

## Natural Resources and Environmental Sciences

---

### *Who can take the NRES secondary major?*

This secondary major is open to all degree-seeking undergraduate or graduate students in all colleges. Courses required for the NRES secondary major can be taken concurrently with your major.

### *Does the NRES secondary major add more hours?*

Most programs of study will allow completion of this secondary major within the normal time required by the primary major. All NRES students must complete BAE/DAS/GENAG 582 NRES Capstone during their senior year. Whether or not additional hours are required depends on individual programs and use of electives.

### *Is this secondary major like a minor?*

Minors are typically based within an existing discipline. Because resource and environmental issues are so broad and complex, they exceed the scope of any one discipline and are best addressed through an interdisciplinary (multiple colleges and departments) secondary major.

### *What will I learn in this secondary major?*

The NRES program provides an interdisciplinary overlay for your primary major. Its focus is to broaden students' perspectives, in part through course offerings and in part through interactions with students from other disciplines. The educational goal of the NRES secondary major is to prepare undergraduate students to apply broadly-based scientific knowledge to the use, management, sustainability, and quality of soil, air, water, mineral, biological, and energy resources.

### *What are the academic requirements in the NRES secondary major?*

All NRES students must meet the entry, capstone, and block electives course requirements shown in this guide. In addition, at least one life science course must be completed as part of either the primary major or this secondary major.

### *How do I participate in the NRES secondary major?*

Either make an appointment to meet with the Director, Dr. Shawn Hutchinson in 1077 Seaton Hall (Phone: 785-532-6727 or e-mail: [shutch@ksu.edu](mailto:shutch@ksu.edu)) or apply online from the NRES website (<http://www.ksu.edu/nres/>). An academic advisor will be available to assist in meeting NRES requirements.

### *How does the NRES secondary major function?*

The program is administered through the Director and through an interdisciplinary Governing Board elected from the faculty teaching NRES courses. Currently, the NRES Director is Shawn Hutchinson (Geography). Others serving on the Board are: Colby Moorberg (Agronomy), Nathan Nelson (Agronomy), Stacy Hutchinson (Biological and Agricultural Engineering), Trisha Moore (Biological and Agricultural Engineering), Matthew Sanderson (Sociology), Kendra McLauchlan (Geography), Saugata Datta (Geology), and Jim Sherow (History).

*Kansas State University*

## *Natural Resources and Environmental Sciences*

# **NRES**

## *Secondary Major*

---

## Academic Guide

---

**Enroll in NRES at our WEBSITE**

**The most current curriculum information and an  
NRES enrollment form are available at  
<http://www.ksu.edu/nres>**

*Revised May 17, 2019*

## Natural Resources and Environmental Sciences

### What is the NRES secondary major?

The NRES secondary major is an academic program consisting of an array of courses taken by students interested in adding academic breadth in natural resource and environmental concepts to the depth provided in their primary major.

### Why take the NRES secondary major?

Increasing government, public, and corporate concerns about environmental affairs are producing career opportunities for individuals capable of dealing with the broad scope of natural resource and environmental problems. The NRES secondary major provides extra qualifications for employment by enhancing the knowledge base of the primary major. Participation and completion of the NRES secondary major will be noted on your KSU transcript and graduates will receive a secondary major diploma.

## NRES Academic Requirements

**BASIC REQUIREMENTS:** Students must successfully complete Parts A, B, and C of the basic entry courses to fulfill the NRES secondary major requirements.

○ = K-State 8 Courses

A. Four basic science courses (or their more advanced equivalent).

- MATH 100 College Algebra (3)
- CHM 110 General Chemistry (3) and ○ CHM 111 General Chemistry Lab (1)  
or ○ CHM 210 Chemistry I (4)
- PHYS 101 The Physical World (3) and ○ PHYS 103 The Physical World and Lab (1)  
or ○ PHYS 113 General Physics I (4) or ○ PHYS 115 Descriptive Physics (5)
- ECON 110 Prin. Macroeconomics (3) or ○ ECON 120 Prin. Microeconomics (3) or  
○ AGECE 120 Agricultural Economics & Agribusiness (3)

B. Two of the following basic resource courses. These courses must be from different departments and total a minimum of 6 credits. **Courses used to meet this requirement may not be used again as block electives.**

- AGRON 305 Soils (4)
- AGRON 335 Environmental Quality (3)
- BIOL 198 Principles of Biology (4)
- GEOG 221 Intro Physical Geog (4)
- GEOG 340 Geog Nat Resources (3)
- GEOL 100 Earth in Action (3)
- GEOL 105 Oceanography (3)
- GEOL 115 Environ Geology (3)
- GEOL 125 Natural Disasters (3)
- PMC 275 Intro Nat Resource Mgmt (3)

C. One life science course. This course may also be used to meet another requirement..

- AGRON 220 Crop Science (3)
- ANTH 280 Intro to Biol Anthro (3)
- BIOCH 265 Intro Organic Biochem (5)
- BIOCH 521 General Biochemistry (3)
- BIOL 198 Princ of Biology (4)
- BIOL 303 Ecol of Envir Prob (3)
- GEOL 650 Geomicrobiology (3)
- HORT 201 Princ Hort Science (4)

**CAPSTONE COURSE REQUIREMENT.** All students must successfully complete the NRES capstone course. This course should be scheduled during the student's senior year.

- BAE/DAS/GENAG 582 Natural Resources/Environmental Sciences Project (3)

## Natural Resources and Environmental Sciences

**BLOCK ELECTIVE REQUIREMENTS:** From this list, students must successfully complete a minimum of 5 courses (15 hours minimum) from at least 4 departments. One course must come from each area (natural, applied, & social sciences/humanities), two courses must be numbered 500 or greater, and three courses must have a prerequisite (courses without a prerequisite are underlined). Check with the NRES Director or access the NRES site (<http://www.ksu.edu/nres>) for the most recent curriculum requirements.

### Natural Science Courses

- AGRON 305 Soils (4)
- AGRON 515 Soil Genesis & Classification (3)
- BIOL 433 Intro Fish Wildlife Conser Bio (3)
- BIOL 529 Fundamentals of Ecology (3)
- BIOL 612 Freshwater Ecology (4)
- BIOL 642 Prin. of Conservation Biology (3)
- BIOL 687 Microbial Ecology (3)
- CHM 315 Environmental Science (3)
- CHM 316 Environmental Science Lab (1)
- ENTOM 301 Insects and People (3)
- ENTOM 312 General Entomology (3)
- ENTOM 692 Insect Ecology (3)
- GEOG 235 Atmospheric Science (4)
- GEOG 535 Fund. of Climatology (4)
- GEOG 740 Fluvial Geomorphology (3)
- GEOL 305 Earth Resources (3)
- GEOL 315 Geology of National Parks (3)
- GEOL 399 Honors Seminar in Geology (Var)
- GEOL 506 Environmental Studies (3)
- GEOL 520 Geomorphology (3)
- GEOL 540 Geol. Rec of Climate Change (3)
- GEOL 611 Hydrogeology (3)
- GEOL 711 Water Resource Geochemistry (3)

### Applied Science & Technology Courses

- AGRON 330 Weed Science (3)
- AGRON 335 Environmental Quality (3)
- AGRON 375 Soil Fertility (3)
- AGRON 501 Range Management (3)
- AGRON 635 Soil Conservation & Mgmt (3)
- AGRON 645 Soil Microbiology (3)
- AGRON 646 Soil Microbiology (1)
- AGRON 655 Site Specific Agriculture (3)
- AGRON 746 Environmental Soil Physics (3)
- ATM 558 Hydrol & Soil Erosion Mgmt (3)
- ATM 653 Water Mgt & Irrigation (2)
- ATM 661 Watershed Assess & Mgmt (3)
- BAE 560 Hydrology for Biological Sys (3)
- BAE 620 Problems in Ag Engg (Var)
- BAE 643 Life Cycle Assessment (3)
- BAE 651 Air Pollution Engineering (3)
- BAE 660 Hydraulic Transport Bio Sys (3)
- BAE 664 Green Strmwtr Infra Des & Assess (3)
- BAE 768 Geoenvironment Engg Design (3)
- BIOL 303 Ecology of Environ. Problems (3)
- BIOL 684 Wildlife Mgt & Techniques (4)
- BIOL 696 Fisheries Mgt & Techniques (4)
- CE 550 Water Resource Engineering (3)
- CE 552 Hydraulic Engineering (3)
- CE 563 Environ Engineering Fund (3)
- CE 565 Water & Wastewater Engg (3)
- CE 625 Principle of Geoenviron Engg (3)
- CE 654 Design Groundwater Flow Sys (3)
- CE 766 Wastewater Engg/Biol Proc (3)
- CE 768 Geoenviron Engg Design (3)
- CHE 650 Hazardous Waste Engg Sem (1)
- CHE 670 Sem/Sustainability (1)
- CHE 715 Biochemical Engineering (3)
- GEOG 508 Geographic Info Systems I (4)
- GEOG 605 Remote Sensing of Environ (3)
- GEOL 730 Petroleum Geology (3)
- GEOL 745 Exploration Geophysics (3)
- LAR 420 Socio-Ecological Sys Studio (4)
- LAR 734 Rivers: Process and Forms (3)
- PMC 575 Water Mgmt Nat Res Mgr (3)
- PMC 635 Methods of Environ Interp (3)
- PMC 740 Adv Environ Interpretation (3)

### Social Science/Humanities Courses

- AGCOM 712 Environ. Communications (3)
- AGECE 525 Nat Res & Environ Econ (3)
- AGECE 610 Current Ag & Nat Res Policy (3)
- ANTH 260 Intro to Archeology (3)
- ANTH 310 Environmental Anthropology (3)
- AT/ID 350 Our Sustainable World (3)
- ECON 527 Environmental Economics (3)
- ENGL 270 American Natures (3)
- ENGL 399 Honors Sem: Lit and the Environ (3)
- ENGL 680 Environ in American Literature (3)
- GENAG 670 Intro Ag Res/Environ Mgmt (2)
- GEOG 340 Natural Resources (3)
- GEOG 360 Sustainable Concepts & Issues (3)
- GEOG 460 Human Dim Global Change (3)
- GEOG 600 Mountain Geography (3)
- GEOG 718 Geography of Public Lands (3)
- GEOG 720 Geography of Land Use (3)
- GEOG 725 Geography of Water Resources (3)
- GEOG 761 Human Impact on Environ. (3)
- GEOG 765 Geography of Natural Hazards (3)
- GEOG 770 Perception of Environment (3)
- GWSS 480 Gender, Environ. & Justice (3)
- HIST 511 Environmental History (3)
- HIST 557 History of American Ag (3)
- LAR 322 Ethics and Environ Dilemmas (3)
- LAR 646 Comm Engagement Studio (5)
- MC 712 Environ Communications (3)
- PHILO 595 Environmental Ethics (3)
- PLAN 315 Introduction to City Planning (3)
- POLSC 250 Environmental Political Thought (3)
- SOCIO 536 Society and Nat Resources (3)