Geographic information systems (GIS) is one of the top emerging industries in the 21st century. It combines cartography, spatial analysis, and data management to support research and inform decision making. The Geography Department offers a one-year GIS Certificate that combines GIS concepts, technology, and real-world experience.

GIS is a framework to acquire, store, manage, analyze and visualize spatial data. Traditional paper maps are able to display just one view of data, at one point in time. Using GIS allows the display of information in various spaces and times. GIS provides a suite of tools used to support decision-making, as well as statistical and spatial analysis.

GIS Program

The GIS Certificate prepares students to apply GIS with a solid theoretical foundation. A diverse range of GIS skills are covered including data capture, spatial & statistical analysis, modeling and cartography.

The GIS courses take a practical, hands-on approach. Students will not only learn how to use a specific software – they will apply GIS using a variety of projects and methodologies. With a combination of lab exercises, individual projects, and a community-based, collaborative long-term project, students will learn how to plan, design, and execute GIS projects.

GIS Technical Certificate Program

Are you...

1. A student who wishes to acquire technical and topical knowledge to support your major or professional field?
2. A student who wishes to acquire specialized training to meet current or future job requirement calling for GIS knowledge?
3. Spending hours looking at maps to better understand the world you live in?

What is GIS?

Required Coursework (16 Credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maps &amp; Geospatial Concepts</td>
<td>GEO 264</td>
</tr>
<tr>
<td>Introduction to GIS</td>
<td>GEO 265</td>
</tr>
<tr>
<td>GIS Analysis</td>
<td>GEO 266</td>
</tr>
<tr>
<td>GIS Applications</td>
<td>GEO 267</td>
</tr>
</tbody>
</table>

Electives (24 total credits)

GIS Electives - 12 credits

- Geo 221: The Local Landscape
- Geo 223: Field Geography, GPS & GIS
- Geo 240: Cartography
- Geo 242: GIS Programming
- Geo 244: Interactive Map Design
- Geo 246: Remote Sensing
- Geo 280: Cooperative Education

Geography Electives - 8 credits

- Geo 105: Intro to Human Geography
- Geo 106: World Regional Geography
- Geo 107: Geography of Global Issues
- Geo 202: Geography of Europe
- Geo 204: Geography of Middle East
- Geo 206: Geography of Oregon
- Geo 209: Weather & Climate
- Geo 210: The Natural Environment
- Geo 215: Geography of Latin America
- Geo 230: Geo of Race & Ethnic Conflict
- Geo 250: Geography of Africa
- Geo 298: Independent Study

Technical Electives - 4 credits

Various courses offered through the CAS, CIS, and MTH departments. Check the current course catalog for specific course.

www.pcc.edu/programs/geography/gis.html
The Bureau of Labor Statistics have categorized GIS related jobs as an emerging industry and one that should experience higher than average employment growth over the next 10 years. Geographers with GIS experience or knowledge have the strongest job outlook, especially with government, business, local municipalities, real estate developers, utilities, and environmental consulting. There will also be an increase in the job opportunities to apply GIS skills and technologies in areas such as emergency response, and other non-traditional areas. Oregon has the 2nd highest concentration of people employed in the geography field, with a mean annual wage of $61,420.

Below is a chart of the Projection Data for Surveyors, Cartographers, Photogrammetrists, Survey & Mapping Technicians, Environmental Scientists, Urban/Regional Planners, and Geographers – all industries with a strong GIS focus.

*All data in this section is obtained from the Bureau of Labor Statistics

<table>
<thead>
<tr>
<th>Occupational Title</th>
<th>Employment 2010</th>
<th>Projected Employment 2020</th>
<th>Mean Annual Wage, 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographer</td>
<td>1,600</td>
<td>2,200</td>
<td>$74,170</td>
</tr>
<tr>
<td>Cartographer &amp; Photogrammetrists</td>
<td>13,800</td>
<td>16,900</td>
<td>$60,110</td>
</tr>
<tr>
<td>Geoscientist</td>
<td>33,800</td>
<td>40,900</td>
<td>$82,500</td>
</tr>
<tr>
<td>Surveying &amp; Mapping Technicians</td>
<td>56,900</td>
<td>66,000</td>
<td>$42,050</td>
</tr>
<tr>
<td>Environmental Scientist and Protection Technician</td>
<td>29,600</td>
<td>36,600</td>
<td>$41,380</td>
</tr>
<tr>
<td>Urban &amp; Regional Planner</td>
<td>40,300</td>
<td>46,800</td>
<td>$67,350</td>
</tr>
</tbody>
</table>

Transferability

Oregon Universities that have a 4-year degree in Geography and/or GIS

Portland State University
Oregon State University
University of Oregon
Oregon Institute of Technology
Western Oregon University
Southern Oregon University