MINOR IN GEOSPATIAL INFORMATION SCIENCE FOR NATURAL RESOURCES

The minor in Geospatial Information Science for Natural Resources provides students with fundamental geospatial skills in natural resource science and management. Geographic information systems, global positioning systems, and remote sensing are key tools for the 21st century workforce.

This minor is designed for students desiring to gain technical skills and to increase their employment potential in an applied area. The minor in Geospatial Information Science has a broad interdisciplinary appeal due to the ability to adapt and use these technologies in many disciplines.

For more information on the minor including minor declaration events, please visit the department website (http://warnercnr.colostate.edu/geospatial-information-science-for-natural-resources-minor/).

Learning Objectives

Upon successful completion of this minor, students will be able to:

1. Describe geospatial characteristics of landscapes through the use of digital data.
2. Carry out geospatial data analysis procedures and generate cartographically sound thematic maps of derived geographical information.
3. Apply geospatial tools to solve real-world spatial problems in a competent manner.
4. Address problem-solving for natural resource management.
5. Soundly and accurately apply geospatial tools to different digital data sources to assess produced outcomes.
6. Comprehend and apply the principles of spatial analysis and modeling in real-world problem solving.
7. Understand and implement spatial analysis tools using state-of-the-art geographic information system software.
8. Understand concepts of data collection, data entry, and spatial data analysis for real-world problem solving.
9. Explore the breadth and depth of geospatial analysis in the natural environment.
10. Articulate and demonstrate an understanding of concepts and applications of geospatial analysis for natural resources.

Requirements Effective Fall 2025

Students must satisfactorily complete the total credits required for the minor. Minors and interdisciplinary minors require 12 or more upper-division (300- to 400-level) credits.

Additional coursework may be required due to prerequisites.

Code	Title	Credits
Required Lower Division:		
CS 152	Python for STEM	2-3
or CS 150B	Culture and Coding: Python (GT-AH3)	
GR 220	Mapping, Cartography, and Spatial Thinking	3
Required Upper Division:		
NR 319	Introduction to Geospatial Science	4
NR 323/GR 323	Remote Sensing and Image Interpretation	3
NR 423	Applications of Global Positioning Systems	1-2
or NR 453	Geospatial Field Methods in Natural Resources	
NR 426	Programming for GIS I	2
Required Upper Division Applications – select one course from the following:		**3-4**
FW 325	Spatial Ecology--Applications with R	
NR 422	GIS Applications in Natural Resource Management	
NR 450	Geospatial Project Design and Analysis	
NR 495	Independent Study [1]	
Upper Division Electives – select from the following courses to reach a minimum of 21 credits total for the minor		**0-3**
BZ 342	Exploring Range Shifts in a Changing World	
FW 310	Mapping Diverse Perspectives in Conservation	
FW 325	Spatial Ecology--Applications with R [2]	
FW 477	Wildlife Habitat Use and Management	
GEOL 440	Geodetic and Near-Surface Geophysical Methods	
GR 430	Land Change Science and Remote Sensing	
GR 431	Land Change Science Lab	
NR 422	GIS Applications in Natural Resource Management [2]	
NR 427	Programming for GIS II	
NR 450	Geospatial Project Design and Analysis [2]	
NR 453	Geospatial Field Methods in Natural Resources [3]	
NR 493	Seminar--GIS and Remote Sensing Applications	
NR 495	Independent Study [1,2]	
Program Total Credits:		**21**

1. NR 495 Independent Study must include geospatial applications and be approved by the minor advisor.
2. Can be counted if not used to fill "Required Upper Division Applications" category.
3. Can be counted if not used to fill "Required Upper Division" category.