PLANT AND ENVIRONMENTAL SOIL SCIENCE - BS, CROPS EMPHASIS

Curriculum in Plant and Environmental Soil Science is administered by the Department of Soil and Crop Sciences. Students following this curriculum develop and utilize basic scientific knowledge to understand the most fundamental resources—plants, soils, and water—and the interaction of these resources in different environmental settings. The required courses provide an essential foundation in several disciplines, while the elective courses can be selected to meet the interests, needs and objectives of individual students.

Based on professional goals and objectives, students will select an emphasis in crops or soil and water. The crops emphasis focuses on the principles involved in the production, management, marketing and use of fiber, forage, grain, biofuel and oilcrops. In the soil and water emphasis, students will study the nature, properties, management, conservation, and use of soils and water. The graduate in Plant and Environmental Soil Science may choose a career in: education—consulting, extension, or public relations; production agriculture—biofuel or seed production, farming, or farm management; soil and water resource management—soil surveying, land appraisal, land use planning, conservation and pollution abatement, or watershed management; environmental—pollution control and environmental protection as affected by plant-soil-water interactions.

Flexible curricula are provided so that each student, in consultation with their academic advisor, can design a degree program that best serves the student’s career objectives.

Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Semester Credit Hours</th>
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<tbody>
<tr>
<td><strong>Department of Soil and Crop Sciences Core Courses</strong></td>
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<tr>
<td>CHEM 222</td>
<td>Elements of Organic and Biological Chemistry</td>
<td>3</td>
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<tr>
<td>SCSC 205</td>
<td>Problem Solving in Plant and Soil Systems</td>
<td>3</td>
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<tr>
<td>SCSC 301</td>
<td>Soil Science</td>
<td>4</td>
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<tr>
<td>SCSC 307</td>
<td>Crop Biology and Physiology</td>
<td>4</td>
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<tr>
<td>SCSC 309</td>
<td>Water in Soils and Plants</td>
<td>4</td>
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<tr>
<td>SCSC 481</td>
<td>Senior Seminar</td>
<td>2</td>
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<tr>
<td><strong>Experiential requirement</strong></td>
<td>3</td>
<td></td>
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<tr>
<td>SCSC 420</td>
<td>Brazilian Agriculture and Food Production Systems</td>
<td></td>
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<tr>
<td>SCSC 421</td>
<td>International Agricultural Research Centers - Mexico</td>
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<tr>
<td>SCSC 423</td>
<td>Natural Resources and Agricultural Sustainability in UK</td>
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<tr>
<td>SCSC 484</td>
<td>Internship</td>
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<tr>
<td>SCSC 491</td>
<td>Research</td>
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<tr>
<td>STAT 302</td>
<td>Statistical Methods</td>
<td>3</td>
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<tr>
<td>or ESSM 313 or Vegetation Sampling Methods and Designs in Ecosystems</td>
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Pest Management
Select two of the following: 7-8
- PLPA 301 Plant Pathology
- PLPA 303 and Plant Pathology Laboratory
- ENTO 201 General Entomology
- ENTO 401 Principles of Integrated Pest Management
- SCSC 446 Weed Management and Ecology

Ecology
- RENR 205 Fundamentals of Ecology 3
  or SCSC 444 or Forage Ecology and Management

**Crops Emphasis**
- SCSC 304 Plant Breeding and Genetics 3
- SCSC 311 Principles of Crop Production 3
- SCSC 402 Crop Stress Management 4
- SCSC 410 International Agricultural Systems 3
- SCSC 441 Advances in Agronomic Sciences 3

Directed electives 1
- 9

Free electives 16-17

**University Core Curriculum Requirements**
- AGEC 105 Introduction to Agricultural Economics 3
- CHEM 101 & CHEM 111 Fundamentals of Chemistry I and Fundamentals of Chemistry Laboratory I 4
- COMM 203 Public Speaking 3
- American history elective (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) 6
- Communication elective (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) 3
- Creative arts elective (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) 3
- Government/Political science elective (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science) 6
- Language, philosophy and culture elective (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) 3

Life and physical sciences
Select from the following: 5
- BIOL 101 Botany
- BIOL 111 Introductory Biology I
- BIOL 113 Essentials in Biology
- CHEM 102 Fundamentals of Chemistry II
- GEOL 101 Principles of Geology
- PHYS 201 College Physics
- PHYS 218 Mechanics
Mathematics elective (MATH prefix required) 6
(http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#mathematics)

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<td>Total Semester Credit Hours</td>
<td>120</td>
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1. To be selected from crops emphasis courses.
2. The Graduation requirements include a requirement for six hours of international and cultural diversity courses. A course satisfying a Core category, a college/department requirement, or a free elective can be used to satisfy this requirement. See academic advisor.
3. Credit by examination may be used to substitute for courses.