1960

1960-1962 Southern Illinois University Bulletin Carbondale Campus (School of Agriculture)

Southern Illinois University Carbondale

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1960 · 1962

School of Agriculture

Carbondale Campus

Vol. 2, No. 9 . November, 1960

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.

School of Agriculture

Announcements for 1960-1962

SOUTHERN ILLINOIS UNIVERSITY BULLETIN
Volume 2 Number 9 November, 1960
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The following issues of the *Southern Illinois University Bulletin* may be obtained without charge from General Publications, Southern Illinois University, Carbondale, Illinois.

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Carbondale, Illinois

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Chief Academic Adviser Lowell R. Tucker, Ph.D. (Massachusetts)	1947
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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 refer to the General Information bulletin.

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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 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.

University Calendar, 1961-1962

SUMMER SESSION*

Session Begins	Monday, June 19
Independence Day Holiday	Tuesday, July 4
Final Examinations	Wednesday–Thursday, August 9–10
Commencement	Friday, August 11

SUMMER QUARTER*

Quarter Begins	Monday, June 19
Independence Day Holiday	Tuesday, July 4
Quarter Ends	Friday, September 1

FALL QUARTER

New Student Week	Sunday–Tuesday, September 17–19
Quarter Begins	Wednesday, September 20
Thanskgiving Recess	Wednesday, 12 noon–Monday, 8 A.M. November 22–27
Final Examinations	Monday–Saturday, December 11–16

WINTER QUARTER

Quarter Begins	Tuesday, January 2
Final Examinations	Monday–Saturday, March 12–17

SPRING QUARTER

Quarter Begins	Monday, March 26
Memorial Day Holiday	Wednesday, May 30
Final Examinations	Wednesday–Tuesday, June 6–12
Commencement	Wednesday, June 13

Summer classes will begin on Tuesday, June 20. During the fall, winter, and spring quarters, 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.

* Provision has been made for either an eight-week summer session or a regular summer quarter. The one to be followed will not be known until after the Illinois General Assembly acts on the University's budget during the 1961 legislative session.

University Calendar, 1962-1963

SUMMER SESSION*

Session Begins	Monday, June 18
Independence Day Holiday	Wednesday, July 4
Final Examinations	Wednesday–Thursday, August 8–9
Commencement	Friday, August 10

SUMMER QUARTER*

Quarter Begins	Monday, June 18
Independence Day Holiday	Wednesday, July 4
Quarter Ends	Friday, August 31

FALL QUARTER

New Student Week	Friday–Sunday, September 21–23
Quarter Begins	Monday, September 24
Thanksgiving Recess	Wednesday, 12 noon–Monday, 8 A.M. November 21–26
Final Examinations	Wednesday–Tuesday, December 12–18

WINTER QUARTER

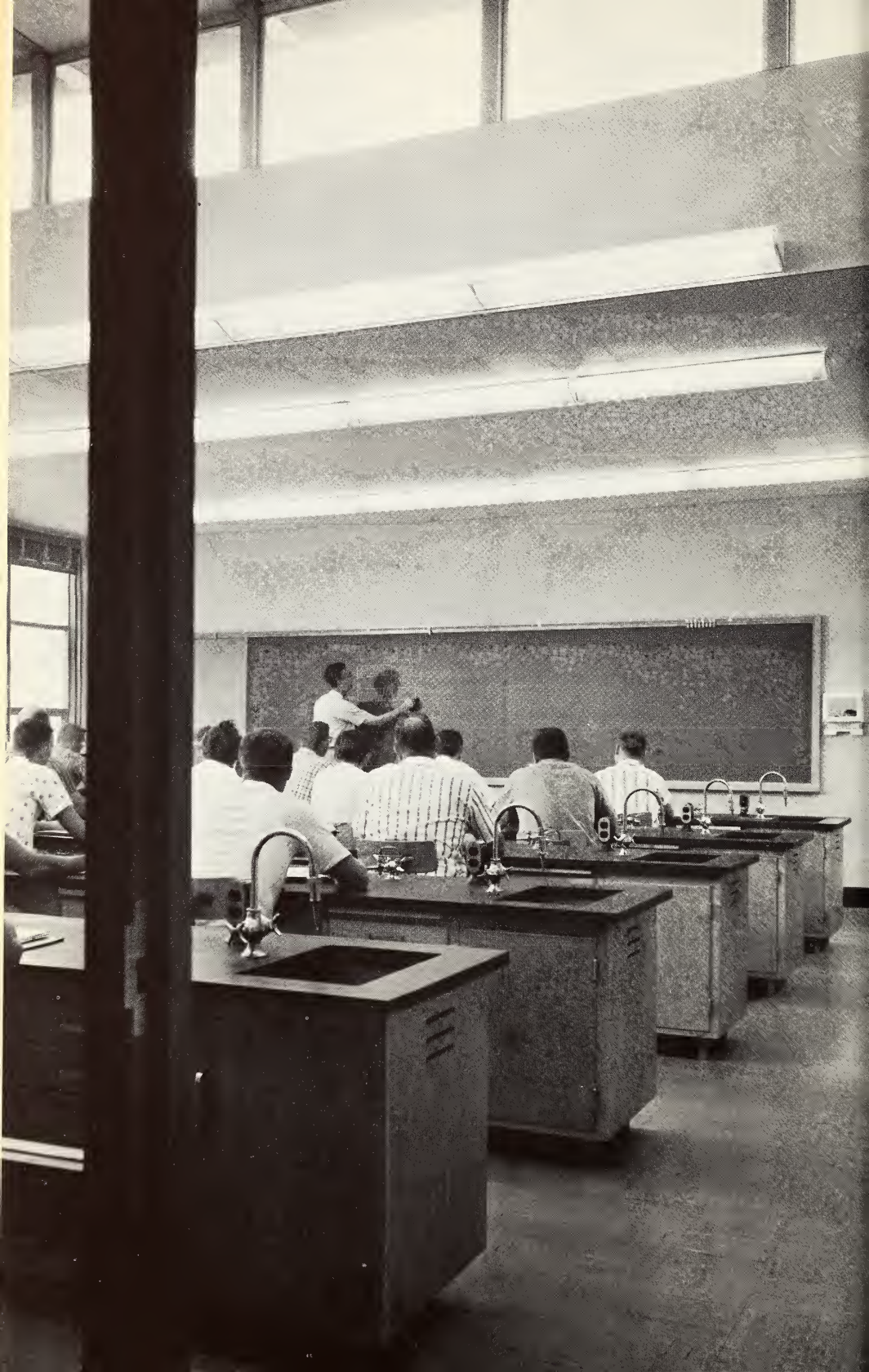
Quarter Begins	Wednesday, January 2
Final Examinations	Wednesday–Tuesday, March 13–19

SPRING QUARTER

Quarter Begins	Wednesday, March 27
Memorial Day Holiday	Thursday, May 30
Final Examinations	Thursday–Wednesday, June 6–12
Commencement	Thursday, June 13

Summer classes will begin on Tuesday, June 19. During the fall, winter, and spring quarters, 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.

* Provision has been made for either an eight-week summer session or a regular summer quarter. The one to be followed will not be known until after the Illinois General Assembly acts on the University's budget during the 1961 legislative session.



The University

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 this list, and in 1955 the Doctor of Philosophy degree was added. The Master of Music and the Master of Music Education degrees were authorized in 1956.

In 1949 the Belleville Residence Center was established and the Alton and East St. Louis residence centers in 1957. In 1958 the Southwestern Illinois Residence Office was created to co-ordinate and direct the University's educational activities in the Madison–St. Clair counties area. In 1959 its name was changed to the Southwestern Illinois Campus and the residence centers to the Alton Center and the East St. Louis Center.

LOCATION

The general administrative offices for the University's campuses at Carbondale, Southern Acres, and Little Grassy Lake are located at Carbondale. The Southwestern Illinois Campus, the administrative office for the Alton Center and the East St. Louis Center, is located at Edwardsville.

The facilities at Carbondale now include more than twenty-three hundred acres of land, thirty-six permanent buildings, and numerous temporary buildings. These buildings house classrooms, auditoriums, laboratories, libraries, offices, living quarters, cafeterias, and farm equipment and animals. The Little Grassy Lake and Southern Acres campuses are each about ten miles from Carbondale.

The Southwestern Illinois Campus at Edwardsville offers classes at the Alton and East St. Louis centers. The facilities of the former Shurtleff College have been leased by the University for the operation of the Alton Center. The East St. Louis Center is located at the former East St. Louis High School building.

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 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 the departments of the University. In addition to the courses which run the full eight weeks, there are workshops and short courses covering shorter periods of time.

REGULATIONS

The University and its various instructional units reserve the right to change the rules regulating admission, instruction, and graduation; to change courses and fees; 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 enrolled in the University.

School of Agriculture

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 Master of Science degree programs.

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 University's general aim of establishing physical facilities and providing the necessary program for developing and bettering human life, with special emphasis upon Southern Illinois 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.

FACILITIES

AGRICULTURE BUILDINGS

A modern Agriculture Building of functional design, occupied in 1957, provides adequate classrooms and well-equipped laboratories for the school's teaching and research activities. It also includes office and laboratory space for the school's staff and the personnel of co-operating agencies.

The Agriculture Building contains twenty-six classrooms, eighteen teaching and research laboratories, offices, and an auditorium-exhibition hall.

Well-equipped laboratories in the Agriculture Building are designed for teaching and research in various agricultural fields.

Greenhouses for agricultural research and teaching purposes and an Agricultural Engineering quonset building also are located adjacent to the main building. Additional laboratory and teaching facilities are located on the various agricultural units used by the school and related co-operating agencies.

Muckelroy Auditorium in the Agriculture Building serves as an auditorium-exhibition hall for teaching, demonstration, and a multitude of agricultural events.

AGRICULTURAL UNITS

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 devoted to teaching, research, and demonstration primarily in the livestock, dairy, poultry, and farm management fields. The fields of soils and soil conservation, horticultural and agronomic crops, and forestry are similarly served on portions of the University Farms. 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 fitting 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. Each of these teaching and research units includes a masonry-type structure containing animal judging and fitting areas, 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 the co-operative Illinois 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, a 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.

Specific projects undertaken include the testing, breeding, and developing of fruit, vegetable, and ornamental varieties adapted to southern Illinois; studying fundamental problems related to cultural methods and to rootstock-variety combinations; and providing demonstrational areas 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 supplemented by an irrigation pond and a station service center with a shop, machine storage, and field laboratory located on immediately adjacent acreage. The pond has 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 school now operates three farm management or demonstration units, designated as Test Farms. 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 farm, deriving income from grade A milk; a steer-hog farm with the principal farm business being market hogs and steers; and a part-time laying flock–sheep farm on which the farm operator supplements income from full-time off-farm work.

Research on breeding, production, and disease control of small fruits, such as strawberries, raspberries, and blackberries, is underway at the co-operatively operated Small Fruits Research Station.

PROGRAMS OF INSTRUCTION

The Bachelor of Science in Agriculture degree may be earned in the School of Agriculture with the following majors: General Agriculture, Agricultural Industries, Animal Industries, Forestry, Plant Industries, Vocational Agricultural Education. Graduates have a wide choice of career opportunities. About 40 per cent of the total employment opportunities in the United States are in agriculture and agriculturally-related occupations. Currently 11 per cent of all agricultural occupational opportunities are actually in farming and ranching. Approximately 20 per cent of the agricultural graduates from Southern since 1947 have gone into farming. The remaining 80 per cent have entered other major employment areas such as agricultural business, advanced professional training for research and teaching, agricultural education, and government service. Most forestry graduates have gone into governmental or industrial programs.

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 any of the departments, or they may choose one of the pre-professional curricula.

A student with a desire to go into specialized scientific work in agriculture including forestry should place strong emphasis upon basic science courses such as mathematics, chemistry, physics, botany, geology, zoology, and economics. This will permit him to continue without undue delay into graduate preparation for professional services in agricultural science or for teaching at the university level.

Many opportunities in technical leadership, sales, management, and other services in agriculturally-related businesses and industries are available to graduates with agricultural training at the bachelor's degree level. In each of the four departments the student is given ample opportunity to take courses in business, communications, economics, in many of the departmental majors, and in the agricultural-business option in addition to courses in his agricultural specialties.

Training in agricultural education prepares graduates for positions in the dissemination of agricultural information through teaching at all levels; in the Extension Service, and in agricultural industries and government agencies.

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.

A sample freshman sequence of courses for School of Agriculture students is shown below as a guide to scheduling courses by quarter. Selection of specific courses in agriculture and other modifications may be made to meet individual needs and the requirements of certain majors.

FALL		WINTER		SPRING	
English 101	3	English 102	3	English 103	3
Music or Art	3	Mathematics	4–5	Zoology or Botany, Mathematics or Social Studies	5
Botany or Zoology	5	Speech 101	4	Health Education	4
*Agriculture	3–4	*Agriculture	2–5	*Agriculture	3–4
Physical Education	1	Physical Education	1	Physical Education	1
Air Science 100A	0	Air Science 100A	0	Air Science 100A and 110	1
Freshman Convocation	0	Freshman Convocation	0	Freshman Convocation	0
	15–16		14–18		17–18

* Agricultural Industries 114, 214; Animal Industries 105, 125, 231; Forestry 104, 221; Plant Industries 209, 264.

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.

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 major fields. The Agricultural Economics Club, a student chapter of the American Farm Economics Association, and the Southern Illinois University Chapter of Future Farmers of America are centered in the Department of Agricultural Industries; the Block and Bridle Club in the Department of Animal Industries; the Forestry Club in the Department of Forestry; and the Plant Industries Club in the Department of Plant Industries. For those with interest in the field of soil and water conservation, a student chapter under the sponsorship of the Egyptian Chapter, Soil Conservation Society of America, has been formed. The

various organizations meet periodically for programs serving the educational, social, and recreational interests of the students.

An Agricultural Advisory Student Council co-ordinates activities of all agricultural clubs and represents the students within the School of Agriculture.

The Illinois Beta Chapter of the National Fraternity of Alpha Zeta was installed in the fall of 1960. Members of this agricultural honorary fraternity are elected on the basis of scholastic standing and personal qualities which indicate promise of leadership and professional achievement.

ADMISSION TO THE SCHOOL

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). In addition, units in agriculture are desirable.

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.

COMPLETE DETAILS concerning admission, tuition, fees, housing, financial assistance, and student employment are given in the General Information bulletin. For a free copy write to General Publications, Southern Illinois University, Carbondale, Illinois.

AGRICULTURAL WORK EXPERIENCE

Students enrolled in the School of Agriculture have opportunities to gain experience in various agricultural fields. Much of the work on the school's research and teaching centers and in agricultural laboratories is done by student labor.

The various departments in the School of Agriculture assist in placing

students in summer trainee programs such as in forestry and in the Soil Conservation Service. Internship programs are arranged with various private business firms and governmental agencies.

Students seeking agricultural work experience should make application in person at the School of Agriculture Office or through appropriate departments. For on-campus jobs, students must be approved by the Student Work Office.

These work experience opportunities will also help defray a portion of the student's educational expenses, and, in limited instances, lodging may be obtained at one of the teaching and research centers.

Research grants for graduate students and scholarships and awards for undergraduate students are available to those enrolled in specific programs. These special aids provide excellent work experience and financial assistance for qualified students.

Research grants are assigned to specific research projects and may include equipment, supplies, travel, and student assistance. Present grantors are

Abbott Laboratories for swine nutrition
Commercial Solvents for ruminant nutrition
Eli Lilly Company for dairy cattle feeding
Fairfield Engineering and Manufacturing Company for swine management and equipment
Hunter Packing Company for swine buildings and management
Illinois Department of Agriculture for egg and peach marketing
Illinois Farm Supply for fertilizer and agricultural economics investigations
National Stockyards Company for swine buildings and management
Phillips Petroleum Company for fertilizer investigations
Ranger Equipment Company for swine management
Staley Milling Company for swine management and nutrition.

Awards and scholarships currently available to agricultural undergraduate students are

Sahara Coal Company Awards in Forestry consisting of cash grants equivalent to tuition and fees for one year.
Illinois Poultry Improvement Association Award.
Prairie Farmer Publishing Company Scholarship in Agricultural Journalism.
Production Credit Associations cash awards.

Additional loans, scholarships, and awards from university, state, and other agencies are also available to agricultural students.

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; they have the option of paying the student activity fee.

ADVISEMENT

In order to insure that an undergraduate student is properly advised concerning the course of study which will fulfill the general university requirements and prepare him for his chosen career, academic advisement has been made the special responsibility of a selected group from the teaching faculty. The School of Agriculture has a chief academic adviser and a number of assistant advisers.

In addition to the contacts through the University's Academic Advisement Center, each student in the School of Agriculture will be assigned an agriculture faculty counselor to assist in selecting a major and elective courses and to confer on other academic and vocational matters.

REQUIREMENTS FOR THE BACHELOR'S DEGREE

Each candidate for the degree must complete a minimum of 192 hours of credit in approved courses. At least 64 must be in senior college courses, of which 48 must be earned at Southern, 16 of which may be earned in extension from Southern. Each student must have a "C" average, and grades not lower than "C" in subjects aggregating at least three-fourths of the work. A "C" average is required in the major subject. These averages are required for the credit made at Southern as well as for the total record.

The *quarter hour* is the unit of credit used at Southern and throughout this bulletin. One quarter hour is two-thirds of a semester hour.

The following requirements should be met by all degree candidates of the University within the first two years of attendance.

Requirements	Hours	Courses
Social Studies	20	Economics 205, Geography 100, Government 101, History 101, 102, 103, Sociology 101 (work in four of the five departments)
Humanities	18	
English	(9)	English 101, 102, 103
English	(6)	English 205, 206, 209, 211, 212
Art or Music	(3)	Art 120, Music 100
Biological Sciences	9	
Health Education	(4)	Health Education 100
Botany or Zoology	(5)	Botany 101, 202, Zoology 100
Mathematics and Physical Sciences	12	Chemistry, physics, and mathematics (work in two of the three departments)
Practical Arts and Crafts	3	Agriculture, business administration, home economics, industrial education (not required if the student has had any of this work in high school)
Physical Education	6	Activity courses
Air Science (Men only)	3	Air Science 110, 210, 220, six quarters of leadership laboratory, and three elective courses must be satisfactorily completed before this requirement is fulfilled.

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. Additional non-agricultural courses are prescribed in respective curricula and are included with the general degree courses required. 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 student. 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.

Instructional Units

GENERAL AGRICULTURE

The curriculum in general agriculture, leading to the Bachelor of Science in Agriculture degree, is intended for students seeking broad backgrounds in the field of agriculture. It is probably the best agricultural curriculum for students who have not chosen their vocations, because it provides for maximum selection of courses within all departments of the School of Agriculture and within other departments of the University.

Beef cattle, whether on the Steer-Hog Test Farm (shown here) or at the School of Agriculture's beef-cattle center, provide laboratory opportunities for students to prepare for farming, for many careers in the livestock industry, and for related fields.

Students following this curriculum gain basic preparation for many of the agricultural careers: general farming, agricultural services, agricultural extension, agricultural communications, agricultural business, agricultural industry, and agricultural and biological science. Students who initially enroll in general agriculture may transfer to other agricultural curricula, or they may continue in general agriculture and select courses from various fields.

SUGGESTED CURRICULUM IN GENERAL AGRICULTURE

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 106c or 111	4–5
Economics 205	5
Geography, history, government, sociology (work in three fields)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air Science	3
Total hours of required non-agricultural courses	76–78
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
Electives in agriculture (including at least seven hours in each of the following fields: agricultural industries, animal industries, plant industries)	34–38
Total hours required in agriculture	60
Free Electives	54–56
Total hours for a bachelor's degree	192

AGRICULTURAL INDUSTRIES

Professor Herman M. Haag, Ph.D. (Cornell)	1959
Professor W. E. Keepper, Ph.D. (Cornell)	1950
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 E. W. Lehman, M.S. (Texas A. & M.)	1960–61

The Department of Agricultural Industries provides instruction, research, demonstration, and consultation in the fields of agricultural economics, agricultural education, and agricultural engineering. All curricula of this department lead to the Bachelor of Science in Agriculture degree with a major in agricultural industries.

In agricultural economics, courses are offered in the following fields: farm management, farm credit, agricultural prices, agricultural marketing, agricultural co-operatives, and farm policy. An agricultural business option is available.

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

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

electrification, farm power and machinery, farm structures, and soil and water engineering. 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 106c or 111	4–5
Mathematics 120 or Economics 307	4
Economics 205 and 206	9
Geography, history, government, sociology (work in three fields)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air Science	3
Psychology 201	4
Business Administration 250	4
Total hours of required non-agricultural courses	92–94
Agricultural Courses Required	
Agricultural Industries 114, 350, 354, 414, 456	20
Agricultural Industries 351, 450, 452, 457, 458 (any two)	8
Animal Industries 105, 125, or 231	4
Animal Industries 315	4
Plant Industries 209, 264, or Forestry 360	4–5
Plant Industries 301	4
Agricultural engineering	3–4
Electives in agriculture [1]	11–13
Total hours required in agriculture	60
Free Electives	38–40
Total hours for a bachelor's degree	192

[1] For an agricultural business option, forty-eight hours are required in agriculture providing additional courses are taken in business and social sciences to make a total of sixty hours in these fields.

SUGGESTED CURRICULUM IN VOCATIONAL AGRICULTURAL EDUCATION

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
English 391 or proficiency examination	3 or 0
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	3
Psychology 201	4
Educational Administration and Supervision 331, 335	7
Guidance 305	4
Secondary Education 310	4
Total hours of non-agricultural courses	106–111
Technical Agricultural Courses Required	
Agricultural Industries 114, 350, and 351, 354 or 414	13
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
Electives in technical agriculture	7–9
Total hours required in technical agriculture[1]	72
Agricultural Education Courses Required	
Agricultural Industries 210, 307, 309, 311, 312[2], 313	23
Free Electives	0
Total hours for a bachelor's degree	201–206

[1] At least thirty-six of the seventy-two hours in technical agriculture must be taken in residence.
[2] 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)	15
Speech 101	4
Health education 100	4
Physical education activity courses	6
Air Science	3
Applied Science 101	3
Total hours of non-agricultural courses required	89
Agricultural Courses Required	
Agricultural Industries 114, 303, 306, 374, 375, 376, 377, 378	28–31
Plant Industries 209, 301	9
Electives in agriculture (including at least one course in each of these fields: animal industries, plant industries, agricultural economics)	20–23
Total hours required in agriculture	60
Free Electives	42
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.

145–4. BASIC ELECTRICITY. Application of electrical theory to the use of simple electrical equipment. Lecture, discussion, and laboratory work to present a broad background in basic electrical theory.

210–2. INTRODUCTION TO AGRICULTURAL EDUCATION. An introduction to the history and philosophy of high school vocational agricultural programs.

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. 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, Educational 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. Can be used for natural science credit in Elementary Education.

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.

313–3. AGRICULTURAL EDUCATION PRACTICES. A discussion of problems and practices in teaching agriculture in high school. Prerequisite: 312.

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.

373–5. 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. 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. Approximate cost: $5. 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 prob-

lems, 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.

471–4. LAND RESOURCE ECONOMICS. (Same as Forestry 471 and Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; elementary land resources planning techniques. Field trip costs approximately $5. Prerequisite: 305 or Forestry 470 or Economics 440.

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.

520B–1 to 6. READINGS IN RESOURCE ECONOMICS. (Same as Forestry 520B and Economics 502.)

550–4. PRODUCTION MANAGEMENT. A study of the principles of production economics upon which problems in agricultural production and resource use can be analyzed. Principles applicable to the farm business and to farm policy, including concepts relating to the decision-making process. Prerequisites: 12 hours in economics and agricultural economics, consent of instructor.

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.

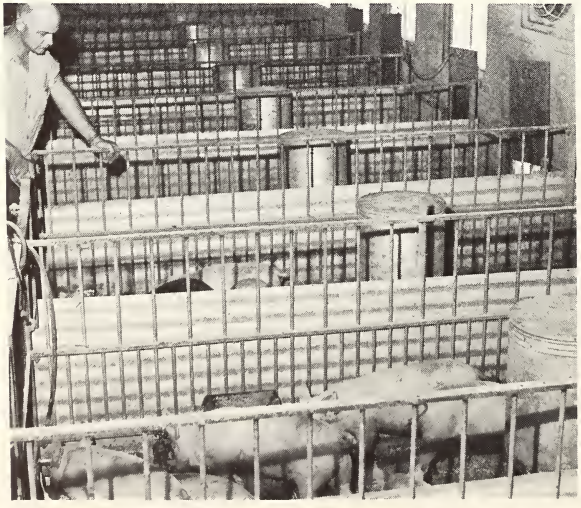
ANIMAL INDUSTRIES

Professor Joseph E. Burnside, Jr., Ph.D. (Wisconsin)	1955
Professor Alex Reed, Ph.D. (Illinois), Chairman	1946
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

Lecturer Marshall G. Clark, M.S. (Illinois), Emeritus (1954)	1947
Assistant Instructor Howard F. Benson, B.S. (Wisconsin State)	1957
Assistant Instructor Marvin Moose, B.S. (Illinois)	1958
Research Associate Verle Chappell, M.S. (Illinois)	1957

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

Pre-veterinary students may enroll 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.



Modern equipment and quality animals at the swine center, as well as at other livestock centers within the School of Agriculture, provide excellent facilities for teaching and research in animal industries and other agricultural fields.

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.

The curriculum below leads to a Bachelor of Science in Agriculture degree with a major in animal industries.

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 106c or 111	4–5
Economics 205	5
Geography, history, government, sociology (work in three fields)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air Science	3
Total hours of required non-agricultural courses	81–83
Agricultural Courses Required	
Agricultural Industries 114	4
Plant Industries 209, 301	9
Animal Industries 105, 125, 231, 315, 332	19
One course in forestry or agricultural engineering	2–4
Electives in animal industries [1]	29
Total hours required in agriculture	63–65
Free Electives	44–48
Total hours for a bachelor's degree	192

[1] 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.

313–2. POULTRY JUDGING. Judging and selection of poultry for egg production and breeding. Grading of poultry products. The poultry judging team representing Southern Illinois University at the intercollegiate contest at Chicago will be selected from students in this class. Prerequisite: 125.

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. The application of the basic principles of genetics and breeding systems to the improvement of farm animals. Prerequisites: 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 tur-

keys 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. The anatomy and physiology of reproduction and the principles of artificial insemination in farm animals. 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.

465–4 to 5. SWINE PRODUCTION. Breed selection, breeding, feeding, management, and marketing of swine. Field trip, approximate cost $3. Prerequisites: 105, 315.

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. Alternate summers 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 re-

search 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)	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)	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 James F. Dubuar, M.F. (Michigan)	1958–60

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 zoology; 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 lives in the field and pays the living expenses involved.

The Crab Orchard Wildlife Refuge, the Shawnee National Forest, the Union County Tree Nursery and Forest, and the Kaskaskia Experimental 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 Department of Forestry 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. The Little Grassy Lake Campus and Giant City State Park provide additional facilities for teaching and research, especially during the Spring Camp.

In addition, the eighteen research foresters of the U.S. Forest Service's Carbondale Forest Research Center are housed adjacent to the Department of Forestry 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	12–14
Geology 220	5
Mathematics 111, 112	10
Physics 101	4
Economics 205	5
Geography, history, government, sociology (work in three fields)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air Science	3
	105–107
Agricultural Courses Required	
Agricultural Economics or Forestry 471	4
Agricultural Industries 214, 303	6
Plant Industries 301	4
Forestry 104, 221, 222, 320, 330, 363, 364, 365, 375, 470, 475	40
Forestry 306, 331, 340, 350, 362, 367 (Spring Camp)	16
Electives in forestry	2
Total hours required in agriculture	72
Free Electives	25–27
Total hours for a bachelor's degree	204

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 ca-

reer. Field trips, approximate cost $5. For forestry majors or with instructor's consent.

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

222–3. SOFTWOOD DENDROLOGY. Field study, identification, 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. Field trips cost approximately $5.

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 cost approximately $5.

350–2. FOREST RECREATION. Recreational use of forest lands with emphasis on parks and national forests. Administration; interpretation; trends in use and developments. Field trips cost approximately $5.

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. Not to be taken by students majoring in forestry.

Part of the work of students in forestry field courses is a study of the soil to determine its suitability for certain species of forest trees.

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. Field trips cost approximately $5.

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 cost approximately $3. 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 cost 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.

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

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. Prerequisite: consent of chairman.

440–4. ECOLOGY OF GRASSES AND GRASSLANDS. (Same as Botany 440.)

Measuring the diameter of a forest tree with a special steel tape is part of the field experience of forestry students in determining its saw-timber volume.

Structure, analysis, and dynamics of grassland communities; structure and growth of individual species. Field and laboratory work, approximate cost $5. Prerequisite: Botany 340 or consent of instructor.

464–4. ADVANCED SILVICULTURE. Analysis and measurement of site quality; stand density; growth as related to site factors and competition; factors affecting reproduction; the tree as a variable. Prerequisites: 364, 365.

465–2 to 4. FORESTRY FIELD STUDIES. An extended trip to study forest conditions and silviculture in different forest regions of the United States. Cost shared by students. Prerequisites: 330, 363, 364, 365.

470–4. ECONOMICS OF PRODUCTION AND MARKETING IN FORESTRY. Introduction to forestry economics; micro-economics of forestry production and conservation; marketing and pricing of forest products. Prerequisite: Economics 205.

471–4. LAND RESOURCE ECONOMICS. (Same as Agricultural Industries 471 and Economics 471). The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; elementary land resources planning techniques. Field trip, approximate cost $5. Prerequisites: 470 or Agricultural Industries 350 or Economics 440.

475–4. MACRO–ECONOMICS AND PLANNING IN FORESTRY. Study of forestry economy; introduction to public planning in forestry including consumption and production goals. Prerequisite: 470 or consent of instructor.

Courses on the 500 level are for graduate students only.

520A–1 to 6. READINGS IN FORESTRY. Directed readings in selected subjects.

520B–1 to 6. READINGS IN RESOURCE ECONOMICS. (Same as Agricultural Industries 520B and Economics 502.) Directed readings in the field of natural resource economics.

575–1 to 6. RESEARCH. Directed research in selected fields of forestry.

581–1 to 6. SEMINAR. Study and discussion of forestry problems.

599–2 to 9. THESIS.

PLANT INDUSTRIES

Professor Alfred Byron Caster, Ph.D. (Arizona), Chairman	1957
Professor Lloyd V. Sherwood, Ph.D. (Illinois)	1959
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
Assistant Professor John F. Kelley, Ph.D. (Wisconsin)	1959

Adjunct Professor Roland C. Blake, Ph.D. (Minnesota)	1959
Adjunct Professor Ronald H. Meyer, M.S. (Illinois)	1957
Visiting Professor Theodore C. Broyer, B.S. (California)	1960–61
Research Associate D. R. Browning, M.A. (Missouri)	1957
Research Associate Charles W. Lobenstein, M.S. (Southern Illinois)	1958
Lecturer Allen D. Fechtig, B.S.Ag. (Illinois)	1960–61

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

With student assistance a staff member gathers data in tomato research.

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, economic, engineering, and forestry phases of agriculture 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)	15
Speech 101	4
Health Education 100	4
Physical education activity courses	6
Air Science	3
Total hours of required non-agricultural courses	89–92
Agricultural Courses Required	
Plant Industries 209, 264, 301	13
Electives in plant industries	23
Electives in agriculture (including work in at least four of these fields: agricultural economics, agricultural engineering, animal industries, forestry, plant industries)	24
Total hours required in agriculture [1]	60
Free Electives	40–43
Total hours for a bachelor's degree	192

[1] 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.

209–5. 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. Prerequisite: Botany 101.

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

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.

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.

318–4. WEEDS AND THEIR CONTROL. Losses due to weeds, their identification and distribution, methods of weed dissemination and reproduction. Mechanical, biological, and chemical control of weeds. State and federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field trips, approximately $2.50. Prerequisite: Botany 101 or 102.

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, 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. Prerequisite: consent of chairman.

401–4. SOIL PHYSICS. Physical properties of the soil; factors affecting them, their measurements, evaluation, and influence in determination of soil productivity. Prerequisite: 301.

407–3 to 4. FERTILIZERS AND SOIL FERTILITY. The uses of fertilizer materials; effects of various fertilizers on soils and crops; fertility maintenance and soil management. Prerequisite: 301.

408–4. ADVANCED CROP PRODUCTION. Ecological and physiological considerations used in the interpretation of crop research data, with emphasis on modern developments and trends in production and research of major agronomic crops. Prerequisite: 209.

415–3. PLANT BREEDING. General principles and methods employed in the breeding of horticultural, agronomic, and forest plants. Emphasis on methods of selection, breeding, and testing; use of polyploidy; heterosis; male sterility; combining ability; and plot technique. Prerequsiite: 315 or Zoology 401.

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 Microbiology 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. Studies of the genetic, morphological, and physiological factors influencing the production of vegetable crops. Prerequisites: 264, Botany 320 or consent of instructor.

440–3. PLANT PROPAGATION. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cut-

ings, grafts, and other methods of propagation. Prerequisites: 264, Botany 101, or approval of the instructor.

458–4. GRADING AND MARKETING OF FIELD CROPS. (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, Agricultural Industries 354 or consent of instructor.

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.