GEOGRAPHIC INFORMATION SCIENCE CERTIFICATE

Also available via Ecampus.

Kuuipo Walsh, Director
GIScience Certificate Program
134 Wilkinson Hall
College of Earth, Ocean, and Atmospheric Sciences
Oregon State University
Corvallis, OR 97331
541-737-3795
Email: kuuipo.walsh@oregonstate.edu
Website: https://ceoas.oregonstate.edu/geographic-information-science-undergraduate-certificate (https://ceoas.oregonstate.edu/geographic-information-science-undergraduate-certificate/)

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.

Certificate Code: C540

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Core</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FE 208</td>
<td>FOREST SURVEYING</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 201</td>
<td>*FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 370</td>
<td>GEOVISUALIZATION: CARTOGRAPHY</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 480</td>
<td>REMOTE SENSING I: PRINCIPLES AND APPLICATIONS</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one course from the following:

- GEOG 360: GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY
- FE 257: GIS AND FOREST ENGINEERING APPLICATIONS
- CE 202: CIVIL ENGINEERING: GEOSPATIAL INFORMATION AND GIS

Select 7-8 credits from the following:

- CE 413: GIS IN WATER RESOURCES
- CROP 414/HORT 414: PRECISION AGRICULTURE
- ECE 468: DIGITAL IMAGE PROCESSING
- ENSC 410/FOIR 410: ENVIRONMENTAL SCIENCE INTERNSHIP (1 or more credits)
- FE 209: FOREST PHOTOGRAMMETRY AND REMOTE SENSING
- FE 310: FOREST ROUTE SURVEYING
- FE 423: UNMANNED AIRCRAFT SYSTEM REMOTE SENSING
- FW 303: SURVEY OF GEOGRAPHIC INFORMATION SYSTEMS IN NATURAL RESOURCE
- GEO 401/GEOG 401: RESEARCH
- GEO 403/GEOG 403: THESIS
- GEOG 361: QUANTITATIVE ANALYSIS AND MODELING
- GEOG 371: GEOVISUALIZATION: WEB MAPPING
- GEOG 451: PLANNING PRINCIPLES AND PRACTICES FOR RESILIENT COMMUNITIES
- GEOG 462: GISCIENCE III: PROGRAMMING FOR GEOSPATIAL ANALYSIS
- GEOG 463: GISCIENCE IV: SPATIAL MODELING
- GEOG 464: GEOSPATIAL PERSPECTIVES ON INTELLIGENCE, SECURITY AND ETHICS
- GEOG 472: GEOVISUALIZATION: GEOVISUAL ANALYTICS
- GEOG 481: SATELLITE IMAGE ANALYSIS
- SOIL 468: SOIL LANDSCAPE ANALYSIS

* Baccalaureate Core Course (BCC)