GEOGRAPHIC INFORMATION SCIENCE CERTIFICATE

Also available via Ecampus.

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Oregon State University offers an undergraduate and graduate certificate in Geographic Information Science. Geographic Information Science ("GiScience") is a discipline that combines theory and principles underlying:

- geospatial data collection (remotely sensed imagery from satellites, aircraft, and drones, social media, telemetry, GPS, etc.);
- technologies to manage, analyze, and visualize geospatial data (geographic information systems);
- computational, statistical, and mathematical methods to analyze and model geospatial data (machine learning, Big Data, spatial statistics, spatial modeling, geovisual analytics, etc.);
- digital cartography and geovisualization (the science and practice of creating maps); and
- cognitive, social, and environmental implications of GiScience (professional ethics, privacy, digital divide, etc.).

The OSU GiScience certificate can help lead to certification as a nationally-recognized geographic information systems (GIS) professional (GISP). GIS professionals are in high demand for jobs in government, NGOs, and the private sector, and have rewarding careers in natural resource management, online and interactive mapping, business, planning, and many others.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FE 208</td>
<td>FOREST SURVEYING</td>
<td>4</td>
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<tr>
<td>GEOG 201</td>
<td>*FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS</td>
<td>4</td>
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<td>Select one of the following:</td>
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<tr>
<td>GEOG 360</td>
<td>GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY</td>
<td>3-4</td>
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<td>FE 257</td>
<td>GIS AND FOREST ENGINEERING APPLICATIONS</td>
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<td>CE 202</td>
<td>CIVIL ENGINEERING: GEOSPATIAL INFORMATION AND GIS</td>
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<td>GEOG 370</td>
<td>GEOVISUALIZATION: CARTOGRAPHY</td>
<td>4</td>
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<tr>
<td>GEOG 480</td>
<td>REMOTE SENSING I: PRINCIPLES AND APPLICATIONS (EC)</td>
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<tr>
<th>Electives</th>
<th>Select 7-8 credits of the following:</th>
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<tr>
<td>CE 413</td>
<td>GIS IN WATER RESOURCES</td>
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CROP 414/HORT 414 PRECISION AGRICULTURE
ECE 468 DIGITAL IMAGE PROCESSING
ENSC 410 ENVIRONMENTAL SCIENCE INTERNSHIP (1 or more)
or FOR 410 INTERNSHIP
or GEO 410 INTERNSHIP
or GEOG 410 INTERNSHIP
FE 209 FOREST PHOTOGRAMMETRY AND REMOTE SENSING
FE 310 FOREST ROUTE SURVEYING
FE 423 UNMANNED AIRCRAFT SYSTEM REMOTE SENSING
FW 303 SURVEY OF GEOPHYSICAL INFORMATION SYSTEMS IN NATURAL RESOURCE
GEO 401 RESEARCH
or GEO 401 RESEARCH
GEO 403 THESIS
or GEO 403 THESIS
GEOG 361 GISCIENCE II: ANALYSIS AND APPLICATIONS (EC)
GEOG 371 GEOVISUALIZATION: WEB MAPPING
GEOG 451 PLANNING PRINCIPLES AND PRACTICES FOR RESILIENT COMMUNITIES
GEOG 462 GISCIENCE III: PROGRAMMING AND GEOSPATIAL ANALYSIS
GEOG 463 GISCIENCE IV: SPATIAL MODELING
GEOG 464 GEOSPATIAL PERSPECTIVES ON INTELLIGENCE, SECURITY, AND ETHICS
GEOG 472 GEOVISUALIZATION: GEOVISUAL ANALYTICS
GEOG 481 REMOTE SENSING II: DIGITAL IMAGE PROCESSING
RNG 430 APPLIED GIS IN RANGELAND SCIENCE
SOIL 468 SOIL LANDSCAPE ANALYSIS

* Baccalaureate Core Course (BCC)

EC signifies the course can also be completed through Ecampus - Distance Education

Major Code: C540