

GEOGRAPHIC INFORMATION SYSTEMS FOR AGRICULTURE MINOR

Offered at: San Luis Obispo Campus

An interdisciplinary program sponsored by three departments in CAFES: BioResource and Agricultural Engineering, Natural Resources Management and Environmental Sciences, and Horticulture and Crop Science. New technologies of geographic information systems (GIS), global positioning systems (GPS), and orthophotography (uniform scale aerial photographs) are revolutionizing the management of natural resources. There are great employment opportunities for those who understand these technologies. Students interested in this minor may come from the following majors: forestry and natural resources, crop science, soil science, landscape architecture, agricultural systems management, bioresource and agricultural engineering, animal science or earth sciences. Students from any major are welcome to take this minor.

Program Learning Objectives

1. Explain fundamental concepts and practices of Geographic Information Systems (GIS).
2. Understand the means in which data is collected and measured for use in a GIS. This includes land survey data and remotely sensed data.
3. Compare interdisciplinary applications of Geospatial Information Science and Technology.
4. Communicate effectively, both verbally and in writing, advanced concepts in remote sensing and geographic information systems.
5. Demonstrate competence in conducting an unfamiliar analysis using GIS, troubleshoot problems in GIS, and seek help from software/website help menus and the GIS community to solve problems.

Minor Requirements and Curriculum

The minor must be completed prior to, or at the same time as, the requirements for the bachelor's degree. A major and a minor may not be taken in the same degree program, and a minor is not required for a degree. Requirements for the minor include:

- At least half of the units must be from upper-division courses (3000-4000 level).
- At least half of the units must be taken at Cal Poly (in residence).
- No more than one-third of the units will be taken with credit-no credit grading (CR/NC), not counting courses with mandatory CR/NC. Departments may further limit CR/NC grading if desired.
- A minimum 2.0 GPA is required in all units counted for completion of the minor.

Code	Title	Units
REQUIRED COURSES		
BRAE 1239	Engineering Surveying	3
BRAE 3345 or GEOG 3328	Photogrammetry and Remote Sensing with GIS Applications Applications in Remote Sensing and GIS	3
LA/NR 2218	Introduction to Geographic Information Systems (GIS)	3
NR 4418 or GEOG 4441	Applied Geographic Information System Advanced Applications in Geospatial Technologies	2-3
Emphasis Areas		
Select one of the following emphasis areas: ¹		12
Environmental Information		
BRAE 4447	Advanced Surveying with GIS Applications	
NR 3304 or NR 3305 or NR 3306	Agroecology Forest and Fire Ecology Natural Resource Ecology and Habitat Management	
NR 4416 or CRP 3336	Environmental Impact Analysis and Management Introduction to Environmental Planning	
SS 4431	Spatial Data Analysis and Environmental Mapping	
Precision Agriculture		
BRAE 4447	Advanced Surveying with GIS Applications	
PLSC 2244	Precision Farming	
PLSC 4406	Advanced Weed Management	
PLSC 4410	Crop Physiology	

PLSC 4431

Integrated Pest Management for Insects

Total Units**23**

¹ Additional prerequisites may be needed to complete this requirement.