### 2015-2016 Undergraduate Announcements

**College of Agriculture, Forestry and Life Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - FOR 3020</td>
<td>Forest Biometrics</td>
</tr>
<tr>
<td>3 - FOR 3040</td>
<td>Forest Resource Economics</td>
</tr>
<tr>
<td>3 - FOR 3410</td>
<td>Wood Procurement Practices in the Forest Industry</td>
</tr>
<tr>
<td>4 - FOR 4130</td>
<td>Integrated Forest Pest Management</td>
</tr>
<tr>
<td>3 - FOR (ENR) 4340</td>
<td>GIS for Landscape Planning</td>
</tr>
<tr>
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</tbody>
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**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>3 - FOR 2520</td>
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<tr>
<td>2 - ENGR 2100</td>
</tr>
<tr>
<td>3 - ENGL 3140</td>
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<tr>
<td>3 - FOR 2060</td>
</tr>
<tr>
<td>3 - Arts and Humanities (Non-Lit.) Requirement</td>
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<tr>
<td>3 - Social Science Requirement</td>
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**Junior Year**

<table>
<thead>
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<tbody>
<tr>
<td>3 - AGRB 2570, ECON 2000, 2110, or 2120</td>
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<tr>
<td>3 - FNR 4900 Field Training in Natural Resources</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>3 - Departmental Science Requirement</td>
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**Senior Year**

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<tr>
<td>3 - Social Science Requirement</td>
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**Land Surveying Emphasis Area**

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>3 - BIOL 1030</td>
</tr>
<tr>
<td>1 - BIOL 1050</td>
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<tr>
<td>4 - CH 1010</td>
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<tr>
<td>1 - ENR 1010</td>
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<tr>
<td>3 - MATH 1020</td>
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### Senior Year

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<td>3 - FNR 4900 Field Training in Natural Resources</td>
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**Second Semester**

| 3 - BIOL 1040 | General Biology II |
| 1 - BIOL 1060 | General Biology Lab. II |
| 3 - ENGL 1030 | Accelerated Composition |
| 1 - FOR 1010 | Introduction to Forestry |
| 3 - STAT 2300 | Statistical Methods I |

### Sophomore Year

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<tbody>
<tr>
<td>3 - FNR 2040</td>
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<tr>
<td>2 - FOR 2050</td>
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<tr>
<td>3 - FOR 2210</td>
</tr>
<tr>
<td>3 - ENGL 3140</td>
</tr>
<tr>
<td>3 - FOR 2060</td>
</tr>
<tr>
<td>3 - Arts and Humanities (Literature) Requirement</td>
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</tbody>
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### Major Requirement

- **For 4100** Harvesting Processes
- **For 4130** Integrated Forest Pest Management
- **For 4150** Forest Wildlife Management
- **For 4160** Forest Policy and Admin.
- **For 4170** Forest Resource Mgt. and Regulation
- **For 4250** Forest Resource Management Plans
- **For 4310** Rec. Resource Plan. in Forest Mgt.
- **For 4330** GPS Applications
- **For 4340** GIS for Landscape Planning
- **For 4380** Wind and Paper Products
- **For 4650** Silviculture
- **For 4700, 4900, or For 4190.**
- **For 4800** Wood Information Systems
- **For 4900** Field Training in Natural Resources

### Arts and Humanities (Literature) Requirement

- 3 - Arts and Humanities (Literature) Requirement

### Arts and Humanities (Non-Lit.) Requirement

- 3 - Arts and Humanities (Non-Lit.) Requirement

### Departmental Science Requirement

- 3 - Departmental Science Requirement

### Research Requirement

- 3 - Research Requirement

### Cross-Cultural Awareness Requirement

- 3 - Cross-Cultural Awareness Requirement

### Social Science Requirement

- 3 - Social Science Requirement

### Science Requirement

- 3 - Departmental Science Requirement

### Economics Requirement

- 3 - Economics Requirement

### Summer

- 3 - FNR 4900 Field Training in Natural Resources

### Bachelor of Science in Genetics

**Genetics** is the study of heredity. Genetics research takes many forms, from the study of heredity at the level of individual molecules to study at the level of cells and chromosomes, individuals, or populations. To comprehend current genetic information and to make future contributions to our molecular understanding of life processes, students must obtain a broad background in biology and a firm foundation in chemistry and mathematics. This is the basis of the genetics curriculum.

A degree in Genetics is a strong preparation for many careers. The degree provides an excellent foundation for medical, veterinary, or pharmacy school, as well as graduate research in any discipline related to biology, including bioinformatics, forensic technology, and genetic counseling. Because of the increasing emphasis on genetics in everyday life, a Bachelor of Science in Genetics can also be a direct path to a career in the emerging biotechnology industries (pharmaceuticals, agricultural technologies, biomimetic minerals) in research, sales, or business operations. Combined with a law degree, a genetics bachelor of science is a good background for a career as a patent attorney.

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>5 - BIOL 1100</td>
</tr>
<tr>
<td>1 - GEN 1030</td>
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<tr>
<td>4 - MATH 1060</td>
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</tbody>
</table>

### Second Semester

| 5 - BE 3220 | Small Watershed Hydrology and Sedimentology |
| 1 - FNR 4990 | Natural Resources Seminar |
| 2 - FOR 4060 | Forested Watershed Management |
| 3 - FOR 4150 | Forest Wildlife Management |

### Major Requirement

- **For 4100** Harvesting Processes
- **For 4130** Integrated Forest Pest Management
- **For 4150** Forest Wildlife Management
- **For 4160** Forest Policy and Admin.
- **For 4170** Forest Resource Mgt. and Regulation
- **For 4250** Forest Resource Management Plans
- **For 4310** Rec. Resource Plan. in Forest Mgt.
- **For 4330** GPS Applications
- **For 4340** GIS for Landscape Planning
- **For 4380** Wind and Paper Products
- **For 4650** Silviculture
- **For 4700, 4900, or For 4190.**
- **For 4800** Wood Information Systems
- **For 4900** Field Training in Natural Resources

### Research Requirement

- 3 - Research Requirement

### Cross-Cultural Awareness Requirement

- 3 - Cross-Cultural Awareness Requirement

### Social Science Requirement

- 3 - Social Science Requirement

### Science Requirement

- 3 - Departmental Science Requirement

### Economics Requirement

- 3 - Economics Requirement

### Summer

- 3 - FNR 4900 Field Training in Natural Resources

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[1] See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement. (Note: Social Science Requirement must be in an area other than economics or applied economics.)

[2] See advisor. CH 1020 or PHYS 2000 or higher level general physics course. PHYS 2000 is highly recommended.

[3] AGRB 2570, ECON 2000, 2110, or 2120


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[5] See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement. (Note: Social Science Requirement must be in an area other than economics or applied economics.)

[6] See advisor. CH 1020 or PHYS 2000 or higher level general physics course. PHYS 2000 is highly recommended.

[7] AGRB 2570, ECON 2000, 2110, or 2120

[8] Summer internship must be in land surveying.

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[9] AGRB 2570, ECON 2000, 2110, or 2120

[10] Summer internship must be in land surveying.

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[12] Summer internship must be in land surveying.

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[13] AGRB 2570, ECON 2000, 2110, or 2120


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[15] AGRB 2570, ECON 2000, 2110, or 2120

[16] Summer internship must be in land surveying.
Sophomore Year
First Semester
3 - CH 2230 Organic Chemistry
1 - CH 2270 Organic Chemistry Lab.
1 - COMM 1500 Intro. to Human Comm. or
3 - COMM 2500 Public Speaking
2 - GEN 3020 Molecular and General Genetics
3 - PHYS 1220 Physics with Calculus I
1 - PHYS 1240 Physics Lab. 1
14

Second Semester
3 - BCHM 3010 Molecular Biochemistry
3 - CH 2240 Organic Chemistry
1 - CH 2280 Organic Chemistry Lab.
2 - GEN 3040 Molecular Biology Lab.
3 - STAT 2300 Statistical Methods I
3 - Arts and Humanities (Literature) Requirement
3 - Social Science Requirement
14

Junior Year
First Semester
3 - GEN 4200 Molecular Genetics and Gene Reg.
2 - GEN 4210 Molecular Genetics and Gene Regulation Lab.
3 - GEN (BCHM) 4400 Bioinformatics
3 - Science Requirement
3 - Social Science Requirement
14

Second Semester
3 - BIOL 4610 Cell Biology
3 - GEN 4100 Population and Quantitative Gen.
2 - GEN 4110 Population and Quantitative Gen. Lab.
3 - PHIL 3260 Science and Values
3 - Genetics Requirement
3 - Elective
17

Senior Year
First Semester
3 - GEN 4500 Comparative Genetics
3 - Genetics Requirement
3 - Science Requirement
6 - Elective
15

Second Semester
2 - GEN 4930 Senior Seminar
3 - Genetics Requirement
3 - Science Requirement
6 - Elective
14

122 Total Semester Hours

Notes:
1. A student is allowed to enroll in science and mathematics courses only when all prerequisites have been passed with a grade of C or better.
2. A minimum grade of C is required in all science and mathematics courses. No student may exceed a maximum of two attempts, excluding a W, to complete successfully any science or mathematics course.

Horticulture Bachelor of Science
Horticulture connects plants and people to improve our world, be it through the enhancement of the foods we eat, the creation of healthy natural living spaces, the economic and aesthetic enhancement of our homes and communities, or the application of green solutions to the challenges of environmental quality. The plants of horticulture are the foundation of human and environmental well being, and it is horticulture professionals who have the knowledge, skills, and passion to utilize those plants for the betterment of humankind.

The Horticulture degree program includes courses in science, mathematics, business, leadership, law, and communication, combined with a strong foundation in horticultural sciences and arts. The curriculum provides the flexibility to choose courses within these categories that best support the student’s personal interests, goals, and success. Career opportunities are endless.

Students work closely with faculty in creative inquiry groups to investigate and implement solutions to real problems. Internships are excellent opportunities to learn and explore potential careers.

Freshman Year
First Semester
3 - BIOL 1030 General Biology I
1 - BIOL 1050 General Biology Lab. I
4 - CH 1010 General Chemistry
3 - Horticulture Specialization Requirement
15

Second Semester
3 - BIOL 1040 General Biology II
1 - BIOL 1060 General Biology Lab II
4 - CH 1020 General Chemistry
3 - ENGL 1030 Accelerated Composition
3 - MATH 1020 Intro. to Mathematical Analysis
3 - Business Requirement
17

Sophomore Year
First Semester
3 - HORT 2100 Growing Garden Plants in the Fall
3 - HORT 3030 Landscape Plants
3 - MATH 1010 Essential Math. for Informed Soc.
3 - Arts and Humanities (Non-Lit.) Requirement
4 - Plant Biology Requirement
16

Second Semester
3 - HORT 2110 Growing Plants in the Spring
4 - PES 2020 Soils
3 - Arts and Humanities (Literature) Requirement
3 - Social Science Requirement
13

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

Junior Year
First Semester
3 - HORT 3080 Sustainable Landscape Garden Design
3 - Business Requirement
3 - Horticulture Specialization Requirement
3 - Oral Communication Requirement
3 - Related Science Requirement
15

Second Semester
3 - BIOL 4010 Plant Physiology
1 - BIOL 4020 Plant Physiology Lab
3 - HORT 4040 Plant Propagation
1 - HORT 4050 Plant Propagation Techniques Lab.
3 - Horticulture Specialization Requirement
3 - Social Science Requirement
1 - Elective
15

Senior Year
First Semester
3 - HORT 4090 Senior Capstone Course
3 - Business Requirement
3 - Horticulture Specialization Requirement
3 - Related Science Requirement
3 - Elective
15

Second Semester
3 - Horticulture Specialization Requirement
6 - Related Science Requirement
3 - Elective
12

121 Total Semester Hours

Microbiology Bachelor of Science
Microbiology deals with the study of bacteria, viruses, yeasts, filamentous fungi, protozoa, and unicellular algae. Microbiologists seek to describe these organisms in terms of their structures, functions, and processes of reproduction, growth, and death at both the cellular and molecular levels. They are also concerned with their ecology, particularly in regard to their pathological effects on man, and with their economic importance.

The Microbiology major provides a thorough training in the basic microbiological skills. Further, students receive instruction in mathematics, physics, chemistry, and biochemistry, all essential to the training of a modern microbiologist. Students can prepare for a variety of careers through a wide choice of electives.

The Microbiology curriculum with a Biomedicine