

GEOGRAPHY AND GEOSPATIAL SCIENCE UNDERGRADUATE MAJOR (BS, HBS)

Also available via Ecampus.

Julia Jones, *Director*

Geography & Geospatial Science Undergraduate Program
 104 CEOAS Administration Building
 Oregon State University
 Corvallis, OR 97331
 541-737-1224

Email: julia.jones@oregonstate.edu

Website: <https://ceoas.oregonstate.edu/geography-and-geospatial-science> (<https://ceoas.oregonstate.edu/geography-and-geospatial-science/>)

Geography is a scientific approach to understanding people's relationship with their environment and resources. Geography is central to many important issues, including planning for land-use change, global studies, and adaptation to climate change. Geospatial science applies techniques, including web mapping, geovisualization, remote sensing, and geographic information systems (GIS), to address these issues. Geographic thinking and geospatial technology are present in every aspect of modern life, and career opportunities abound for students trained in geography and geospatial science.

Major Code: 896

- Use terminology and basic principles to describe and explain (a) physical geography, (b) human geography, and (c) geospatial science and technology.
- Apply spatial reasoning and critical thinking to create, synthesize and analyze data; model human-environment interactions; and evaluate contemporary issues in geography.
- Communicate findings and their implications, including ethical aspects, in visual, oral and written form.

Students majoring in Geography and Geospatial Science complete work in five major areas:

1. OSU's baccalaureate core
2. Basic statistics and math
3. Geography and Geospatial Science core
4. Electives
5. Experiential learning (field courses and internship or research)

The major consists of 85 credits of course work. In addition to baccalaureate core courses, the major consists of:

Code	Title	Credits
	Supporting mathematics and statistics	12
	Foundational skills in geography and geospatial science	17
	Upper-division geospatial science	12
	Experiential learning	9
	Seminar	1
	Upper-division electives	31

Capstone course	3
Total Credits	85

Code	Title	Credits
Baccalaureate Core		
Select 51 credits		
Supporting Skills		
MTH 112	*ELEMENTARY FUNCTIONS	4
ST 351	INTRODUCTION TO STATISTICAL METHODS	4
ST 352	INTRODUCTION TO STATISTICAL METHODS	4
Foundational Skills		
GEOG 102 or GEO 202	*PHYSICAL GEOGRAPHY *EARTH SYSTEMS SCIENCE	4
GEOG 103 or GEOG 203	*THE HUMAN PLANET *HUMAN-ENVIRONMENT GEOGRAPHY	3
GEOG 105 or GEOG 106	*GEOGRAPHY OF THE NON-WESTERN WORLD *GEOGRAPHY OF THE WESTERN WORLD	3
GEOG 201	*FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS	4
GEOG 240 or GEOG 250 or GEOG 251	*HUMAN DIMENSIONS OF CLIMATE CHANGE *LAND USE PLANNING FOR SUSTAINABLE COMMUNITIES *GEOGRAPHY OF DISASTER MANAGEMENT	3
Upper-Division Geospatial Science Techniques and Problem-Solving		
GEOG 360	GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY	4
GEOG 370	CARTOGRAPHY	4
GEOG 480	REMOTE SENSING I: PRINCIPLES AND APPLICATIONS	4
Seminar		
GEOG 407	SEMINAR	1
Experiential Learning		
GEOG 295	GEOGRAPHIC FIELD RESEARCH	3
GEOG 410 or GEOG 401 or GEOG 403	INTERNSHIP RESEARCH THESIS	3
GEOG 495	FIELD GEOGRAPHY SYNTHESIS	3
Capstone		
GEOG 464	GEOSPATIAL PERSPECTIVES ON INTELLIGENCE, SECURITY AND ETHICS	3
Upper-Division Geography and Geospatial Science Electives		
GEOG 323 or GEOG 324	*CLIMATOLOGY *ECOLOGICAL BIOGEOGRAPHY	4
Select 27 credits from the following lists with at least five courses at 400 level:		27
<i>Geospatial Science</i>		
GEOG 361	GISCIENCE II: ANALYSIS AND APPLICATIONS	
GEOG 371	WEB MAPPING	
GEOG 462	GISCIENCE III: PROGRAMMING FOR GEOSPATIAL ANALYSIS	
GEOG 463	GISCIENCE IV: SPATIAL MODELING	
GEOG 472	GEOVISUALIZATION: GEOVISUAL ANALYTICS	
GEOG 481	SATELLITE IMAGE ANALYSIS	
<i>International Studies</i>		
GEOG 311	*GEOGRAPHY OF AFRICA	
GEOG 313	*GEOGRAPHY OF ASIA	
GEOG 314	*GEOGRAPHY OF LATIN AMERICA	
GEOG 330	*GEOGRAPHY OF INTERNATIONAL DEVELOPMENT AND GLOBALIZATION	
GEOG 431	GLOBAL RESOURCES AND DEVELOPMENT	
<i>Water Resources</i>		
GEOG 340	*INTRODUCTION TO WATER SCIENCE AND POLICY	
GEOG 423	SNOW HYDROLOGY	
GEOG 424	HYDROLOGY FOR WATER RESOURCES MANAGEMENT	
GEOG 440	CONFLICT, COOPERATION, AND CONTROL OF WATER IN THE US	
GEOG 441	THE WORLD'S WATER	

Resources, Hazards, and Planning

GEOG 300	*SUSTAINABILITY FOR THE COMMON GOOD	
GEOG 331	*POPULATION, CONSUMPTION, AND ENVIRONMENT	
GEOG 350	*GEOGRAPHY OF NATURAL HAZARDS	
GEOG 430	RESILIENCE-BASED NATURAL RESOURCE MANAGEMENT	
GEOG 432	*GEOGRAPHY OF FOOD AND AGRICULTURE	
GEOG 450	LAND USE IN THE AMERICAN WEST	
GEOG 451	PLANNING PRINCIPLES AND PRACTICES FOR RESILIENT COMMUNITIES	
GEOG 452	ENVIRONMENTAL ASSESSMENT	
Total credits required for graduation		180

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

Major Code: 896

Sample Four-Year Plan: Geography and Geospatial Science

First Year

GEOG 102 or GEO 202	*PHYSICAL GEOGRAPHY or *EARTH SYSTEMS SCIENCE	4
GEOG 103 or GEOG 203	*THE HUMAN PLANET or *HUMAN-ENVIRONMENT GEOGRAPHY	3
GEOG 105 or GEOG 106	*GEOGRAPHY OF THE NON-WESTERN WORLD or *GEOGRAPHY OF THE WESTERN WORLD	3
MTH 112	*ELEMENTARY FUNCTIONS	4
Credits		14

Second Year

GEOG 201	*FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS	4
GEOG 240 or GEOG 250 or GEOG 251	*HUMAN DIMENSIONS OF CLIMATE CHANGE or *LAND USE PLANNING FOR SUSTAINABLE COMMUNITIES or *GEOGRAPHY OF DISASTER MANAGEMENT	3
GEOG 295	GEOGRAPHIC FIELD RESEARCH	3
ST 351	INTRODUCTION TO STATISTICAL METHODS	4
ST 352	INTRODUCTION TO STATISTICAL METHODS	4
Credits		18

Third Year

Fall		Credits
GEOG 300 or GEOG 331 or GEOG 340	*SUSTAINABILITY FOR THE COMMON GOOD or *POPULATION, CONSUMPTION, AND ENVIRONMENT or *INTRODUCTION TO WATER SCIENCE AND POLICY	3
GEOG 360	GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY	4
GEOG 370	CARTOGRAPHY	4
Credits		11

Winter

GEOG 300 or GEOG 330 or GEOG 350	*SUSTAINABILITY FOR THE COMMON GOOD or *GEOGRAPHY OF INTERNATIONAL DEVELOPMENT AND GLOBALIZATION or *GEOGRAPHY OF NATURAL HAZARDS	3
GEOG 361	GISCIENCE II: ANALYSIS AND APPLICATIONS	4
GEOG 371	WEB MAPPING	4
GEOG 423 or GEOG 424 or GEOG 441	SNOW HYDROLOGY or HYDROLOGY FOR WATER RESOURCES MANAGEMENT or THE WORLD'S WATER	3
Credits		14

Spring

GEOG 300 or GEOG 340 or GEOG 440	*SUSTAINABILITY FOR THE COMMON GOOD or *INTRODUCTION TO WATER SCIENCE AND POLICY or CONFLICT, COOPERATION, AND CONTROL OF WATER IN THE US	3
GEOG 323 or GEOG 324	^CLIMATOLOGY or ^ECOLOGICAL BIOGEOGRAPHY	4
GEOG 431 or GEOG 432	GLOBAL RESOURCES AND DEVELOPMENT or *GEOGRAPHY OF FOOD AND AGRICULTURE	3
GEOG 462 or GEOG 472	GISCIENCE III: PROGRAMMING FOR GEOSPATIAL ANALYSIS or GEOVISUALIZATION: GEOVISUAL ANALYTICS	4
Credits		14

Fourth Year

Fall		Credits
GEOG 407	SEMINAR	1
GEOG 440 or GEOG 463	CONFLICT, COOPERATION, AND CONTROL OF WATER IN THE US or GISCIENCE IV: SPATIAL MODELING	3
GEOG 480	REMOTE SENSING I: PRINCIPLES AND APPLICATIONS	4
Credits		8

Winter

GEOG 410 or GEOG 401 or GEOG 403	INTERNSHIP or RESEARCH or THESIS	1-16
GEOG 423 or GEOG 424 or GEOG 441 or GEOG 451	SNOW HYDROLOGY or HYDROLOGY FOR WATER RESOURCES MANAGEMENT or THE WORLD'S WATER or PLANNING PRINCIPLES AND PRACTICES FOR RESILIENT COMMUNITIES	3
GEOG 481	SATELLITE IMAGE ANALYSIS	4
Credits		8-23

Spring

GEOG 452 or GEOG 472	ENVIRONMENTAL ASSESSMENT or GEOVISUALIZATION: GEOVISUAL ANALYTICS	3
GEOG 464	GEOSPATIAL PERSPECTIVES ON INTELLIGENCE, SECURITY AND ETHICS	3
GEOG 495	FIELD GEOGRAPHY SYNTHESIS	3
Credits		9
Total Credits		96-111

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

Sample Two-Year Plan: Geography and Geospatial Science

Up to 29 transfer credits may be accepted representing the equivalent of:

Code	Title	Credits
GEOG 102 or GEO 202	*PHYSICAL GEOGRAPHY *EARTH SYSTEMS SCIENCE	4
GEOG 103 or GEOG 203	*THE HUMAN PLANET *HUMAN-ENVIRONMENT GEOGRAPHY	3
GEOG 105 or GEOG 106	*GEOGRAPHY OF THE NON-WESTERN WORLD *GEOGRAPHY OF THE WESTERN WORLD	3
GEOG 201	*FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS	4
GEOG 240 or GEOG 250 or GEOG 251	*HUMAN DIMENSIONS OF CLIMATE CHANGE *LAND USE PLANNING FOR SUSTAINABLE COMMUNITIES *GEOGRAPHY OF DISASTER MANAGEMENT	3
MTH 112	*ELEMENTARY FUNCTIONS	4

ST 351 & ST 352	INTRODUCTION TO STATISTICAL METHODS and INTRODUCTION TO STATISTICAL METHODS	8
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Total Credits		29
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Third Year

Fall Credits

GEOG 295	GEOGRAPHIC FIELD RESEARCH	3
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GEOG 300 or GEOG 331 or GEOG 340	*SUSTAINABILITY FOR THE COMMON GOOD or *POPULATION, CONSUMPTION, AND ENVIRONMENT or *INTRODUCTION TO WATER SCIENCE AND POLICY	3
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GEOG 360	GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY	4
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GEOG 370	CARTOGRAPHY	4
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Credits		14
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Winter

GEOG 300 or GEOG 330 or GEOG 350	*SUSTAINABILITY FOR THE COMMON GOOD or *GEOGRAPHY OF INTERNATIONAL DEVELOPMENT AND GLOBALIZATION or *GEOGRAPHY OF NATURAL HAZARDS	3
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GEOG 361	GISCIENCE II: ANALYSIS AND APPLICATIONS	4
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GEOG 371	WEB MAPPING	4
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GEOG 423 or GEOG 424 or GEOG 441	SNOW HYDROLOGY or HYDROLOGY FOR WATER RESOURCES MANAGEMENT or THE WORLD'S WATER	3
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Credits		14
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Spring

GEOG 300 or GEOG 340 or GEOG 440	*SUSTAINABILITY FOR THE COMMON GOOD or *INTRODUCTION TO WATER SCIENCE AND POLICY or CONFLICT, COOPERATION, AND CONTROL OF WATER IN THE US	3
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GEOG 323 or GEOG 324	^CLIMATOLOGY or ^ECOLOGICAL BIOGEOGRAPHY	4
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GEOG 431 or GEOG 432	GLOBAL RESOURCES AND DEVELOPMENT or *GEOGRAPHY OF FOOD AND AGRICULTURE	3
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GEOG 462 or GEOG 472	GISCIENCE III: PROGRAMMING FOR GEOSPATIAL ANALYSIS or GEOVISUALIZATION: GEOVISUAL ANALYTICS	4
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Credits		14
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Fourth Year

Fall

GEOG 440 or GEOG 463	CONFLICT, COOPERATION, AND CONTROL OF WATER IN THE US or GISCIENCE IV: SPATIAL MODELING	3
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GEOG 480	REMOTE SENSING I: PRINCIPLES AND APPLICATIONS	4
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GEOG 407	SEMINAR	1-16
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Credits		8-23
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Winter

GEOG 410 or GEOG 401 or GEOG 403	INTERNSHIP or RESEARCH or THESIS	1-16
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GEOG 423 or GEOG 424 or GEOG 441 or GEOG 451	SNOW HYDROLOGY or HYDROLOGY FOR WATER RESOURCES MANAGEMENT or THE WORLD'S WATER or PLANNING PRINCIPLES AND PRACTICES FOR RESILIENT COMMUNITIES	3
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GEOG 481	SATELLITE IMAGE ANALYSIS	4
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Credits		8-23
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Spring

GEOG 430 or GEOG 440 or GEOG 452 or GEOG 472	RESILIENCE-BASED NATURAL RESOURCE MANAGEMENT or CONFLICT, COOPERATION, AND CONTROL OF WATER IN THE US or ENVIRONMENTAL ASSESSMENT or GEOVISUALIZATION: GEOVISUAL ANALYTICS	3
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GEOG 464	GEOSPATIAL PERSPECTIVES ON INTELLIGENCE, SECURITY AND ETHICS	3
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GEOG 495	FIELD GEOGRAPHY SYNTHESIS	3
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Credits		9
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Total Credits		67-97
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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)