E. S. Foster, Jr., E. R. Janway, Maxie Lambright, Agnes C. Miller, Richard A. Smith, John C. Trisler, Two junior or senior students.
- PROGRAM COMMITTEE:** J. Harold Gilbert, Chairman; Marshall Bretz, Charles Foxworth, Sallie Hollis, M. R. Johnson, Dallas Lutes, E. R. Minchew, Shirley Reagan, Charles H. Smith, James Townsend. Four students.
- RADIATION COMMITTEE:** Charles A. Killgore, Chairman; W. H. Brumage, Winston Hackbarth, James Malone, Agnes Miller, Student.
- RESEARCH COUNCIL:** James L. Hester, Chairman; W. L. Bergeron, Jerry Drewett, Charles Killgore, A. G. McKee, P. B. Moseley, John Murad, Bobby Price, Richard Ringheim, Nancy Tolman, Don Wilcox, One senior or graduate student.
- SAFETY COMMITTEE:** S. X. Lewis, Chairman; June W. Dyson, Charles E. Edwards, Jr., E. S. Foster, Jr., Hollis Hearne, E. R. Janway, William McBride, J. Clarp Ramsaur, Earl Williamson, Charles Wilson, Janet Wright, President, Associated Women Students, President, Men's Dorm Council, President, Student Association.
- SCHOLASTIC STANDARDS COMMITTEE:** Ben T. Bogard, Chairman; Glynn Aycock, Hal B. Barker, B. J. Collinsworth, Patsy B. Lewis, Agnes Miller, Paul Pennington, Burton Risinger, Eleanor Rockett, J. C. Seaman, Two students.
- SOCIAL STANDARDS COMMITTEE:** The Social Standards Committee shall be composed of twelve faculty members appointed by the Vice President for Academic Affairs, the president of Men's Dormitory Council, the second vice president of the Associated Women Students, four senior men and four senior women appointed by the President, a chairman and an alternate chairman appointed by the Vice President for Student Affairs.
- STUDENT ORGANIZATIONS COMMITTEE:** Dean of Student Development, Chairman; Vice Chairman of the Faculty Senate, Chairman of the Student Association Department of Internal Affairs and two members of that department, the Activities Director, a representative from the Division of Student Affairs, an advisor from: the Student Government Association, the Union Board, the Interfraternity Council, and the Panhellenic Council, a student representative from: the Interfraternity Council, the Panhellenic Council.
- SUMMER ORIENTATION COMMITTEE:** Karen Seaman, Chairman; Glynn Aycock, Patsy Lewis, Robert Patterson, Helen Penny, R. G. Russell, Phillip Washington, AWS President, Union Board President.
- WATER RESOURCES ADVISORY COMMITTEE:** Bobby E. Price, Chairman; Charles A. Killgore, P. B. Moseley, John Murad, Donald C. Wilcox.

University
Faculty

University Faculty

Department in which each faculty member is listed is by budget unit rather than by discipline. For teachers specific discipline see the college listings of faculty.

- ABEGG, ROLAND; PROFESSOR, ZOOLOGY--BA, UNIV OF MICH; MS, PHD, LA STATE UNIV. (1959) GRADUATE FACULTY
- ALBERTI, DINO A; ASSISTANT PROFESSOR, LIBRARY--BA, MA, LA POLY INST; MS, LA STATE UNIV. (1967)
- ALBRITTON, LOU ANN; ASSISTANT PROFESSOR, PHYSICAL EDUCATION--BS, MS, LA POLY INST. (1965)
- ALEXANDER, BARBARA J; INSTRUCTOR, SPEECH--BS, MS, LA TECH UNIV. (1973)
- ANDERSON, MICHAEL E; INSTRUCTOR, FLIGHT OPERATIONS--BS, LA TECH UNIV. (1970)
- ANDRULOT, EDWARD ROBERT; PROFESSOR, FORESTRY--BSF, UNIV OF MICH; MS, LA POLY INST; PHD, LA STATE UNIV. (1956) GRADUATE FACULTY
- ARMSTRONG, LARRY BENNETT; ASSISTANT PROFESSOR, ACCOUNTING--BS, LA POLY INST; MBA, LA STATE UNIV. (1966)
- ATTEBERY, BILLY J; PROFESSOR, MATHEMATICS--BSE, STATE COLLEGE OF ARK; MA, UNIV OF ARK; PHD, UNIV OF MISSOURI. (1966) GRADUATE FACULTY
- ATTREP, ABRAHAM M; ASSOCIATE PROFESSOR, HISTORY--BA, LA COLLEGE; MA, TULANE UNIV; PHD, UNIV OF GA. (1962) GRADUATE FACULTY
- BADEAUX, GILBERT R; ASSISTANT PROFESSOR, ELECTRICAL ENGINEERING--BS, UNIV OF SOUTHWESTERN LA; MS, UNIV OF ILL. (1966) GRADUATE FACULTY
- BAILEY, R L; PROFESSOR, ANIMAL INDUSTRY--BS, TENN STATE A&I UNIV; MS, PHD, STATE UNIV OF IOWA. (1969)
- BAIRNSFATHER, LEE ELLIS; INSTRUCTOR, ELECTRICAL ENGINEERING--BS, LA TECH UNIV. (1974)
- BAKER, RILEY E; ASSISTANT PROFESSOR, SOCIAL SCIENCES--BS, MS, NORTH TEX STATE UNIV. (1962) GRADUATE FACULTY
- BARHAM, ROBERT EWING; ASSISTANT PROFESSOR, ENGLISH--BA, MA, LA POLY INST. (1965)
- BARKER, HAL B; PROFESSOR, LIFE SCIENCES ADMINISTRATION--BS, TENN POLY INST; MS, IOWA STATE UNIV; PHD, AUBURN UNIV. (1949) GRADUATE FACULTY
- BARKER, JON ALBERT; ASSISTANT PROFESSOR, MUSIC--BA, NORTHEAST LA STATE COLLEGE; MCM, SW BAPTIST THEOLOGICAL SEM. (1969) GRADUATE FACULTY
- BARNWELL, J H; PROFESSOR, MECHANICAL ENGINEERING--BS, GA INST OF TECH; MS, TEX A & M UNIV. (1941) GRADUATE FACULTY
- BARRON, RANDALL F; PROFESSOR, MECHANICAL ENGINEERING--BS, LA POLY INST; MS, PHD, OHIO STATE UNIV. (1965) GRADUATE FACULTY
- BAUGH, MARY WILMA; ASSOCIATE PROFESSOR, SPEECH--BA, MIAMI JUNIOR COLLEGE; MA, NORTHWESTERN UNIVERSITY. (1946) GRADUATE FACULTY
- BEARD, JACK; PROFESSOR, ART AND ARCHITECTURE--BA, LA POLY INST; MA, STEPHEN F AUSTIN UNIV. (1963) GRADUATE FACULTY
- BEASLEY, MARY FOWLER; ASSOCIATE PROFESSOR, SPEECH--BA, MA, LA TECH UNIV; PHD, PURDUE UNIV. (1969) GRADUATE FACULTY
- BERGERON, WILBUR LEE; PROFESSOR, EDUCATION RESEARCH--BA, LA COLLEGE; MA, GEORGE PEABODY COLLEGE; EDD, UNIV OF ARK. (1953) GRADUATE FACULTY
- BERGUSON, ROBERT JENKINS; ASSISTANT PROFESSOR, ART AND ARCHITECTURE--BA, MA, MFA, UNIV OF IOWA. (1970) GRADUATE FACULTY
- BERNARD, WILLIAM H; PROFESSOR, PHYSICS--BS, PHD, TULANE UNIVERSITY. (1962) GRADUATE FACULTY
- BLACKWELL, LLOYD P; PROFESSOR, FORESTRY--BA, LYNCHBURG COLLEGE; MF, YALE UNIV. (1946)
- BOGARD, BEN T; PROFESSOR, ENGINEERING ADMINISTRATION--BS, LA POLY INST; MS, LA STATE UNIV. (1937) GRADUATE FACULTY
- BOWEN, EDWARD C; ASSISTANT PROFESSOR, AIR SCIENCE--BA, N Y STATE UNIV; MA, UNIV OF ARK. (1974)
- BOYETTE, HOWELL WALLACE; ASSISTANT PROFESSOR, MATHEMATICS--BS, SOUTHERN STATE COLLEGE; MS, MS, UNIV OF ARK. (1963)
- BRETZ, MARSHALL E; PROFESSOR, MUSIC--BM, WEST CHESTER STATE; MSM, UNION THEOL SEM OF SACRED MUS; SMD, UNION THEOL SCHOOL OF MUSIC. (1944) GRADUATE FACULTY
- BREWER, JOHN CLINTON; ASSISTANT PROFESSOR, BARKSDALE CENTER--BA, CENTENARY COLLEGE; MA, PHD, UNIV OF TEXAS. (1970) GRADUATE FACULTY

BREWERTON, FRANCIS J; ASSOCIATE PROFESSOR, BUSINESS--BSM, MBA, DBA, LA STATE UNIV. (1971) GRADUATE FACULTY

BREWERTON, MARTI J; ASSISTANT PROFESSOR, ENGLISH--BA, MA, LA STATE UNIV; PHD, UNIV OF NORTH DAKOTA. (1971)

BROWN, BUCK F; PROFESSOR, ELECTRICAL ENGINEERING--BS, MASS INST OF TECH; MS, PHD, OKLA STATE UNIV. (1964) GRADUATE FACULTY

BROWN, JAMES RUSSELL; PROFESSOR, ALLIED HEALTH, MEDICAL RECORDS--BS, UNIV OF NEW MEXICO; MD, LSU SCHOOL OF MEDICINE. (1974)

BRUCE, ARTHUR CHILTON; ASSOCIATE PROFESSOR, MECHANICAL ENGINEERING--BS, MS, VA POLY INST; PHD, GA TECH. (1967) GRADUATE FACULTY

BRUMAGE, WILLIAM HARRY; PROFESSOR, PHYSICS--BS, MS, OKLA STATE UNIV; PHD, UNIV OF OKLA. (1952) GRADUATE FACULTY

BUICE, S DAVID; ASSOCIATE PROFESSOR, HISTORY--BA, STETSON UNIV; MA, UNIV OF SOUTHERN MISS; PHD, UNIV OF OKLA. (1966) GRADUATE FACULTY

BURTON, EUGENE PAUL; ASSOCIATE PROFESSOR, MATHEMATICS--BS, HENDERSON ST; MA, UNIV OF ARK. (1955)

BUSCH, FRANK M; ASSOCIATE PROFESSOR, OFFICE ADMINISTRATION--BBA, NORTH TEX STATE UNIV; MBA, PHD, INDIANA UNIV. (1966) GRADUATE FACULTY

BUSH, JOHN M; ASSOCIATE PROFESSOR, HISTORY--BSE, ARK STATE TEACHERS COLLEGE; MA, PHD, MISS STATE UNIV. (1965) GRADUATE FACULTY

BUTLER, A Z; PROFESSOR, ENGLISH--BA, UNIV OF SC; MA, VANDERBILT UNIV. (1948) GRADUATE FACULTY

BUTLER, GEORGE M; ASSOCIATE PROFESSOR, MATHEMATICS--BS, MS, PHD, OKLA STATE UNIV. (1967) GRADUATE FACULTY

BYERS, NORMAN F; ASSISTANT PROFESSOR, ECONOMICS AND FINANCE--BS, MA, NORTHWESTERN UNIV. (1963) GRADUATE FACULTY

CALHOUN, J D; PROFESSOR, MECHANICAL ENGINEERING--BS, LA POLY INST; MS, LA STATE UNIV. (1948) GRADUATE FACULTY

CALHOUN, RUTH R; INSTRUCTOR, ENGLISH--BA, MA, LA POLY INST. (1964)

CAMERON, JAMES M JR; INSTRUCTOR, NUCLEAR CENTER--BS, S D SCHOOL OF MINES & TECH; MS, LA TECH UNIV. (1971)

CAMPBELL, JANET G; INSTRUCTOR, OFFICE ADMINISTRATION--BS, LA STATE UNIV; MS, UNIV OF TENN. (1972)

CANTERBURY, JACK; PROFESSOR, MECHANICAL ENGINEERING--BS, LA TECH UNIV; MS, UNIV OF ARK; PHD, NC STATE UNIV. (1958) GRADUATE FACULTY

CAROTHERS, JOHN EDWIN; PROFESSOR, FORESTRY--BS, SALEM COLLEGE; MF, UNIV OF MICH; MS, IOWA STATE UNIV; PHD, MICH STATE UNIV. (1966) GRADUATE FACULTY

CARUTHERS, ROBERT MACK; PROFESSOR, PETROLEUM ENGINEERING--BS, BS, LA POLY INST; PHD, UNIV OF TEX. (1967) GRADUATE FACULTY

CASON, ROBERT L JR; ASSOCIATE PROFESSOR, PHYSICS--BS, SOUTHEASTERN LA UNIV; MS, LA STATE UNIV. (1948) GRADUATE FACULTY

CATO, CHARLES E; ASSOCIATE PROFESSOR, ACCOUNTING--BBA, MBA, SAM HOUSTON STATE UNIV; PHD, UNIV OF MISS. (1973) ASSOCIATE GRADUATE FACULTY

CHANDLER, ERA B; INSTRUCTOR, EDUCATION--BM, LA POLY INST; MED, MS, LA STATE UNIV. (1971)

CHANDLER, WELDON KENNETH; ASSISTANT PROFESSOR, LIBRARY--BM, LA POLY INST; MME, MS, LA STATE UNIV. (1967)

CHASE, CIDA; ASSISTANT PROFESSOR, FOREIGN LANGUAGES--BS, MS, KANSAS ST TEACHERS COLLEGE. (1974)

CHEATHAM, ROBERT E III; INSTRUCTOR, MUSIC--BME, UNIV OF SOUTHERN MISS. (1973)

CHEW, WOODROW W; PROFESSOR, CHEMICAL ENGINEERING--BS, NEW MEXICO STATE; MS, OKLA STATE UNIV. (1940) GRADUATE FACULTY

CHRISTIAN, JAMES ALEXANDER; ASSOCIATE PROFESSOR, BOTANY AND BACTERIOLOGY--BS, MA, PHD, UNIV OF MISSOURI. (1966) GRADUATE FACULTY

CHUMLEY, J GALE; PROFESSOR, BUSINESS--BA, BS, CENTRAL STATE UNIV; MS, OKLA STATE UNIV; MA, PHD, UNIV OF MISS. (1949) GRADUATE FACULTY

CHUMLEY, LUCY L; ASSISTANT PROFESSOR, LIBRARY--BA, BS, CENTRAL STATE UNIV; MA, LA POLY INST; MSL, UNIV OF MISS. (1961)

CLARK, GLENN E; PROFESSOR, ANIMAL INDUSTRY--BS, PHD, LA STATE UNIV; MS, TEX A & M UNIV. (1952) GRADUATE FACULTY

COLE, RONALD E; ASSISTANT PROFESSOR, LIBRARY--BA, MA, FLORIDA STATE UNIV; MLS, LA STATE UNIV. (1974)

COLEMAN, MARGARET NORRIS; INSTRUCTOR, MATHEMATICS--BS, MS, LA POLY INST. (1969)

COLEMAN, NOLAN B; ASSISTANT PROFESSOR, MATHEMATICS--BS, MS, LA POLY INST. (1964)

- COLLINSWORTH, BENNIE J; PROFESSOR, EDUCATION ADMINISTRATION--BS, LA POLY INST; MS, EDD, UNIV OF ARK.
(1962) GRADUATE FACULTY
- CONWAY, WILLIAM JOHN; ASSOCIATE PROFESSOR, SOCIAL SCIENCES--BS, UNIV OF WISCONSIN; MA, PHD, LA STATE
UNIV. (1973) ASSOCIATE GRADUATE FACULTY
- COOK, GARY DENNIS; INSTRUCTOR, MUSIC--BM, UNIV OF MICHIGAN. (1972)
- COOK, PHILIP CHARLES; ASSOCIATE PROFESSOR, HISTORY--BA, LA STATE UNIV; MA, LA POLY INST; PHD, UNIV OF
GEORGIA. (1969) GRADUATE FACULTY
- CORLEY, SUSAN C; INSTRUCTOR, OFFICE ADMINISTRATION--BS, MBA, LA TECH UNIV. (1974)
- CRAIG, ARCHIE W; ASSOCIATE PROFESSOR, PHYSICAL EDUCATION--BS, LA POLY INST; MS, LA STATE UNIV.
(1955) GRADUATE FACULTY
- CROMBIE, VAUGHN C; ASSISTANT PROFESSOR, ART AND ARCHITECTURE--BFA, LA COLLEGE; MFA, LA TECH UNIV;
(1969)
- CROW, WILLIAM M; PROFESSOR, TEACHER EDUCATION--BS, LA POLY INST; MS, EDD, UNIV OF ARK. (1959)
GRADUATE FACULTY
- CRUMP, CLIFFO D; ASSISTANT PROFESSOR, OFFICE ADMINISTRATION--BBA, MBE, NORTH TEX STATE UNIV. (1952)
- CRUMP, KENNY S; ASSOCIATE PROFESSOR, MATHEMATICS--BS, LA POLY INST; MA, UNIV OF DENVER; PHD, MONTANA
STATE UNIV. (1966) GRADUATE FACULTY
- DAUZAT, SAMUEL VARNER; ASSOCIATE PROFESSOR, TEACHER EDUCATION--BA, MA, NORTHWESTERN STATE COLLEGE;
EDD, UNIV OF MISS. (1968) GRADUATE FACULTY
- DAVENPORT, RONALD EDMOND; ASSOCIATE PROFESSOR, GEOSCIENCES ENGINEERING--BS, ARIZ STATE UNIV; MS, UNIV
OF ARIZ; PHD, OREGON STATE UNIV. (1970) GRADUATE FACULTY
- DAVIS, BILLY J; PROFESSOR, ZOOLOGY--BS, MT, SOUTHWESTERN STATE COLLEGE; PHD, OKLA STATE UNIV.
(1966) GRADUATE FACULTY
- DAVIS, CARL A JR; ASSISTANT PROFESSOR, BOTANY AND BACTERIOLOGY--BS, MS, UNIV OF ALA. (1973) GRADUATE
FACULTY
- DAVIS, JERLYNNE L; ASSISTANT PROFESSOR, MUSIC--BA, MA, LA POLY INST. (1971)
- DICKSON, JAMES G; ASSISTANT PROFESSOR, FORESTRY--BS, UNIV OF THE SOUTH; MS, UNIV OF GEORGIA; PHD, LA
STATE UNIV. (1974)
- DOBBS, ROSS E; INSTRUCTOR, BARKSDALE CENTER--BS, LA POLY INST; MBA, LA TECH UNIV. (1970)
- DRISKELL, HERMIONE M; ASSISTANT PROFESSOR, TEACHER EDUCATION--BA, LA POLY INST; MA, UNIV OF MICHIGAN.
(1970)
- DUNN, PRENTISS; ASSISTANT PROFESSOR, MUSIC--BM, BAYLOR UNIVERSITY; MM, INDIANA UNIV. (1973)
- DUNN, TUCSON; ASSOCIATE PROFESSOR, PHYSICS--BS, MS, LA POLY INST; PHD, UNIV OF FLA. (1968) GRADUATE
FACULTY
- DYKES, JEAN C; PROFESSOR, HOME ECONOMICS--BS, LA POLY INST; MA, SAM HOUSTON STATE UNIV; PHD, TEXAS
WOMEN'S UNIV. (1971) GRADUATE FACULTY
- DYSON, SAMUEL A; ASSOCIATE PROFESSOR, LIBRARY--BS, NORTHWESTERN STATE COLLEGE; MS, LA STATE UNIV.
(1960)
- EDENS, FRANK N; PROFESSOR, BUSINESS--BBA, PHD, UNIV OF TEX; MBA, UNIV OF HOUSTON. (1970) GRADUATE
FACULTY
- EDWARDS, C H JR; PROFESSOR, CIVIL ENGINEERING--BS, LA POLY INST; MS, UNIV OF TEX. (1949) GRADUATE
FACULTY
- EDWARDS, DONALD E; PROFESSOR, CAB ADMINISTRATION--BBA, MBA, NORTH TEX STATE UNIV; PHD, UNIV OF ARK.
(1967) GRADUATE FACULTY
- ELIOFF, ROBERT; ASSOCIATE PROFESSOR, PHYSICS--BS, LA POLY INST; MS, UNIV OF FLA. (1947) GRADUATE
FACULTY
- ENRIGHT, BARBARA P; INSTRUCTOR, ENGLISH--BA, MA, LA TECH UNIV. (1970)
- ERWIN, DON RICKY; INSTRUCTOR, CHEMICAL ENGINEERING--BS, LA TECH UNIV. (1974)
- EVANS, LINDA R; ASSISTANT PROFESSOR, HOME ECONOMICS--BS, LA STATE UNIV; MS, UNIV OF TENN. (1967)
ASSOCIATE GRADUATE FACULTY
- EZELL, RICHARD L; ASSOCIATE PROFESSOR, FOREIGN LANGUAGES--BA, LA POLY INST; MA, PHD, OKLA UNIV.
(1966) GRADUATE FACULTY
- FARRAR, MARY A; INSTRUCTOR, ENGLISH--BA, LA POLY TECH; MA, LA TECH UNIV. (1973)
- FERGUSON, MAGDALEN B; INSTRUCTOR, FOREIGN LANGUAGES--BA, UNIV OF S FLA; MA, LA STATE UNIV. (1971)
- FERRINGTON, ROBERT HARRIS; ASSOCIATE PROFESSOR, MUSIC--BME, NORTHWESTERN STATE COLLEGE; ME, UNIV OF
ARK; PHD, UNIV OF SOUTHERN MISS. (1969) GRADUATE FACULTY
- FERRINGTON, RUSSELL C; ASSOCIATE PROFESSOR, ACCOUNTING--BS, LA POLY INST; MBA, LA STATE UNIV.
(1953) GRADUATE FACULTY
- FILLINGHAM, GEORGIA A; ASSISTANT PROFESSOR, MUSIC--BME, MA, UNIV OF SOUTHERN MISS. (1973)

FINCHER, PHILLIP E; ASSISTANT PROFESSOR, ECONOMICS AND FINANCE--BS, LA POLY INST; MBA, MISS STATE UNIV. (1964) GRADUATE FACULTY

FITZGERALD, ODIE LEROY; ASSOCIATE PROFESSOR, FORESTRY--BS, LA POLY INST; MF, DUKE UNIV. (1951)

FLOURNOY, ROBERT W; PROFESSOR, ZOOLOGY--BS, MS, PHD, TEX A & M UNIV. (1966) GRADUATE FACULTY

FORD, JOHN PHILIP; ASSISTANT PROFESSOR, MUSIC--BM, GEORGE PEABODY COLLEGE; MM, UNIV OF ILLINOIS. (1966) GRADUATE FACULTY

FOWLER, JOHN ROBERT JR; ASSISTANT PROFESSOR, BUSINESS--BS, MBA, LA POLY INST. (1966)

FOXWORTH, CHARLES L; ASSOCIATE PROFESSOR, TEACHER EDUCATION--BA, EAST TEXAS BAPTIST COLLEGE; MA, UNIV OF HOUSTON; PHD, LA STATE UNIV. (1971) GRADUATE FACULTY

FRANCIS, NELLE TREW; ASSOCIATE PROFESSOR, ENGLISH--BA, HARDIN-SIMMONS UNIV; MA, PHD, UNIV OF TEXAS. (1967) GRADUATE FACULTY

FRANZ, SYLVIA; INSTRUCTOR, HOME ECONOMICS--BS, MS, LA POLY INST. (1969)

FREASIER, BEN F; PROFESSOR, CHEMISTRY--BS, MS, TEX A&I UNIV; PHD, TEX TECH UNIV. (1962) GRADUATE FACULTY

FUTRELL, ANN MACE; INSTRUCTOR, ENGLISH--BA, MA, LA POLY INST. (1967)

GALLI, ANTHONY JOHN; PROFESSOR, PHYSICS--BS, LA STATE UNIV; PHD, GEORGETOWN UNIV. (1966) GRADUATE FACULTY

GARNER, JACKIE B; PROFESSOR, MATHEMATICS--BS, LA POLY INST; MS, PHD, AUBURN UNIV. (1957) GRADUATE FACULTY

GARRETT, HAROLD E; ASSOCIATE PROFESSOR, FORESTRY--BS, MS, SOUTHERN ILL UNIV; PHD, UNIV OF MISSOURI. (1970) GRADUATE FACULTY

GATONS, PAUL K; ASSOCIATE PROFESSOR, ECONOMICS AND FINANCE--BS, UNIV OF ILL. (1971) GRADUATE FACULTY

GIBBS, RICHARD LYNN; PROFESSOR, PHYSICS--BA, UNIV OF THE SOUTH; MS, PHD, CLARKSON COLLEGE OF TECH. (1966) GRADUATE FACULTY

GIESSE, RICHARD J; ASSISTANT PROFESSOR, SPECIAL EDUCATION--BA, HOWARD PAYNE COLLEGE; MED, HARDIN SIMMONS; EDD, NORTHEAST LA UNIV. (1963) GRADUATE FACULTY

GILBERT, JIMMIE D; PROFESSOR, MATHEMATICS--BS, LA POLY INST; MS, PHD, AUBURN UNIV. (1958) GRADUATE FACULTY

GILLEY, BILLY HAWKINS; PROFESSOR, HISTORY--BS, TENN POLY INST; MA, UNIV OF TENN; PHD, UNIV OF GA. (1966) GRADUATE FACULTY

GILLEY, JEANNE M; ASSOCIATE PROFESSOR, HOME ECONOMICS--BA, LA POLY INST; MSE, NORTHWESTERN STATE UNIV; PHD, TEXAS WOMAN'S UNIV. (1973) ASSOCIATE GRADUATE FACULTY

GOBER, RICHARD WAYNE; PROFESSOR, BUSINESS--BS, MS, PHD, UNIV OF ALA. (1965) GRADUATE FACULTY

GOERTZ, JOHN WILLIAM; PROFESSOR, ZOOLOGY--BS, MS, OREGON STATE UNIV; PHD, OKLA STATE UNIV. (1962) GRADUATE FACULTY

GOOSEN, KENNETH RAY; ASSOCIATE PROFESSOR, ACCOUNTING--BS, MS, OKLA STATE UNIV; PHD, UNIV OF TEX. (1972) GRADUATE FACULTY

GOSS, SUSAN KIRKHAM; INSTRUCTOR, FOREIGN LANGUAGES--BA, LA POLY INST; MA, LA TECH UNIV. (1969)

GRAFTON, BENJAMIN F; ASSOCIATE PROFESSOR, AGRONOMY AND HORTICULTURE--BS, LA POLY INST; MS, LA STATE UNIV. (1952)

GRAHAM, ROBERT DOUGLAS; ASSISTANT PROFESSOR, MUSIC--BA, UNIV OF TEX. (1972)

GREEN, JAMES D; ASSOCIATE PROFESSOR, BIOMEDICAL ENGINEERING--MD, BS TULANE. (1974)

GREGORY, GARLAND D; ASSISTANT PROFESSOR, PHYSICAL EDUCATION--BS, MS, LA POLY INST. (1966)

GRIDER, DOUGLAS T; ASSOCIATE PROFESSOR, BUSINESS--BA, EMORY UNIV; MBA, PHD, GA STATE UNIV. (1973) ASSOCIATE GRADUATE FACULTY

GRIFFIN, ANNE BURFORD; INSTRUCTOR, ENGLISH--BA, LA POLY INST; MA, LA TECH UNIV. (1970)

GRIFFITH, LEAMON E; ASSISTANT PROFESSOR, MATHEMATICS--BS, LA POLY INST; MA, LA STATE UNIV. (1963)

GUILBEAU, ERIC JOSEPH; ASSISTANT PROFESSOR, BIOMEDICAL ENGINEERING--BS, MS, LA POLY INST; PHD, LA TECH UNIV. (1973) ASSOCIATE GRADUATE FACULTY

HACKBARTH, WINSTON P; PROFESSOR, BOTANY AND BACTERIOLOGY--BA, STATE UNIV OF IOWA; BS, IDAHO STATE UNIV; MS, DENVER UNIV; PHD, IOWA STATE UNIV. (1959) GRADUATE FACULTY

HADLEY, WILLIAM D; ASSOCIATE PROFESSOR, CIVIL ENGINEERING--BSC, UNIV OF TENN; MSC, PHD, UNIV OF TEX. (1972) GRADUATE FACULTY

HALE, PAUL NOLEN JR; ASSOCIATE PROFESSOR, INDUSTRIAL ENGINEERING--BS, LAMAR TECH; MS, UNIV OF ARK; PHD, TEX A & M UNIV. (1966) GRADUATE FACULTY

HALEY, ELIZABETH G; ASSOCIATE PROFESSOR, HOME ECONOMICS--BS, LA POLY INST; MS, PHD, FLA STATE UNIV. (1969) GRADUATE FACULTY

HALEY, SUSAN TAYLOR; INSTRUCTOR, NURSING--BS, UNIV OF ALA. (1974)

- HALL, ELIZABETH M; ASSISTANT PROFESSOR, ENGLISH--BA, LA POLY INST; MA, LA TECH UNIV. (1970)
- HAMBURG, ROBERT EUGENE; ASSISTANT PROFESSOR, PHYSICS--BS, MCNEESE STATE; MS, PHD, LA STATE UNIV. (1969) GRADUATE FACULTY
- HAMM, BOBBY L; ASSOCIATE PROFESSOR, ECONOMICS AND FINANCE--BS, HARDING COLLEGE; MBA, PHD, UNIV OF ARK. (1965) GRADUATE FACULTY
- HAMMON, RUBY MARIA; INSTRUCTOR, ENGLISH--BA, LA POLY INST; MA, LA TECH UNIV. (1973)
- HANCOCK, CHARLES RAY; ASSISTANT PROFESSOR, MATHEMATICS--BSE, HENDERSON STATE; MED, UNIV OF ARK. (1965)
- HANNA, RUTH ELLEN; INSTRUCTOR, MATHEMATICS--BS, MS, LA POLY INST. (1967)
- HARRIS, MARK R JR; ASSOCIATE PROFESSOR, ART AND ARCHITECTURE--BA, LA POLY INST; MA, COLUMBIA UNIV. (1953) GRADUATE FACULTY
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