



# GEOGRAPHIC INFORMATION SCIENCE (GIS) MAJOR

The BS degree in Geographic Information Science (GIS) is a new degree in one of the fastest growing STEM areas of science and information technology. This degree provides the foundation for a career in the emerging field that integrates computer science, information technology with geographic concepts and techniques to support management and resilience of earth's natural environmental, urban and human systems. GIS uses massive data sets from satellite imagery, drones, digital mapping, GPS, geospatial statistics to create knowledge to analyze and solve 21st Century problems.

Geography has long used maps and images as models of the earth surface and physical/human processes. The advent of digital cartography, satellite imagery, global positioning systems and geographically-informed digital databases (Google Earth, vehicle navigation systems, etc) has transformed the use of traditional geographic theory, methodology and techniques to 21st Century science and technology to address issues confronting the earth and human societies. The Department of Labor estimates that employment for Geographic Information Scientists will increase 29% across the United States and 105% in Utah by the year 2022.

Geographic Information Science is a federally recognized STEM discipline allied with the Cartography and Geospatial Intelligence designations.

# REQUIRED CLASSES

## Geography core requirements

- GEOG 1000** Earth Environments and Global Change (PS)
- GEOG 1005** Earth Environments and Global Change Lab
- GEOG 1400** Human Geography (BF)
- ENV 1100** Our Digital World
- ENV 2100** Environment and Society (BF)
- \***GEOG 3020** Geographical Analysis (QI)
- \***GEOG 3100** Introduction to Geographic Information Science (QI)

## APPLIED GIS CORE (Applied GIS Requirements)

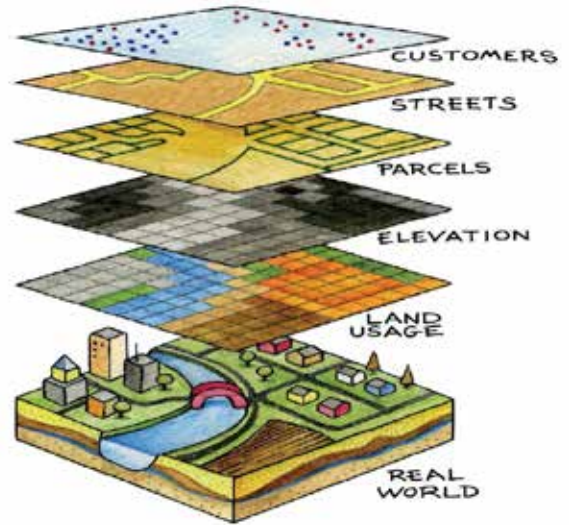
- \***GEOG 3050** Problem Solving in Physical Geography
- GEOG 3/5170** Geospatial Field Methods: GPS and Drones
- \***GEOG 3180** Introduction to Geo-Programming
- \***GEOG 4140** Advanced Methods in GIS
- \***GEOG 4150** Geospatial Big Data
- \***GEOG 4165** Data Visualization
- GEOG 5680** Introduction to R Programming
- \***GEOG 5160** Spatial Data Science in Practice

## REMOTE SENSING CORE (Remote Sensing Requirements)

- GEOG 3110** Introduction to Remote Sensing
- \***GEOG 5110** Environmental Analysis through Remote Sensing

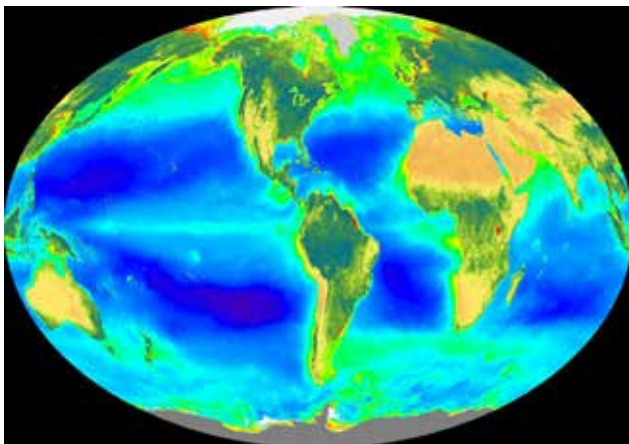
## SENIOR CAPSTONE (required core course for major in final year)

- \***GEOG 5161** Capstone in Geographic Information Science



# CAREER OUTLOOK

- Department of Defense
- US Department of Transportation
- Urban Planning
- United States Geological Survey (USGS)
- Natural Resource Management (Forest Service, Fish and Game)
- Environmental consulting and Conservation Non-Profits
- Non-Governmental Organizations (NGO's)
- Spatial Software/Environmental Systems Research Institute (ESRI)



# SCHOLARSHIPS

Thanks to the generous donations given by industry & alumni, The School of Environment, Society & Sustainability offers several scholarships to incoming and continuing students.

To apply, please visit:  
<https://ess.utah.edu/scholarships.php>

# CONTACT INFORMATION

For more information about the Geographic Information Science major or to contact an Academic Advisor, please visit:  
<https://ess.utah.edu/>



THE UNIVERSITY OF UTAH

**SCHOOL OF ENVIRONMENT,  
SOCIETY & SUSTAINABILITY**



**STEM Education**