GLOBAL RESOURCE SYSTEMS

The Global Resource Systems undergraduate major employs a truly interdisciplinary and systemic approach to understanding complex global resource issues. Students develop a core set of technical competencies in a resource area selected from the majors, minors and certificates offered by the College of Agriculture and Life Sciences. Students choose a world region in which to specialize, develop competency in a relevant world language, and participate in a significant cross-cultural immersion experience. They carry out a senior project related to their resource specialization within the context of the world region.

Multidisciplinary themes are developed in the context of the physical, biological and sociological factors affecting global resource systems. In this context, resource systems include agricultural (including crops, livestock and aquaculture), food, fuel, natural, environmental, biological, financial, governmental, institutional, human, knowledge, and other resources. Graduates of this program have transnational leadership skills and are successful integrators of various specializations on a team. They are skilled in applying a systemic perspective and developing solutions to complex global resource systems problems using innovativeness and creativity. Future professionals communicate effectively and demonstrate environmental awareness, exhibit an ethical perspective, and display clear analysis of how cultural diversity impacts work both here and abroad. They also recognize opportunities for learning after graduation.

A degree in Global Resource Systems opens the door to employment opportunities in the many businesses and organizations that require globally competent employees.

Curriculum in Global Resource Systems

Administered by a supervisory committee in the College of Agriculture and Life Sciences. Students choose a region of the world to develop an expertise; they choose a language to learn and develop proficiency through the intermediate level; they choose and possess an area of technical expertise by completing an additional major, minor or certificate program offered through the College of Agriculture and Life Sciences; they complete a required internship in an international setting; and they select and complete a senior research project with faculty mentoring.

Total Degree Requirement: 129 cr.

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
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<tbody>
<tr>
<td>International Perspective</td>
<td>3 cr.</td>
</tr>
<tr>
<td>U.S. Diversity</td>
<td>3 cr.</td>
</tr>
<tr>
<td>Communications Proficiency</td>
<td>3 cr.</td>
</tr>
<tr>
<td>Communication/Library</td>
<td>13 cr.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 150</td>
<td>Critical Thinking and Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 250</td>
<td>Written, Oral, Visual, and Electronic Composition</td>
<td>3</td>
</tr>
<tr>
<td>SP CM 212</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>or AGEDS 311</td>
<td>Presentation and Sales Strategies for Agricultural Audiences</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 302</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 309</td>
<td>Proposal and Report Writing</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 314</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>LIB 160</td>
<td>Information Literacy</td>
<td>1</td>
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Total Credits: 13 cr.

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Humanities and Social Sciences</td>
<td>6 cr.</td>
</tr>
<tr>
<td>ECON 101</td>
<td>Principles of Microeconomics</td>
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<tr>
<td>or ECON 102</td>
<td>Principles of Macroeconomics</td>
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Total Credits: 6 cr.

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td>Ethics</td>
<td>3 cr.</td>
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<tr>
<td>Life Sciences</td>
<td>7 cr.</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 211</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 211L</td>
<td>and Principles of Biology Laboratory I</td>
<td></td>
</tr>
<tr>
<td>Plus 3 cr. from approved life sciences list at 300-level or higher</td>
<td>3</td>
<td></td>
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Total Credits: 6-7 cr.

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td>Global Competency</td>
<td>15-31 cr.</td>
</tr>
<tr>
<td>16 cr. of 100 and 200 level of a single WLC language; 15 cr. in global competency courses from an approved list with up to 3 cr. may be earned from a travel course.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Physical Sciences</td>
<td>8 cr.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 163</td>
<td>College Chemistry and Laboratory in College Chemistry</td>
<td></td>
</tr>
<tr>
<td>&amp; 163L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or CHEM 177</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>&amp; 177L</td>
<td>and Laboratory in General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>One course from the following</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>AGRON 154</td>
<td>Fundamentals of Soil Science</td>
<td></td>
</tr>
<tr>
<td>or AGRON 155</td>
<td>Soils for Horticultural Scientists</td>
<td></td>
</tr>
<tr>
<td>AGRON 206</td>
<td>Introduction to Weather and Climate</td>
<td></td>
</tr>
<tr>
<td>AGRON 260</td>
<td>Soils and Environmental Quality</td>
<td></td>
</tr>
<tr>
<td>AGRON 406</td>
<td>World Climates</td>
<td></td>
</tr>
<tr>
<td>GEOL 101</td>
<td>Environmental Geology: Earth in Crisis</td>
<td></td>
</tr>
<tr>
<td>GEOL 160</td>
<td>Water Resources of the World</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 8 cr.

GLOBE 110 Orientation 1
3 credits of GLOBE 211 3

GLOBE 201 Global Resource Systems 3
GLOBE 301 Resource Systems of Industrialized Nations 3
GLOBE 302 Resource Systems of Developing Nations 3
GLOBE 320 Global Resource Systems Internship Preparation 1
GLOBE 401 Senior Project 3
GLOBE 402 Responses to Global Resource System Challenges 3

One of the following: 3-6
- GLOBE 321 Internship - Global
- GLOBE 322 Internship - United States

Total Credits 23-26

Technical Concentration: 15-18 cr.

Satisfied by any of the majors, minors or certificates offered through the College of Agriculture and Life Sciences.

Electives:
Sufficient coursework to ensure a total of not less than 129 credits

Global Resource Systems, B.S.

Freshman

Fall Credits Spring Credits
GLOBE 110 1 GLOBE 201 3
GLOBE 211 1 MATH 140 3
ECON 101 3 ENGL 250 3
ENGL 150 3 CHEM 163 4
LIB 160 1 CHEM 163L 1
BIOL 211L 1
Humanities 3

Total 16 17

Sophomore

Fall Credits Spring Credits
GLOBE 211 1 GLOBE 301 3
Language 4 Language 4
Global Politics or Global Culture 3 AGEDS 311 or SP CM 212 3
Technical Area 3 AGRON 154/155 or Geol 101 3
Elective 4 Technical Area 3

Total 15 16

Junior

Fall Credits Spring Credits
GLOBE 302 3 GLOBE 320 1
Language 4 Language 4
GLOBE 211 1 Global History or Global Culture 3
ENGL 309 3 AGRON 342 (or Other CALS Approved Ethics) 3

Total 15 16

Senior

Fall Credits Spring Credits
GLOBE 321 3 GLOBE 402 3
GLOBE 401 3 Global Culture 3
International Perspectives 3 ENT 374 (or Other 300 Level or Higher CALS Approved Life Science Course) 3
Global Economics or Global Culture 3 Technical Area 3
Technical Area 3 General Elective 3
General Elective 1

Total 16 15

Total Credits: 129

Courses primarily for undergraduates:

GLOBE 110: Orientation
(1-0) Cr. 1. F.

GLOBE 201: Global Resource Systems
(3-0) Cr. 3. S.
A comparative analysis of global resources and the various natural and human systems affecting those resources. Assessed service-learning component.

GLOBE 211: Issues in Global Resource Systems
(1-0) Cr. 1. Repeatable, maximum of 3 credits. F.S.
Prereq: credit or enrollment in GLOBE 201
Discussion of topics of current importance in global resource systems. Offered on a satisfactory-fail basis only. A maximum of 3 credits of 211 may be used towards degree requirements.

GLOBE 220: Global Sustainability
(Cross-listed with ANTHR, ENV S, M E, MAT E, SOC, T SC). (3-0) Cr. 3. F.S.
An introduction to the key global issues in sustainability. Focuses on interconnected roles of energy, materials, human resources, economics, and technology in building and maintaining sustainable systems. Applications discussed will include challenges in both the developed and developing world and will examine the role of technology in a resource-constrained world. Cannot be used for technical elective credit in any engineering department.
Meets International Perspectives Requirement.

GLOBE 221: Apprenticeship
Cr. R. Repeatable. F.S.SS.
Prereq: Approval by the Global Resource Systems Faculty Coordinator
Practical work experience in approved domestic or international settings such as with a company, research laboratory, governmental agency or non-governmental organization. Offered on a satisfactory-fail basis only.
GLOBE 290: Independent Study  
Cr. 1-2. Repeatable. F.S.SS.  
**Prereq:** Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator  
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for first-year students and sophomores.

GLOBE 290H: Independent Study, Honors  
Cr. 1-2. Repeatable. F.S.SS.  
**Prereq:** Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator  
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for first-year students and sophomores.

GLOBE 301: Resource Systems of Industrialized Nations  
(3-0) Cr. 3. S.  
**Prereq:** GLOBE 201, ECON 101 or ECON 102  
In-depth analysis of the opportunities, constraints and consequences of the resource systems common in industrialized nations. Topics integrate natural resources with land tenure, societal structure, food security, agriculture, shelter, energy and wealth dynamics.

GLOBE 302: Resource Systems of Developing Nations  
(3-0) Cr. 3. F.  
**Prereq:** GLOBE 201, ECON 101 or ECON 102  
In-depth appraisal of resource systems common throughout the developing world. Topics integrate natural resources with land tenure, societal structure including gender issues, food security, agriculture, shelter, energy and wealth dynamics and effectiveness of global programs aimed at sustainable development.

GLOBE 320: Global Resource Systems Internship Preparation  
(1-0) Cr. 1. S.  
**Prereq:** Permission of instructor.  
Students enrolled in this course intend to enroll in Globe 321 or 322 in the following term. Topics provide a pre-departure orientation, including logistical, academic, cultural, and personal requirements for completion of an experiential supervised work experience.

GLOBE 321: Internship - Global  
Cr. 3-6. Repeatable. F.S.SS.  
**Prereq:** GLOBE 320, Junior or Senior and enrollment in Global Resource Systems major; permission of the instructor and approval by the Global Resource Systems Faculty Coordinator  
A supervised learning experience including an analysis of an international location's resource system via immersion in a foreign culture lasting at least five weeks. The experience should focus on the region consistent with the student's degree track. Course expenses paid by student. A maximum of 12 credits of GLOBE 321 and 322 may be used for degree requirements.

GLOBE 322: Internship - United States  
Cr. 3-6. Repeatable. F.S.SS.  
**Prereq:** GLOBE 320, Junior or Senior and enrollment in Global Resource Systems major; permission of the instructor and approval by the Global Resource Systems Faculty Coordinator  
A supervised learning experience including an analysis of a domestic location's resource system via immersion in a different culture within the United States lasting at least five weeks. Designed for international students and for students who are not in a position to leave the United States. Course expenses paid by student. A maximum of 12 credits of Globe 321 and 322 may be used for degree requirements.

GLOBE 385: Economic Development  
(Cross-listed with ECON). (3-0) Cr. 3.  
**Prereq:** ECON 101, ECON 102  
Current problems of developing countries, theories of economic development, agriculture, and economic development, measurement and prediction of economic performance of developing countries, alternative policies and reforms required for satisfying basic needs of Third World countries, interrelationships between industrialized countries and the developing countries, including foreign aid. Meets International Perspectives Requirement.

GLOBE 401: Senior Project  
Cr. 3. F.S.SS.  
**Prereq:** Senior classification in Global Resource Systems  
Research project in collaboration with faculty that complements and furthers a student's experiences from Globe 321 and 322 while simultaneously bringing into focus entire four-year experience. Student will write a research report and make either an oral or poster presentation.

GLOBE 401H: Senior Project, Honors  
Cr. 3. F.S.SS.  
**Prereq:** Senior classification in Global Resource Systems  
Research project in collaboration with faculty that complements and furthers a student's experiences from Globe 321 and 322 while simultaneously bringing into focus entire four-year experience. Student will write a research report and make either an oral or poster presentation.

GLOBE 402: Responses to Global Resource System Challenges  
(3-0) Cr. 3. S.  
**Prereq:** Two courses from AN S 223, AN S 225, AN S 226, AN S 229, AN S 235  
An overview of animal agriculture with emphasis on animal agriculture in developing countries. Historical, economic, environmental; and political considerations will be assessed and evaluated. Issues related to gender, resilience and sustainability for different production systems will be investigated. Meets International Perspectives Requirement.
GLOBE 446: International Issues and Challenges in Sustainable Development
(Cross-listed with AGRON, INTST). Cr. 3. F.S.
Prereq: 3-credit biology course, Sophomore or higher classification, permission of instructor
Interdisciplinary study and analysis of agricultural systems, sustainable management, and impact on plants and animal biodiversity. International field experience in evaluating different agricultural systems and impact on biodiversity may be required. A program fee is charged to students for international study abroad.
Meets International Perspectives Requirement.

GLOBE 490: Independent Study
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for juniors and seniors. A maximum of 9 credits of all (university-wide) 490 courses may be used for degree requirements.

GLOBE 490A: Independent Study: General
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for juniors and seniors. A maximum of 9 credits of all (university-wide) 490 courses may be used for degree requirements.

GLOBE 490B: Independent Study: Service Learning
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Selected projects that result in outcomes benefiting a non-Iowa State University entity while instilling a professional ethics and accomplishing student learning goals. Course expenses paid by student. Assessed service-learning component.

GLOBE 490C: Independent Study: Entrepreneurship
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for juniors and seniors. A maximum of 9 credits of all (university-wide) 490 courses may be used for degree requirements.

GLOBE 490D: Independent Study: Honors
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for juniors and seniors. A maximum of 9 credits of all (university-wide) 490 courses may be used for degree requirements.

GLOBE 490E: Independent Study: Service Learning
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Selected projects that result in outcomes benefiting a non-Iowa State University entity while instilling a professional ethics and accomplishing student learning goals. Course expenses paid by student. Assessed service-learning component.

GLOBE 490F: Independent Study: Entrepreneurship
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for juniors and seniors. A maximum of 9 credits of all (university-wide) 490 courses may be used for degree requirements.

GLOBE 490G: Independent Study: Honors
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Independent study on topics of special interest to the student. Comprehensive report required. Intended primarily for juniors and seniors. A maximum of 9 credits of all (university-wide) 490 courses may be used for degree requirements.

GLOBE 494: Service Learning
Cr. arr. F.S.SS.
Prereq: Permission of instructor.
Selected projects that result in outcomes benefiting a non-Iowa State University entity while instilling a professional ethics and accomplishing student learning goals. Course expenses paid by student. Assessed service-learning component.

GLOBE 494A: Service Learning: International
Cr. arr. Repeatable, maximum of 12 credits. F.S.SS.
Prereq: Permission of instructor.
Selected projects that result in outcomes benefiting a non-Iowa State University entity while instilling a professional ethics and accomplishing student learning goals. Course expenses paid by student. Assessed service-learning component.

GLOBE 494B: Service Learning: Domestic
Cr. arr. Repeatable, maximum of 12 credits. F.S.SS.
Prereq: Permission of instructor.
Selected projects that result in outcomes benefiting a non-Iowa State University entity while instilling a professional ethics and accomplishing student learning goals. Course expenses paid by student. Assessed service-learning component.

GLOBE 495: Global Resource Systems Study Abroad Course Preparation
(1-0) Cr. 1. Repeatable. F.S.
Prereq: Permission of instructor.
Global resource systems topics will include the agricultural industries, climate, crops, culture, economics, food, geography, government, history, livestock, marketing, natural resources, public policies, soils, and preparation for travel to locations to be visited. Students enrolled in this course intend to register for Globe 494A, 496 or 497 the following term.

GLOBE 496: Global Resource Systems Study Abroad
Cr. 2-4. Repeatable. F.S.SS.
Prereq: Permission of instructor.
Extended field trips abroad to study global resource systems. Location and duration of trips will vary. Pre-trip sessions arranged through Globe 495. Trip expenses paid by student.
Meets International Perspectives Requirement.

GLOBE 497: Deans Global Ag and Food Leadership Program
Cr. 1-4. Repeatable. F.S.SS.
Prereq: Permission of instructor.
An integrated agricultural and food production and policy program that allows students to assess, analyze and evaluate complex, country-specific situations and to develop their skills, knowledge and abilities via team-oriented projects that involve complex issues such as development of effective foreign food aid and agricultural and food production systems, drivers of world hunger, sustainable resource management and efficacy of policy, and the role of the USA and the United Nations and other development agencies in these systems. International location and duration of program will vary. Pre-trip sessions arranged through Globe 495. Trip expenses paid by students.
Meets International Perspectives Requirement.

GLOBE 499: Undergraduate Research
Cr. arr. F.S.
Prereq: Permission of the instructor and approval by the Global Resource Systems Faculty Coordinator
Research projects in collaboration with faculty.