NATURAL RESOURCES MANAGEMENT CONCENTRATION

Sophomore Year

First Semester
4 - FNR 2040 Soil Information Systems or
4 - PES 2020 Soils
2 - FOR 2050 Dendrology
3 - FOR 2210 Forest Biology
3 - WFB 3000 Wildlife Biology
3 - Arts and Humanities (Literature) Requirement 2

Second Semester
3 - ENR 3020 Natural Resources Measurements
3 - FOR 2060 Forest Ecology
3 - WFB 3500 Principles of Fish and Wildlife Biol.
3 - Arts and Humanities (Non-Lit.) Requirement 1
3 - Social Science Requirement 2
15

Junior Year

First Semester
3 - AGRB 2570 Natural Resources, Environment and Economics or
3 - ECON 2110 Principles of Microeconomics
4 - BIOL 3200 Field Botany or
3 - BIOL 4060 Intro. Plant Taxonomy and
1 - BIOL 4070 Plant Taxonomy Lab.
3 - ENR 4290 Environmental Law and Policy
3 - Minor Requirement 3
3 - Elective
16

Second Semester
3 - AGRB 3570 Natural Resources, Environment and Economics
1 - GEOL 1010 Physical Geology
1 - GEOL 1030 Physical Geology Lab.
3 - WFB (BIOI) 3130 Conservation Biology
6 - Minor Requirement 3
16

Senior Year

First Semester
3 - FOR 4160 Forest Policy and Admin.
3 - FOR (ENR) 4340 GIS for Landscape Planning
3 - Internship, Creative Inquiry or Directed Research Requirement 4
3 - Minor Requirement 3
3 - Elective
15

Second Semester
3 - ENGL 3140 Technical Writing
3 - ENR 4500 Conservation Issues
2 - FOR 4060 Forested Watershed Management
3 - WFB 4620 Wetland Wildlife Biology
3 - Minor Requirement 3
14

121 Total Semester Hours

FOOD SCIENCE AND TECHNOLOGY CONCENTRATION

Freshman Year

First Semester
3 - BIOL 1030 General Biology I and
1 - BIOL 1050 General Biology Lab. I or
5 - BIOL 1100 Principles of Biology I
4 - CH 1010 General Chemistry
3 - COMM 1500 Intro. to Human Comm. or
3 - COMM 2500 Public Speaking
1 - FDSC 1010 Introduction to Food Science and Human Nutrition
3 - MATH 1020 Intro. to Math. Analysis or
4 - MATH 1060 Calculus of One Variable I
15/17

Second Semester
3 - BIOL 1040 General Biology II and
1 - BIOL 1060 General Biology Lab. II or
5 - BIOL 1110 Principles of Biology II
4 - CH 1020 General Chemistry
3 - ENGL 1030 Accelerated Composition
1 - FDSC 1020 Perspectives in Food and Nutrition Sciences
1 - FDSC 4500 Creative Inquiry
3 - PSYC 2010 Introduction to Psychology
16-17

Sophomore Year

First Semester
3 - CH 2010 Survey of Organic Chemistry and
1 - CH 2020 Survey of Organic Chemistry Lab. or
3 - CH 2230 Organic Chemistry and
1 - CH 2270 Organic Chemistry Lab.
1 - FDSC 4500 Creative Inquiry
3 - PHYS 1220 Physics with Calculus I and
1 - PHYS 1240 Physics Lab. I or
3 - PHYS 2070 General Physics I and
1 - PHYS 2090 General Physics I Lab.
3 - Arts and Humanities (Literature) Requirement 1
3 - Social Science Requirement 2
15

Second Semester
3 - BCHM 3050 Essential Elements of Biochem.
2 - BIOL 4340 Biological Chemistry Lab. Techniq.
3 - FDSC 2140 Food Resources and Society
1 - FDSC 4500 Creative Inquiry
3 - STAT 2300 Statistical Methods I
4 - Arts and Humanities (Non-Lit.) Requirement 2
2 - Elective
17

Junior Year

First Semester
1 - FDSC 3010 Food Regulations and Policy
1 - FDSC 4170 Seminar
1 - FDSC 4500 Creative Inquiry
4 - MICR 3050 General Microbiology
3 - NUTR 4510 Human Nutrition
3 - Departmental Requirement 1
2 - Emphasis Area Requirement 4
15

Second Semester
3 - ENGL 3400 Business Writing or
3 - ENGL 3410 Technical Writing
2 - FDSC 4030 Food Chemistry and Analysis
4 - FDSC 4100 Food Product Development
1 - FDSC 4500 Creative Inquiry
4 - MICR 4070 Food and Dairy Microbiology
3 - Emphasis Area Requirement 4
17

Senior Year

First Semester
3 - FDSC 3500 Institutional Food Service Mgmt. or
3 - FDSC 3700 Restaurant Food Service Mgmt.
3 - FDSC 4100 Food Chemistry I
3 - FDSC 4340 Food Preservation and Processing
2 - FDSC 4070 Quantity Food Production
1 - FDSC 4500 Creative Inquiry
3 - Emphasis Area Requirement 4
15

1A minor is required and must be selected from the following: Biochemistry; Biological Sciences; Chemistry; Crop and Soil; Environmental Science; Environmental Science and Policy; Forest Resource Management; Geology; Horticulture; Legal Studies; Microbiology; Natural Resource Economics; Non-profit Leadership; Park and Protected Area Management; Recreational Therapy; Travel and Tourism; Urban Forestry; Wildlife and Fisheries Biology.
2Internship (FNR 4900), Creative Inquiry (FNR 4700), Directed Research (FNR 4910), or Senior Honors Thesis (WFB 4630).
3FOOD SCIENCE Bachelor of Science

Food Science majors apply principles of basic and applied sciences to design and manufacture safe and quality foods in addition to identifying the relationship between nutrients and human health. The curriculum allows flexibility for concentrating in one of two areas:

In the Food Science and Technology Concentration, students may emphasize business, culinary science (one of three national programs that have been approved by the Research Chef’s Association, as Culinology™), engineering, food packaging, and additional sciences that complement requirements of the Institute of Food Technologists.

Food processing industries, ingredient manufacturers, and packaging suppliers employ graduates in new food product development, quality assurance, production management, and technical sales. State and federal agencies also need graduates for food safety and regulatory purposes.

The Nutrition and Dietetics Concentration prepares students for graduate study in nutrition and a variety of health related fields as well as dietetic internship programs to become a Registered Dietitian.

Examples of career opportunities include employment as dietitians, nutritionists, consultants and food specialists. The Nutrition and Dietetics curriculum is accredited by the Accreditation Council for Education of Nutrition and Dietetics (ACEND).

The Department of Food, Nutrition and Packaging Sciences also offers an accelerated five-year combined bachelor’s/master’s program that allows students to count up to twelve hours of graduate credit toward both the BS degree in Food Science and the MS degree in Food, Nutrition and Culinary Sciences. Details are available from the Department of Food, Nutrition and Packaging Sciences or at www.clemson.edu/fnps.

FOOD SCIENCE AND TECHNOLOGY CONCENTRATION

Freshman Year

First Semester
3 - BIOL 1030 General Biology I and
1 - BIOL 1050 General Biology Lab. I or
5 - BIOL 1100 Principles of Biology I
4 - CH 1010 General Chemistry
3 - COMM 1500 Intro. to Human Comm. or
3 - COMM 2500 Public Speaking
1 - FDSC 1010 Introduction to Food Science and Human Nutrition
3 - MATH 1020 Intro. to Math. Analysis or
4 - MATH 1060 Calculus of One Variable I
15/17

Second Semester
3 - BIOL 1040 General Biology II and
1 - BIOL 1060 General Biology Lab. II or
5 - BIOL 1110 Principles of Biology II
4 - CH 1020 General Chemistry
3 - ENGL 1030 Accelerated Composition
1 - FDSC 1020 Perspectives in Food and Nutrition Sciences
1 - FDSC 4500 Creative Inquiry
3 - PSYC 2010 Introduction to Psychology
16-17

Sophomore Year

First Semester
3 - CH 2010 Survey of Organic Chemistry and
1 - CH 2020 Survey of Organic Chemistry Lab. or
3 - CH 2230 Organic Chemistry and
1 - CH 2270 Organic Chemistry Lab.
1 - FDSC 4500 Creative Inquiry
3 - PHYS 1220 Physics with Calculus I and
1 - PHYS 1240 Physics Lab. I or
3 - PHYS 2070 General Physics I and
1 - PHYS 2090 General Physics I Lab.
3 - Arts and Humanities (Literature) Requirement 1
3 - Social Science Requirement 2
15

Second Semester
3 - BCHM 3050 Essential Elements of Biochem.
2 - BIOL 4340 Biological Chemistry Lab. Techniq.
3 - FDSC 2140 Food Resources and Society
1 - FDSC 4500 Creative Inquiry
3 - STAT 2300 Statistical Methods I
4 - Arts and Humanities (Non-Lit.) Requirement 2
2 - Elective
17

Junior Year

First Semester
1 - FDSC 3010 Food Regulations and Policy
1 - FDSC 4170 Seminar
1 - FDSC 4500 Creative Inquiry
4 - MICR 3050 General Microbiology
3 - NUTR 4510 Human Nutrition
3 - Departmental Requirement 1
2 - Emphasis Area Requirement 4
15

Second Semester
3 - ENGL 3400 Business Writing or
3 - ENGL 3410 Technical Writing
2 - FDSC 4030 Food Chemistry and Analysis
4 - FDSC 4100 Food Product Development
1 - FDSC 4500 Creative Inquiry
4 - MICR 4070 Food and Dairy Microbiology
3 - Emphasis Area Requirement 4
17

Senior Year

First Semester
3 - FDSC 3500 Institutional Food Service Mgmt. or
3 - FDSC 3700 Restaurant Food Service Mgmt.
3 - FDSC 4100 Food Chemistry I
3 - FDSC 4340 Food Preservation and Processing
2 - FDSC 4070 Quantity Food Production
1 - FDSC 4500 Creative Inquiry
3 - Emphasis Area Requirement 4
15

1Conservation Biology Concentration students or students planning to take organic chemistry must take CH 1010 and CH 1020 and must satisfy the General Education Science and Technology in Society Requirement through another course.

2See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement.
Second Semester
3 - FDSC 4020 Food Chemistry II
4 - FDSC 4080 Food Process Engineering
3 - FDSC (PKSC) 4090 Total Quality Mgt. for the Food and Packaging Industries
1 - FDSC 4500 Creative Inquiry
3 - Emphasis Area Requirement
14
124–127 Total Semester Hours

See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement.

For students undecided on concentration area, AGRB 2020, ECON 2110, or 2120 is recommended.

FDSC 4300 or AVS 4130

See advisor.

NUTRITION AND DIETETICS CONCENTRATION

Freshman Year
First Semester
3 - BIOL 1030 General Biology I and
1 - BIOL 1050 General Biology Lab. I or
5 - BIOL 1100 Principles of Biology I
4 - CH 1010 General Chemistry
3 - COMM 1500 Intro. to Human Comm. or
3 - COMM 2500 Public Speaking
1 - FDSC 1010 Introduction to Food Science and Human Nutrition
3 - MATH 1020 Intro. to Math. Analysis or
4 - MATH 1060 Calculus of One Variable I

Second Semester
3 - BIOL 1040 General Biology II and
1 - BIOL 1060 General Biology Lab. II or
5 - BIOL 1110 Principles of Biology II
4 - CH 1020 General Chemistry
3 - ENGL 1030 Accelerated Composition
1 - FDSC 1020 Perspectives in Food and Nutrition Sciences
3 - PSYC 2010 Introduction to Psychology

Sophomore Year
First Semester
3 - AGRB 2020 Agricultural Economics or
3 - ECON 2110 Principles of Microeconomics or
3 - ECON 2120 Principles of Macroeconomics
3 - CH 2010 Survey of Organic Chemistry and
1 - CH 2020 Survey of Organic Chemistry Lab. or
3 - CH 2230 Organic Chemistry and
1 - CH 2270 Organic Chemistry Lab.
3 - NUTR 2030 Introduction to Principles of Human Nutrition
1 - NUTR 2160 Evidence-Based Nutrition
3 - PHYS 1220 Physics with Calculus I and
1 - PHYS 1240 Physics Lab. I or
4 - PHYS 2000 Introductory Physics or
3 - PHYS 2070 General Physics I and
1 - PHYS 2090 General Physics I Lab.

Second Semester
3 - BCHM 3050 Essential Elements of Biochem.
2 - BIOL 4340 Biological Chemistry Lab. Techniq.
3 - NUTR 2040 Nutrition Across the Life Cycle
3 - STAT 2300 Stastical Methods I
3 - Arts and Humanities (Literature) Requirement
3 - Arts and Humanities (Non-Lit.) Requirement
17

Junior Year
First Semester
4 - BIOL 2220 Human Anatomy and Phys. I
1 - FDSC 3010 Food Regulations and Policy
1 - FDSC 4500 Creative Inquiry
4 - MICR 3050 General Microbiology
3 - NUTR 4510 Human Nutrition
2 - Elective
15

Second Semester
4 - BIOL 2230 Human Anatomy and Phys. II
3 - FDSC 3060 Institutional Food Service Mgt.
1 - FDSC 4500 Creative Inquiry
4 - MICR 4070 Food and Dairy Microbiology
1 - NUTR 4180 Professional Dev. in Dietetics or
1 - NUTR 4190 Professional Dev. in Nutrition
3 - NUTR 4550 Nutrition and Metabolism

Senior Year
First Semester
3 - ENGL 3040 Business Writing or
3 - ENGL 3140 Technical Writing
3 - FDSC 4010 Food Chemistry I
2 - FDSC 4070 Quantity Food Production
4 - NUTR 4240 Medical Nutrition Therapy I

Second Semester
3 - FDSC 4020 Food Chemistry II
2 - FDSC 4030 Food Chemistry and Analysis
3 - FDSC (PKSC) 4090 Total Quality Mgt. for the Food and Packaging Industries
4 - NUTR 4250 Medical Nutrition Therapy II
3 - NUTR 4260 Community Nutrition
1 - NUTR 4270 Nutrition Counseling

15

Foresters are qualified for a broad spectrum of employment opportunities in the public and private sectors. They may be engaged as managers, administrators, or owners of forest lands or forest-based businesses; as technical specialists in the production of timber, usable water, wildlife, and aesthetic values, and in the recreational use of the forest; or as professionals in other areas where the conservation of natural resources is a concern. Foresters earning advanced degrees find employment in academic work and in research conducted by public and private agencies.

The curriculum, accredited by the Society of American Foresters, provides a strong program in the basic knowledge and skills required of a professional forester. Forest Resource Management majors will select a minor (see page 63). The curriculum also provides the necessary prerequisites for graduate study.

For students interested in conservation biology, water, and natural resources, the Department of Forestry and Environmental Conservation also administers the Conservation Biology Concentration and the Natural Resources Management Concentration within the Environmental and Natural Resources degree program. See pages 52-53 for program details.

Freshman Year
First Semester
3 - BIOL 1030 General Biology I
1 - BIOL 1050 General Biology Lab. I
4 - CH 1010 General Chemistry
1 - ENR 1010 Intro. to Environ. and Natural Res. I
3 - MATH 1020 Intro. to Mathematical Analysis
3 - Oral Communication Requirement

Second Semester
3 - BIOL 1040 General Biology II
1 - BIOL 1060 General Biology Lab. II or
5 - BIOL 1110 Principles of Biology II
4 - CH 1020 General Chemistry
3 - ENGL 1030 Accelerated Composition
1 - FDSC 1020 Perspectives in Food and Nutrition Sciences
3 - Arts and Humanities (Non-Lit.) Requirement

Sophomore Year
First Semester
4 - ENR 2040 Soil Information Systems
2 - FOR 2050 Dendrology
3 - FOR 2210 Forest Biology
3 - Arts and Humanities (Literature) Requirement
3 - Economics Requirement

Second Semester
3 - ENGL 3140 Technical Writing
3 - FOR 2060 Forest Ecology
3 - Arts and Humanities (Non-Lit.) Requirement
3 - Social Science Requirement
3 - Minor Requirement

Forrestry Summer Camp
2 - FOR 2510 Forest Communities
1 - FOR 2520 Forest Operations
4 - FOR 2530 Forest Mensuration
1 - FOR 2540 Forest Products