Crop, Soil and Environmental Sciences (CSES)

Jeff Edwards
Department Head
115 Plant Science Building
479-575-2354

Crop, Soil and Environmental Sciences Website

Courses in the Department of Crop, Soil and Environmental Sciences provide fundamental and applied studies in two majors:

- Crop Science (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/dalebumperscollegeofagriculturalfoodandlifesciences/cropmanagementcpmg/)
- Environmental, Soil and Water Science (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/dalebumperscollegeofagriculturalfoodandlifesciences/environmentalsoilandwatersciencesews/)

Areas studied within the Crop Science major include crop science, production agriculture, plant breeding and genetics, crop and forage production, pest management (weeds, insects, and plant diseases), and soil fertility. The Environmental, Soil and Water Science major includes courses in areas such as environmental science, water quality, soil science, soil and water conservation, and the sustainable productivity of natural resources.

Many graduates from both majors also choose to continue their education in graduate programs in a wide variety of disciplines both related and complementary to the B.S.A. degrees.

Crop Science (CPSC)

Jeff Edwards
Professor and Head
115 Plant Science Building
479-575-2354

Opportunities for employment and post-graduate study are numerous for graduates of the Department of Crop, Soil, and Environmental Sciences. Crop Science graduates become involved in crop production or find employment in public agencies providing support services for agriculture (e.g., Extension Service, State Plant Board, Natural Resources Conservation Service), or as consultants serving production agriculture, in the agrichemical and seed industries and in agricultural research programs.

The crop science major includes courses in crop management, production agriculture, plant breeding and genetics, crop and forage production, pest management (weeds, insects, and plant diseases), and soil fertility.

Requirements for a Major in Crop Science (CPSC)

State minimum core (http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/) and discipline specific general education requirements (http://catalog.uark.edu/undergraduatecatalog/gened/generaleducation/).

(Course work that meets state minimum core requirements is in bold.)

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<td>UNIV 1001</td>
<td>University Perspectives ¹</td>
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<table>
<thead>
<tr>
<th>Communications</th>
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<tbody>
<tr>
<td>ENGL 1013</td>
<td>Composition I (ACTS Equivalency = ENGL 1013)</td>
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<tr>
<td>ENGL 1023</td>
<td>Composition II (ACTS Equivalency = ENGL 1023)</td>
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<tr>
<td>COMM 1313</td>
<td>Public Speaking (ACTS Equivalency = SPCH 1003)</td>
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<tr>
<td>CSES 3023</td>
<td>Crop, Soil, and Environmental Sciences Colloquium</td>
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<thead>
<tr>
<th>U.S. History or Government ²</th>
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<tr>
<td>Select 3 hours US History or Government State Minimum Core</td>
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<table>
<thead>
<tr>
<th>Mathematics and Computer Science</th>
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<tbody>
<tr>
<td>MATH 1203</td>
<td>College Algebra (ACTS Equivalency = MATH 1103) or higher level MATH</td>
</tr>
<tr>
<td>ASTM 2903</td>
<td>Agricultural and Human Environmental Sciences Applications of Microcomputers</td>
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<tr>
<td>or STAT 230</td>
<td>Principles of Statistics (ACTS Equivalency = MATH 2103)</td>
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<table>
<thead>
<tr>
<th>Physical and Biological Sciences</th>
<th>15-19</th>
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</thead>
<tbody>
<tr>
<td>BIOL 1543</td>
<td>Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</td>
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<tr>
<td>CHEM 2613</td>
<td>Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)</td>
</tr>
<tr>
<td>ANSC 3123</td>
<td>Principles of Genetics</td>
</tr>
<tr>
<td>or POSC 31</td>
<td>Principles of Genetics</td>
</tr>
<tr>
<td>or BIOL 232</td>
<td>General Genetics</td>
</tr>
<tr>
<td>Select one CHEM group (4-8 hours)</td>
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<tr>
<td>CHEM 1073</td>
<td>Fundamentals of Chemistry (ACTS Equivalency = CHEM 1071 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1071 Lab)</td>
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<tr>
<td>CHEM 1103</td>
<td>University Chemistry I (ACTS Equivalency = CHEM 1101 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1101 Lab)</td>
</tr>
<tr>
<td>CHEM 1101</td>
<td>University Chemistry I (ACTS Equivalency = CHEM 1101 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1101 Lab)</td>
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<tr>
<td>Select 3 hours from Fine Arts State Minimum Core</td>
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<tr>
<td>Select 3 hours from Humanities State Minimum Core</td>
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<tr>
<td>Social Sciences ²</td>
<td>9</td>
</tr>
<tr>
<td>AGEC 1103</td>
<td>Principles of Agricultural Microeconomics</td>
</tr>
<tr>
<td>Select 6 hours from Social Sciences State Minimum Core</td>
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<table>
<thead>
<tr>
<th>Crop Science Core</th>
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<tbody>
<tr>
<td>CSES 1203</td>
<td>Introduction to Plant Sciences</td>
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<tr>
<td>CSES 2103</td>
<td>Crop Science</td>
</tr>
<tr>
<td>&amp; CSES 2101L</td>
<td>Crop Science Laboratory</td>
</tr>
</tbody>
</table>
Crop Science Electives 3 21
Select Twenty-One (21) hours from the following:
- CSES 3214 Soil Resources and Nutrient Cycles
- CSES 3312 Cotton Production
- CSES 3322 Soybean Production
- CSES 3332 Rice Production
- CSES 3342 Cereal Grain Production
- CSES 3703 Precision Agriculture for Crops
- ENSC 3003 Introduction to Water Science
- ENSC 3263 Soil and Water Conservation
- ENSC 3603 GIS for Environmental Science
- CSES 4103 Plant Breeding
- CSES 4133 Ecology and Morphology of Weedy and Invasive Plants
- or CSES 414 Principles of Weed Control
- ENTO 4123 Insect Pest Management
- PLPA 4223 Plant Disease Control
- PLPA 4333 Biotechnology in Agriculture
- CSES 462V Internship (3 hours)
- CSES 400V Special Problems (3 hours)

General Electives 16-20

Crop Science B.S.A.
Eight-Semester Degree Program
See more about the Eight-Semester Degree Policy (http://catalog.uark.edu/undergraduatetcatalog/academicregulations/eightsemesterdegreecompletionpolicy/) for university requirements of the program.

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher level MATH (Satisfies General Education Outcome 2.1))</td>
<td>3</td>
</tr>
<tr>
<td>Satisfies General Education Outcome 3.4: BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) &amp; BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</td>
<td>4</td>
</tr>
<tr>
<td>CSES 1203 Introduction to Plant Sciences</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 1001 University Perspectives</td>
<td>1</td>
</tr>
<tr>
<td>CSES 2103 Crop Science &amp; CSES 2101L Crop Science Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (If exempt, see adviser for communication courses.) (Satisfies General Education Outcome 1.1)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 1103 Principles of Agricultural Microeconomics (Satisfies General Education Outcome 3.3)</td>
<td>3</td>
</tr>
<tr>
<td>U.S. History or Government Core Elective (Satisfies General Education Outcome 4.2)</td>
<td>3</td>
</tr>
</tbody>
</table>

Year Total: 14 16
The Humanities Elective courses which satisfy General Education Requirements:


The Social Science Elective courses which satisfy General Education Requirements:

- ANTH 1033, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.

The Fine Arts Elective courses which satisfy General Education Requirements:

- ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.

Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

See student degree audit for approved course list.

Environmental, Soil and Water Science (ESWS)

Mary C. Savin
ESWS Coordinator
115 Plant Science Building
479-575-5740

Opportunities for employment and post-graduate study are numerous for graduates of the Department of Crop, Soil, and Environmental Sciences. Environmental, Soil, and Water Science graduates find jobs with environmental consulting companies, environmental education organizations, state agencies (e.g., Extension Service, Department of Environmental Quality, Health Department), federal agencies (e.g., Environmental Protection Agency, Natural Resources Conservation Service), municipalities and local environmental services (e.g., waste management and recycling, water and wastewater treatment facilities, parks and tourism departments), a wide variety of private businesses, and environmental research.

The Environmental, Soil, and Water Science major includes courses in areas such as environmental science, water quality, soil science, and water conservation, and the sustainable productivity of natural resources.

Requirements for a Major in Environmental, Soil, and Water Science (ESWS)

State minimum core (http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/) and discipline specific general education (http://catalog.uark.edu/undergraduatecatalog/gened/generaleducation/) requirements:

(Course work that meets state minimum core requirements is in bold.)

University Requirements

1

UNIV 1001 University Perspectives (Counts as General Elective)

Communication

12

Choose from English Core course (6 hours)

COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)

CSES 3023 Crop, Soil, and Environmental Sciences Colloquium

or ACOM 3143 Communicating Agriculture to the Public

U.S. History and Government

3

Choose 3 hours U.S. History/Government from state minimum core

Mathematics

6

MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)

MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203) (Higher level MATH is encouraged for students with an ACT of 26 or higher and considering graduate school.)
BIOL 1543 & BIOL 1541L
Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)

BIOL 2013 & BIOL 2011L
General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)

BIOL 3863 & BIOL 3861L
General Ecology and General Ecology Laboratory
or ENSC 3223 & ENSC 3221L
Ecosystems Assessment and Ecosystems Assessment Laboratory

CSES 1203
Introduction to Plant Sciences

CHEM 1103 & CHEM 1101L
University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)

CHEM 1123 & CHEM 1121L
University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

CHEM 2613 & CHEM 2611L
Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)

or CHEM 3613 & CHEM 3611L
Organic Chemistry I and Organic Chemistry I Laboratory

GEOS 1113 & GEOS 1111L
Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)

PHYS 2013 & PHYS 2011L
College Physics I (ACTS Equivalency = PHYS 1414 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 1414 Lab)

Fine Arts and Humanities 6
Select 3 hours Fine Arts from state minimum core
Select 3 hours Humanities from state minimum core

Social Sciences 9
Select 9 hours Social Sciences from state minimum core

ESWS Requirements*

Environmental Science Core 17

CSES 2203 Soil Science
CSES 2201L Soil Science Laboratory
ENSC 1003 Environmental Science
ENSC 1001L Environmental Science Laboratory
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers
ENSC 3003 Introduction to Water Science
STAT 2303 Principles of Statistics (ACTS Equivalency = MATH 2103)

Soil Science Core 3-4

CSES 3214 Soil Resources and Nutrient Cycles (with Lab Component)
CSES 4224 Soil Fertility (with Lab Component)

CSES 4253 Soil Classification and Genesis (with Lab Component)
CSES 4553 Wetland Soils
ENSC 3263 Soil and Water Conservation
ENSC 4263 Environmental Soil Science (with Lab Component)

Water Science Core

Select one of the following: 3

ENSC 4023 Water Quality
GEOS 3333 Oceanography
GEOS 4033 Hydrogeology
GEOS 4363 Climatology

GEOS 4473 Applied Climatology

Natural Resources Core

Select 9 hours from the following two groups: 9

Environmental Science**

ASTM 3153 Surveying in Agriculture and Forestry
CSES 2013 Pest Management
CSES 355V Soil Profile Description (1 hour, may take twice)
CSES 462V Internship (1-6 credit hours)
CSES 4553 Wetland Soils
ENSC 3103 Plants and Environmental Restoration
ENSC 3263 Soil and Water Conservation
ENSC 3603 GIS for Environmental Science
ENSC 4021L
ENSC 4401 Professional Certification Preparation
GEOS 3043 Sustaining Earth
GEOS 3543 Geospatial Applications and Information Science

Environmental Studies (0-3 hours)

AGEC 3413 Principles of Environmental Economics
AGEC 3503 Agricultural Law I
AGEC 3523 Environmental and Natural Resources Law
ENSC 3933 Environmental Ethics
ENSC 4603 Environmental Sociology

General Electives 16-17

Total Hours 120

*Courses within major cannot be taken for duplicate credit.

**One 3-hr study abroad course, either Experiential Learning in Indian Agriculture (Jan) or Sustainability in the Eurozone Agro-Food Chain (May), which are both taken under AFLS 401V/401VH, can be substituted for 3 hours of Natural Resources core.

Environmental, Soil, and Water Science B.S.A.

Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight-Semester Degree Policy (http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/) for university requirements of the program.

First Year

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)
Satisfies General Education Outcomes 3.4 and 5.1:

- ENSC 1003 Environmental Science
- & ENSC 1001L Environmental Science Laboratory

Satisfies General Education Outcome 3.4:

- BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)
- & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
- MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)
- UNIV 1001 University Perspectives

Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2)\(^1,2\)

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)

CSES 1203 Introduction to Plant Sciences

Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3)

CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)
- & CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)

Year Total: 15

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<tr>
<th>Second Year</th>
<th>Fall</th>
<th>Spring</th>
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<tr>
<td>General Elective as Broadening Elective (could apply toward a minor)</td>
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<tr>
<td>GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) &amp; GEOS 1111L Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)</td>
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<td></td>
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<tr>
<td>U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203)</td>
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<td></td>
</tr>
<tr>
<td>CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) &amp; CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)</td>
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Year Total: 16

Third Year

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<th>Spring</th>
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<tr>
<td>CSES 2203 Soil Science &amp; CSES 2201L Soil Science Laboratory</td>
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<tr>
<td>PHYS 2013 College Physics I (ACTS Equivalency = PHYS 2014 Lecture) &amp; PHYS 2011L College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)</td>
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<tr>
<td>Water Science or Natural Resources Core</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
<td>3-4</td>
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</table>
| General Electives as AFLS Broadening Electives (Could apply toward a minor)\(^4\)
- CHEM 3603 Organic Chemistry I & CHEM 3601L Organic Chemistry I Laboratory
| BIOL 2013 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) & BIOL 2011L General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) | 4 | |
| CHEM 2613 Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) & CHEM 2611L Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab) | 3 | |
| Social Sciences State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1)\(^3\) | |
| Water Science or Soil Science Core (For Water Science: Recommended: ENSC 3003; Soil Science: Pre-at least CSES 2203) | 3-4 | |

Year Total: 14

Fourth Year

<table>
<thead>
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<th>Fall</th>
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<tr>
<td>Select one of the following:</td>
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</table>
| CSES 3023 Crop, Soil, and Environmental Sciences Colloquium (Satisfies General Education Outcome 6.1)
- ACOM 3143 Communicating Agriculture to the Public | |
| Select one of the following: | 4 |
| ENSC 3223 Ecosystems Assessment & ENSC 3221L Ecosystems Assessment Laboratory
- BIOL 3863 General Ecology & BIOL 3861L General Ecology Laboratory | |
| Statistics or Natural Resources Core | 3 |
| Soil Science or Natural Resources Core | 3-4 |
| Natural Resources Core or General Elective (Could apply elective toward a minor)\(^4\) | |
| Natural Resources Core or General Elective\(^4\) | 3 |
| Statistics or Natural Resources Core | 3 |
| General Elective\(^4\) | 3 |
| General Elective as Broadening Elective (Could apply toward a minor)\(^4\) | 2-3 |
| General Elective (May wish to take another elective. Could apply toward a minor)\(^4\) | 2-3 |

Year Total: 16

Year Total: 13
Minor in Crop Biotechnology (CPBT-M)

A student planning to minor in Crop Biotechnology must notify the program advisor for consultation and more detailed information. The Crop Biotechnology Minor consists of 16 hours of courses and to include the following:

Core Courses

- PLPA 4333 Biotechnology in Agriculture 3

Genetics

- CSES 400V Special Problems (two 2-hour courses taken in two different semesters) 4

Select one of the following:

- BIOL 2323 General Genetics 3
- ANSC/POSC 3123 Principles of Genetics

Controlled Electives

Select two of the following:

- BIOL 4303 3
- CHEM 3813 Elements of Biochemistry
- CSES 4103 Plant Breeding

Total Hours 16

Minor in Crop Science (CPSC-M)

A student planning to minor in Crop Science must notify the program advisor for consultation and more detailed information. The Crop Science Minor consists of 18 semester hours of 2000-level courses or above, including the following:

- CSES 2103 Crop Science 3
- CSES 2203 Soil Science 3

Total Units in Sequence: 120

1. The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:
   - ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.


3. The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2103, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

4. Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic advisor when making course selections.

Total Hours 18

Faculty

Bacon, Robert Keith, Ph.D. (Purdue University), M.S., B.S.A., (University of Arkansas), Professor, 1984, 1993.

Barber, Thomas, Ph.D., M.S., B.S. (University of Arkansas), Professor, 2007, 2016.

Bourland, Fred, Ph.D. (Texas A&M University), M.S., B.S.A. (University of Arkansas), Professor, 1988.


Butts, Thomas R., Ph.D. (University of Nebraska-Lincoln), Assistant Professor, 2019.

Counce, Paul Allen, Ph.D. (University of Georgia), M.S. (Purdue University), B.S. (University of Tennessee-Martin), Professor, 1983, 2003.

Daniels, Michael B., Ph.D., M.S. (University of Arkansas), B.S. (Pennsylvania State University), Professor, 1996, 2006.

De Guzman, Christian T., Ph.D. (Louisiana State University), B.S. (University of Philippines, Los Banos), Assistant Professor, 2020.


Gbur, Edward E., Ph.D., M.S. (University of Florida), B.S. (Iowa State University), Associate Professor, 1987, 1998.

Hardke, Jarrod T., Ph.D. (Louisiana State University), B.S.A. (University of Arkansas), Professor, 2013, 2020.

Kelley, Jason, Ph.D., M.S. (Oklahoma State University), B.S. (Kansas State University), Professor, 2003, 2019.

Lee, Jung Ae, Ph.D. (University of Georgia), M.A., B.A., (Ewha Womans University), Assistant Professor, 2016.

Mason, Richard Esten, Ph.D., B.A. (Texas A&M University), Associate Professor, 2010, 2016.

Mauroumostakos, Andy, Ph.D., M.S. (Oklahoma State University), B.S. (Oral Roberts University), Professor, 1989, 2002.

Miller, David M., Ph.D. (University of Georgia), M.S., B.S. (Purdue University), Professor, 1988, 2001.

Mozaffari, Morteza, Ph.D. (University of Delaware), M.S., B.S. (University of Massachusetts), Assistant Professor, 2002.

Mozzoni, Leandro, Ph.D. (University of Arkansas), M.S. B.S. (Rosario National University), Associate Professor, 2017.

Norsworthy, Jason Keith, Ph.D., M.S. (University of Arkansas), B.S. (Louisiana Tech University), Distinguished Professor, 2006, 2019.
Pereira, Andy, Ph.D. (Iowa State University), M.S. (Indian Agricultural Research Institute, India), B.Sc.Ag. (Govind Ballabh Pant University of Agriculture and Technology, India), Professor, Anheuser-Busch and Arkansas Wholesalers Professorship in Molecular Genetics, 2011.

Poncet, Aurelie, Ph.D. (Auburn University), M.S. (Montpellier SupAgro, France), M.S. Minor: (AgroTIC), B.S. (Montpellier SupAgro, France), Assistant Professor, 2020.

Purcell, Larry C., Ph.D. (University of Florida), M.S., B.S. (University of Georgia), Distinguished Professor, Ben J. Altheimer Chair for Soybean Research, 1993, 2017.

Roberts, Trenton L., Ph.D. (University of Arizona), B.S. (Oklahoma State University), Associate Professor, 2010, 2017.

Savin, Mary Cathleen, Ph.D., M.S. (University of Rhode Island), B.S. (University of Notre Dame), Professor, 2002, 2011.

Scott, Robert C., Ph.D. (Mississippi State University), M.S., B.S. (Oklahoma State University), Professor, 2002, 2008.

Sha, Xueyan, Ph.D. (Louisiana State University), Professor, 2012.

Shakiba, Ehsan, Ph.D., M.S. (University of Arkansas), M.S., B.S. (Azad University, Iran), Assistant Professor, 2015.

Slaton, Nathan A., Ph.D., M.S. (University of Arkansas), B.S. (Murray State University), Professor, 2001, 2009.

Srivastava, Vibha, Ph.D. (Jawaharlal Nehru University, New Delhi), M.S. (Govind Ballabh Pant University of Agriculture and Technology), B.S. (D.E.I. University), Professor, 2001, 2012.

Thompson, Gary A., Ph.D. (Purdue University), M.S. (University of Wisconsin), Professor, 2020.


Courses

CSES 1203. Introduction to Plant Sciences. 3 Hours.
An introduction to basics of agricultural crop plant structure, growth, and production. (Typically offered: Fall and Spring)

CSES 2013. Pest Management. 3 Hours.
Introduction to basic principles of pest management as they relate to vertebrate animals, insects, plant disease and weeds. Selected pests are studied with emphasis on current management approaches and alternative pest control. (Typically offered: Spring)

CSES 2101L. Crop Science Laboratory. 1 Hour.
A series of laboratory experiments designed to reinforce principles of plant growth and development, reproduction, classification, and the utilization of plant products. Emphasis is placed on major crop plant species. Experiments are conducted by individuals or by teams. Laboratory consists of a single, 2-hour period each week. Required for Crop Management majors. Corequisite: CSES 2103. (Typically offered: Spring)

CSES 2103. Crop Science. 3 Hours.
Principles of crop growth, development, and utilization and how these principles relate to production. Emphasis on major agronomic crop species. Lecture 3 hours per week. (Typically offered: Spring)

CSES 2201L. Soil Science Laboratory. 1 Hour.
Field and laboratory exercises related to the study of the physical, chemical, and microbiological properties of soils. Laboratory mandatory for all crop management and environmental, soil, and water science majors and optional for others. Laboratory 2 hours per week. Pre- or Corequisite: CSES 2203. (Typically offered: Fall and Spring)

CSES 2203. Soil Science. 3 Hours.
Origin, classification, and physical, chemical, and biological properties of soils. Lecture 3 hours, discussion 1 hour per week. Corequisite: Drill component. Prerequisite: MATH 1203 or higher (to include MATH 1213, MATH 1284C, MATH 1514, MATH 2213, MATH 2043, MATH 2053, MATH 2445, MATH 2514, MATH 2554, MATH 2564, or MATH 2574) and CHEM 1103 or CHEM 1073. (Typically offered: Fall and Spring)

CSES 3023. Crop, Soil, and Environmental Sciences Colloquium. 3 Hours.
A communication-intensive course covering topics in agronomy and environmental, soil, and water science with particular emphasis on spoken communication but also including written communication, group activities, professionalism, ethics, problem solving, and information retrieval. A student-oriented class with collaborative participation. Colloquium workshop: 3 hours per week. Prerequisite: COMM 1313 and Junior or Senior standing only. (Typically offered: Fall)

CSES 3121. Soil Resources and Nutrient Cycles. 4 Hours.
Integration of the fundamental concepts of the biological, chemical, and physical properties of soil systems and their roles in managing soil resources. Lecture 3 hours, laboratory 3 hours per week. Pre- or Corequisite: BIOL 2313 and BIOL 2111L. Corequisite: Lab component. Prerequisite: CSES 2203. (Typically offered: Spring Odd Years)

CSES 3312. Cotton Production. 2 Hours.
Principles and techniques associated with production of cotton. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Fall Even Years)

CSES 3322. Soybean Production. 2 Hours.
An overview of the history and utilization of soybean as well as the physiological and environmental basis for the development of economical soybean production practices. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Fall Odd Years)

CSES 3332. Rice Production. 2 Hours.
A study of the principles and practices involved in rice culture worldwide with major emphasis on the United States. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Fall Odd Years)

CSES 3342. Cereal Grain Production. 2 Hours.
An overview of the botany, production, cultural practices, soil & climatic adaptation and utilization of the major cereal grain crops. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Spring Even Years)

CSES 355V. Soil Profile Description. 1-2 Hour.
Training for soil profile description writing and membership of judging teams. (Typically offered: Fall) May be repeated for up to 8 hours of degree credit.

CSES 3703. Precision Agriculture for Crops. 3 Hours.
This course will provide students with a practical understanding of precision agriculture and crop/ecosystem monitoring with remote and proximal sensing technology. Prerequisite: MATH 1203 and CSES 2103. (Typically offered: Spring)

CSES 400V. Special Problems. 1-6 Hour.
Work on special problems in crop, soil and environmental sciences or related field. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

CSES 4013. Advanced Crop Science. 3 Hours.
Fundamental concepts of crop physiology, crop improvement, seed science, and crop production systems. Recitation 3 hours per week. Prerequisite: CSES 2103 and CSES 2203. (Typically offered: Spring)

CSES 402V. Special Topics. 1-3 Hour.
Studies of selected topics in crop, soil and environmental sciences not available in other courses. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
CSES 4103. Plant Breeding. 3 Hours.
Basic principles involved in plant breeding programs to improve crop plants and seed programs. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: ANSC 3123 or BIOL 2323. (Typically offered: Fall Even Years)

CSES 4133. Ecology and Morphology of Weedy and Invasive Plants. 3 Hours.
Study of weeds as economic pests occurring in both agricultural and nonagricultural situations and including poisonous plants and other specific weed problems. Gross morphological plant family characteristics which aid identification, habitat of growth and distribution, ecology, competition, and allelopathy are discussed. Lecture 2 hours, laboratory 2 hours a week. Corequisite: Lab component. Prerequisite: CSES 2103 or HORT 2003. (Typically offered: Fall)

CSES 4143. Principles of Weed Control. 3 Hours.
Advanced concepts and technology used in modern weed control practices and study of the chemistry and specific activity of herbicides in current usage. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1073 and CHEM 1071L. (Typically offered: Spring)

CSES 4224. Soil Fertility. 4 Hours.
Study of the soil's chemical, biological and physical properties, and human modification of these properties, as they influence the uptake and utilization of the essential nutrients by plants. Lecture 3 hours, laboratory 2 hours per week. Pre- or Corequisite: CHEM 1123 and CHEM 1121L or (CHEM 1073 and CHEM 1071L and CHEM 2613 and CHEM 2611L). Corequisite: Lab component. Prerequisite: CSES 2201L and CSES 2203. (Typically offered: Fall)

CSES 4253. Soil Classification and Genesis. 3 Hours.
Lecture and field evaluation of soil properties and their relation to soil genesis and soil classification with emphasis on soils of Arkansas. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L. (Typically offered: Fall Odd Years)

CSES 4553. Wetland Soils. 3 Hours.
This course explains the chemical, physical, and morphological characteristics of wetland soils and describes the techniques for identifying wetland soils using field indicators and monitoring equipment. This course also explains principles of wetland creation, restoration, and mitigation - all key components in assuring the sustainability of valuable wetland resources. Prerequisite: CSES 2203 and CSES 2201L or CSES 355V. (Typically offered: Spring Odd Years)

CSES 462V. Internship. 1-6 Hour.
Supervised practical work experience in agronomy and environmental science to develop and demonstrate professional competence. Faculty approval of project proposal prior to enrollment and written and oral reports after the project is complete are required. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.