

GEOGRAPHIC INFORMATION SCIENCE CERTIFICATE

Also available via Ecampus.

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GIScience Certificate Program

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Website: <https://ceos.oregonstate.edu/geographic-information-science-undergraduate-certificate> (<https://ceos.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

Code	Title	Credits
Required Core		
FE 208	FOREST SURVEYING	4
GEOG 201	*FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS	4
GEOG 370	CARTOGRAPHY	4
GEOG 480	REMOTE SENSING I: PRINCIPLES AND APPLICATIONS	4
Select one course from the following:		3-4
GEOG 360	GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY	
FE 257	GIS AND FOREST ENGINEERING APPLICATIONS	
CE 202	CIVIL ENGINEERING: GEOSPATIAL INFORMATION AND GIS	
Electives		
Select 7-8 credits from the following:		7-8
CE 413	GIS IN WATER RESOURCES	
CROP 414/HORT 414	PRECISION AGRICULTURE	
ECE 468	DIGITAL IMAGE PROCESSING	

ENSC 410/FOR 410/GEO 410/GEOG 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 GISCIENCE II: ANALYSIS AND APPLICATIONS

GEOG 371 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

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Baccalaureate Core Course (BCC)

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