# **GIS Technical Certificate Program**

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.

## 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?

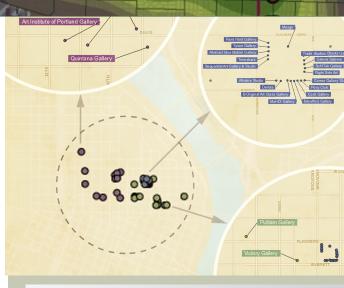
GIS is a framework to acquire, store, manage, analyze and visualize spatial data. Traditional paper maps are able to display just one view of data, at one point in time. Using GIS allows the display of information in various spaces and times. GIS provides a suite of tools used to support decision-making,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



#### **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 - 16 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 248. Unmanned Aerial Systems (UAS)

Geo 252. UAS Data Integration

Geo 280. Cooperative Education

Geography Electives - 4 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.



### 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 \$59,430.

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.

<sup>\*</sup>All data in this section is obtained from the Bureau of Labor Statistics

Occupational Title	Employment 2014	Projected Employment 2024	Mean Annual Wage, 2016
Geographer	1,400	1,400	\$74,260
Cartographer & Photogrammetrists	12,800	15,900	\$62,740
Geoscientist	36,400	40,200	\$89,780
Surveying & Mapping Technicians	57,300	52,900	\$42,450
Environmental Scientist and Protection Technician	36,200	39,600	\$44,190
Urban & Regional Planner	38,000	40,400	\$70,020

# 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

