Undergraduate Catalog 1998 - 1999

College of Agriculture and Natural Resources

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In 1862, Congress passed the Morrill Land Grant Act providing grants of federal land to each state. Funds from the sale of these lands were used in establishing a college teaching agriculture and related subjects in each state. Subsequent federal acts have enlarged the responsibilities of these colleges. Today they continue to serve agriculture and society in many ways through a variety of educational programs. The University of Connecticut is the land-grant university in Connecticut. The College of Agriculture and Natural Resources offers instruction at both undergraduate and graduate levels. Research and experimental work is carried on through the Storrs Agricultural Experiment Station. Educational and service programs are conducted throughout the State by the Cooperative Extension System. The College of Agriculture and Natural Resources is supported by both federal and state appropriations and contributions from the private sector.

The College maintains livestock, greenhouses, forested lands, gardens, orchards, and other related operations to supplement and enhance instruction, research, and service programs. The Northeastern Research Center for Wildlife Diseases, the Center for Environmental Health, the Water Resources Center, and the Food Marketing Policy Center are also integral parts of the College of Agriculture and Natural Resources.

The following departments offer undergraduate instruction in the College: Agricultural and Resource Economics, Animal Science, Natural Resources Management and Engineering, Nutritional Sciences, Pathobiology, and Plant Science. The Directory of Courses section of this Catalog describes the course offerings of these departments. Other courses are offered under the departmental listing Agriculture and Natural Resources.

The four-year curriculum leads to the Bachelor of Science degree.

Admission Requirements. See Admission to the University and New England Regional Student Program.

Scholarships. Over $100,000 in scholarships and awards are available to students in the College of Agriculture and Natural Resources. See the Scholarship section.

Faculty Advisors. Faculty advisors are assigned to students upon entry into the College of Agriculture and Natural Resources according to a student's major and area of special interest. Advisors assist students in the selection of appropriate courses and help them develop an individualized program of study for the Baccalaureate that will meet educational and career goals.

Bachelor's Degree

Requirements

Upon recommendation of the faculty the degree of Bachelor of Science is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned a total of 120 degree credits; (2) earned at least a 2.0 grade point average for the total number of calculable credits for which they have been registered; (3) earned at least a 2.0 grade average for all calculable Upper Division course work; (4) met all the requirements of the University of Connecticut and the College of Agriculture and Natural Resources.

Plan of Study
Students should work closely with their advisors to review requirements, recommended courses, and career goals. Each student should prepare a tentative plan of study, outlining all courses, with an academic advisor as early as possible, but in no case later than at the start of the junior year. A final plan of study, approved by the major advisor and the department head, must be filed with the Degree Auditor no later than the end of the fourth week of classes of the semester in which a student expects to graduate.

**General Education Requirements**

All students in the College of Agriculture and Natural Resources must meet the University-wide General Education Requirements (GER) as described in the Appendix of this Catalog. Students must select approved courses to meet requirements.

**36 Credit 200-Level Requirement for All Majors**

Students in all majors in the College of Agriculture and Natural Resources must successfully complete at least 36 credits of **200-level courses** in or relating to their major. Courses for this 36 credit group may be taken from specific major requirements (as listed below for some majors), or may be selected according to a student's individual educational and career goals. This group of courses must:

- 1. be numbered 200 or above
- 2. be approved by the student's advisor and department head
- 3. be taken at the University of Connecticut
- 4. be taken in two or more departments
- 5. include at least 15 credits from departments in the College of Agriculture and Natural Resources.
- 6. have a combined grade point average at least 2.0
- 7. not include more than 6 credits of independent study or internship
- 8. not be taken on Pass/Fail

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1 Transfer students should refer to the "Transfer Students" statement included in this section.

**Specific Course Requirements for Individual Majors**

Students must complete specific courses for individual majors as outlined below. Many courses may be used to meet more than one requirement.

**Undergraduate Majors**

Students in most majors have a great deal of latitude in the choice of courses and may emphasize a range of options to meet personal objectives. Students may prepare for career opportunities in such diverse activities as research, production, distribution, business and industry, public service, professional service, education, communications, product development, international development, environmental protection, and community resource development. Students interested in agricultural education should refer to the School of Education section of this Catalog. In addition to formal course work students may participate in independent study projects, field internships, cooperative education, and practicums. Students may also prepare for formal education beyond the Bachelor of Science degree.

Faculty are available to discuss with prospective students the requirements, recommended courses, and career opportunities of the various majors.

**Agriculture and Natural Resources**

This individualized major is designed for students who want broad training in agriculture and natural resources.
Students and their advisors work together to develop a personalized program of study according to a student's educational and career goals.

Agriculture and Natural Resources majors do not have to meet specific course requirements, but must complete the 36 credit, 200-level requirement as approved by advisor and department head.

**Agriculture and Natural Resources Courses**

**Agronomy**

Agronomy, in the Department of Plant Science, is the study of soils and land use and the production and management of turf and field crops. A thorough knowledge of the relationship between soils and the growth of plants is the basis for environmentally sound practices and efficient land use.

The turfgrass concentration in Agronomy is designed to provide students basic and applied knowledge in turfgrass science. Students completing the program will be able to apply their skills toward the management of lawns, golf courses, athletic and recreational fields, roadsides, sod farms, erosion control projects, and other areas where turfgrass is utilized. Formal courses in turfgrass science and related topics will be complemented with hands-on training in the establishment, management, and maintenance of turf for various purposes.

**Agronomy majors** must pass the following courses:

- Biology 110
- Chemistry 122 or 127
- Plant Science 213 or Biological Sciences 259
- Plant Science 250

In addition, agronomy majors must earn a minimum of 9 credits from courses in Biology\(^2\), Chemistry, Computer Science, Geology and Geophysics, Mathematics\(^3\), Physics, Statistics\(^4\).

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\(^{2}\) Students may not receive more than 12 credits for courses in Biology at the 100's level.

\(^{3}\) Math 101 cannot be used to meet this requirement.

\(^{4}\) See Statistics section for credit restrictions.

**Animal Science**

This major provides four options leading to the B.S. degree: Pre-professional (veterinary medicine or graduate training), Business/Service, Equine Sciences and Production Management. By choice of option and selection of electives, Animal Science majors may prepare for a wide variety of careers in animal agriculture including biotechnology, agribusiness, education, extension education, biomedical sciences, livestock management and production, animal product processing, government service, laboratory animal management and trade or breed associations. All options can lead to certification in the American Registry of Professional Animal Scientists. Students preparing for graduate training in animal science or admission to a school of veterinary medicine should follow the pre-professional option.

The curriculum includes courses in cooperating departments within the University. Technical knowledge and practical skills are emphasized through Cooperative Education and other employment opportunities either domestically or internationally.
Species emphasized in the animal science curriculum include beef and dairy cattle, horses, poultry, sheep, swine, and companion and laboratory animals. Individualized programs of study may be developed to emphasize pre-veterinary medicine, animal breeding and genetics, animal physiology, animal nutrition, animal behavior, laboratory animal management, animal product technology, pre-graduate training, teaching, or production and management of livestock, poultry and companion animals.

**Animal Science majors** must pass the following courses:

One course in Biology (minimum 3 credits)

Chemistry 122 or 127Q

Animal Science 120, 216, 217, 219, 295

Pathobiology 200

Three of the following:

Animal Science 222, 235, 253 or 253W, 254, 269, 273, 275

**Animal Science Courses**

A minor in Dairy Management is offered by the Department of Animal Science. For details please refer to the section entitled *Dairy Management Minor*.

**Environmental Science**

The major in Environmental Science is based in the physical and biological sciences, but also includes course work in selected areas of the social sciences. The major leads to a Bachelor of Science degree in Environmental Science, and may be adopted by students in either the College of Agriculture and Natural Resources or the College of Liberal Arts and Sciences. This curriculum offers a comprehensive approach to the study of environmental problems, including not only a rigorous scientific background, but also detailed analyses of the social and economic implications of environmental issues. The complexity and interdisciplinary nature of environmental science is reflected in the core requirements of the major. These courses, assembled from several different academic departments representing two colleges, provide both breadth and depth, preparing students for careers that deal with environmental issues, and for graduate study in environmental science and related fields.

Because of the structure of the curriculum, all **Environmental Science majors** follow similar programs during the first two years. Students should decide before the end of their fourth semester on the concentration they wish to pursue for the remainder of their undergraduate program. The diversity of courses required for this degree mandates that students plan their curriculum carefully to meet the minimum requirements of the school in which they are registered. An appropriate advisor will be assigned at the time a concentration is declared. Undecided students should consult with the Director of the Environmental Science program in either the College of Agriculture and Natural Resources or the College of Liberal Arts and Sciences.

The University of Connecticut offers other means for students to pursue environmental interests, which may be more appropriate than the Environmental Science major for some students. In the College of Agriculture and Natural Resources, the departments of Agricultural and Resource Economics, Natural Resource Management and Engineering, and Plant Science offer majors and options for students interested in the environment.

**Environmental Science majors** must pass the following core requirements:

**A. 100's Level Course Work (49-52 credits)**

BIOL 107, 108 or 110
CHEM 127, 128
ECON 112 or ARE 150
GEOL 102
MARN 170
MATH 115, 116 or 112, 113, 114
PHYS 131, 132 or 121, 122, 123
STAT 110 or 220

Environmental Sciences Courses

B. 200's Level Course Work (30-31 credits)

Environmental Policy and Law

Select one course from:
ARE 234(W) - Environmental and Resource Policy
NRME 240 - Environmental Law

Environmental Economics

ARE 235 - Environmental and Resource Economics

Atmospheric Science

NRME 241 - Meteorology

Terrestrial Systems

GEOL 251 - Earth Surface Processes

Hydrosphere Dynamics

Select one course from:
EEB 247 - Limnology
GEOL 234 - Introduction to Ground Water Hydrology
MARN 220Q - Environmental Reaction and Transport
MARN 270 - Descriptive Physical Oceanography
NRME 245 - Introduction to Water Resources

Ecological Interactions

EEB 244(W) - General Ecology

Human Impact
GEOG 236 - Human Modifications of Natural Environments

**Environmental Health**

ANSC 226 - Environmental Health

**Chemical and Microbial Reactions**

Select one of the following two-course options:

1. CHEM 243, 244 (Organic Chemistry)

2. CHEM 141 (Organic Chemistry) and MCB 229 (Fundamentals of Microbiology) or MCB 203 (Introduction to Biochemistry)

3. CHEM 141 (Organic Chemistry) and GEOL 245 (Introduction to Geochemistry)

In addition to these core requirements, all students majoring in *Environmental Science* must also fulfill the requirements of a concentration in a discipline associated with the program before graduation. Approved concentrations are listed below: all consist of 4 or 5 courses in a specialized field, including a field course or an internship experience.

**Resource Economics (Agricultural and Natural Resource Economics, CANR)** - Students must pass the following courses: ECON 218(Q), ARE 257, ARE 297. Additionally, students must pass at least two of the following: ARE 238, 255(W), 285, 215C

**Environmental Health (Animal Science, CANR)** - Students must pass courses in these categories listed:

Molecular and Cellular Biology: Choose any two: MCB 211, 213, 215, 229

Animal Science: Students must pass the following: ANSC 220, 221, 224, 225

Other Departments: choose one 3-4 credits: NUSC 236, PATH 200, 297, PHAR 281, PNB 250(W)

**Environmental Chemistry (Chemistry, CLAS)** - Students must pass the following courses: CHEM 232Q, 245, 263Q, 264Q, 370

**Environmental Biology (Ecology and Evolutionary Biology, CLAS)** - All students must take EEB 293S. In addition, they must select at least one course from each of the following groups.

**Group I -- Ecological Systems and Processes**

EEB 238, 245, 294, 296, 310, PLSC 250

**Group II -- Plant Ecology and Systematics**

EEB 227, 256, 268, 271, 272, 277, 280

**Group III -- Vertebrate Ecology and Systematics**

EEB 200, 214, 281, 454, 465

**Group IV -- Invertebrate Ecology and Systematics**

EEB 243/243W, 252, 275, 288
Environmental Geography (Geography, CLAS) _ Students must pass the following: GEOG 232, 285W, 286W In addition, students must pass one of the following courses: 240C, 246C

Environmental Geoscience (Geology, CLAS) _ Students must pass the following: GEOL 212, 252, 253

Marine Science (Marine Science, CLAS) _ Students must pass the following courses: MARN 270*, 275W, 280W, 294 or 380

*Students may not use MARN 270 to satisfy both a hydrospheric dynamics requirement and a related area in marine sciences. Students choosing a concentration in marine science should satisfy their hydrospheric dynamics requirement with another course from that group.

Natural Resources (Natural Resources Management and Engineering, CANR) _ Students must pass five courses from the following group: NRME 204, 205, 210, 214, 217, 237, 239P, 242, 260Q/260P, 287

Soil Science (Plant Science, CANR) _ Students must pass the following courses: PLSC 205, 250, 259C In addition, students must select two courses from the following: NRME 260Q/260P, PLSC 253(W), 258, 372, 375, 377, 378

Horticulture

The Department of Plant Science provides instruction in the horticultural areas of floriculture, fruit and vegetable crops, and ornamental horticulture. Curricular options for horticulture majors are Horticultural Commerce and Professional Horticulture. Horticulture has an important role in maintaining high-quality diets and enhancing environmental quality through the aesthetic and functional uses of plants. Career options include leadership positions in federal, state and local governments, public and private gardens, the Cooperative Extension System, education, research, and a variety of horticultural industries. Students planning to pursue graduate study should obtain a comprehensive background in the biological and physical sciences.

Horticulture majors must pass the following courses:

Biology 110

Chemistry 122 or 127Q

Plant Science 213 or Biology (EEB 259)

Plant Science 250

Plant Science 238

One of the following:

Agricultural and Resource Economics 150 or 215C

Economics 112 or 113

Accounting 131

One of the following:

Plant Science 260, 261, or 231

Biology (EEB 272)

Natural Resources Management and Engineering 214
Two of the following:

Plant Science 257 or 203

Biology (EEB 288) or equivalent

Two of the following:

Plant Science 212, 225, 227, 240, 240W, 244, 245, 263, 264, 289, or 292

In addition, horticulture majors must earn a minimum of 9 credits from the following departments:

Biology\(^2\), Chemistry, Computer Science, Geology and Geophysics, Mathematics\(^3\), Physics, Statistics\(^4\).

\(^2\) Students may not receive more than 12 credits for courses in Biology at the 100's level.

\(^3\) Math 101 cannot be used to meet this requirement.

\(^4\) See Statistics section for credit restrictions.

Landscape Architecture

This major in the Department of Plant Science provides instruction in site planning and design, landscape history, plan graphics and presentation and the use of plants and other features to enrich exterior spaces. Through seminars, practicums, and internships, students learn to apply theory to actual case studies. Students may pursue careers in landscape architecture and related fields or apply for graduate programs in landscape architecture and planning. The State Board of Higher Education approved the Landscape Architecture major based on expansion of facilities, curriculum revision, and specialized accreditation by the American Society of Landscape Architects.

Landscape Architecture majors must pass the following courses:

Biology 110

Chemistry 122 or 127Q

Plant Science 250

Plant Science 213 or Biology (EEB 259)

Geology 101 or 102

Plant Science 247, 255, 256, 260, 262, 265, 266, 267, 270, 275, 277, 278, 280, 281, 293

Accreditation and space restrictions necessitate that the number of students in the Landscape Architecture program be limited. All students admitted into the Landscape Architecture program will be evaluated at the end of their third semester (or middle of their sophomore year). Students will be allowed to continue in the program based upon their TGPA, successful completion of recommended courses during their first and second semester, and grades earned in the introductory Landscape Architecture courses offered during the third semester (PLSC 255: Landscape Design Drawing, and PLSC 275; Landscape Design). Students who do not meet these requirements may want to consider other majors including Horticulture or the turf option in Agronomy.

Natural Resources

Natural Resources, offered by Natural Resources Management and Engineering, is a field concerned with understanding and managing the many natural systems in agriculture, forestry, wildlife, watersheds and other terrestrial
and aquatic ecosystems. The primary focus is productivity of renewable natural resources to benefit society's economic and social well-being including: (1) fundamental biophysical relationships; (2) causes and effects of ecosystem exploitation and destruction; (3) changes and effects on ecosystems due to management for increased production or improved quality; and (4) economic and ethical considerations in managerial and policy decisions. Electives permit emphasis on a wide variety of interest and provide a strong liberal education as a basis for life-long learning.

The major provides basic preparation for careers in one of the natural resources professions or fields of applied science. Such careers deal with the allocation, utilization and management of the diverse resource base. Employment opportunities are found in the private sector or with local, state or federal government agencies.

Students who are interested in a research career in a specific area, such as forestry, water, wildlife, fisheries or soil and water conservation, should plan on earning an advanced degree.

**Natural Resources majors must pass the following courses:**

Natural Resources Management and Engineering 100, 239P, 242, 295

Plant Science 250

Biology (EEB) 244 or 244W

Mathematics 113 or 115

One course in Chemistry

One course in Statistics

One course in Physics or Geology

Students must also earn an additional 12 credits in NRME courses, numbered 200 or above.

Students should meet with their advisors to select specific courses in Natural Resources Management and Engineering and other departments. Students may focus on specific areas such as fisheries, forestry, wildlife, water, land use and planning, cartography, resource-based business, or public administration. Several options and recommended programs of study are available to allow selection of courses according to individual interests.

**Natural Resources Management and Engineering Courses**

**Nutritional Science**

Four options in this major lead to the B.S. degree: Dietetics, Nutritional Biochemistry, Food Science, and Nutrition Fundamentals. These options combined with selected elective courses prepare students for careers in dietetics, the food industry, health and human services, and education including outreach programs such as community nutrition, sport nutrition, the Cooperative Extension System, and governmental and private health and human service programs.

**Dietetic Program.** The Didactic Program in Dietetics, offered through the Department of Nutritional Sciences, is approved by the American Dietetic Association (ADA) for students preparing to become Registered Dietitians. Students concurrently complete requirements for a Bachelor of Science degree in Nutritional Sciences and ADA course requirements for the Didactic program in Dietetics. After completion of required courses the students are eligible to apply for a Dietetic Internship or AP4. Students preparing to become Registered Dietitians are required to pass courses listed in the Didactic Program, complete a Dietetic Internship or AP4, and pass the ADA Registration Examination. Students need to keep abreast of changes in requirements by consulting with the dietetics program director in Nutritional Sciences. Dietetic Internships and AP4's are competitive programs to which interested students may apply during their senior year. Students in the Dietetic Program are encouraged to obtain practical experience and to develop an area of concentration in clinical nutrition, community nutrition, or food service management.
Nutritional Biochemistry is a program dealing with organ, cellular, and subcellular levels of nutrition. It provides training for careers in research or medicine and meets the entrance requirements for medical schools. Graduates often conduct research in food companies, drug companies, and pursue graduate education, medical education, or other allied health degrees (e.g., physical therapy, dentistry).

Food Science is a program dealing with the control of chemical, physical, and microbiology changes in food during production, processing, packaging, storage, distribution, preparation, and utilization. Graduates often work in product development, quality assurance, and pursue graduate education.

Nutrition Fundamentals provides a broad background in nutrition, which allows more flexibility in career goals. This option includes Nutrition and Exercise, Community Nutrition, and Food Service Management. A limited number of students are admitted in the Nutrition and Exercise specialization, because space is restricted in required courses in Exercise Sciences and Leisure Studies. Community Nutrition students enroll in more social science courses to enhance their ability to assist individuals, families, and private and public agencies and to evaluate and address nutritional needs in the community setting. Food Service Management includes more management courses. Field experiences are usually part of the Food Service Management and Community Nutrition options.

**Nutritional Sciences majors must successfully complete the following courses:**

Nutritional Sciences 165

Nutritional Sciences 200

Chemistry 127 and 128, or Chemistry 122

Chemistry 141, or 243 and 244

Biology (PNB) 264 and 265, or Biology 107, 108 and (PNB) 250

Biology (MCB) 203 or 204 or 229

In addition to the courses listed above, a minimum of 8 credits, numbered 200 or above, must be earned from courses in the Department of Nutritional Sciences. Credits earned in field experiences and independent studies cannot be used to meet this 8-credit requirement. Specific course recommendations are listed in the *Programs Available* brochure in the department.

**Nutritional Sciences Courses**

**Pathobiology**

Students majoring in Pathobiology are concerned about animal health and diseases and their relationship to people and the environment. Subjects covered include gross and microscopic study of normal and pathological anatomy, microbiology, ecology of disease, and specific diseases of laboratory animals, domestic mammals, birds, and free-living mammals.

Students can prepare to enter veterinary medical schools or medical schools. Pathobiology majors also pursue careers in biotechnology, biomedical sciences, para-veterinary medicine, and many diverse laboratory and research positions in health fields and agriculture and natural resources.

**Pathobiology majors must pass the following courses:**

Pathobiology 297

Three of the following:

Pathobiology 200
Pathobiology 202
Pathobiology 248
Pathobiology 252
Pathobiology 296

One of the specified courses in each of these areas:

Biochemistry (MCB 203 or 204)
Microbiology (MCB 229)
Microbiology 200
Genetics (MCB 213 or ANSC 217)

One course in nutrition or immunology (as listed below):

Animal Science 216
Nutritional Sciences 165
Biology: MCB 211
Allied Health: MLS 208W

Pathobiology

Resource Economics

The Resource Economics major in the Department of Agricultural and Resource Economics applies economic and business methods to address problems pertaining to the production and distribution of food products and the management of natural resources and the environment. There is a wide range of areas of specialization including environmental economics and policy, marketing and business management, and international agricultural development and trade. Students can go through either a structured curriculum or with the assistance of a faculty advisor, create one to meet individual career goals. Our graduates pursue careers in environmental fields, business management and marketing, resource and recreational management, and banking and finance. The Resource Economics program also provides students with the background to pursue graduate studies.

Resource Economics majors do not have to meet specific course requirements, but must complete the 36 credit, 200-level requirement as approved by advisor and department head.

Resources Economics

Double Major Option. Students may elect to complete requirements for two major fields of study offered by the College of Agriculture and Natural Resources. A student selecting this option must submit a Double Major Declaration form indicating primary and secondary majors. This declaration must include a tentative plan of study and requires approval by the advisors and department heads for both respective major areas of study and the Associate Dean. Once an approved declaration has been submitted to the Degree Auditor, the student must complete the requirements for both majors in order to graduate. Withdrawal of the Double Major Declaration requires the approval of the Associate Dean. The student's final plan and record of study will include a double major attachment to verify that the requirements have been met for both the primary and secondary majors. The transcript will identify both majors.
Primary Major. Students must meet all requirements as listed under "Requirements for a Major" (36 credit group) and all individual major requirements as listed above.

Secondary Major. Students must meet all individual major requirements as listed above and successfully complete additional 200-level course work not used as part of the 36 credit group for the primary major. This group of courses must:

1. total not less than 24 credits
2. be numbered 200 or above
3. be approved by student's advisor and department head
4. be taken at the University of Connecticut
5. include at least 15 credits of College of Agriculture and Natural Resources courses
6. average at least a 2.0 Grade Point Average
7. not include more than six credits of Independent Study and Internship
8. not be taken on Pass/Fail.

Dairy Management Minor

The minor in Dairy Management is intended to provide interested students with an in-depth exposure to all aspects of dairy farm management including quality milk production, cattle health management, personnel management, and farm financial management. Students will have the opportunity to manage a portion of the UConn dairy herd and be responsible for daily activities and short and long-term decision-making. Completion of the program will provide students with the knowledge base necessary to pursue employment in dairy production at the managerial level or to seek employment in other aspects of the dairy industry. The requirements for this minor are:

ANSC 275 PATH 202
ANSC 277S ARE 215C
ANSC 278 ARE 217

The Storrs Agricultural Experiment Station

The Storrs Agricultural Experiment Station, the research arm of the College of Agriculture and Natural Resources, is part of a nationwide system of research institutions tracing their origin to the passage of the Hatch Act in 1887. The Station's mission is to promote the effective use of natural resources in the production of food, fiber, and derived products, while preserving the quality of the environment, and to improve the quality of life for the people of the state. Research emphasis is on improving the understanding of the basic biology and chemistry of economically important plants and animals, developing efficient technologies that will sustain the major agricultural enterprises in the state, expanding our knowledge base in selected aspects of human nutrition, and applying the methodology of biotechnology to plant and animal improvement programs. Results of Station studies are published in national and international journals and by the Storrs Station as bulletins, research reports, and monographs. Information obtained broadens the scientific foundation of agriculture and contributes to the understanding of fundamental processes. Financial support is furnished by Federal and State appropriations and by grants from industry, foundations, and Federal agencies such as the National Science Foundation, National Institutes of Health, and the U.S. Departments of Agriculture, Energy, and Commerce.

Northeastern Research Center for Wildlife Diseases
The Center is a regional facility created to investigate diseases of wildlife and their effects on people, domestic animals, and the environment. The Center serves the New England states plus New York, Pennsylvania and New Jersey. See the Special Facilities and Programs section for detailed information.

**Institute of Water Resources**

The Institute of Water Resources promotes and supports programs relating to water quality, quantity, and use in Connecticut. See the Special Facilities and Programs section.

**Center for Environmental Health**

The Center for Environmental Health develops interdisciplinary methods for solving environmental problems. Although the interests of the Center include all areas of environmental concerns, the main focus is on human health, with an emphasis relevant to Connecticut. See the Special Facilities and Programs section for detailed information.

**Food Marketing Policy Center**

The Food Marketing Policy Center conducts research on competition, cooperatives, food safety regulation, and antitrust policy in food markets. It is the core research group for an international consortium that includes researchers from 27 universities, government agencies, and private research organizations. Members are from the United States, Canada, England, France, Italy, and Japan. See the Special Facilities and Programs section for detailed information.

**Cooperative Extension System**

The Cooperative Extension System (CANR), one of the three major components of the College of Agriculture and Natural Resources, is an integral part of the University of Connecticut's outreach efforts. Established by federal land grant legislation in 1914, the Cooperative Extension System's mission is to educate the people of Connecticut on adapting to a rapidly changing society and on improving their lives. This program is supported by state and federal funds. Additional resources are obtained through grant awards.

Cooperative Extension programming uses a multi-disciplinary approach and focuses on increasing the competitiveness of Connecticut's agriculture and aquaculture, protecting the environment and developing the potential of the state's families, individuals, and youth living in urban, suburban and rural communities. Cooperative Extension professionals in partnership with local citizen advisory groups, agencies, organizations and businesses, provide noncredit education to youth and adults one-on-one, in groups or via mass media. Content areas include food safety, economic viability, aquaculture, water resources, family and youth, horticulture systems, animal health, dairy/livestock, and public policy/issues education.

Storrs-based CANR department faculty with Cooperative Extension assignment and extension faculty cooperate in developing and presenting programs. Extension field faculty and professional staff work from eight regional Cooperative Extension Centers which are positioned as doorways to the University. They provide easy access for potential students and other Connecticut residents who want to take advantage of the many educational resources available through UConn. Extension professionals also work from four 4-H camps and the only 4-H Farm Resource Center in the United States. Program assistants extend the effectiveness of Extension Educators through specially funded programs designed to foster positive youth development and the ability of families with limited resources to make good food choices and to manage their resources.

Several thousand volunteers are recruited and trained to further extend the outreach of Cooperative Extension professionals. UConn students, both undergraduate and graduate, are encouraged to inquire about possible field work and volunteer opportunities. Each year more than half a million state residents enrich their quality of life by applying knowledge gained through educational opportunities provided by the University of Connecticut Cooperative Extension System. For more details about Cooperative Extension, please call (860) 486-1987.

**Pre-veterinary Programs.** Prerequisites for entry into a professional curriculum in veterinary medicine may be obtained by majoring in Animal Science or Pathobiology. The Animal Science major is most appropriate for students
interested in biotechnology, physiology, nutrition, genetics, behavior, or production and management. Pathobiology is appropriate for students interested in biomedical science, medical biotechnology, ecology of diseases, anatomy, microbiology, or diseases of wildlife. Both programs offer excellent opportunities for education in the biological sciences.

**Honors Programs.** University honors programs are available to qualified students in the College. Please refer to the section of this *Catalog* designated "Honors Programs" for further information.

**Transfer Students.** Transfer students can use transfer credits to meet General Education requirements and 100-level course requirements in a specific major. Transfer students may apply a maximum of six credits of 200-level work toward the 36 credit requirement for a major. These credits must be identified as courses comparable to specific University of Connecticut courses and cannot include internships, special topics, or unassigned credits. Transfer students must complete at least 30 credits of 200-level course work at the University of Connecticut, including at least 15 credits in College of Agriculture and Natural Resources courses.

**Exemptions and Substitutions.** Students requesting an exemption from any University and/or College requirement, or a substitution for a course or requirement, should consult their advisors. Such exemptions or substitutions must be approved by the department head and the Associate Dean of the College and may require approval of the Vice President for Academic Affairs.

**Field Trips and Transportation Costs.** Many courses require off-campus field trips. Students should budget money for participation.

**Graduate Programs.** Most departments provide graduate programs for students interested in greater specialization beyond the baccalaureate. The study may lead to a Master of Science or Doctor of Philosophy degree. Students planning for a graduate program should secure a comprehensive background in the basic sciences. For further information see the announcement of the Graduate School.

**Computer Laboratory**

A computer laboratory is available for student use in Room 108 of the Ratcliffe Hicks Building. Instructors schedule classes in the facility when appropriate, and the room is open additional hours for individual student use.