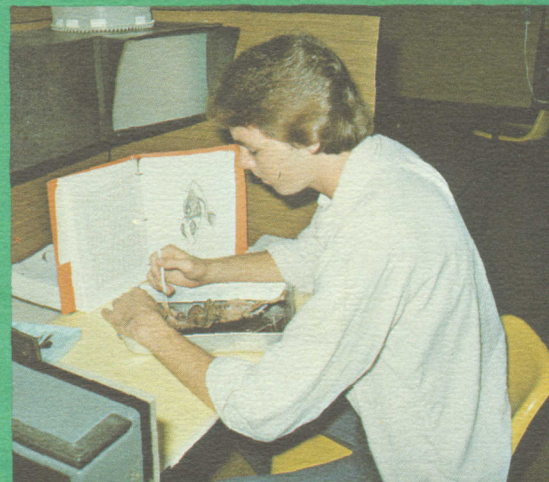




SCHOOL
OF
AGRICULTURE,
FORESTRY,
AND
BIOLOGICAL
SCIENCES
AUBURN
UNIVERSITY





A Message from the Dean

I hope that you will take a few minutes to read this brochure that briefly describes the programs available in the School of Agriculture, Forestry and Biological Sciences. I am sure that many of you would like to have more details regarding a specific program or discipline and I personally invite you and your family to visit the Auburn campus. The Dean's Office is looking forward to working with you to help you obtain your career goals.

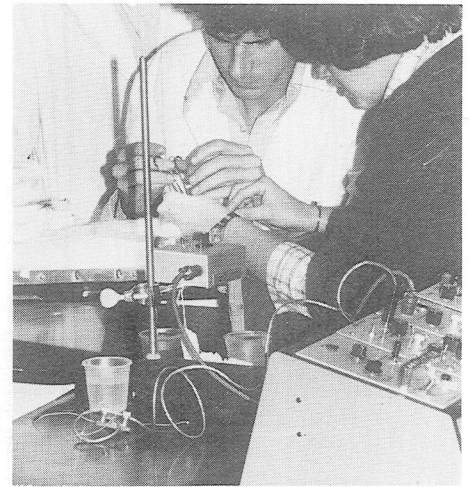
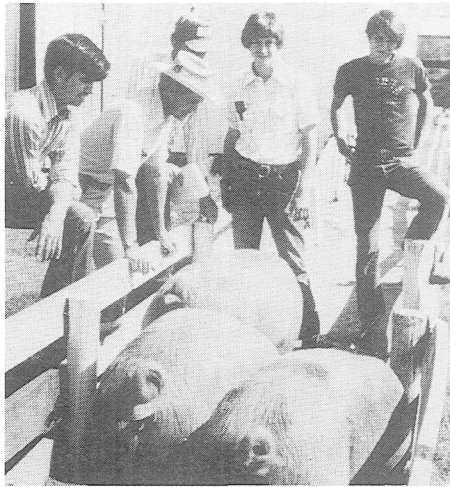
Auburn is rather unique in that we have included the Biological Sciences with Agriculture and Forestry. This is just one example of the progressive attitude that exists on the Auburn campus. We feel that this arrangement allows us to develop stronger programs in all related areas because of these closer "family ties."

It has been said that Agriculture is the only "essential industry." In addition, I feel that American Agriculture is the most dynamic, effective and efficient industry on the face of the earth. Whether your interests are directed toward basic biology or more toward the production of "food, fiber or fun" the School offers you opportunities from A to Z (Agronomy to Zoology). Any of these areas offer great personal satisfaction as well as financial success. What a beautiful combination.

I know that you will enjoy the fact that Auburn offers all the opportunities you expect from a major university while it still retains the friendly atmosphere of a small town college. I hope you will visit us soon so that you can see, first hand, that Auburn University and the School of Agriculture, Forestry, and Biological Sciences is the "place" for you.

Rob Voitle

You and Agriculture



AGRICULTURE HAS NEVER been more important than it is now. This is recognized more and more every day in the United States and throughout the world. Even the fear of wars takes second place to worries about feeding and clothing the world's rapidly growing population.

America's greatest success story has been its abundant production of food and fiber by only a small part of the nation's labor force. This capability has played a major role in keeping the nation on top economically and militarily.

A vital link in this strong agricultural chain has been the agricultural teaching program of schools of agriculture at land-grant colleges like Auburn University. Auburn's School of Agriculture, Forestry, and Biological Sciences has provided trained men and women needed in all phases of Alabama agriculture, from the actual production through all supporting industries and agencies. And there is no slackening of the demand for technically qualified men and women in this dynamic industry.

A Choice of Careers

But production agriculture-farming-is only one of many careers that are available for graduates of the School of Agriculture, Forestry, and Biological Sciences. The list of professional opportunities runs into the hundreds, covering such widely varying jobs as agricultural engineer, bacteriologist, biologist, teacher, conservationist, entomologist, extension agent or specialist, farm manager, fertilizer salesman, florist, food technologist, forester, geneticist, golf course superintendent, land appraiser, livestock buyer, market analyst, nutritionist, park manager, pathologist, radio or TV farm director, newspaper farm editor, wildlife manager, and zoologist. Many of these provide excellent career opportunities for women, as well as for men.

Ten separate curriculums are offered by the School of Agriculture, Forestry, and Biological Sciences with 26 available majors, and options. Degrees are awarded in agricultural science, with majors in agronomy and soils, animal and dairy sciences, poultry science, horticulture, and agricultural journalism; agricultural business and economics; agricultural engineering; biological sciences, with majors in botany, microbiology, fisheries management, wildlife management, entomology, zoology, and marine biology; food science; forest management; forest engineering; landscape and ornamental horticulture; plant protection, and forest products. Regardless of the curriculum, the courses provide a broad foundation in the basic sciences, a general knowledge of the applied sciences, and a reasonable number of humanities and social sciences.

Graduate study is available in many specialized areas and qualified students are encouraged to continue study beyond the undergraduate level.

Agronomy students are trained for work in production, marketing, and utilization of various crops.



Specialized Teachers, Advisors

Each of the subject matter departments in the School has a specialized teaching staff with more than three-fourths holding a Ph.D. degree. Most teachers also do research at the Agricultural Experiment Station, and all are associated with the research division. This association helps keep them up-to-date on the latest developments in their fields, which can be a tremendous advantage to their students.

Another advantage enjoyed by students is the advisor system used by the School of Agriculture, Forestry, and Biological Sciences. Each student is assigned an advisor who aids in class scheduling or with any special problems he or she may have.

A good background in English, mathematics, and science is needed for successful completion of courses in the School's curriculums. For this reason, high school students who want to enter the School of Agriculture, Forestry, and Biological Sciences, should take these subjects each year while in high school. Alabama residents are required to complete the American College Test (ACT) on one of the announced national testing dates. Applicants from other states may complete the ACT or Scholastic Aptitude Test (SAT) of the College Entrance Examination Board.

The Junior College Transfer Program at Auburn makes it possible for students to

attend other colleges and, by taking suggested courses, to graduate at Auburn University with a minimum loss of time after transfer. All Alabama junior colleges have copies of this program, and information is available from faculty advisors at those schools. Transfer students who fail to follow this program transfer with a distinct loss of time.

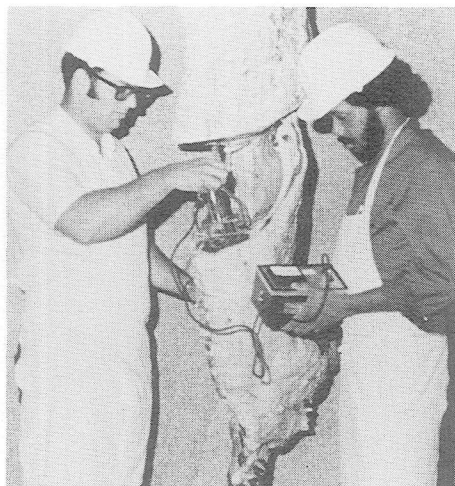
Transfer credit is normally not given for any course passed with a grade lower than C. Credit is not allowed for technical agricultural subjects taken at colleges where these courses are taught by faculty who do not have graduate degrees in the subject matter area, unless the student passes validating examinations in the subjects after entering Auburn.

Detailed information about curriculums in each department is presented on the following pages.

Additional information is available by writing to:

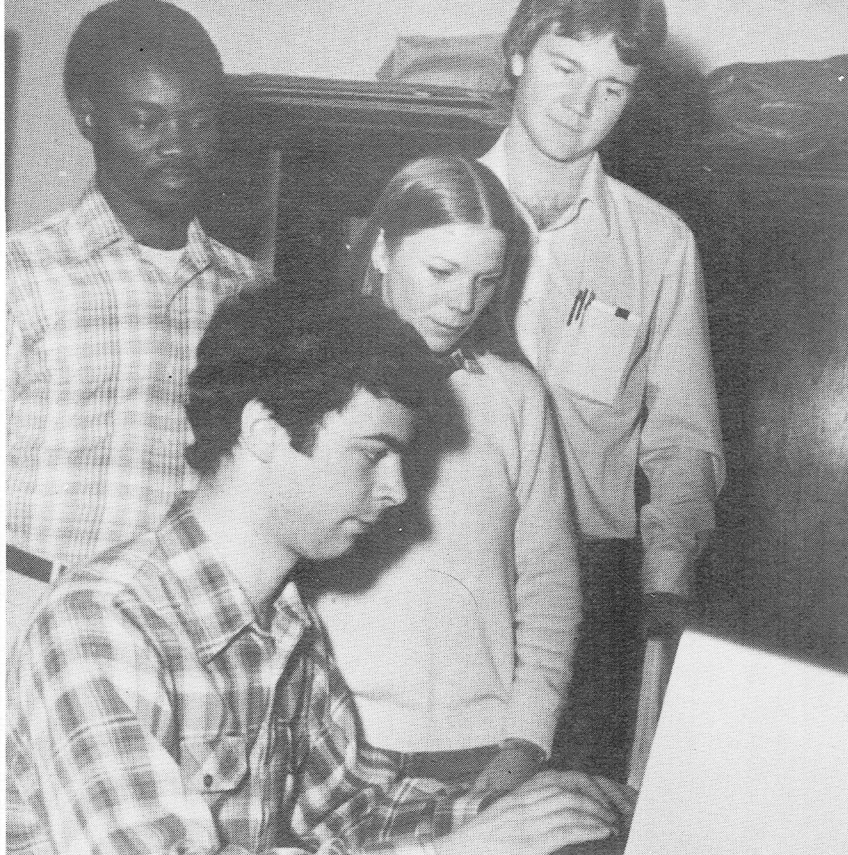
Dean
School of Agriculture, Forestry, and
Biological Sciences
Auburn University, Alabama 36849-
4201

or you may contact the head of the department in which you are particularly interested, using the School of Agriculture, Forestry, and Biological Sciences address. Applications for Admission are directed to the Admissions Office, Auburn University, Alabama 36849-4201.



There is a great demand for technically qualified men and women in the dynamic agricultural industry.





Ag economics students read a computer display in the Department of Agricultural Economics and Rural Sociology.

Agricultural Business and Economics

Agricultural Business and Economics students are taught the concepts and methods for solving economic problems of agricultural and related businesses. Knowledge of economic concepts contributes to effective management and decision making not only in agribusiness but in every day life.

The Agricultural Business and Economics (agribusiness) curriculum is administered by the Department of Agricultural Economics and Rural Sociology at Auburn University. Agricultural Economics is a social science dealing with agricultural production which includes agricultural input supply, processing, and distribution of agricultural products, as well as the ultimate consumption of these products. The use and allocation of our scarce natural resources are also concerns of the Department. The curriculum is designed to train students for employment in business, agriculture, and for careers in a variety of governmental agencies serving both agriculture and the American consumer. The business principles learned also help in operation of one's own farm or other business.

Employment opportunities are increasing for graduates with the combined business and agricultural training offered in the agricultural business and economics curriculum. There is already a shortage of college graduates with such training. Increasing emphasis on social and economic problems by business and government agencies is expanding the demand for agribusiness graduates in sales, public relations, services, management, farm organization, resource development, teaching, and research. Most land-grant universities list agribusiness job opportunities as one of their areas of strongest demand, and starting salaries are highly competitive.

Recent graduates are self-employed as farmers or employed by private business firms in positions such as sales managers in poultry and livestock processing firms, sales representatives for agricultural chemical firms, public relations with poultry associations, management trainees for agricultural cooperatives, loan officers for commercial banks and the farm credit system, and research analysts with agribusiness firms. Graduates going into public service have accepted employment with agencies such as the Farmers Home Administration, Statistical Reporting Service, Soil Conservation Service, Cooperative Extension Service, and the Federal Reserve System. Largely because of the economics, business, and statistics courses taken, administrators of these agencies are increasingly interested in hiring agricultural business and economics graduates. Some graduates continue academic study for advanced degrees. Surveys of B.S. graduates reveal that 80 percent of those responding were in careers relating to agriculture and agribusiness.

Course of Study

The curriculum is administered through a faculty advisory system so that individual student programs of study can be developed. During the freshman and sophomore years, emphasis is placed on science, liberal arts, and general agricultural courses. Upper-classmen are offered courses in broad areas of agricultural production, farm management, business, marketing, resource economics, and policy. Flexibility in selection of elective courses permits students to emphasize training in areas of special interest and to prepare for specific vocational occupations. The curriculum leads to a degree of Bachelor of Science in Agricultural Business and Economics.

Faculty and Facilities

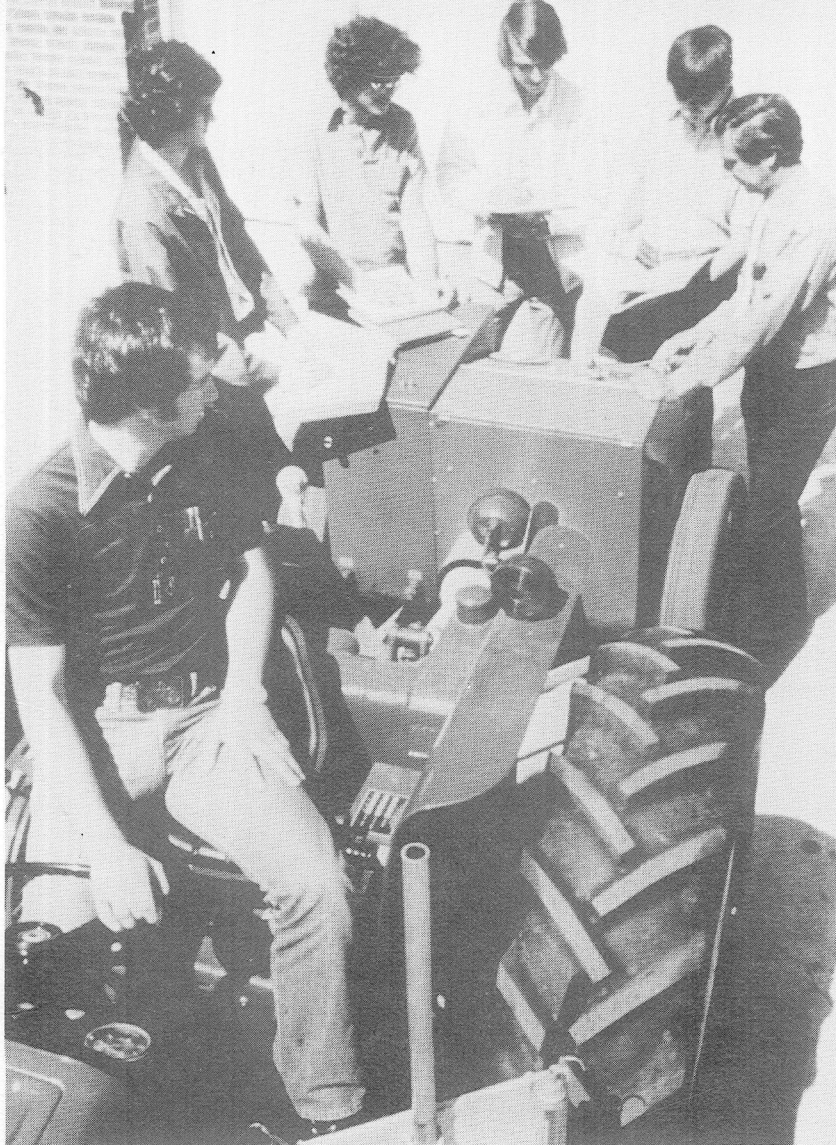
The faculty in the Department of Agricultural Economics and Rural Sociology represents numerous specialty areas. Such diversity insures student exposure to a variety of perspectives regarding agricultural problems. The department has a research reference room and ready access to remote computer facilities for teaching and research.

Field trips to business firms, farms, and other agribusiness enterprises are a regular part of student training. In addition, students may elect to work directly with agribusiness firms or agencies through co-op and intern programs while continuing their course of study.

A limited number of undergraduate students may be employed on an hourly basis to work on research projects in the Department.

Subjects Studied

- Principles of Agricultural Economics
- Agricultural Marketing
- Credit, Finance, and Farm Record Analysis and Income Taxes
- Agricultural Price Analysis
- Land and Water Economics
- Agricultural Business Management
- Farm Management and Agricultural Production
- Rural Sociology
- Agricultural Policies and Programs
- Agricultural Law
- Computer Science
- Mathematics and Statistics



Ag engineering students can take power and machinery courses which involve research design, development, and service of farm tractors, machinery, and equipment.

Agricultural Engineering

The Department of Agricultural Engineering offers the Bachelor of Science degree in Agricultural Engineering and Forest Engineering. The latter is offered cooperatively with the Department of Forestry.

Agricultural Engineering is the branch of the engineering profession that serves the world's largest industry-agriculture. Agricultural engineers deal with engineering problems associated with the production, processing, and handling of food and fiber.

How Agricultural Engineering Differs

Nearly every engineering problem encountered is associated in some way with biological systems. Agricultural engineers are unique in that they receive fundamental training in the biological sciences, and therefore are specially prepared to help solve the complex engineering problems in agriculture.

Future for Agricultural Engineers

The requirements for food and agricultural raw materials in a rapidly expanding population provide a growing number of opportunities for agricultural engineers. The demand continues to exceed the supply of agricultural engineers.

Agricultural Engineering Curriculum

Agricultural engineering includes engineering sciences, engineering design, and agricultural sciences. Also involved are courses in physics, chemistry, mathematics, English, history, and the social sciences. These engineers also complete special agricultural-engineering courses in various areas of specialization. Agricultural engineering is a rigorous engineering curriculum leading to a career in professional engineering. The curriculum is accredited by the Accrediting Board for Engineering and Technology.

Specialities in Agricultural Engineering

The training an agricultural engineer receives, provides opportunities to concentrate on a number of special interest areas. The agricultural engineer can specialize in the following areas.

POWER and MACHINERY involves the design, development and sale of agricultural power units, machines, and equipment. Application of engineering principles results in modern equipment for agricultural production. Agricultural engineers with imagination are needed to adapt new energy sources and materials to the refinement and improvement of tillage, planting, cultivating, harvesting, and handling equipment. Much work is yet to be done in machinery automation and the application of micro-computer technology to agricultural processes.

SOIL and WATER includes irrigation, drainage, erosion control, and land and water management practices to conserve and utilize our vital soil and water resources. As the world's population increases, demand for food and fiber will require that larger arid areas of the world be irrigated. The engineering involved in shaping field surfaces, terracing, canal design, and dam construction is a major factor in modern economic crop production. Increasing demands on existing water supplies and reduced stream pollution will require sound water conservation engineering practices.

ELECTRIC POWER and PROCESSING includes the application and use of electrical energy for moving, grading, sizing, and mixing food and feed crops. Present farming requires extensive use of electronics and materials-handling equipment. Growing opportunities exist for innovative thinking to improve the human and animal environment for agricultural production through automatic control of light, temperature, and humidity and the purification of air and water.

FARM STRUCTURES and ENVIRONMENT includes research, design, sale, and fabrication of structures for use by the agricultural industry. It also involves equipment storage buildings, processing centers and environmentally controlled units for maximum plant and animal production and storage. These engineers design buildings complete with materials handling equipment for processing the raw material, removing and utilizing waste material, and moving the marketable product.



Students in agronomy and soils learn about weed growth and control (left). Members of the Soil Judging Team, many-time national winners, examine soil types.

Agronomy and Soils

Agronomy and soils deals with the study and application of crop and soil sciences. Field crops and pastures are the main source of food and fiber for humans and feed for livestock, and they also provide raw materials for many industries. Agronomy deals with the study of seeding, cultivating, harvesting, managing, and improving the various crops. Soil science involves study of the chemical, physical, and biological properties of the soils and how to modify these properties for maximum crop production. With the steady increase of the earth's population and the accompanying worldwide demand for more food and fiber, crop and soil sciences are more important than ever before.

The increase in leisure time in this country has resulted in demands for more and better outdoor recreation areas where there is a need for turfgrass.

Agronomy and soils majors in the agricultural science curriculum have two options—crops and soils, and turf management.

For students with a keen interest in biology, chemistry, physics, or earth sciences, agronomy and soils offers a great opportunity to pursue these inclinations and abilities. Students in agronomy and soils include men and women from both urban and rural high schools. Four years of study in this curriculum lead to a bachelor of science degree. For those interested in additional study, both the M.S. and Ph.D. degrees, with majors in either crop science, soil science, or turf management, are offered.

The program of study for a B.S. degree includes courses in science, technology, and the humanities. The basic sciences of biology, chemistry, mathematics, and physics make up the central core and serve as a foundation for a study of the technical courses. There are courses in crops designed

to give a student a thorough knowledge of the principles involved in the economic production of grain, forage, fiber, and oil crops. Courses dealing with turf, herbicides, and genetics and plant breeding are also available. There are courses in soils that give special attention to the principles of soil formation and classification; others stress soil fertility and management, including soil conservation and the use of fertilizers.

The Agronomy and Soils Department is located in a modern building with well-equipped classrooms and teaching laboratories, a computerized soil testing laboratory, and many research laboratories in which students majoring in agronomy and soils frequently secure part-time jobs. There are greenhouses and growth chambers for various phases of work in crop and soil sciences. Equipment is available for X-ray diffraction and fluorescent analyses, radioactive assay, respiration studies, and cytological work. Special studies on root growth are conducted in a well-equipped rhizotron, the first to be built in the United States.

Young men and women with B.S. degrees in agronomy and soils may obtain positions with such agricultural industries as those dealing with fertilizers, pesticides, and seed. They may work in selling, consulting, and managing. There are many opportunities for employment with such agencies as the Soil Conservation Service and the cooperative extension services. Many graduates return to the farm and others become involved in such activities as land use planning or golf course management. Those with advanced degrees have further opportunities for employment in research or college teaching. Salaries are in line with positions in other fields that require commensurate training. The demand for trained people to fill positions has been much greater than the supply.

Animal and Dairy Sciences

Animal and Dairy Sciences includes all the technical, professional, and business aspects of producing, processing, and distributing meat and dairy products and animal fiber.

Specialized training needed to fill positions in this broad industry is offered by Auburn's Department of Animal and Dairy Sciences. A *pre-veterinary option* is also

offered that provides an opportunity to meet the pre-veterinary requirements and to obtain additional courses in animal and dairy sciences. In addition to the undergraduate major, both M.S. and doctoral programs are available in specialized areas of animal biochemistry, animal breeding, animal nutrition, meats and dairy products, and physiology of reproduction.



Career Opportunities

Varied and rewarding careers are open for qualified animal and dairy science graduates in this expanding field.

Animal and dairy production training prepares students to work as farm operators, breed association field representatives, livestock consultants, sales managers, and livestock dealers.

MEATS offer many opportunities, including livestock buying, meat plant management, grading and inspection, quality control, and wholesale and retail meat sales.

DAIRY PRODUCTS training qualifies graduates to work in processing plant management, quality control, sales and promotion.

ALLIED INDUSTRIES, such as banks and other credit agencies, drug, pharmaceutical and chemical companies, feed companies, and agricultural supply companies, employ many college graduates with a background in animal and dairy science.

COMMUNICATIONS work with livestock publications, breed magazines, farm magazines, newspapers, and radio and TV stations attracts many animal and dairy science majors.

RESEARCH AND TEACHING opportunities are many and varied, particularly to majors with advanced degrees. Colleges and universities, foundations, industry, governmental agencies, and cooperative extension services would all be possible employers.

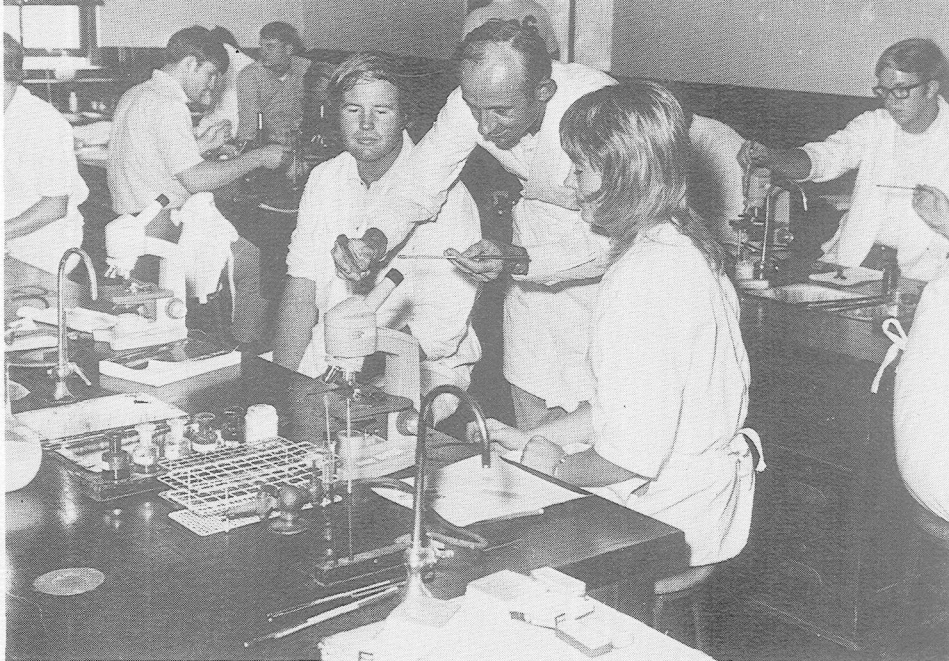
Field of Study

Major courses provide an opportunity for the student to become knowledgeable in all areas of animal and dairy sciences. Subject matter areas include beef production, dairy cattle production, swine production, horse production, livestock judging, carcass judging and grading, animal biochemistry and nutrition, animal breeding and genetics, animal reproduction, meat and dairy product technology, feeds and feeding, and animal physiology.

Supporting work in agronomy and soils, zoology, entomology, chemistry, microbiology, agricultural engineering, economics, mathematics, physics, English, journalism, speech, history, and government is offered by other departments of the University.

Laboratories emphasize "hands-on" experiences for students. The new intern program provides further practical experience with selected commercial farms, related agribusiness, and farm units at Auburn University. Through these programs, prospective graduates gain valuable experience and learn useful skills.

Beef production and dairy cattle production are parts of the subject matter areas in animal and dairy sciences.



Students examine life in the miniscule world of microbiology.

Botany, Plant Pathology, and Microbiology

Auburn's Department of Botany, Plant Pathology, and Microbiology offers curricula leading to the B.S., M.S., and Ph.D. degrees in many areas of plant science and microbiology. All forms of life ultimately depend for their existence on the activities of plant and microorganisms. In this age of expanding world population with an ever decreasing supply of natural resources, the understanding and efficient management of higher plants and microorganisms is even more important than it has been in the past.

Botany is probably the oldest of the sciences. It originated as a natural response to man's need to identify those species to be used as sources of food, fiber, and medicine. But many professional botanists feel that their science has an ill-conceived and somewhat dull image in the minds of a large section of the public. Unfortunately, the image of the botanist as a person whose sole activity consists of collecting, identifying, and classifying plants has tended to persist. Taxonomy, as this aspect of botany is called, is indeed an important cornerstone of the subject, but in reality it occupies only a minor part of the time of a student enrolled in a modern botany curriculum. If a botanist who graduated fifty years ago were to wander through a present day botany department he would have great difficulty in recognizing much of what he saw as pertaining to the discipline he had studied.

Auburn's botany curriculum includes, among other topics, studies of: cell structure (cytology); tissue structure and organization (anatomy and morphology); the growth, functioning, and development of plants (plant physiology and biochemistry); reproduction and inheritance (genetics); and the

relationship of plants to their environment and to other species (ecology). Because of the importance to the world's economy of healthy plants showing high crop yields, courses are also offered that consider the nature, causative agents, and control of plant diseases (plant pathology) and the problem of weeds and their control (weed science).

Botany courses, primarily the areas of plant pathology, microbiology, and weed science, are an integral part of the new multidisciplinary curriculum in plant protection. This relatively new branch of applied biological science offers a fascinating and challenging program to students, and one which is currently available at only a very few universities.

Career opportunities for trained botanists and plant pathologists exist in a wide range of areas. In industry, they are employed by agricultural chemical companies, food processing companies, seed producing and marketing companies, etc. Federal and state agricultural and scientific agencies, agricultural experiment stations, and state and national park services all employ botanists and plant pathologists. Some botanists choose a career in teaching at the high school, junior college, or university level. As national needs and interests change with time new areas for the employment of botanists continue to open; currently, graduates in botany from Auburn are employed in pollution monitoring and control, and as environmental quality consultants. As with all other sciences, obtaining the more senior jobs with greater responsibilities usually requires the student to continue his or her education to the M.S. or Ph.D. level.

Unlike botany, microbiology is a more recent science. It deals specifically with the nature and activities of those organisms, such as bacteria, viruses, fungi, and algae, which are too small to be seen with the naked eye.

It is only in the past 100 years that the fundamental importance of microorganisms in man's affairs has come to be appreciated. Certain species are the causative agents of the majority of plant and animal diseases. Some microorganisms, are, however, essential symbionts for good health, and others are the principal agents of decay and are important in the recycling of nutrients through the ecosystem.

Like the student of botany or plant pathology, a major in microbiology studies both basic and applied aspects of the subject. Microbiology courses currently offered include: microbial taxonomy, microbial physiology and genetics, virology, mycology, immunology, clinical microbiology, and environmental microbiology.

Graduates in microbiology find employment in a wide range of professions. The medical profession employs microbiologists in research, medical technology, virology, and immunology. In the food, pharmaceutical, and fermentation industries they are employed as research workers and in quality control. Increasingly, microbiologists are finding their talents needed in those public service professions concerned with the maintenance of health and a quality environment.

In summary, the various curricula offered by the department of Botany, Plant Pathology, and Microbiology present interesting and challenging courses of study with the prospects following graduation for a worthwhile and responsible career in the service of mankind.

Fisheries and Allied Aquacultures



Hands-on experience offers fisheries and allied aquacultures students a unique learning experience.

Trained fishery biologists, aquatic ecologists, and aquaculturists can help provide additional sport fishing opportunities, the protection of our valuable aquatic resources, and the increased supplies of food fish that will be needed in the future. The Department of Fisheries and Allied Aquacultures excels in presenting a variety of classroom and laboratory experiences and research opportunities in the areas of sport fish management, aquatic ecology, and aquaculture. Training is offered leading to the B.S., M.S., and Ph.D. degrees. The first two years of the undergraduate curriculum are devoted to enhancement of basic skills in chemistry, mathematics, biology, physics, English, and history. A wide variety of fishery courses is available during the junior and senior years. Students with above average records are encouraged to participate in a special problems course where an opportunity is given to develop and implement a research project. Advanced degree students can specialize in such areas as:

- sport fish management
- aquaculture
- limnology, water quality, and plankton dynamics
- fish parasites and diseases
- fish nutrition, fish processing and technology
- ichthyology

Both undergraduate and graduate students find ample opportunity to contribute to the Department's varied activities, and in doing so obtain valuable experience in a variety of specialties.

The Department's warm water research station is recognized as being one of the world's best. Approximately 700 experimental units are available, ranging in size from small tanks to a 26-acre pond. The research facilities are extensively used as a "laboratory" for teaching. Having first-hand experience handling fish and observing their reproduction, growth, and mortality are opportunities few institutions can offer.

Because fish are primarily a public resource, management of fisheries is mostly a state or federal function. However, private fish farms, especially in the Southeast, are becoming aware of the need for trained managers. For many positions, a M.S. degree is an increasingly frequent requirement. Avenues of employment are: State fish and game departments, such as the Alabama Department of Conservation and Natural Resources; federal agencies, such as the U.S. Fish and Wildlife Service; fishery research

laboratories, private fish hatcheries; fish and bait farms; handlers and producers of tropical fish; and international organizations; such as the Food and Agricultural Organization to the United Nations.

The profession offers many intangible benefits for those who enjoy working with renewable resources. For example, fishery biologists manage aquatic ecosystems to provide quality fishing year after year. Fish culturists operate hatcheries, or intensively raise fish in ponds as a cash crop. In either case, the biologist spends much time throughout the year outdoors. However, simply liking to hunt and fish in itself is not enough. Management and research activities demand considerable skill in the basic as well as the applied sciences. In fisheries, as in all biological sciences, mathematics, computer programming, and statistical analysis are being used in problem-solving. Also, the ability to communicate effectively is essential. High school students should acquire a good academic background that should include courses in biology, mathematics, chemistry, and physics. Languages and humanities are as important to fisheries as to other sciences.



The Food Science curriculum prepares students for a career in one of the many facets of food technology, including research. Here work is being done with a reconstituted steak product, developed here at Auburn.

Food Science

The American consumer has been brought up on a wide variety of wholesome, tasty, convenient, and abundant foods. Americans enjoy the world's highest living standard, and only a small percentage of the nation's work force is required to provide the food products that help make life pleasant. All of this is possible because of the productivity of the American farmer and the ingenuity and efficiency of the nation's food industry.

With a rapidly expanding population throughout the world, providing enough food is the major global problem. The U.S. not only has responsibility of providing food and fiber for American consumers, but is the world's major exporter of food for hungry nations across the world. The vast food industry complex in the U.S. is the most efficient in the world, but food demands at home and abroad dictate that we further expand and increase food processing efficiency.

To help provide technologists and scientists needed by the food industry, Auburn University has a Food Science Curriculum. This course of study in the School of Agriculture is administered by a committee from the departments of Animal and Dairy Sciences, Horticulture, and Agricultural Engineering. It provides coursework in the following areas:

- basic sciences
- food sciences and technology
- other applied sciences
- social sciences
- electives

As students progress through their training they first gain a knowledge of the basic sciences - chemistry, physics, microbiology, and mathematics. This basic knowledge is then applied to the manufacturing, processing, preserving, and distributing of foods. Through their choice of elective courses, the students may gain additional competence in

the areas of business administration, science and technology, or public health. This training will prepare the graduate for a career in one of the many facets of food technology such as research, development, processing, packaging, quality control, marketing, governmental regulation, and foreign trade.

Your Future in Food Science

In Alabama there are more than 300 food processing establishments and, in the U.S., more than 40,000. Graduates in these programs, thus, have a bright future, as consumers here and abroad demand increasing amounts and variety in convenient, high quality, economical foods.

Starting salaries in the food science and technology field are good—comparable to those in other scientific fields. Opportunities for advancement are unlimited for the well-trained food science graduate.

Forestry



Measuring tree growth—one of the many skills acquired in the forestry curriculum.

The Department of Forestry offers the Bachelor of Science degree in three curricula: (1) FOREST MANAGEMENT; (2) FOREST PRODUCTS; and (3) FOREST ENGINEERING. While all three curricula have similarities, they are also noticeably different. The forest engineering degree is offered cooperatively with the Department of Agricultural Engineering and is described separately in this brochure.

Forest management graduates are prepared primarily for positions involving the management and administration of forest land and associated resources. Forest management responsibilities frequently focus on the timber resource, but other natural resources are also involved. As land managers, foresters may be employed by industrial firms, federal, state or local government, consulting firms, and individual landowners of all categories. The field of forestry, however, involves more than land management. Persons with forest management degrees are employed to: buy and sell timber, perform public relations and promotional services, appraise land and timber, manage recreation areas, manage forest nurseries, do research, teach, and do extension work. Furthermore, since the field is broad, it touches many other professional areas and many foresters have been successful in developing careers in disciplines such as remote sensing, banking, law, and computer science. Auburn's forest management curriculum is fully accredited by the Society of American Foresters.

While forest managers are concerned with managing land, timber, and people to produce a variety of forest-derived goods and services, forest products graduates are concerned with processing logs into a variety of finished products useful to man. Logs may be converted into posts, poles, or piling, sawn into lumber, chipped for particle board or wood pulp, turned into veneer for plywood, or subjected to processes which yield one or more chemicals. These various products, in turn, may be used in buildings or other structures, furniture, paper, or a host of other products. Forest Products graduates are prepared primarily to design and control the processes used to produce wood products and also to manage the manufacturing plants in which these processes take place. Since manufacturing is usually a function of private enterprise, most forest products graduates are employed by industrial firms. However, many forest products graduates are engaged in research in government or university laboratories, in promotional activities with trade organizations, in consulting, and in university-level teaching. The field is broad and career opportunities are abundant.

The Department also has an undergraduate honors program which is available to forest management and forest engineering majors with high academic records. Students in the honors program pursue highly individualized plans of study which permit them to explore specialized areas of interest, prepare for graduate school, or obtain a

more diverse education.

In addition to undergraduate programs, the Department of Forestry offers graduate work leading to the Master of Forestry, Master of Science, and Doctor of Philosophy degrees. Opportunities for graduate study are available in most aspects of forest management, forest products, and forest engineering.

Facilities on campus include the main forestry administration building, M. White Smith Hall, which is equipped with excellent classrooms and laboratories, and the Forest Products Laboratory which houses the Department's forest products programs and is a modern education and research facility. An 80-acre woodlot is within walking distance of the forestry building and is available for on-campus laboratory instruction. The Tuskegee National Forest as well as university and forest industry properties within a half-hour's drive of campus are also available for education and research. An extensive, up-to-date collection of literature on forestry and supporting subjects is housed in the University's Ralph Brown Draughon Library.

The Department also administers the Solon Dixon Forestry Education Center, located in South Alabama near Andalusia. This Center is comprised of several thousand acres of forest land as well as classroom and dormitory facilities to accommodate groups ranging up to 100 for overnight use and 200 for day use. Forest management and forest engineering majors attend a 10-week forestry Summer Camp at the Dixon Forestry Education Center following either their freshman or sophomore year. This "in-woods" experience is an integral component of these curricula and adds a positive dimension to Auburn's programs which is not available at many other universities.

The Department of Forestry faculty consists of 21 scientific and instructional staff, all of whom hold the doctoral degree. Ten individuals with master's degrees provide additional professional support.

A challenging and rewarding career - one tailored to your temperament and greatest ambition - awaits you in the field of horticulture. Horticulture combines the arts and technical sciences into a pleasing blend. Graduates trained in horticulture enjoy a feeling of personal well being, along with good earning power, while working in a dynamic field that is necessary for the enrichment of our lives with nutritious, flavorful foods and the beauty and utility of decorative plants.

Training Horticulture Students

There are two curriculums in the Horticulture Department. One is the Horticulture of fruits and vegetables, and the other is Landscape and Ornamental Horticulture. Students in both curriculums take a basic core of courses in the communication arts, physical and life sciences, and humanities. In addition, students take courses in landscape gardening, entomology, plant physiology, soil sciences, and plant pathology. Opportunity for practical experience and training is provided by the department's internship program and by the university's co-op program.

Horticulture of Fruits and Vegetables

This curriculum trains students for work in production, marketing, and utilization of fruits and vegetable crops. These students take courses in orchard management, plant propagation, genetics, vegetable crops, production of fruit and nut crops, crop storage, packaging and marketing, farm management, agricultural engineering, soil and water technology, and weed science.

Landscape and Ornamental Horticulture

A blending of the arts and sciences, this curriculum is one of the life sciences, but is concerned with the art of using plants for enrichment and personal well being rather than for food, fiber, or shelter. Ornamental horticulture students select one of the following options: florist crop production, flower shop management, nursery crop production, or landscape horticulture.

IN FLORIST CROP PRODUCTION and FLOWER SHOP MANAGEMENT students study flower arranging, vegetable crops, fundamentals of florist crop production, flower shop management, and other management and salesmanship courses. Emphasis in florist crop production is in the production, marketing, and management of floricultural crops; while emphasis in retail flower shop management is on retail flower shop operations.

NURSERY CROP PRODUCTION students study nursery crop production, orchard management, turf management, care and maintenance of ornamental plants, nursery management, plant propagation and identification of trees, evergreen, and

Horticulture



Those in ornamental horticulture may have an option of working in florist crop production, flower shop management, nursery crop production, or landscape horticulture (top). General horticulture trains students for work in production, marketing, and utilization of fruits and vegetable crops.

deciduous shrubs and vines. Emphasis in this option is on production and marketing of nursery plants.

LANDSCAPE majors study principles of landscape design, intermediate landscape design, advance landscape design, graphics, care and maintenance of ornamental plants and identification of trees, evergreen, and deciduous shrubs and vines. The emphasis of this option is to train students in the principles of landscape design.

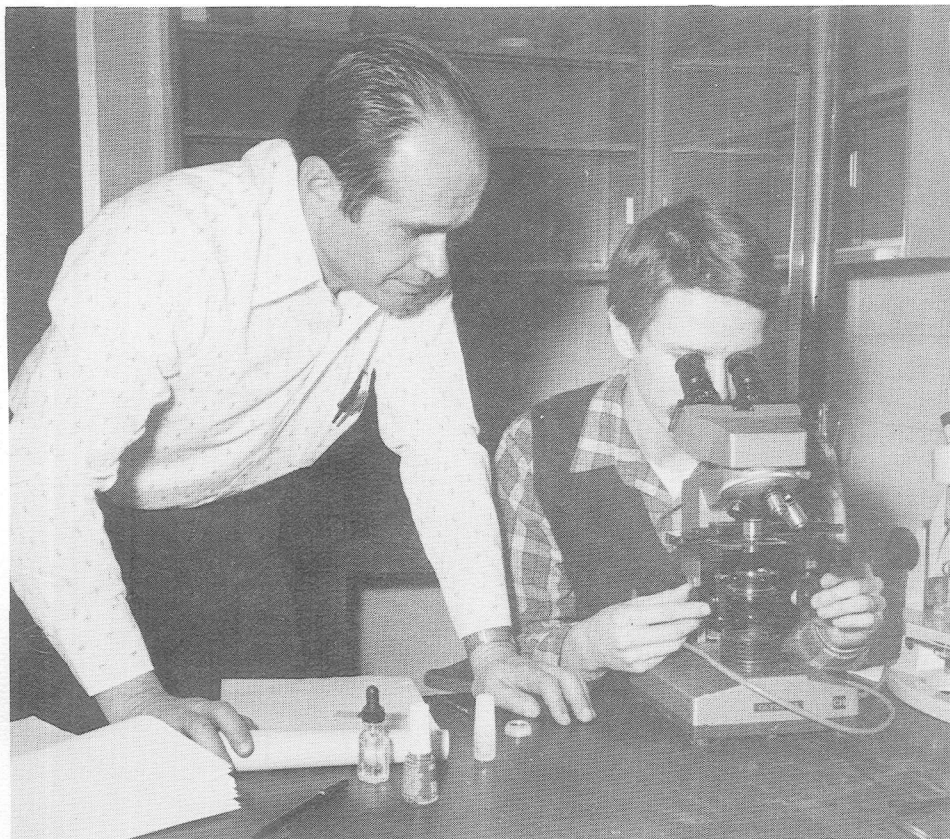
Employment Opportunities

Positions are available in direct production of horticultural crops as owner or manager; sales, service, and consulting the support production of horticultural crops;

sales of horticultural crops at wholesale and retail levels; landscape designing, controlling, and maintenance of homes, and businesses.

Positions are also available in management and consulting, regarding public and private recreational areas; teaching horticulture in high schools, trade schools, and colleges; carrying out research at state and federal experiment stations and for private companies, and in counseling farmers and nurserymen as county agents and extension specialists.

Involvement in regulatory agencies governing foreign plant introductions, plant and harvested crop inspections, and use of pesticides is also available to horticulture graduates.



Plant Protection Curriculum

Diseases, insects, vertebrate and invertebrate pests, and weeds cause annual losses of billions of dollars each year in agricultural production in this country. Not reflected in these annual losses are those incurred in recreational areas, parks, and home lawns and gardens. These losses would be considerably greater were it not for the closely coordinated programs in plant protection which utilize biological, cultural or cropping, and chemical integrated management or control of these pests.

In recent years major reliance for pest control has been with chemicals including bactericides, fungicides, herbicides, insecticides, nematocides, rodenticides, etc. Since improper and excessive use of chemicals can contribute to resistant strains of pest, damage to the environment, the replacement of one pest with another, and human controversy, scientists have been stimulated to research other means of pest control such as: biological and cultural control, mechanical means of control, and integrated pest management.

This has led to the development of an interdepartmental curriculum in plant protection. It is designed to teach students how to control pests by utilizing cultural, biological, physical, and chemical means in integrated programs that will keep pest populations below crop damaging levels. The control of crop pests requires a broad

knowledge of the ecology of the agricosystem and management of such a system. Pest control measures should be such that control of one does not increase the problems with another. A combination of measures should be utilized to suppress the pest while producing the least damage to natural enemies and other components of the ecosystem. Protection of crops requires a blend of disciplines with entomologists, plant pathologists, and weed scientists, integrating their sciences with those of the agronomists, geneticists, chemists, horticulturists, engineers, and economists. This curriculum is interdepartmental between the departments of Agronomy and Soils, Botany and Microbiology, and Zoology-Entomology.

Recent emphasis by the public and government on environmentally safe pest control has created employment opportunities for individuals well trained in plant protection. Specific employment opportunities include positions with the Environmental Protection Agency, sales and research and management positions with agricultural chemical industries and other agribusiness, positions as quarantine and pest control inspectors with USDA Animal and Plant Health Inspection Service and state regulatory agencies, positions as research scientists, extension agents, and specialists with state and federal programs, and careers as private consultants in plant pest management and control.

Plant pests and diseases are examined in laboratory settings (top left). The plant protection curriculum is designed to teach students how to control pests by utilizing cultural, biological, physical, and chemical means (bottom right).



Poultry Science

Undergraduate studies in Poultry Science are designed to equip bright, enthusiastic students for future leadership in a dynamic food production industry. The poultry industry is highly specialized. Its leaders must be well qualified in basic and technical areas, as well as in communication and business subjects. In the poultry science curriculum, an attempt is made to give the student a wide base in the sciences and humanities as the foundation on which technical knowledge can be added. With the broad areas of available employment, no attempt is made at the undergraduate level to make specialists of the students.

The Poultry Science Department has staff competence and course offerings in the areas of production and hatching management, processing, genetics, nutrition, physiology, and diseases of poultry. In formal course work, the student is acquainted with basic concepts of avian biology and the interrelationship of the bird to its environment. Students with inquisitive minds are encouraged to select, as juniors or seniors, a poultry problem course, where an opportunity is given for them to design and complete a research project of their choice. This enables them to become familiar with library techniques, report writing, and interpretation. Business training in this curriculum is offered in cooperation with the Department of Agricultural Economics and Rural Sociology and the School of Business.

The departmental research facilities are used as an important part of teaching. Where possible, students are employed to assist in research where they may have close contact with the professional staff and apply knowledge obtained in formal study. This enables the student to obtain some competence in specialized areas. Upper level undergraduates are encouraged and assisted by faculty and industry to obtain summer employment with one of the major poultry companies, or enroll in our intern program to become familiar with commercial poultry production.

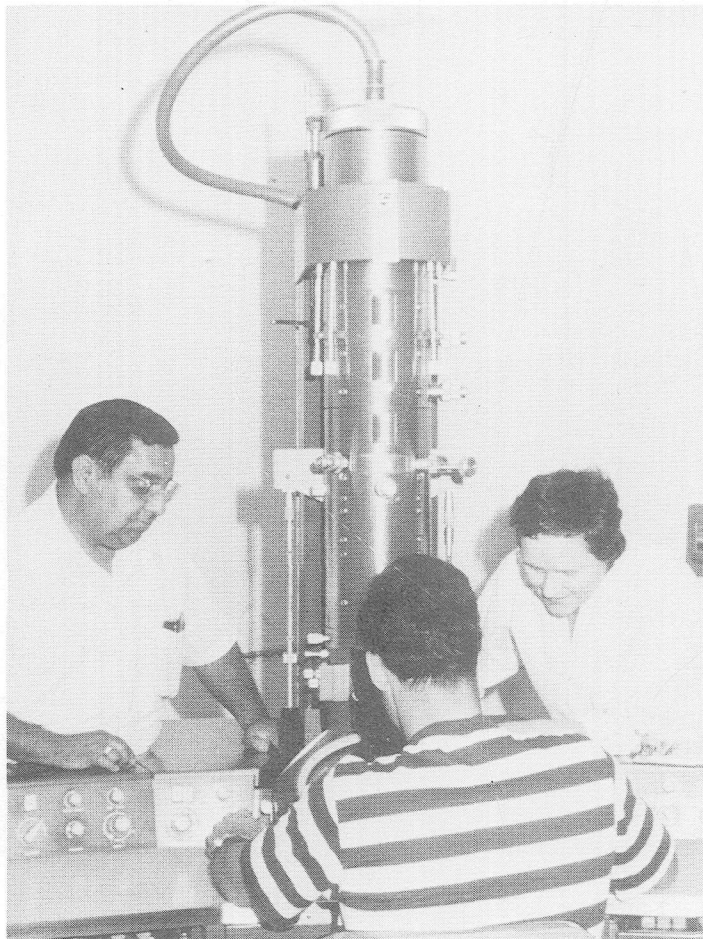
The poultry industry has made enormous growth in the past 25 years and is currently the leader in Alabama agriculture. Coupled with this growth has been a drastic change in complexity - from the farm flock, where the housewife was the caretaker—to large environmentally controlled units where engineers and poultry graduates work as a team with business managers. This growth and complexity has created need for more technical and managerial people than the universities have supplied.



Poultry science majors take courses in the areas of production and hatching management, processing, genetics, nutrition, physiology, and diseases of poultry.

The complexity and business-like nature of the poultry industry has demanded a continuous search for personnel in areas such as sales, service, purchasing, business management, disease control, feed manufacturing, personnel management, hatchery manage-

ment, and farm management. The Poultry Science Department is in a position to be of vital service in supplying bright young men and women for industry at the B.S. and advanced levels of training.



A poultry science student is shown examining cell structure using the department's electron microscope.

Zoology-Entomology

The Department of Zoology-Entomology is the largest and perhaps the most diverse department on the Auburn campus. Education opportunities are offered, which will lead to the B.S. degree in the general area of zoology, as well as in the more specialized areas of entomology, marine biology, and wildlife. M.S. and Ph.D. degrees are offered in entomology and wildlife as well as in the basic zoological sciences.

ZOOLOGY

This curriculum includes all of the animal-oriented basic biological sciences. Opportunities exist for the study of both laboratory-oriented (anatomy, embryology, genetics, and physiology) and field-oriented zoological sciences (ecology, systematics, and natural history). Advanced training in specialized areas of most laboratory and field-related disciplines is open to qualified individuals.

Depending upon the specific training of the individual, employment opportunities include:

- (1) Research and/or teaching positions with high schools, colleges, universities, and museums.
- (2) Research, administrative, and consulting positions with various state and federal agencies and with private industry.
- (3) Public relations and sales positions in private industry.
- (4) Land-use projects.

Additionally, zoology offers a basic science curriculum for those individuals interested in medicine, dentistry, or veterinary sciences.

ENTOMOLOGY

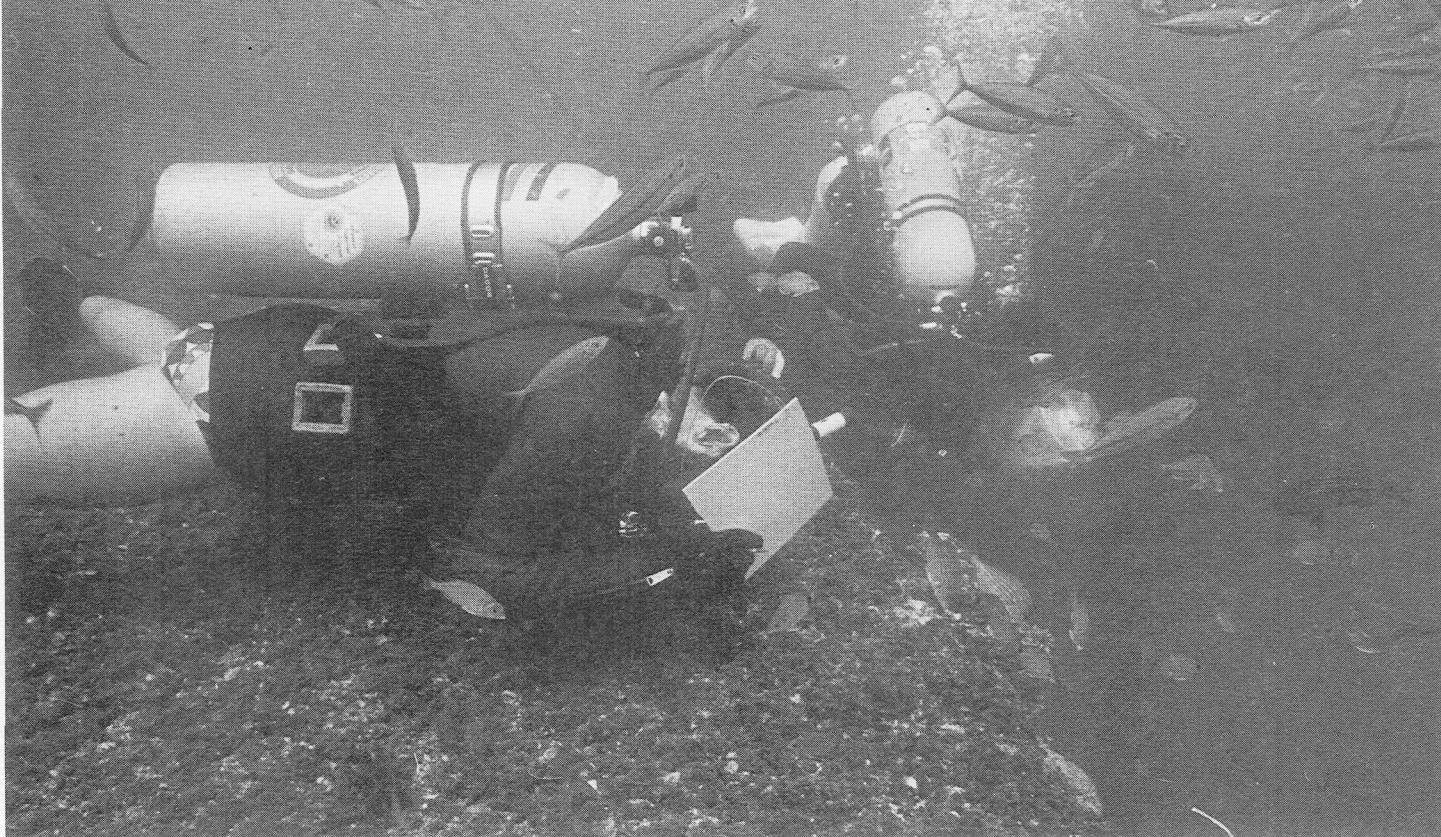
Insects are major competitors with man for possession of the earth. There are more than 700,000 different kinds of insects, and although many are beneficial, others destroy crops, harm animals, spread diseases, and cause other types of damage and annoyance. The Department offers opportunities for study of various aspects of entomology: identification (taxonomy), life history, physiology and control by chemical, cultural, biological, and pest management methods.

Employment opportunities for individuals trained in entomology include:

- (1) State agricultural experiment stations, the federal government and private industry.
- (2) teaching, agricultural extension, and regulatory work.
- (3) chemical companies and pest control organizations for research and development, sales, public relations, and practical control work.
- (4) land-use projects where entomologists develop environmental impact assessments.

Entomology students have an opportunity to study bees.





Part of the marine biology curriculum requires courses at an approved marine station.

MARINE BIOLOGY

Training leading to the B.S. degree in marine biology is available. Students take basic and background courses at Auburn and spend at least one summer, and preferably two, taking courses at an approved marine station such as the Gulf Coast Research Laboratory at Ocean Springs, Mississippi or the Dauphin Island Sea Laboratory, Alabama. Marine biology is a fascinating but highly competitive area. Students should strive for high scholastic records and plan to do graduate work after earning the B.S. degree. Employment opportunities are enhanced by high levels of achievement in undergraduate and graduate studies.

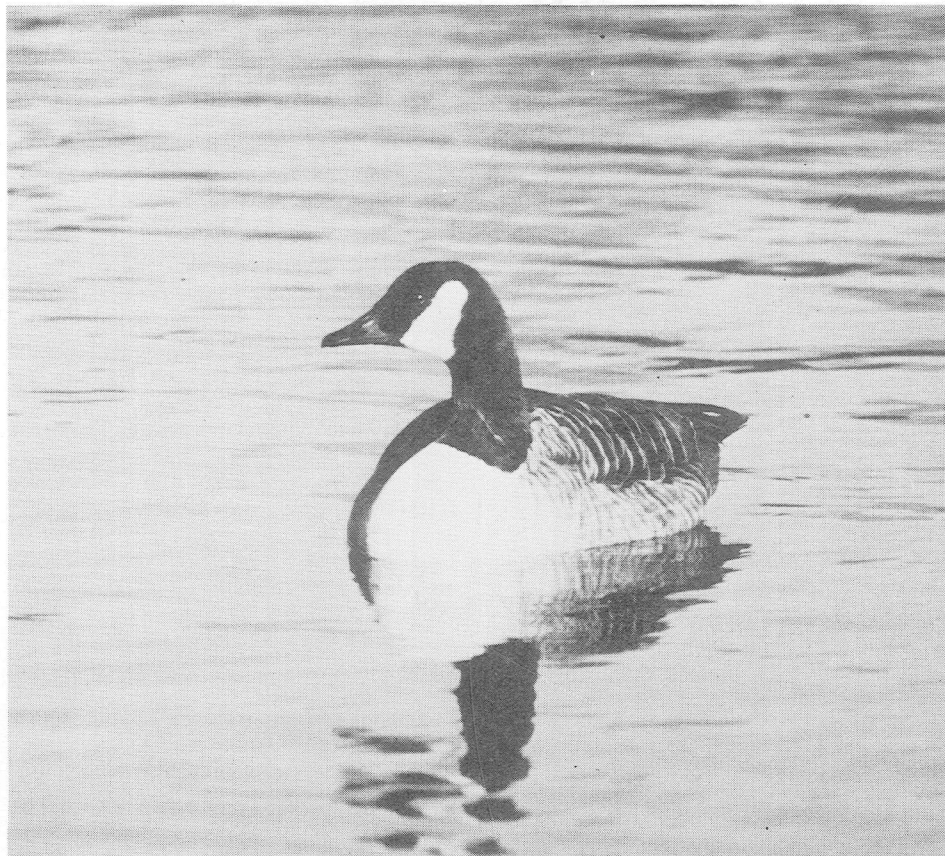
WILDLIFE

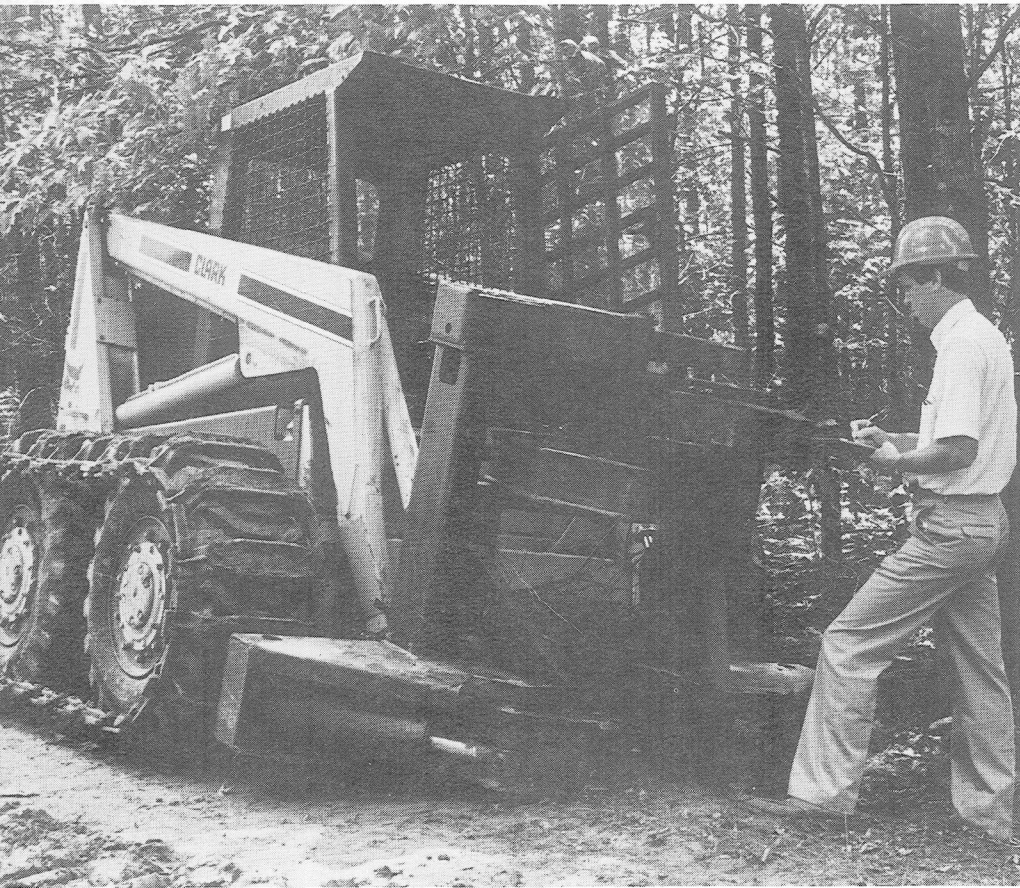
America's wildlife is enjoyed by millions each year. Wildlife species provide endless hours of recreation for people such as bird-watchers, hunters, campers, photographers and the like. These recreational activities also are important to local and national economies. Outstanding opportunities to study wildlife science are offered at Auburn University leading to a variety of careers. Employment opportunities occur with:

- (1) State research, management, and law enforcement programs,
- (2) many Federal agencies such as the U.S. Fish and Wildlife Service,
- (3) large estates and timber producing companies,
- (4) conservation organizations such as Ducks Unlimited,
- (5) universities.

Opportunities are greatly enhanced for those holding advanced degrees.

Outstanding opportunities to study wildlife sciences are offered, leading to a variety of careers.





Forest engineers are employed to design, develop, and evaluate forestry equipment.

Forest Engineering

The Bachelor of Science in Forest Engineering is jointly offered by the Department of Forestry and Department of Agricultural Engineering.

Forestry Engineering is a multidisciplinary science bringing together engineering and forestry principles for application to problems dealing with timber and land and the mechanical systems and processes for their effective utilization. Forest engineers are trained professionals capable of working in a diversity of areas ranging from solving operations problems of timber harvesting, handling and processing to conducting analyses of equipment and designing machines and mechanical systems for utilizing forest resources.

Commercial forests occupy two-thirds of Alabama's land area. The forest products industry is the largest manufacturing industry in the State, and depends on an adequate supply of raw materials which must come from efficient wood harvest and transport procedures and systems. These procedures and systems are continually updated through improved technology. Forest engineers help develop improved technology in such diverse areas as forest regeneration, design of machines and machine systems to harvest, transport, and handle timber pro-

ducts, planning forest road systems, soil and water conservation practices, and planning for forest recreation development.

Education

The Auburn forest engineering program, jointly administered by the Department of Forestry and Department of Agricultural Engineering, develops competence in both forestry and engineering. Students obtain a fundamental knowledge of engineering through mathematics, physics, chemistry, engineering sciences, and design. They also acquire a broad background in forestry from courses in forest biology and silviculture, forest mensuration, forest management and economics, and forest ecology. Studies in English, history, and other humanities are also included. In addition to theoretical training, practical experience is gained from hands-on laboratory courses taught during Forestry Summer Camp which comes after either the freshman or sophomore year.

Auburn's Forest Engineering - a professional program - is designed to meet engineering accreditation criteria through the Accrediting Board for Engineering Technology and forestry accreditation standards of the Society of American Foresters.

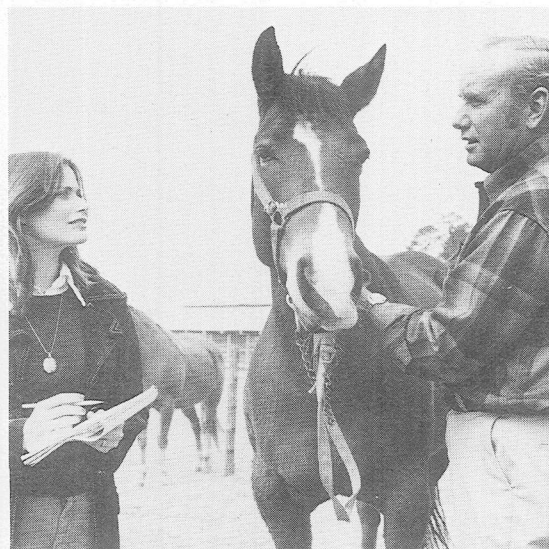
Facilities for the forest engineering program are provided by the Departments of Forestry and Agricultural Engineering. Both departments have office space, classrooms, laboratories, and shop and test equipment for use by both their teaching and research staffs. Reference rooms and computer facilities are convenient for students and faculty. A research farm and school forest are also available where students may observe new machines in operation and investigate new research techniques.

Employment

Forest engineers are employed to design, develop, and evaluate forestry equipment, to develop and analyze machine systems and operational procedures, to act in supervisory and management capacities, and to train personnel, develop programs, and analyze future mechanization needs of the forest products industry.

Forest engineers are also needed to supervise and manage mechanized harvest operations. Analysis, evaluation, and implementation of new machines and optimized operational procedures are needed by the forest products industry to efficiently carry out their operations and provide minimal disturbance to the environment.

Forest engineering in Federal and State forestry agencies conduct applied research, handle environmental matters, develop public education programs, and coordinate logging activities on government lands.



Agricultural journalism students prepare for a variety of jobs available in the ever-growing field of agriculture. Shown here are students (clockwise) learning paste-up, news gathering, and photography skills.

Agricultural Journalism

Agricultural journalism is designed for students who desire a diversified rather than a specialized program in either agriculture or communications and is offered as an option in the Agricultural Science curriculum. It offers maximum flexibility which will enable the student to obtain an education for specific individual needs with a rather broad background. Students with a degree in agricultural journalism will have opportunities for employment in land grant universities, U.S. Department of Agriculture and related agencies, farm magazines, sales in areas of agricultural industries, television, radio, and newspapers.

Students gain practical experience through the internship program sponsored by the School of Agriculture, Forestry, and Biological Sciences. This program covers one quarter and awards credit for this period.

A program closely associated with the agricultural journalism curriculum is Agricultural Communicators of Tomorrow (ACT). The national organization, Agricul-

tural Communicators in Education (ACE) serves as parent organization of ACT. The Auburn Chapter is affiliated with the American Association of ACT.

The purposes of this local organization area: (a) to stimulate interest in the profession of agricultural communications; (b) to promote the interchange of ideas among students and faculty members at colleges and universities that offer professional education in agricultural communications; and (c) to provide a means of contact among students, members of ACE and members of other professional agricultural communications organizations.

Membership is open to interested and otherwise qualified students without regard to race, sex, or handicap. It is composed of undergraduate and graduate students actively interested in the profession of agriculture, home economics and natural resources with emphasis on communications. Each member of the local chapter shall be a member of the national organization of ACT.

