

Natural Resources and Environmental Sciences: secondary major, bachelor's, CIP Code: 03.0103

Concerns in the public and private sectors about environmental problems and scarcity of natural resources have led to an increasing demand for individuals who can bring together and synthesize the many facets of today's environmental and resource issues. With an increasing emphasis on sustainability, Kansas State University has an obligation to educate its students on the sustainable use and management of resources now and in the future. By providing an interdisciplinary array of courses from across the university, the Natural Resources and Environmental Sciences (NRES) secondary major allows KSU students to add academic breadth and depth to the courses taken for their primary major.

The NRES program does more than just complement existing primary majors at KSU. Rather, it broadens the perspective of students by exposing them to courses drawn from the humanities, social sciences, physical sciences, and applied sciences and technology. Students are required to take classes outside their major area of emphasis, and in doing so interact with students and faculty who address environmental and natural resources questions from many different perspectives. All NRES courses have been approved for inclusion in the secondary major by the governing board, which consists of KSU faculty recognized for their teaching and research quality in the field of environmental sciences or natural resource use and management.

As part of the NRES program, students must complete the NRES capstone class. The class is open only to senior NRES students. This course, which is taught by an interdisciplinary group of full-time KSU faculty members, affords students the opportunity to take a multi-faceted approach to an environmental or natural resource problem. Students complete a group project under the direction of a KSU faculty member and communicate their findings and/or recommendations in a written report and formal oral presentation.

All faculty who serve on the governing board and teach NRES classes hold the terminal degree in their discipline. For most, this is the Ph.D. Many have been recognized with teaching and research awards in their respective colleges. NRES faculty are housed in the Colleges of Engineering, Architecture, Arts and Sciences, and Agriculture.

Concern about environmental, natural resource, and sustainability issues have increased the availability of jobs and careers that match the skills and background of NRES graduates. Most NRES graduates have found positions in government, education, or industry.

Many courses in the NRES program also count towards completion of a student's primary major. In many instances, NRES classes also fulfill distribution requirements in various colleges and help students complete University General Education (UGE) requirements. Currently, 47% of NRES students have their primary major in the College of Arts and Sciences, 21% in the College of Agriculture, 18% in the College of Engineering, and 12% in the College of Architecture, Planning, and Design. By expanding the knowledge base of students, the NRES secondary major enhances the employment opportunities for KSU students completing the program.

Summarized Assessment of Student Learning – B.S.

Student Learning Outcomes:

Students in the Natural Resources and Environmental Sciences (NRES) Secondary Major are expected to apply broad-based knowledge to the use, management, sustainability, and quality of air, soil, water, mineral, and biological resources. The NRES Capstone class (DAS/GENAG/DEN 582), the only NRES course taken by all students in the secondary major, compels students to understand the broad perspective required in addressing natural resource and environmental problems, and provides students the chance to work in a multi-disciplinary environment.

Results:

- Assessment of student learning is accomplished through evaluation of student group projects at the end of the NRES Capstone course. The NRES program will complete its first annual assessment of student learning outcomes report in March 2009.
- Preliminary review of the Spring 2008 course evaluations (n=16):
 - 75% of the students indicated that the class provided a comprehensive approach to dealing with important natural resource and environmental problems
 - 69% of the students indicated that the class has a positive impact on their attitudes and viewpoints about working with a variety of professionals
 - 88% concluded that the class presented a breadth of academic viewpoints

- 94% of the responding students agreed that the course facilitated interaction between students and faculty from various viewpoints and backgrounds.

Actions/Revisions:

Since the NRES program will submit its first annual assessment of student learning outcomes in March 2009, there is no information available yet to improve the secondary major, and specifically the NRES Capstone class. The NRES governing board will continue to be proactive in identifying new courses whose inclusion in the secondary major will broaden the multi-disciplinary experience of students.