

Undergraduate and Graduate certificate programs in GIScience

Marshall University offers an interdisciplinary Undergraduate and Graduate Certificate in Geospatial Information Science.

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The participating departments and colleges include:

- College of Information Technology and Engineering
- College of Liberal Arts
 - Geography
- College of Science
 - Biology
 - Geology
 - Integrated Science and Technology
 - Physics

The program is directed by the James Leonard, Geography Department. The program is designed to:

- offer GIS study in a variety of disciplines with a variety of applications;
- teach students GIS techniques;
- encourage students to apply GIS to solve scientific research problems;
- encourage students to gain experience in the GIS field before graduation by means of internships and work study programs;
- integrate GIS applications with appropriate computer science training;
- prepare students for GIS employment or GIS work at the graduate level.

See the Full Color Brochure (pdf) here:

<http://www.marshall.edu/geography/gis/GIScience.pdf><http://www.marshall.edu/geography/gis/GIScience.pdf>

Undergraduate certificate:

An undergraduate certificate in Geospatial Information Science consists of a minimum of 18 hours in courses designated as GIScience Courses, including regularly offered courses as well as special topics courses. Students must take courses from at least three different departments for a GIScience Certificate.

- BSC 410/PS 410/IST 420 Physical Principles of Remote Sensing with Applications (4 credit hours)
- BSC 410/PS 411/IST 421 Digital Image Processing and Computer Simulation Modeling (4 hrs.)
- ENGR 241 Geomatics (3 hrs.)
- GEO 110 Basic GIS (1 hr.)
- GEO 201 Introduction to GPS (1 hr.)
- GEO 426 Principles of GIS (3 hrs.)
- GEO 429 Intermediate GIS – Vector Analysis (3 hrs.)
- GEO 430 Intermediate GIS – Raster Analysis (3 hrs.)
- GEO 431 Analysis of Digital Airborne and Space-Based Imagery (3 hrs.)
- GEO 490 Internship (3 hrs.; must be GIScience approved in advance)
- GLY 212 Geological Field Mapping (2 hrs.)
- IST 322 Terrestrial Systems (3 hrs.)
- IST 323 Aquatic Ecology (3 hrs.)
- IST 423 GIS and Integrated Data Systems (3 hrs.)
- IST 428 CAD and Terra Modeling (3 hrs.)
- IST 470 Internship (1-4 hrs.; must be GIScience approved in advance)
- Special Topics courses as approved by the GIScience Advisory Board

Graduate certificate:

A graduate certificate in Geospatial Information Science consists of a minimum of 12 graduate hours in courses designated as GIScience Courses, including regularly offered courses as well as special topics courses. Students must take courses from at least two different departments for a graduate GIScience certificate.

Graduate GIScience courses:

- BSC 510/PS 510 Remote Sensing/GIS Applications (4 credit hours)
- BSC 511/PS 511 Digital Image Processing/GIS Model (4 hrs.)
- ES 626 Remote Sensing and Map Use (3 hrs.)
- GEO 526 Principles of GIS (3 hrs.)
- GEO 529 Intermediate GIS – Vector Analysis (3 hrs.)
- GEO 530 Intermediate GIS – Raster Analysis (3 hrs.)
- GEO 531 Analysis of Digital Airborne and Space-Based Imagery (3 hrs.)
- GEO 631 Applied GIS Projects (3 hrs.)
- GEO 690 Internship (1-6 hrs.; must be GIScience approved in advance)
- IS 645 Geographic Information Systems (3 hrs.)
- Special Topics courses as approved by the GIScience Advisory Board