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1959-1960 Southern Illinois University Bulletin (School of Agriculture)

Southern Illinois University Carbondale

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School of Agriculture

Vol. 1, No. 6

School of Agriculture

Announcements for 1959-1960

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Carbondale, Illinois

Objectives of Southern Illinois University

TO EXALT BEAUTY

IN GOD,
IN NATURE,
AND IN ART;
TEACHING HOW TO LOVE THE BEST
BUT TO KEEP THE HUMAN TOUCH;

TO ADVANCE LEARNING

IN ALL LINES OF TRUTH
WHEREVER THEY MAY LEAD,
SHOWING HOW TO THINK
RATHER THAN WHAT TO THINK,
ASSISTING THE POWERS
OF THE MIND
IN THEIR SELF-DEVELOPMENT;

TO FORWARD IDEAS AND IDEALS

IN OUR DEMOCRACY,
INSPIRING RESPECT FOR OTHERS
AS FOR OURSELVES,
EVER PROMOTING FREEDOM
WITH RESPONSIBILITY;

TO BECOME A CENTER OF ORDER AND LIGHT

THAT KNOWLEDGE MAY LEAD
TO UNDERSTANDING
AND UNDERSTANDING
TO WISDOM.

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Dean W. E. Keepper, Ph.D. (Cornell)	1950
Assistant Dean Herbert L. Portz, Ph.D. (Illinois)	1954
Chief Academic Adviser Ralph A. Benton, Ph.D. (Illinois)	1956
Registrar and Director of Admissions Robert A. McGrath, Ph.D. (Iowa)	1949

Table of Contents

University Calendar, 1959-1960

SUMMER SESSION

Session Begins	Monday, June 22
Independence Day Holiday	Friday, July 3
Final Examinations	Wednesday–Thursday, August 12–13
Commencement	Friday, August 14

FALL QUARTER

New Student Week	Friday–Tuesday, September 18–22
Quarter Begins	Wednesday, September 23
Thanksgiving Recess	Wednesday, 12 noon–Monday, 8 A.M. November 25–30
Final Examinations	Monday–Saturday, December 14–19

WINTER QUARTER

Quarter Begins	Monday, January 4
Final Examinations	Monday–Saturday, March 14–19

SPRING QUARTER

Quarter Begins	Monday, March 28
Memorial Day Holiday	Monday, May 30
Final Examinations	Wednesday–Tuesday, June 8–14
Commencement	Wednesday, June 15

Summer Session classes will begin Tuesday, June 23. During a quarter, day classes will begin on the second day of the quarter. Evening classes (5:45 P.M. or later) will begin on the first day of the quarter.

University Calendar, 1960-1961

SUMMER SESSION

Session Begins	Monday, June 20
Independence Day Holiday	Monday, July 4
Final Examinations	Wednesday–Thursday, August 10–11
Commencement	Friday, August 12

FALL QUARTER

New Student Week	Friday–Tuesday, September 16–20
Quarter Begins	Wednesday, September 21
Thanksgiving Recess	Wednesday, 12 noon–Monday, 8 A.M. November 23–28
Final Examinations	Monday–Saturday, December 12–17

WINTER QUARTER

Quarter Begins	Tuesday, January 3
Final Examinations	Monday–Saturday, March 13–18

SPRING QUARTER

Quarter Begins	Monday, March 27
Memorial Day Holiday	Tuesday, May 30
Final Examinations	Wednesday–Tuesday, June 7–13
Commencement	Wednesday, June 14

Summer classes will begin on Tuesday, June 21. During a quarter, day classes will begin on the second day of the quarter. Evening classes (5:45 P.M. or later) will begin on the first day of the quarter.


AGRICULTURE

The University

This bulletin covers in detail questions concerning the School of Agriculture. It does not cover all questions concerning Southern Illinois University. For complete information about the University the prospective student should write the General Publications Office for a copy of the General Information Bulletin.

HISTORY

Southern Illinois University was established in 1869 as Southern Illinois Normal University. The shortened name became official in 1947 by action of the state legislature.

For some years after its establishment, Southern operated as a two-year normal school. In 1907 it became a four-year, degree-granting institution, though continuing its two-year course until 1936. In 1943 the state legislature changed the institution, which had been in theory exclusively a teacher-training school, into a university, thereby taking official recognition of the great demand in the area for diversified training.

The Graduate School, approved in 1943, at first granted only the Master of Science in Education degree. In 1948 it was authorized to grant also the Master of Arts and Master of Science degrees. In 1952 the Master of Fine Arts degree was added to the list, and in 1956 the Master of Music, the Master of Music Education, and the Doctor of Philosophy degrees.

CAMPUS

The main campus of Southern Illinois University is located in Carbondale, in Jackson County. The region is noted for its large peach and apple orchards, which in blossom time attract many tourists. Giant City, a state

park, is a popular resort to the south of Carbondale, and Crab Orchard Lake, with swimming, boating, and fishing facilities, lies four miles to the east.

The Carbondale campus is at present undergoing extensive expansion. It now comprises more than seventeen hundred acres, and more tracts of land are to be added. Twenty-three permanent buildings form the nucleus of the University's physical plant. Other permanent buildings are under construction.

UNIVERSITY SESSIONS

The academic year is divided into three quarters. Each quarter is approximately twelve weeks in length.

The fall quarter opens near the middle of September and closes just prior to the Christmas vacation period. The winter quarter begins early in January and ends about the middle of March. The spring quarter begins the latter part of March and ends about the second week in June. Definite dates for each quarter may be found in the University Calendar.

In addition to the three regular quarters, there is an eight-week summer session which begins immediately following the close of the spring quarter.

The summer session consists of a comprehensive program of courses offered by all the departments of the University. In addition to the courses which run the full eight weeks, there are a number of workshops and short courses covering a shorter period of time.

UNIVERSITY REGULATIONS

The University and its various instructional units reserve the right to change the rules regulating admission, instruction, and graduation; and to change any other regulation affecting the student body. Such regulations shall go into force whenever the proper authorities so determine, and shall apply both to prospective students and to those who have matriculated in the University. The University also reserves the right to withdraw courses and to change fees.

School of Agriculture

HISTORY

Agriculture has been a part of the educational program at Southern Illinois University since 1913 when a Department of Agriculture was organized to provide instruction in agricultural courses in the institution's teacher training program. At about the same time the first part of the University's experimental farm, a sixty-acre tract now used for campus purposes, was purchased.

The department continued to be a small teaching unit from the time of its organization until 1946 when additional agriculture faculty members were employed. Growth in staff and facilities has been more rapid since 1950, permitting the addition of more technical courses in agriculture.

In 1953 the Division of Rural Studies was established and on July 1, 1955, the division was redesignated as the School of Agriculture. At the same time the school was authorized to grant the Bachelor of Science in Agriculture degree. The school's four academic departments were established in 1957. In 1958, the Departments of Agricultural Industries, Animal Industries, and Plant Industries were approved to offer the Master of Science degree.

OBJECTIVES

The objectives of the School of Agriculture are to encourage better use of agricultural land, labor, and capital for the general welfare of the nation and its people; to help industries and service agencies closely related to agriculture; and to support the general University aim of establishing physical facilities and providing the necessary program for developing and bettering human life, with special emphasis upon the Southern Illinois area and its people.

To carry out these objectives the School of Agriculture strives to

educate by providing high-quality instruction, to carry on research which will have significance to agriculture in the area, and to offer consultation and service to the people of Southern Illinois in all phases of agriculture and its related occupations.

These activities are performed by the four departments in the school: (1) Agricultural Industries, (2) Animal Industries, (3) Forestry, and (4) Plant Industries.

The school's four-year programs of study lead to a Bachelor of Science in Agriculture degree. More detailed information on programs of study in each of the four departments are presented in succeeding pages of this publication. Programs of graduate study leading to a Master of Science degree are offered by the Departments of Agricultural Industries, Animal Industries, and Plant Industries. For further details see the Graduate School Bulletin.

FACILITIES

NEW AGRICULTURE BUILDING

A new agriculture building was completed for occupancy during 1957, providing adequate classrooms and well-equipped laboratories for teaching and research. Of functional design, the structure contains twenty-six classrooms, eighteen teaching and research laboratories, and office space for the school's staff and personnel of co-operating agencies. It also provides an auditorium-exhibition hall. Three greenhouses for teaching and research occupy a courtyard.

AGRICULTURAL LAND

The School of Agriculture currently is responsible for the operation of approximately 1,800 acres of land adjacent to the campus for purposes of teaching and research in agriculture. This acreage is administered in the following units: (1) the University Farms; (2) the Illinois Horticultural Experiment Station; (3) the Southern Illinois Co-operative Agronomy Research Center; (4) the U.S.D.A. Co-operative Small Fruits Research Station; and (5) the Test Farms.

UNIVERSITY FARMS

The University Farms of the School of Agriculture utilize the major share of the institution's farm land holdings. This area is fully devoted to teaching, research, and demonstration in soils, crops, livestock, dairying,

poultry, and forestry. Facilities include a farm service center for storing and maintaining farm equipment and for dispatching student labor used on the farms; a temporary feed center for preparing and mixing rations for livestock on the University farms; and a number of teaching-research centers.

A poultry center has been in operation since 1953. Present facilities include a service building for egg and poultry handling and supply storage, six houses for brooding and raising poultry used in teaching and experimental programs, and a number of portable shelters for use on the poultry range.

A new dairy center was activated during the spring of 1957. Facilities at the new location include a building which houses a dairy-cattle judging and preparation area, two milking parlors, a milk-handling room, and quarters for student employees; a silo with mechanical feeding equipment; and three pole-type barns—one for hay storage and feeding, one for sheltering the dairy animals, and one for housing calves.

A sheep center was erected during 1957. It includes a masonry-type building which provides feed storage, a sheep judging and animal preparation room, wool-handling facilities, and student workers' quarters; and two metal-covered pole-type barns for sheltering and feeding sheep.

A swine center and a beef-cattle center were constructed in 1958. Both of these teaching and research units include a masonry-type structure containing animal judging and preparation areas and observation facilities, supply storage, and quarters for student employees; and adjacent buildings for sheltering and feeding animals as well as conducting experimental projects.

Adequate flocks and herds are maintained for teaching and research purposes.

ILLINOIS HORTICULTURAL EXPERIMENT STATION

The establishment of a co-operative Horticultural Experiment Station at Carbondale was approved December 1, 1949, and was fully activated August 1, 1951, by the University of Illinois and Southern Illinois University. The purpose of the station is to provide facilities for research and demonstration with fruit, vegetable, and ornamental crops.

The station's land area includes a twenty-eight-acre south unit, fifty-five-acre west unit and approximately twenty-five acres for vegetable research. The station headquarters, located on the west unit, includes a combination research-laboratory storage building, a machinery shed, a sash-type greenhouse, a plastic greenhouse, and a propagation cellar. A pond of one and one-half acres provides water for spraying and irrigating.

Projects are conducted on a co-operative basis by personnel of both institutions or independently by personnel of either institution. Specific projects undertaken include breeding and developing varieties adapted to Southern Illinois; testing fruit, vegetable, and ornamental varieties for adaptability to Southern Illinois; studying fundamental problems related to cultural methods; studying rootstock-variety combinations; and providing demonstrations for students and growers.

SOUTHERN ILLINOIS CO-OPERATIVE AGRONOMY RESEARCH CENTER

A co-operatively operated Agronomy Research Center at Carbondale was approved December 15, 1953, and fully activated October 27, 1954, by the University of Illinois and Southern Illinois University. The purpose of the station is to provide facilities for soils and crops research and demonstrations. The station includes approximately one hundred acres of land at two locations.

Projects are conducted on a co-operative basis by personnel of both institutions, or independently by personnel of either institution. Studies are conducted to develop acceptable varieties of field and forage crops, emphasizing their adaptability to Southern Illinois; and to seek answers to fundamental problems in the management of soils and the culture of crops. Demonstrations are developed for observation by students and other interested persons.

U.S.D.A. CO-OPERATIVE SMALL FRUITS RESEARCH STATION

A co-operatively operated Small Fruits Research Station at Carbondale was approved October 6, 1958, and activated in March, 1959, by the United States Department of Agriculture, Agricultural Research Service, Crops Research Division, and Southern Illinois University. The purpose of the station is to provide facilities for research investigations on breeding, production and disease control of strawberries, blueberries, brambles, and other small fruits.

The station includes fifty acres of suitable land, and will be serviced from an irrigation pond, shop, machine storage, and field laboratory space provided on immediately adjacent acreage. When completed the pond for irrigation will have a capacity of approximately fifteen million gallons.

Details of the co-operative work are jointly planned and conducted and the research and investigational work shall be for the benefit of the entire fruit industry in Illinois and elsewhere in the United States.

TEST FARMS

The first three of a series of five proposed units, known as Test Farms,

have been activated by the School of Agriculture since late 1956. Aimed at being representative of desirable Southern Illinois agricultural operations, each of the Test Farms has a different kind or combination of farming enterprises. Each serves as a family farm commercial unit, that provides experimental data for farm-management research and teaching.

The activated Test Farms are a dairy-broiler farm, deriving income from grade A milk and broilers; a steer-hog farm with the principal farm business being market hogs and steers; and a part-time laying flock-sheep farm, a unit of small acreage on which the farm operator supplements income from full-time off-farm work.

ADMISSION

As pre-college preparation of high school students for the study of agriculture at Southern Illinois University, the School of Agriculture recommends that the following be included: four units of English; two to four units of mathematics (algebra, geometry, advanced mathematics); two to three units of social studies; and two to three units of science (biology, chemistry, physics).

Inquiries concerning admission to the School of Agriculture should be directed to the University's Admissions Office. Application for admission may be made any time during the year. Applications should be initiated at least thirty days in advance of the desired entrance date to permit necessary processing to be completed. High school seniors should apply at the beginning of the last semester of their senior year.

It should be remembered that the writeups from page 7 to page 10 are merely summaries of the subject in question. For full and complete details, the prospective student should address the General Publications Office for a copy of the General Information Bulletin.

TUITION AND FEES

At the present time legal residents of Illinois registered for more than eight hours pay a total of $61.50 per quarter. This includes $42.00 tuition, a $5.00 book rental fee, a $5.00 student union building fund fee, and a $9.50 student activity fee. Out-of-state students pay an additional $50.00 tuition, or a total of $111.50. Students registered for eight hours or fewer

pay one-half tuition, one-half book rental fee, and full student union building fund fee, and have the option of paying the student activity fee.

ADVISEMENT

Advisement is given by School of Agriculture faculty members in the University Student Advisement Center. In addition, each student in the school will be assigned an agriculture faculty counselor to assist in selecting a major and elective courses and in other academic and vocational matters.

FINANCIAL ASSISTANCE

The financial assistance program at Southern has been organized so that it may function as an integral part of the total educational experience of the student. In so far as possible, an attempt is made not only to assist needy and deserving students with their financial obligations, but also to contribute to their general development and learning experience.

The program of financial assistance includes scholarships, awards, prizes, private agency awards, grants-in-aid, and student loan funds.

The comparative limitation of such forms of assistance in terms of both number and amount available makes it inadvisable for an undergraduate student to expect to meet all University expenses from such means.

Some of the scholarships and awards available to agriculture students at Southern are as follows:

Southern Illinois University Scholarship and Activity Awards covering tuition.

Sixty Sahara Coal Company Awards in forestry for forestry students, cash grant equivalent to tuition and fees for one year. The total number is distributed over a four-year period, beginning with the 1957–58 school year.

Illinois Poultry Improvement Association Award.

Prairie Farmer Publishing Company Scholarship in Agricultural Journalism.

W. V. Jeans Memorial Award for Farm Equipment Retailing.

These scholarships and awards are administered by the University's Scholarship and Loans Committee and are awarded in accordance with the terms of the respective grants.

In addition to the above, students in the School of Agriculture may use State Teacher Education Scholarships, covering tuition and activity fee, provided they include in their curricula courses satisfying state teacher certification requirements. Illinois State Scholarships awarded on the basis of competitive examinations for high school seniors may also be used by students in the School of Agriculture.

More detailed information about these and other awards is contained in the General Information Bulletin, or may be obtained by writing to the Financial Assistance Center, Office of Student Affairs.

EMPLOYMENT OPPORTUNITIES

The Student Work Office assists students in obtaining employment to defray a portion of their educational expenses as well as to gain experience while working. Since it is impossible to guarantee work to every student, those who expect to earn a part of their expenses, and who do not have definite appointments to positions before coming to college, should have means to support themselves for at least three months.

Much of the work on the University's farms and in agricultural laboratories is done by student labor.

The Student Work Office also assists students in obtaining off-campus jobs and full-time summer jobs.

The various departments in the School of Agriculture also assist in placing students in summer trainee programs in both private and governmental agencies.

HOUSING

Southern Illinois University maintains University-owned housing for single men and women, co-operative apartments for men, and apartments for families. Students who wish to live in University housing should make application early. Application forms may be obtained at the Housing Center located in the Office of Student Affairs. Admission does not assure University housing. For the school year of 1958–59, room and board are $666.00 per academic year ($222.00 per quarter). There are a limited number of rooms available at $135.00 to $162.00 per academic year ($45.00 to $54.00 per quarter).

In addition to University housing a number of the students enrolled at Southern live in private homes in the city of Carbondale or in surrounding areas. Lists of available rooms for men, women, and married couples are

maintained in the Housing Center. Units meeting the University's minimum housing requirements are noted. These rooms should be rented only after personal inspection. Room rent for off-campus housing ranges from $4.00 to $6.00 per week.

STUDENT ORGANIZATIONS

In addition to the opportunity of participating in a wide variety of recreational, religious, social, and special interest organizations at Southern Illinois University, students in the School of Agriculture find the opportunity for expression and growth in a number of voluntary groups sponsored by the school.

Each department has one or more special interest clubs appealing primarily to students in those phases of agriculture emphasized in the respective departments. The organizations meet periodically for programs of an educational, social, or recreational nature and sponsor special events and activities during the year.

An Agricultural Honorary Fraternity was established in the Spring of 1959. Members are elected on the basis of scholastic standing and personal qualities which indicate promise of leadership and professional achievement.

GENERAL BACHELOR'S DEGREE REQUIREMENTS

Each candidate for the Bachelor of Science in Agriculture degree must satisfy the general degree requirements for all schools and colleges at Southern Illinois University. These include the following:

1. Completion of 192 hours of credit approved courses.
2. At least 64 hours in senior college courses, of which 48 must be earned in residence at Southern.
3. A "C" average, and grades not lower than "C" in subjects aggregating at least three-fourths of the work.
4. A "C" average in the major subject.
5. In case of transfer students, meeting of the "C" average requirements for the credit made at Southern as well as for the total record.
6. Course requirements in social studies, humanities, biological sciences, physical sciences, practical arts and crafts, physical education, and air science. The specific requirements are presented in detail in the General Information Bulletin and are not presented again here because most of the agriculture curricula either require more than the minimum

in several of these areas or specify certain courses be taken where options are permitted. Agriculture students will satisfy these requirements as they satisfy the course requirements of the various curricula listed later in this bulletin.

In addition to the above, each candidate must fulfill the minimum requirements listed in the suggested curriculum in general agriculture or in one of the departmental curricula listed later in this bulletin. Every curriculum in the School of Agriculture requires a student to take a minimum of one course in each of four of the five following fields: plant industries, animal industries, agricultural economics, agricultural engineering, and forestry.

Several courses in the School of Agriculture involve field laboratory trips to nearby markets, processing plants, and farms. Individual student expenses are borne by the registrant. An effort has been made to indicate the specific courses involving field trip costs. The school reserves the right to require field trips in courses where this fact has not been specifically indicated.

PROGRAMS OF INSTRUCTION

The Master of Science degree may be earned in the Graduate School with the following majors in the School of Agriculture: Agricultural Industries (Agricultural Economics), Animal Industries, Plant Industries.

The Bachelor of Science degree may be earned in the School of Agriculture with the following majors: Agriculture (General), Agricultural Industries, Animal Industries, Forestry, Plant Industries, Vocational Agriculture.

The pre-professional programs offered in the School of Agriculture include Pre-Veterinary Science (where emphasis on agriculture is desired), Pre-Dairy Technology, Pre-Agricultural Engineering.

Students who are candidates for the Bachelor of Science in Agriculture degree may select the curriculum in general agriculture which provides preparation for work in the over-all field. Students wishing to specialize may choose an appropriate curriculum in the Departments of Agricultural Industries, Animal Industries, Forestry, or Plant Industries, or may choose one of the pre-professional curricula.

Instructional Units

AGRICULTURE, GENERAL

The general agriculture curriculum is intended for students seeking a broad background in the field of agriculture. Also, the general agriculture curriculum is probably best for those students undecided in their vocational choice. This curriculum provides for maximum selection of courses within all departments of the school and also in other departments of the University. Students will have the basic preparation for many of the careers in

agriculture: general farming, agricultural services, agricultural communications, agricultural business, agricultural industry, and agricultural and biological science.

Students initially enrolled in general agriculture may later transfer to specialized departmental curricula or may continue with the general agriculture curriculum and select courses in the various fields.

SUGGESTED CURRICULUM IN AGRICULTURE, GENERAL

Non-Agricultural Courses Required	Hours
English 101, 102, 103	9
English 205, 206, 209, 211, 212 (two of the five)	6
Art 120 or Music 100	3
Botany 101	5
Zoology 100 or Microbiology 100 or 301	4–5
Chemistry	8
Mathematics	4–5
Economics 205	5
Geography, history, government, sociology (work in three fields required)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air science	6
Total hours of required non-agricultural courses	79–81
Agricultural Courses Required	
Agricultural Industries 114, 350, or 354	4–5
Animal Industries 105, 125, or 231	4
Animal Industries 315	4
Plant Industries 209 or 264	4–5
Plant Industries 301	4
Forestry or agricultural engineering	2–4
Additional courses in agricultural industries	7
Additional courses in animal industries	7
Additional courses in plant industries	7
Total hours of required agricultural courses	43–47
Additional agricultural electives (Total of 60 hours in agriculture)	7–13
Free electives	51–53
Total hours for a bachelor's degree	192

AGRICULTURAL INDUSTRIES

Professor W. E. Keepper, Ph.D. (Cornell)	1950
Professor Renzo E. Muckelroy, M.S. (Wisconsin), Emeritus (1945)	1911
Professor Walter J. Wills, Ph.D. (Illinois), Chairman	1956
Associate Professor Ralph Albert Benton, Ph.D. (Illinois)	1956
Associate Professor William McDaniel Herr, Ph.D. (Cornell)	1957
Associate Professor John James Paterson, M.Sc. (Saskatchewan)	1957
Assistant Professor Henrik Joakim Aune, Ph.D. (Minnesota)	1958
Assistant Professor Milton Shute, M.S. (Cornell)	1955
Assistant Professor Eugene S. Wood, Ed.D. (Missouri)	1949

Visiting Professor O. C. Stine, Ph.D. (Wisconsin)	1958–1959
Visiting Professor Herman Haag, Ph.D. (Cornell)	1959–1960

The Department of Agricultural Industries provides instruction, research, demonstration, and consultation in the fields of agricultural economics, agricultural education, and agricultural engineering.

In agricultural economics, courses are offered in the following fields:

A vocational agriculture student teacher explains welding to two students in an area high school.

farm management, farm credit, agricultural prices, agricultural marketing, agricultural co-operatives, and farm policy.

In agricultural education, completion of a four-year program leads to certification as a teacher of vocational agriculture. Courses in both the School of Agriculture and the College of Education are included.

Courses are offered in the four fields of agricultural engineering: rural electrification, farm power and machinery, farm structures, and soil and water engineering. The suggested curriculum in this department leads to an agricultural degree with emphasis on engineering aspects of agriculture. A special program is available to train farm machinery specialists for positions requiring managerial ability for dealer services and sales work.

SUGGESTED CURRICULUM IN AGRICULTURAL ECONOMICS

Non-agricultural courses required	Hours
English 101, 102, 103	9
English 205, 206, 209, 211, 212, (two of the five)	6
Art 120 or Music 100	3
Botany 101	5
Zoology 100 or Microbiology 100 or 301	4–5
Chemistry	8
Mathematics 106 or 111	4–5
Mathematics 120 or Economics 307	4
Economics 205 and 206	9
Geography, history, government, sociology (work in three fields required)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air science	6
Psychology 201	4
Business Administration 250	4
Total hours of required non-agricultural courses	95–97
Agricultural courses required	
Animal Industries 105, 125, or 231	4
Animal Industries 315	4
Plant Industries 209, 264, or 360	4–5
Plant Industries 301	4
One agricultural engineering course	3–4

Agricultural Industries 114	4
Agricultural Industries 350	5
Agricultural Industries 354	4
Agricultural Industries 414	4
Agricultural Industries 456	3
Total hours of required agricultural courses	39–41
Two courses from the following: Agricultural Industries 351, 450, 452, 457, 458	8
Agricultural electives (Total of 60 hours in agriculture)	13–11
Free electives	37–35
Total hours for a bachelor's degree	192

SUGGESTED CURRICULUM IN VOCATIONAL AGRICULTURE

Non-agriculture courses required	Hours
English 101, 102, 103	9
English 205, 206, 209, 211, 212 (two of the five)	6
Art 120 or Music 100	3
English 391*	3
Botany 101 and Zoology 100	10
Chemistry 111, 112, 305 or Chemistry 110, 240, 230 or 350	12–14
Geology 220	5
Mathematics 111	5
Economics 205	5
History 201 or 202	5
Government 101	5
Sociology 101 or Geography 100	5
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air science	6
Psychology 201	4
Education 331	3
Education 355	4
Guidance 305	4
Education 310	4
Total hours of non-agricultural courses	112–114

* May be omitted if student passes proficiency test.

Agricultural education courses required	
Agricultural Industries 307, 309, 311, and 312	18–19
Agricultural courses required	
Agricultural Industries 114, 350	9
Agricultural Industries 215, 373, and 375	12
Animal Industries 105, 125, 231, 315, and 311 or 312	18–19
Plant Industries 209, 264, 301, and 302, 306, or 407	16–17
Forestry 360	4
Total hours of required technical agricultural courses	59–61
Additional agricultural electives	13–11
(Total of 72 hours in technical agriculture)	
Total hours for a bachelor's degree	202–204

Seventy-two hours of technical agriculture are required of which thirty-six must be taken in residence.

A grade-point average of 3.5 must be earned before student teaching can be done in the senior year.

SUGGESTED CURRICULUM IN AGRICULTURAL ENGINEERING

This program does not lead to a professional degree in agricultural engineering.

Non-agricultural courses required	Hours
English 101, 102, 103	9
English 205, 206, 209, 211, 212 (two of the five)	6
Art 120 or Music 100	3
Botany 101 and Zoology 100	10
Chemistry	8
Mathematics 111	5
Physics 101 and 102	8
Economics 205	5
Geography, history, government, sociology (work in three fields required)	15
Speech 101	4
Health education 100	4
Physical education activity courses	6
Air science	6
Industrial Education 101	4
Total hours required non-agricultural courses	93

Agricultural courses required	
Agricultural Industries 114	4
Plant Industries 209	5
Plant Industries 301	4
Agricultural Industries 303	4
Agricultural Industries 306	2–5
Agricultural Industries 374	4
Agricultural Industries 375	3
Agricultural Industries 376	4
Agricultural Industries 377	4
Agricultural Industries 378	3
Total hours of required agricultural courses	37–40
One additional course each in animal industries, plant industries, agricultural economics, and additional electives in agriculture (Total of 60 hours in agriculture)	20–23
Free electives	39
Total hours for a bachelor's degree	192

COURSE DESCRIPTIONS

Courses on the 100, 200, and 300 levels are for undergraduate students. Those on the 400 level are for both undergraduate and graduate students. Those on the 500 level are for graduate students only.

114–4. INTRODUCTION TO AGRICULTURAL ECONOMICS. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture.

214–2. AGRICULTURAL DRAWING. The fundamentals of lettering; use of instruments, orthographic and isometric projections, topographic drawing, and graphic depiction of statistical information.

215–4. INTRODUCTION TO FARM STRUCTURES AND ELECTRIFICATION. An introduction to the basic concepts of structures and electricity as they apply to agriculture. Includes farm structures, soil and water structures, and farm electrification.

303–4. SURVEYING. Elementary surveying; use of tape, compass, level, and transit, with practice in making simple maps.

306–2, 3 or 5. SOIL AND WATER CONSERVATION. (Same as Plant Industries 306.) Factors affecting soil erosion and excessive water run-off, and principles of soil management and water conservation. Practical structural methods of controlling water run-off and soil erosion. Prerequisite: Plant Industries 301.

307–2 to 3. SUMMER PRACTICE IN VOCATIONAL AGRICULTURE. An internship with the vocational agriculture teacher in an approved center for practice in summer activities.

309–5. AGRICULTURAL EDUCATION. Methods of teaching agriculture in secondary schools. Taken concurrently with 312 in a professional quarter. Prerequisites: Psychology 201, Guidance 305, Secondary Education 310, Education Administration and Supervision 331; 48 hours in agriculture.

310–4. GENERAL AGRICULTURE. A survey of the agricultural field as it relates to the art and science of food and fiber production; problems in livestock and poultry production; soil and water management; and field crops, fruit, and vegetable production. Cannot be used toward major credit in agriculture.

311–3. ADULT EDUCATION IN AGRICULTURE. Nature and scope of adult education in agriculture; methods of effectively working with adult and young farmer groups.

312–8. STUDENT TEACHING IN VOCATIONAL AGRICULTURE. Experience in conducting a complete program in vocational agriculture in an approved center. A student must have at least a 3.5 grade-point average before being admitted to this course. Taken concurrently with 309.

350–5. FARM MANAGEMENT. Measuring profits, principles, and practice in organizing and operating the business. Field trips, approximate cost $2. Prerequisites: Economics 205, junior standing.

351–4. FARM FINANCIAL MANAGEMENT. Farm records and accounts as aids in solving financial problems; obtaining and using credit and insurance, budgeting. Prerequisite: 350 or consent of instructor.

354–4. AGRICULTURAL MARKETING. Marketing outlets for farm products, price determinants, agricultural market efficiency, margins, and costs. Prerequisite: Economics 205.

373–3 to 5. FARM POWER AND MACHINERY. A basic course to acquaint the student with the principles, operating adjustments, maintenance, and economical use of common farm power units and field machines. Prerequisite: Mathematics 106 or equivalent.

374–4. FARM ELECTRIFICATION. A study of the more common electrical fundamentals and their application to farmstead needs; factors to consider in the selection and use of specialized electrical equipment and motors. Prerequisite: 215.

375–3. FARM SHOP. Set-up of the farm workshop; selection, care, and use of tools and machinery for farm repair work; equipment construction. Prerequisite: Mathematics 106 or equivalent.

376–4. TRACTOR MAINTENANCE. A study of daily and periodical service needs of tractors and on-farm servicing of functional parts. Prerequisite: 373.

377–4. FARM STRUCTURES. Basic requirements of farm buildings; materials used; elementary principles of design; practical application of these principles. Prerequisite: 215.

378–3. FARM MACHINERY. Elementary mechanics and principles on which farm machines operate. Selection, operation, maintenance, and storage of farm machines. Prerequisite: 373.

381–1 to 2. AGRICULTURAL SEMINAR. (Same as Animal Industries 381, Forestry 381, and Plant Industries 381.) Discussions of problems in agriculture. Limited to senior students.

390–1 to 8. SPECIAL STUDIES IN AGRICULTURAL INDUSTRIES. Assignments involving research and individual problems.

394–3. AGRICULTURAL JOURNALISM. (Same as Journalism 394.) Reporting and writing farm and home news, features; selecting farm photographs.

414–4. AGRICULTURAL PROBLEMS AND POLICIES. Recognition of problems and their origins; attempts to solve them. Prerequisite: Economics 205.

450–4. ADVANCED FARM MANAGEMENT. Methods of analyzing farm enterprises, comparing farm businesses, allocating farm resources, combinations of enterprises, and production factors. Prerequisite: 350. Field trips.

452–4. AGRICULTURAL PRICES. Fluctuations in the general price level, causes and stabilization policies as they affect agriculture. Price determination including the measurement of supply and demand, elasticity, and the theory of price stabilization as applied to agriculture. Prerequisites: Economics 205 and consent of instructor.

456–3. AGRICULTURAL CO-OPERATIVES—AGRICULTURAL MARKETING I. Development of the agricultural co-operative movements, agricultural co-operative organization, legal requirements, principles and practices of agricultural co-operative associations. Prerequisites: 354, Economics 205, or consent of instructor.

457–4. LIVESTOCK MARKETING—AGRICULTURAL MARKETING II. (Same as Animal Industries 457.) Problems and their solutions in marketing livestock. Field trips to market center to observe operating problems, approximate cost $5. Prerequisites: 354, Economics 205 or consent of instructor.

458–4. GRADING AND MARKETING OF FIELD CROPS—AGRICULTURAL MARKETING III. (Same as Plant Industries 458.) Grading and marketing factors affecting the quality of grain and hay crops; standards employed in their classification and grading in the commercial market; laboratory practice in grading; economic problems and market operations in marketing field crops. Field trips to commercial grain-grading laboratory and marketing center, approximate cost $5. Prerequisites: 354, Economics 205, Plant Industries 209, or consent of instructor.

Courses on the 500 level are for graduate students only.

520–1 to 6. READINGS. Contemporary books and periodicals on selected areas of the field.

554–4. ADVANCED AGRICULTURAL MARKETING. Current complex problems in agricultural marketing and methods of developing solutions; co-operative activities. Prerequisite: 12 hours or equivalent in economics and agricultural economics.

575–1 to 6. RESEARCH. Directed research in selected areas of agricultural industries.

581–1 to 6. SEMINAR. A study and discussion of problems relating to various phases of the field of agricultural industries such as farm management, marketing, prices, farm policy, land economics, etc.

599–6 to 9. THESIS.

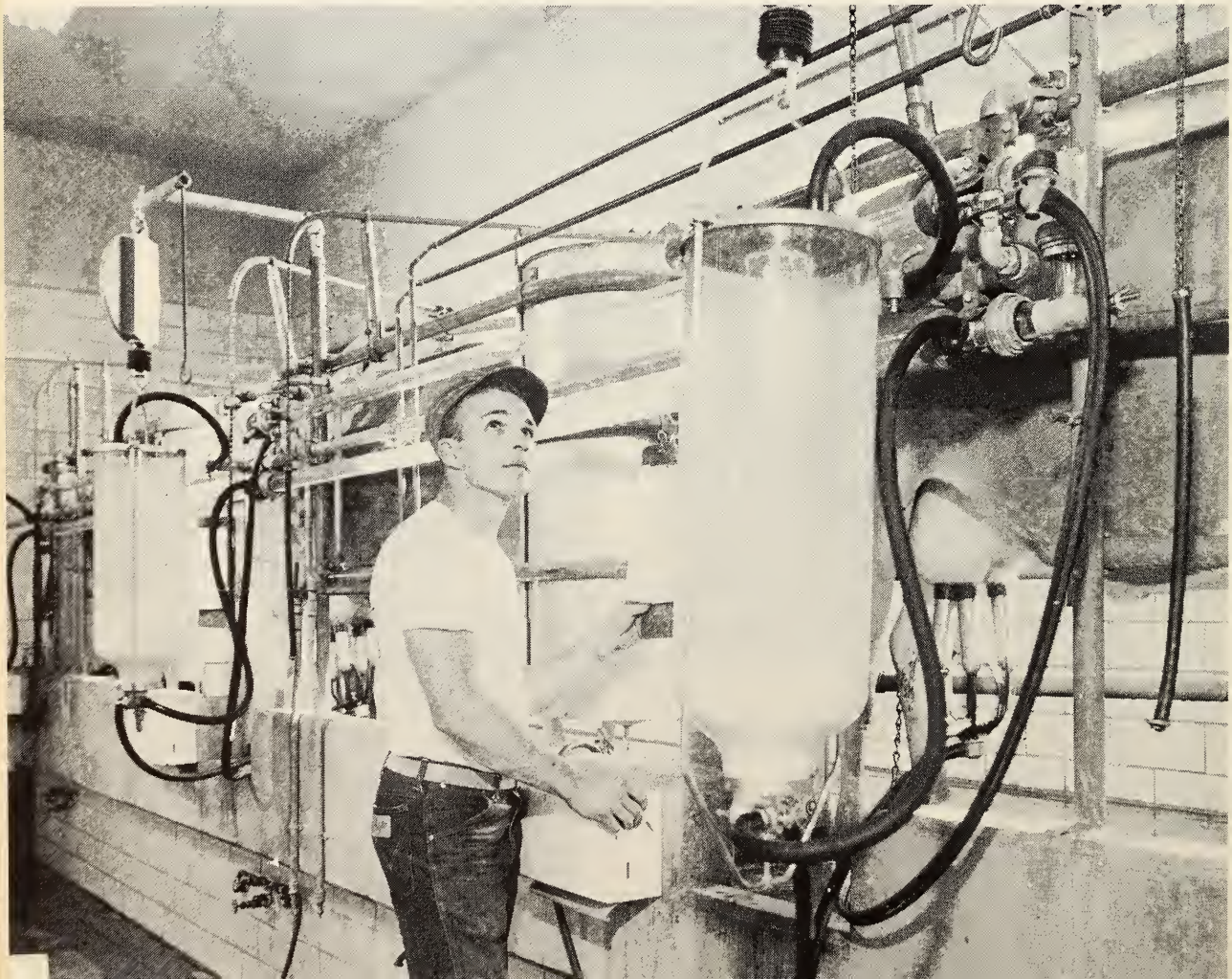
ANIMAL INDUSTRIES

Professor Alex Reed, Ph.D. (Illinois), Chairman	1946
Associate Professor Joseph E. Burnside, Jr., Ph.D. (Wisconsin)	1955
Associate Professor Scott William Hinners, Ph.D. (Illinois)	1951
Associate Professor W. G. Kammlade, Jr., Ph.D. (Illinois)	1954
Associate Professor Howard H. Olson, Ph.D. (Minnesota)	1954
Assistant Professor Billy L. Goodman, Ph.D. (Ohio State)	1958

Visiting Professor Gustav Bohstedt, Ph.D. (Wisconsin)	1957–59
Lecturer Marshall G. Clark, M.S. (Illinois), Emeritus (1954)	1947
Research Assistant Howard F. Benson, B.S. (Wisconsin State)	1957
Research Assistant Verle Chappell, B.S. (Purdue) (on leave)	1957
Research Assistant Marvin Moose, B.S. (Illinois)	1958

The Department of Animal Industries provides instruction, research, demonstration, and consultation in the fields of livestock, dairy, and poultry production, pre-veterinary science, and pre-dairy technology. Courses

Students gain experience in modern animal husbandry.



are offered in all phases of animal production, animal nutrition, and livestock management.

Pre-veterinary students may major either in the College of Liberal Arts and Sciences or the School of Agriculture. A pre-veterinary student in agriculture will major in the Department of Animal Industries and should consult with a representative of that department concerning the use of available electives.

The first two years of training as a dairy technologist can be completed by careful selection of approved courses.

The student has opportunity to select courses in other departments in the School of Agriculture or related fields such as business, biology, or physical sciences, thus being able to include in his curriculum the agronomic, agricultural economic, and agricultural engineering phases of agriculture or business as related to animal production.

SUGGESTED CURRICULUM IN ANIMAL INDUSTRIES

Non-agricultural courses required	Hours
English 101, 102, 103	9
English 205, 206, 209, 211, 212 (two of the five)	6
Art 120 or Music 100	3
Botany 101	5
Zoology 100	5
Microbiology 100 or 301	4–5
Chemistry (Both inorganic and organic)	8
Mathematics	4–5
Economics 205	5
Geography, history, government, sociology (work in three fields required)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air science	6
Total hours of required non-agricultural courses	84–86
Agricultural courses required	
Agricultural Industries 114	4
Plant Industries 209	5
Plant Industries 301	4
Animal Industries 105	4
Animal Industries 125	4

Animal Industries 231	4
Animal Industries 315	4
Animal Industries 332	3
One course in forestry or agricultural engineering	2–4
Additional courses in animal industries	29
Total hours of required agricultural courses	63–65
Free electives	45–41
Total hours for a bachelor's degree	192

For an agricultural science option in animal industries, the additional hours required in animal industries will be only seventeen providing additional courses are taken in mathematics, physical sciences, and biological sciences to make a total of sixty hours in these fields.

COURSE DESCRIPTIONS

Courses on the 100, 200, and 300 levels are for undergraduate students. Those on the 400 level are for both undergraduate and graduate students. Those on the 500 level are for graduate students only.

105–4. ANIMAL HUSBANDRY. Survey of beef cattle, sheep, and hog industries; laboratory work in judging. Field trip, approximate cost $2.

125–4. ELEMENTARY POULTRY PRODUCTION. Brooding and rearing of chicks; housing, feeding, disease control, flock selection, management, and marketing of poultry.

231–4. DAIRY HUSBANDRY. Introductory work, including selection, herd improvement, milk secretion, manufacturing of dairy products.

311–3. LIVESTOCK JUDGING. Comparative judging of breeding, feeder, and fat livestock. Prerequisite: 105.

312–2. DAIRY CATTLE JUDGING. Comparative judging and selection of dairy cattle. Prerequisite: 231.

315–4. FEEDS AND FEEDING. Principles of domestic animal nutrition and feeding. Balancing rations. Prerequisite: 105 or equivalent.

319–2. HORSES. Types, breeds, selection, use, care, and management of saddle and draft animals. Field trip, approximate cost $2.

321–4. PROCESSING AND GRADING OF POULTRY PRODUCTS. Skills required in price determination, processing, grading, storage, merchandising, and distribution of poultry products. Prerequisite: 125.

327–4. HATCHERY AND BREEDING FARM MANAGEMENT. Flock selection, testing, sexing, trade rules and regulations, trap-nesting, wing-banding, incubation, disease control, hatchery-producer agreements, records. Prerequisite: 125.

332–3. ANIMAL BREEDING AND GENETICS. An application of physiology of reproduction and modes of inheritance in farm animals. Breeding problems as related to economic production. Prerequisite: 105 or 231, Zoology 100.

337–4. ANIMAL HYGIENE. Contagious, infectious, and nutritional diseases and parasites of animals; their prevention and control. Field trip, approximate cost $3. Prerequisite: 105.

381–1 to 2. AGRICULTURAL SEMINAR. (Same as Agricultural Industries 381, Forestry 381, and Plant Industries 381.) Discussions of problems in agriculture. Limited to senior students.

390–1 to 8. SPECIAL STUDIES IN ANIMAL INDUSTRIES. Assignments involving research and individual problems. Approval of department chairman required.

415–4. ANIMAL NUTRITION. Physical and chemical properties of nutrients; principles involved in determination of nutritive requirements. Prerequisite: 315.

420–4. COMMERCIAL POULTRY PRODUCTION. Broilers, layers, and turkeys as adapted to poultry speciality farms. Field trips, approximate cost $4. Prerequisite: 125.

423–3. POULTRY NUTRITION. A study of nutrients, vitamins, chemical and biological analysis as related to production. Ration requirements and formulation, methods and economics of feeding. Prerequisites: 125, 315.

430–4. DAIRY PRODUCTION. Milk production; feeding, breeding; calf raising; records, buildings and equipment; sanitation; and diseases. Field trip, approximate cost $2. Prerequisites: 231, 315.

431–4. REPRODUCTION AND ARTIFICIAL INSEMINATION OF FARM ANIMALS. Physiology of reproduction and modes of inheritance in farm animals. Breeding problems and systems of breeding as related to economic production. Prerequisites: 105 or 231, Zoology 100.

433–3. FEEDING DAIRY CATTLE. Nutrient requirements of dairy cattle. Feeding calves and heifers for commercial growth, and cows for economical milk production. Pasture, hay, and silage utilization in milk production. Prerequisites: 231, 315.

457–4. LIVESTOCK MARKETING—AGRICULTURAL MARKETING II. (Same as Agricultural Industries 457). Problems and their solution in marketing livestock. Field trip to market center to observe operating problems, approximate cost $5. Prerequisites: Economics 205, Agricultural Industries 354, or consent of instructor.

465–5. SWINE PRODUCTION. Breed selection, breeding, feeding, management, and marketing of swine. Field trip, approximate cost $3. Prerequisites: 105, 315.

475–4. APPLIED PHYSIOLOGY OF FARM ANIMALS. Consideration of physiology and anatomy as applied to livestock production. Prerequisites: 105, organic chemistry.

480–4. SHEEP PRODUCTION. Breeding, feeding, and management of sheep. Field trip, approximate cost $3. Prerequisites: 105, 315.

485–4. BEEF PRODUCTION. Breeding, feeding, and management of beef and dual-purpose cattle. Field trip, approximate cost $3. Prerequisites: 105, 315.

486–4. THE RANGE LIVESTOCK INDUSTRY. A course designed to acquaint advanced animal industries students with range livestock operations; consists of full-time classroom review of beef cattle and sheep production followed by a two- to three-week field trip throughout the range area; cost shared by students. Prerequisites: 480, 485. Summer only.

487–3. COMMERCIAL LIVESTOCK FEEDING. Consideration of principles and problems in fattening beef cattle and sheep for market. Field trip, approximate cost $3. Prerequisites: 105, 315.

Courses on the 500 level are for graduate students only.

505A–5, 505B–2. RESEARCH METHODS IN AGRICULTURAL SCIENCE. Training and experience in designing experiments and use of various techniques in agricultural research. Prerequisite: consent of instructor.

520–1 to 6. READINGS IN ANIMAL INDUSTRIES. Directed reading in specialized fields under direction of approved graduate specialists in that field.

525–4. ADVANCED POULTRY PRODUCTION. Study and interpretation of the objectives, design, and results of research in poultry feeding, breeding, and management.

530–4. ADVANCED DAIRY PRODUCTION. Study and interpretation of research in dairy farming, including buildings, herd management, quality milk production, and dairy marketing problems.

565–4. ADVANCED SWINE PRODUCTION. Study and interpretation of research in swine feeding, breeding, housing, management, and marketing problems.

575–1 to 6. INDIVIDUAL RESEARCH. Investigation of a problem in animal science under the supervision of an approved graduate specialist in that field.

580–4. ADVANCED SHEEP AND WOOL PRODUCTION. Consideration of research findings in sheep and wool production problems.

581–1 to 6. SEMINAR. Presentation and discussion of problems relating to various phases of animal industries.

585–4. ADVANCED BEEF PRODUCTION. Consideration of principles and practices in beef cattle production in the light of research findings.

599–6 to 9. THESIS.

FORESTRY

Professor Ronald I. Beazley, Ph.D. (Purdue University)	1959
Professor Neil W. Hosley, Ph.D. (Michigan), Chairman	1958
Associate Professor John F. Hosner, Ph.D. (State University of New York)	1950

Adjunct Professor Stephen S. Boyce, Ph.D. (North Carolina State College)	1957
Adjunct Professor Leon S. Minckler, Ph.D. (State University of New York)	1954
Adjunct Professor Robert W. Merz, M.F. (Minnesota)	1956
Visiting Professor Charles E. Behre, M.F. (Yale)	1958–1959
Visiting Professor James F. Dubuar, M.F. (Michigan)	1958–1959

A forestry student uses a staff compass to establish base lines in working out a laboratory problem to compute forest acreage.

The Department of Forestry provides instruction, research, and consultation in the fields of forest production and utilization. The department's four-year curriculum leads to a Bachelor of Science in Agriculture degree making provisions for basic training of students planning forestry as a professional career.

The forestry student's freshman and sophomore years at Southern Illinois University are devoted primarily to studies of basic sciences, such as mathematics, chemistry, botany, physics, and zoloogy; and other cultural-foundational courses, such as English, history, and economics. Most of the technical forestry courses are provided in the junior and senior years. One spring quarter of practical field courses also is required. A student during this period will live in the field and will have to pay the living expenses involved.

The Crab Orchard Wildlife Refuge, the Shawnee National Forest, the Union County Tree Nursery and Forest, and the Kaskaskia Experiment Forest comprising several hundred thousand acres of forest land are all in the vicinity of the University. These lands are available for use by the forestry department for teaching and research. Also available for wood utilization, teaching, and research is a wood products pilot plant located on the Southern Acres Campus near Carbondale.

In addition, the fifteen research foresters of the U.S. Forest Service's Carbondale Forest Research Center are housed adjacent to the forestry department and help to enrich Southern's forestry program.

SUGGESTED CURRICULUM IN FORESTRY

Non-agricultural courses required	Hours
English 101, 102, 103	9
English 205, 206, 209, 211, 212 (two of the five)	6
Art 120 or Music 100	3
Botany 101, 320	10
Zoology 100, 463	9
Chemistry 110, 230, 240 or 111, 112, 305	12
Geology 220	5
Mathematics 111, 112	10
Physics 101	4
Economics 205	5
Geography, history, government, or sociology (work in three fields required)	15
Speech 101	4

Health Education 100	4
Physical education activity courses	6
Air science	6
	107
Agricultural courses required	
Agricultural Economics	4
Agricultural Industries 214	2
Agricultural Industries 303	4
Plant Industries 301	4
Forestry 104	3
Forestry 221	3
Forestry 222	3
Forestry 320	4
Forestry 330	4
Forestry 363	4
Forestry 364	4
Forestry 365	3
Forestry 370	4
Forestry 375	4
Forestry 306)	3
Forestry 331)	2
Forestry 340)	3
Forestry 350) Spring camp, preferably sophomore year	2
Forestry 362)	3
Forestry 367)	3
Total required agriculture hours	66
Forestry electives	6
Free electives	13
Total hours for a bachelor's degree	192

COURSE DESCRIPTIONS

Courses on the 100, 200, and 300 levels are for undergraduate students. Those on the 400 level are for both undergraduate and graduate students. Those on the 500 level are for graduate students only.

104–3. INTRODUCTION TO FORESTRY. Designed to acquaint students with the broad field of forestry. Special emphasis is given to forestry as a career. Field trips, approximate cost $5. For forestry majors or with instructor's consent.

221–3. HARDWOOD DENDROLOGY. Field study, identification and classification, and elementary silvics of hardwood trees. Field trips, approximate cost $3. Prerequisite: Botany 101.

222–3. SOFTWOOD DENDROLOGY. Field study, identification and classification, and elementary silvics of softwood trees. Field trips, approximate cost $2. Prerequisite: Botany 101.

230–2. LUMBER GRADING. The study and practice of applying National Hardwood Rules, Southern Pine Rules, and West Coast Rules in grading lumber. Tally methods and grading for special products are also covered. Grading rules, approximately $1.50.

306–3 SILVICAL FIELD STUDIES. The forest as a result of site and biotic factors. Influences of the forest on the site.

320–4. WOOD TECHNOLOGY. Structure, identification, and physical properties of wood. Prerequisite: Botany 101.

330–4. LOGGING AND MILLING. Principles of harvesting and manufacturing forest products. Field trips, approximate cost $4.

331–2. UTILIZATION STUDIES. Utilization practices in hardwood timber types.

340–3. FOREST FIRE CONTROL. The causes and effects of forest fires; factors affecting occurrence, intensity, and spread of fires; beneficial effects of fires. Field trips, approximate cost $2.

350–2. FOREST RECREATION. Recreational use of forest lands with emphasis on parks and national forests. Administration; interpretation; trends in use and developments.

360–4. FARM FORESTRY. The management of farm woodlands; measurement of logs, trees, and stands; planting and harvesting methods; improvement cuttings; uses and marketing of woodland products. Field trips, approximate cost $2.

361–4. FOREST CONSERVATION. The importance and use of forests, their management and conservation, public forest policy. Not to be taken by students majoring in agriculture. Field trips, approximate cost $2.

362–3. FIELD MENSURATION. Timber cruising, log scaling, and growth studies.

363–4. FOREST MENSURATION. Methods and principles of measuring contents of trees, stands of timber, and rough wood products. Application of yield tables and growth studies. Field trips, approximate cost $2. Prerequisite: Mathematics 111.

364–4. PRINCIPLES OF SILVICULTURE. The influence of site factors on the reproduction, growth, development, and characteristics of forest vegetation; the effect of forest cover on the site. Field trips, approximate cost $5. Prerequisite: 104, Botany 101.

365–3. PRACTICE OF SILVICULTURE. The theory and practice of applying silvical knowledge in controlling establishment, composition, and growth of forest stands. Field trips, approximately $5. Prerequisite: 364.

366–3. REGIONAL SILVICULTURE. Applied systems of silviculture and commercially important timber species and types in the U.S. Prerequisites: 364, 365.

367–3. FIELD SILVICULTURE. Exercises in planting, weeding, thinning, pruning, and improvement cuttings.

370–4. FOREST ECONOMICS. Economics of the production of forest goods and services. Emphasis on principles and methods of analysis most useful in making economic decisions and in understanding economic activity. Prerequisite: Economics 205.

375–4. FOREST MANAGEMENT. Economic and technical principles involved in managing forests. Prerequisites: 364, 365, 370.

381–1 to 2. AGRICULTURAL SEMINAR. (Same as Animal Industries 381, Agricultural Industries 381, and Plant Industries 381.) Discussion of problems in agriculture. Limited to senior students.

390–1 to 8. SPECIAL PROBLEMS IN FORESTRY. Assignments involving research and individual problems in forestry.

Forestry students get field training in "cruising" timber under the guidance of an instructor.

PLANT INDUSTRIES

Professor Alfred Byron Caster, Ph.D. (Arizona), Chairman	1957
Professor Lloyd V. Sherwood, Ph.D. (Illinois)	1959
Associate Professor William T. Andrew, Ph.D. (Michigan State)	1950
Associate Professor James B. Mowry, Ph.D. (Rutgers)	1951
Associate Professor Herbert L. Portz, Ph.D. (Illinois)	1954
Associate Professor Lowell R. Tucker, Ph.D. (Massachusetts)	1947
Associate Professor Joseph P. Vavra, Jr., Ph.D. (Purdue)	1951
Assistant Professor Irvin George Hillyer, Ph. D. (Michigan State)	1956

Adjunct Professor Ronald H. Meyer, M.S. (Illinois)	1957
Research Associate D. R. Browning, M.A. (Missouri)	1957
Research Assistant Charles W. Lobenstein, M.S. (Southern Illinois)	1958

Students check the comparative heights of corn growing on various plots in deep tillage and deep fertilizer placement experiments at the Southern Illinois Co-operative Agronomy Research Center operated by Southern Illinois University and the University of Illinois.

The Department of Plant Industries provides instruction, research, demonstration, and consultation in the fields of production and utilization of fruits, vegetables, grain and forage crops, and ornamentals; and in the field of soils and soil management.

Courses offered are in all phases of intensive and extensive crop production, soils, soil conservation and fertilization, weed control, and related subjects.

The student has ample opportunity to select courses in other departments in the School of Agriculture or related fields such as business, biology, or physical sciences, and thus is able to include in his curriculum the animal, agricultural economic, agricultural engineering, and forestry phases of agriculture or business as related to crop production and utilization.

SUGGESTED CURRICULUM IN PLANT INDUSTRIES

Non-agricultural courses required	Hours
English 101, 102, 103	9
English 205, 206, 209, 211, 212 (two of the five)	6
Art 120 or Music 100	3
Botany 101	5
Zoology 100 or Microbiology 100 or 301	4–5
Chemistry (including inorganic and organic)	12
Geology 220	5
Mathematics (two quarters) or mathematics and physics (one quarter each)	8–10
Economics 205	5
Geography, history, government, sociology (work in three fields required)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air science	6
Total hours of required non-agricultural courses	92–95
Agricultural courses required	
Plant Industries 209	5
Plant Industries 264	4
Plant Industries 301	4
Total required plant industries courses	13
Plant industries electives	23

Agricultural electives from four or more of the following five fields: agricultural economics, agricultural engineering, animal industries, forestry, plant industries. (Total of 60 hours in agriculture)	24
Free electives	40–37
Total hours for a bachelor's degree	192

For an agricultural science option in plant industries, a total of forty-eight hours in agriculture is required providing additional courses are taken in mathematics, physical sciences, and biological sciences to make a total of sixty hours in these fields.

COURSE DESCRIPTIONS

Courses on the 100, 200 and 300 levels are for undergraduate students. Those on the 400 level are for both undergraduate and graduate students. Those on the 500 level are for graduate students only.

209–3 to 5. FIELD CROP PRODUCTION. Principles of growth and production of common field crops: cereals, forages, and miscellaneous crops; growth characteristics; adaptation; improvement; culture; diseases and insects and their control; utilization. Field trip to be arranged, approximate cost $5. Prerequisite: Botany 101.

264–4. GENERAL HORTICULTURE. General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Field trip, approximate cost $3.

301–4. SOIL SCIENCE. Basic concepts of soil formation, classification, characteristics, fertilization, and management. Field trips, approximate cost $2. Prerequisite: one term of chemistry.

302–4. ADVANCED SOIL SCIENCE. The application of basic concepts of soil physics, chemistry, and fertility to plant production. Prerequisite: 301.

304–3. LANDSCAPE GARDENING. Land selection, landscape design and development for home, farm, and public sites with regard to area adaptation. Field trips, approximate cost $2.

305–3. SOIL CONSERVATION. A course dealing with the management of soil in a manner to conserve topsoil and remedial procedures under conditions of erosion. Not to be taken by students majoring in agriculture. Offered as workshop only. Field trips, approximate cost $2.50.

306–2, 3 or 5. SOIL AND WATER CONSERVATION. (Same as Agricultural Industries 306.) Factors affecting soil erosion and excessive water run-off, and principles of soil management and water conservation. Practical structural methods of controlling water run-off and soil erosion. Prerequisite: 301.

308–3. ADVANCED CROP PRODUCTION. Principles of crop science applied

to complete soil-crop management systems. Ecological and physiological aspects and cultural practices will be covered. Prerequisite: 209.

315–4. PLANT GENETICS. (Same as Botany 315.) A general course involving principles of evolution and genetics of plants. Prerequisite: minor in agriculture, botany, or zoology.

316–4. SMALL FRUITS. Production of strawberries, brambles, grapes, and miscellaneous small fruits. Prerequisites: 264, Botany 101, or permission of instructor.

318–3. WEEDS AND THEIR CONTROL. Weed identification and distribution; methods of dissemination and reproduction. Cultural, biological, and chemical control of weeds with a study of regulatory legislation relating to biological and chemical methods. A survey of the common weeds of the Midwest. Field trips, approximate cost $2. Prerequisites: Botany 101 and 102 or Plant Industries 209.

324–4. ORCHARDING. Commercial tree fruit growing, physiology, orchard practices, pest control, harvesting, and marketing. Field trips, approximate cost $2. Prerequisites: 264, Botany 101.

334–4. PRESERVATION AND PROCESSING OF AGRICULTURAL PRODUCTS. Commercial canning, freezing, drying, and fermentation of foods. Field trips, approximate cost $5.

340–4. COMMERCIAL VEGETABLE PRODUCTION. Culture, harvesting, and marketing of commercial vegetables. Field trips, approximate cost $3. Prerequisites: 264, Botany 101.

344–4. GENERAL FLORICULTURE. Propagation, culture, and uses of flowering plants in the home and garden. Field trips, approximate cost $3. Prerequisite: Botany 101.

355–5. PLANT PATHOLOGY. (Same as Botany 355.) A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of Southern Illinois plants. Field trips, approximate cost $3.00. Prerequisites: Botany 101, 202, 301, or approval of instructor.

360–4. VEGETABLE GARDENS AND SOILS. Garden sites, soils and fertilizers, plant growing structures, varieties, cultural practices, pest control, harvesting and storing. Not to be taken by students majoring in agriculture. By extension only.

381–1 to 2. AGRICULTURAL SEMINAR. (Same as Agricultural Industries 381, Animal Industries 381, and Forestry 381). Discussion of problems in agriculture. Limited to senior students.

390–1 to 8. SPECIAL STUDIES IN PLANT INDUSTRIES. Assignments involving research and individual problems. Approval of department chairman required.

401–3. SOIL PHYSICS. Physical properties of the soil; factors affecting them, their measurements, evaluation, and influence in determination of soil productivity. Prerequisite: 301.

407–3. FERTILIZERS AND SOIL FERTILITY. The uses of fertilizer materials; effects of various fertilizers on soils and crops; fertility maintenance and soil management. Prerequisite: 301.

419–4. FORAGE CROP MANAGEMENT. Forage production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to

animal production, soil conservation, crop rotation, and land use. Prerequisite: 209.

424A–3. SOIL MICROBIOLOGY. (Same as Microbology 424A.) A study of the numbers, characteristics, and biochemical activities of soil microorganisms, with particular consideration of their role in the transformations of organic matter, nitrogen, and minerals as related to soil fertility and management. Prerequisite: Botany 101.

424B–2. SOIL MICROBIOLOGY LABORATORY. (Same as Microbiology 424B.) Experiments designed to determine numbers, and to study the characteristics and biochemical activities of the soil microflora as related to fertility. Prerequisites: 424A, Microbiology 100 or 301.

438–3. ADVANCED VEGETABLE CROPS. Influence of environment, growth regulators, breeding, nutrition, crop rotation. Prerequisites: 264, Botany 101.

440–3. PLANT PROPAGATION. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Prerequisites: 264, Botany 101, or approval of the instructor.

458–4. GRADING AND MARKETING OF FIELD CROPS—AGRICULTURAL MARKETING III. (Same as Agricultural Industries 458.) Grading and marketing factors affecting the quality of grain and hay crops; standards employed in their classification and grading in the commercial market; laboratory practice in grading; economic problems and market operations in marketing field crops. Field trips to commercial grain grading laboratory and marketing center, approximate cost $5. Prerequisites: 209, Economics 205.

Courses on the 500 level are for graduate student only.

520–1 to 6. READINGS. Contemporary books and periodicals on selected subjects within the fields of the plant industries.

575–1 to 6. RESEARCH. Directed research on approved projects investigating selected fields of the plant industries.

581–1 to 6. SEMINAR. Group discussions of, and individual papers on, subjects and problems relating to soils, field and horticultural crops, and other phases of the fields of the plant industries.

599–6 to 9. THESIS.

PHOTOGRAPHS

Acknowledgment is made to Albert Meyer for the photographs on pages 13, 15, 22, 27, 31, 32, and to the Photographic Service for the photograph on page x.

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