SOIL AND WATER SCIENCE CONCENTRATION

Sophomore Year

First Semester
- CH 2010 Survey of Organic Chemistry 1
- GEOL 1010 Physical Geology
- GEOL 1030 Physical Geology Lab.
- PES 2020 Soils
- PHYS 2070 General Physics I
- PHYS 2090 General Physics I Lab.

Second Semester
- AGRB 2050 Agriculture and Society
- COMM 1500 Intro. to Human Comm. or COMM 2500 Public Speaking
- MICR 3050 General Microbiology
- PHYS 2080 General Physics II
- PHYS 2100 General Physics II Lab.

Junior Year

First Semester
- AGM 3010 Soil and Water Conservation
- PES 4220 Major World Crops
- Concentration Requirement 1

Second Semester
- BIOL 4010 Plant Physiology and
- BIOL 4020 Plant Physiology Lab.
- ENGL 3150 Scientific Writing and Comm.
- PES 3150 Environment and Agric.
- PES 4010 Academic and Professional Dev.
- Concentration Requirement 1
- Social Science Requirement 1

Senior Year

First Semester
- PES 3500 Practicum
- PES 4030 Soil Genesis and Classification
- PES 4550 Seminar
- Applied Spatial Technology Requirement
- Arts and Humanities (Literature) Requirement
- Field Scale Environmental Mgt. Requirement

Second Semester
- PES 4080 Land Treatment of Wastewater and Sludges
- PES 4900 Beneficial Soil Organisms in Plant Growth
- Concentration Requirement
- Social Science Requirement

123-124 Total Semester Hours

1See General Education Requirements.

AGM 4100, FDR 4330, GEOL 4210, or other course approved by advisor.

AGM 4020, GEOL 4090, or other course approved by advisor.

TURFGRASS

Bachelor of Science

Turfgrass is a major part of our built environment and daily life, including home lawns, sports fields, and golf courses. Grasped areas are aesthetically attractive and provide many environmental benefits, including the prevention of soil erosion, noise reduction, improved water quality, and reduced injuries from sports.

Graduates pursue careers in management of professional golf courses and sports fields and in lawn care; production and sale of seed, sod, supplies, and equipment; or as technicians for businesses or government agencies. The curriculum provides a strong foundation in science, advanced business, and environmental and leadership skills that are needed for success in today’s competitive environment. Courses in horticulture also provide a background for turfgrass managers who may have responsibilities for landscaped areas.

Students work closely with faculty in creative inquiry groups to investigate and implement solutions to real problems. Student interns experience a wide range of turf facilities, businesses, and public institutions to develop skills and experience needed for successful careers. In addition, the University’s golf course (Walker Golf Course) and athletic fields offer great employment and learning opportunities.

Combined Bachelor of Science/Master of Science Degree Program

Turfgrass students may begin a Master of Science degree in Plant and Environmental Sciences or a Master of Science degree in Entomology while completing their Bachelor of Science degree, and use up to 12 credits to satisfy the requirements of both the undergraduate and graduate degrees. To be eligible for this plan, students must have a 3.4 or higher grade-point average and have completed at least 90 credits of coursework. Details are available from the Department of Plant and Environmental Sciences.

Freshman Year

First Semester
- BIOL 1030 General Biology I
- BIOL 1050 General Biology Lab I
- CH 1010 General Chemistry
- HORT 1010 Horticulture
- MATH 1020 Business Calculus I
- Arts and Humanities (Non-Lit) Requirement

Second Semester
- BIOL 1040 General Biology II
- BIOL 1060 General Biology Laboratory II
- CH 1020 General Chemistry
- ENGL 1030 Composition and Rhetoric
- MATH 1010 Essential Math for Informed Soc.

Sophomore Year

First Semester
- BIOL 3040 Biology of Plants
- BIOL 3080 Biology of Plants Lab
- HORT 2120 Introduction to Turfgrass Culture
- HORT 2130 Turfgrass Culture Lab.
- HORT 3030 Landscape Plants
- Social Science Requirement 1

Second Semester
- HORT 4270 Urban Tree Care
- PES 2020 Soils
- Arts and Humanities (Literature) Requirement
- Oral Communications Requirement
- Social Science Requirement 1

Summer
- HORT 2710 Internship 2 or
- HORT 4710 Advanced Internship 2

Junior Year

First Semester
- ENT 3010 Insect Biology and Diversity
- PLPA 3100 Principles of Plant Pathology
- Business Requirement
- Horticulture Specialization Requirement
- Soil Science Requirement

Second Semester
- AGM 4020 Irrigation System Design
- BIOL 4010 Plant Physiology
- BIOL 4020 Plant Physiology Lab.
- HORT 4200 Applied Turfgrass Physiology
- PLPA (ENT) 4060 Diseases and Insects of Turfgrasses
- Horticulture Specialization Requirement

Summer
- PLPA (ENT) 4080 Diseases and Insects of Turfgrasses Laboratory

Senior Year

First Semester
- HORT 4090 Senior Capstone Course
- HORT 4120 Advanced Turfgrass Management
- PES 4460 Soil Management
- Business Requirement
- Related Science Requirement

Second Semester
- HORT (PES) 4330 Landscape and Turf Weed Management
- PES 4520 Soil Fertility
- PES 4530 Soil Fertility Lab
- Business Requirement
- Related Science Requirement

123 Total Semester Hours

1See General Education Requirements. Six of these credit hours must also satisfy the Cross-Cultural Awareness and the Science and Technology in Society Requirements.
WILDLIFE AND FISHERIES BIOLOGY

Bachelor of Science

Increased interest in sustainable use and conservation of natural resources has resulted in these areas becoming increasingly technical and requiring highly qualified wildlife and fisheries biologists. Greatest demands for graduates are in the areas of management, research, survey, and regulatory positions with state and federal agencies; industrial research and quality control laboratories; conservation, recreation, and other public service agencies; and private enterprises.

The Bachelor of Science degree program in Wildlife and Fisheries Biology provides a solid foundation for many careers in the sciences. The curriculum is strong in basic and applied sciences, communication skills, and the social sciences. In addition, three credit hours are available for field training with appropriate natural resource agencies. Students may satisfy coursework requirements for professional certification by the Wildlife Society and/or the American Fisheries Society.

For students interested in conservation biology, water, and natural resources, the Department of Forestry and Environmental Conservation also administers the Conservation Biology and Natural Resources Management Concentrations within the Environmental and Natural Resources degree program. See pages 48-50 for program details.

Combined Bachelor of Science/Master of Science Degree Program

Under this plan, students may reduce the time necessary to earn both degrees by applying graduate credits to both undergraduate and graduate program requirements. Students are encouraged to obtain the specific requirements for the dual degree from the Department of Forestry and Environmental Conservation as early as possible in their undergraduate program, as a number of required courses have prerequisites not normally taken by Wildlife and Fisheries Biology majors. Enrollment guidelines and procedures can be found under Academic Regulations in this catalog.

Freshman Year

First Semester

3 - BIOL 1030 General Biology I
1 - BIOL 1050 General Biology Lab. I
4 - CH 1010 General Chemistry or
4 - ENR 1010 Intro to Env. and Natural Res. I
3 - MATH 1020 Business Calculus I
3 - Oral Communication Requirement
15

Second Semester

3 - BIOL 1040 General Biology II
1 - BIOL 1060 General Biology Lab. II
4 - CH 1020 General Chemistry or
4 - PHYS 2000 Introductory Physics
3 - ENGL 1030 Composition and Rhetoric
3 - STAT 2300 Statistical Methods I
1 - Elective
15

Sophomore Year

First Semester

4 - FNR 2040 Soil Information Systems
2 - FOR 2050 Dendrology
3 - FOR 2220 Forest Biology
3 - WFB 3000 Wildlife Biology Lab.
3 - Arts and Humanities (Non-Lit.) Requirement
16

Second Semester

3 - AGRB 2020 Agricultural Economics
3 - ECON 2110 Principles of Microeconomics
3 - FOR 2060 Forestry Ecology
3 - GEN 3000 Fundamental Genetics
3 - WFB 3500 Principles of Fish and Wildlife Biol.
3 - Social Science Requirement
15

Junior Year

First Semester

3 - BIOL 3030 Vertebrate Biology
4 - BIOL 3200 Field Botany
3 - ENGL 3140 Technical Writing
3 - WFB 4100 Wildlife Management Techniques
3 - Oral Communication Requirement
16

Second Semester

3 - WFB (BIOL) 3130 Conservation Biology
3 - WFB 4120 Wildlife Management
4 - WFB 4160 Fisheries Techniques
3 - WFB 4620 Wetland Wildlife Biology
3 - Approved Requirement
16

Senior Year

First Semester

4 - AVS 3010 Anat. and Phys. of Domestic Animals
3 - FOR (ENR) 4340 GIS for Natural Resources
9 - Approved Requirement
16

Second Semester

1 - FNR 4990 Natural Resources Seminar
3 - WFB 4300 Wildlife Conservation Policy
6 - Approved Requirement
3 - Policy and Law Requirement
13

122 Total Semester Hours