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 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 Coursework**

### Required Coursework
- GEO 170. Maps & Geospatial Concepts
- GEO 265. Introduction to GIS
- GEO 266. GIS Analysis
- GEO 267. GIS Applications
- GEO 270. Creating a Map Portfolio

### Electives
(A total of 24 elective credits are required)

**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. Human Geography
- Geo 106. World Regional Geography
- Geo 110. The Natural Environment
- Geo 202. Geography of Europe
- Geo 204. Geography of Middle East
- Geo 206. Geography of Oregon
- Geo 209. Weather & Climate
- Geo 212. Geography of Global Issues
- 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](http://www.pcc.edu/programs/geography/gis.html)
GIS Job Market*

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 one of the highest concentration of people employed in the cartography and photogrammetry field, with a mean annual wage of $59,870.

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 2014</th>
<th>Projected Employment 2024</th>
<th>Mean Annual Wage, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographer</td>
<td>1,400</td>
<td>1,400</td>
<td>$74,920</td>
</tr>
<tr>
<td>Cartographer &amp; Photogrammetrists</td>
<td>12,800</td>
<td>15,900</td>
<td>$65,410</td>
</tr>
<tr>
<td>Geoscientist</td>
<td>36,400</td>
<td>40,200</td>
<td>$105,720</td>
</tr>
<tr>
<td>Surveying &amp; Mapping Technicians</td>
<td>57,300</td>
<td>52,900</td>
<td>$44,800</td>
</tr>
<tr>
<td>Environmental Scientist and Protection Technician</td>
<td>36,200</td>
<td>39,600</td>
<td>$43,030</td>
</tr>
<tr>
<td>Urban &amp; Regional Planner</td>
<td>38,000</td>
<td>40,400</td>
<td>$68,220</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

FOR MORE INFORMATION:
Christina Friedle | christina.friedle@pcc.edu | 971.722.4072