

**College of Natural Resources and Environment (CNRE)  
Department of Geography**

**Minor in Geographic Information Science (GIS-G)  
(For Meteorology and Geography majors only)**

(See Minor in Geographic Information Science (GIS) for more information)

*For student date of entry under UG Catalog 2023-2024*

**A minimum of 18 credit hours to include:**

**Required Courses (9 credits)**

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

**Restricted Elective Courses (9 credits), Choose 3 courses:**

- \_\_\_\_\_ FREC 4114 Info Technologies for Natural Resource Management (Pre: FREC 2214 or GEOG 2314) (3)
- \_\_\_\_\_ GEOG 4254 R-Programming for Geospatial Analysis (Pre: GEOG 4084) (3)
- \_\_\_\_\_ GEOG 4314 Spatial Analysis in Geographic Information Systems (Pre: GEOG 4084) (3)
- \_\_\_\_\_ GEOG 4324 Algorithms in Geographic Information Systems (Pre: GEOG 4084, CS 1064) (3)
- \_\_\_\_\_ GEOG 4334 Geospatial Information Technology for Land Change Modeling (Pre: GEOG 4084) (3)
- \_\_\_\_\_ GEOG 4374 Remote Sensing and Phenology (Pre: GEOG 4354) (3)
- \_\_\_\_\_ GEOG 4394 Introduction to Web Mapping (Pre: GEOG 4324) (3)
- \_\_\_\_\_ GEOG 4404 Geovisualization (Pre: GEOG 2084, GEOG 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-G**

- Declare minor using a 'Minor Declaration Form' found on the CNRE Advising Center website: [www.cnre.vt.edu/advising](http://www.cnre.vt.edu/advising)
- Include minor information when updating the application for degree in Hokie Spa.
- Some courses in the minor requirements listed above have prerequisites, so be sure to consult the University Catalog or check with the Minor advisor.
- Students cannot graduate until they have either (1) satisfied the requirements for the minor or (2) withdrawn from the minor by notifying CNRE Academic Programs office in 138 Cheatham and revised their DARS.