

Geographic Information Science Undergraduate Certificate Requirements



Department of Geosciences Oregon State University

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Name: _____ Advisor: _____

OSU Email Address: _____ Date: _____

Geographic information science (GIScience) includes the existing technologies and research areas of geographic information systems (GIS), cartography, remote sensing, photogrammetry, and surveying (also term geomatics in the US). GIScience therefore addresses fundamental issues surrounding the use of digital technology to handle geographic information; namely, information about places, activities, and phenomena on and near the surface of the Earth that are stored in maps and images.

Below are the requirements that need to be completed in order to earn the Geographic Information Science Certificate. Meet with your advisor before you register each term. Make sure you check prerequisites and other course restrictions before attempting to register. You should only schedule a course for which you do not have the prerequisites after consultation with the instructor and your advisor. Using this sheet should help you keep on track toward successfully completing your degree.

[f] = Fall [w] = Winter [sp] = Spring [su] = Summer [de] = Distance Education [c] = Campus
[alt even] = _____ [alt odd] = _____

Background Courses:

- _____ Minimum mathematics: MTH 112 Elementary Functions (4) or equivalent high school or university course(s)
- _____ Basic statistics:
 - ST 201 Principles of Statistics (3) and ST 202 Principles of Statistics (3)
 - or ST 351 Introduction to Statistical Methods (4) and ST 352 Introduction to Statistical Methods (4)
 - or ST 314 Introduction to Statistics for Engineers (4)
 - or ECE 353 Introduction to Probability and Random Signals (3)

Required Core Course (16-17 credits):

- _____ GEO 301 Map and Image Interpretation (4) [f and sp, c or de]
- _____ FE 308 Forest Surveying (4) [sp]
- _____ GEO 365 Geographic Information Systems and Science (3)
- _____ GEO 360 Cartography (4) [f]
- _____ GEO 444 Remote Sensing (4) [f]
- Or** _____ FE 357 GIS and Forest Engineering Applications (3) [f]
- Or** _____ CE 202 Civil Engineering III: Geospatial Information and GIS (3) [w]

Elective Courses (10-11 credits chosen from below):

- _____ CE 413 GIS in Water Resources (3) [sp]
- _____ ECE 468 Digital Image Processing (3) [f]
- _____ FE 311 Advanced Forest Surveying (4) [sp]
- _____ FOR 421 Adv. GIS Applications in Forestry (3) [f-alt odd]
- _____ GEO 445 Computer Assisted Cartography (3) [w]
- _____ GEO 465 Geographic Information Systems and Science (3) [w or f, w, sp, su—de]
- _____ GEO 466 Digital Image Processing (3) [w—alt odd]
- _____ RNG 450 Landscape Ecology and Analysis (3) [w]
- _____ CS 410, CSS 410, ECE 410, FOR 410, GEO 410 or HORT 410 Internship (3 or more credits) [any term as per consultation with advisor]
- _____ CSS 468 Soil Landscape Analysis (4) [sp]
- _____ FE 309 Forest Photogrammetry (4) [w]
- _____ FOR 420 Advanced Aerial Photos & Remote Sensing (3) [f-alt even]
- _____ FW 303 Survey of Geog. Info. Sys. in Nat'l Resources (3) [w, sp, su—de only]
- _____ GEO 460 Multimedia Cartography (4) [sp-alt even]

The elective courses may be taken in one of four tracks. Typical tracks are listed below as examples and are not exhaustive of all possible combinations of courses.

Cartography Track: GEO 445, GEO 460, GEO 466

GIS Track: FOR 421, GEO 410, GEO 441

Remote Sensing Track: FOR 420, FOR 421, GEO 466

Surveying (Geomatics) Track: FE 309, FE 310, FE 311