

**College of Natural Resources and Environment (CNRE)
Department of Geography
Minor in Geographic Information Science – GIS**

Available to students who are **NOT** majoring in Geography or Meteorology
(See Minor in GIS-G for more information)

For students entering under UG Catalog 2021-2022

A minimum of 18 credit hours to include:

Required Courses (12 credits)

- _____ CS 1064 Introduction to Programming in Python (3)
- _____ GEOG 2084 Principles of Geographic Information Systems (3)
- _____ GEOG 4084 Modeling with Geographic Information Systems (Pre: 2084) (3)
- _____ GEOG 4354 Introduction to Remote Sensing (3) OR FREC 4214 Forest Photogrammetry and Spatial Data Processing (3)

Geographic Information Science Options (6 credits)

Choose two courses from following:

- _____ FREC 4114 Information Technologies for Natural Resource Management (Pre: FREC 2214 or GEOG 2314) (3)
- _____ GEOG 3314 Cartography (3)
- _____ GEOG 4314 Spatial Analysis in Geographic Information Systems (Pre: 4084) (3)
- _____ GEOG 4324 Algorithms in Geographic Information Systems (Pre: 4084, CS 1064) (3)
- _____ GEOG 4334 Geospatial Information Technology for Land Change Modeling (Pre: 4084) (3)
- _____ GEOG 4374 Remote Sensing and Phenology (Pre: 4354) (3)
- _____ GEOG 4394 Introduction to Web Mapping (Pre: 2314 or 3314 or 4084) (3)
- _____ GEOG 4404 Geovisualization (Pre: 2084, 3314) (3)

A minimum overall GPA of 2.0 in these courses is required to complete the minor.

All minors must include 6 or more credits at 3000 level or above.

All courses must be taken for an A-F grade unless they are only offered P/F.

Steps for completing the minor in Geographic Information Science for Non-Majors

- Declare minor using a 'Major/Option/Minor Form' found in the CNRE Advising Center, 138 Cheatham Hall.
- Include minor information when updating the application for degree in Hokie Spa.
- Students cannot graduate until they have either (1) satisfied the requirements for the minor or (2) withdrawn from the minor by notifying CNRE Academic Programs office in 138 Cheatham and revised their DARS.