

# GEOG 101 : INTRODUCTION TO GEOSPATIAL SCIENCE & GIS

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## Transcript title

Intro Geospatial Science GIS

## Credits

4

## Grading mode

Standard letter grades

## Total contact hours

60

## Lecture hours

30

## Lab hours

30

## Course Description

Introduces science underlying geospatial technologies including geographic information systems, global positioning systems, satellite and unmanned aerial systems imagery, and cartography. Introduces how geospatial technology can be used with the scientific method to investigate questions in a broad range of fields including the sciences, social sciences, and humanities.

## Course learning outcomes

1. Explain how the curved earth can be represented on a flat map.
2. Describe how the sun's energy reflected from the earth can be mapped and analyzed using sensors mounted on satellites or aerial platforms such as unmanned aerial systems.
3. Correlate spatial patterns in the natural sciences, social sciences, and humanities.
4. Sustainability Outcome: Explain the interconnectedness of environmental, social, and economic systems in the context of geospatial science.

## Content outline

1. Introduction: our geospatial world
2. Finding ourselves: global positioning systems (GPS)
3. Charting where we are: datums, projections, and coordinate systems
4. Meshing our data: georeferencing
5. Getting our data into a system: geographic information systems (GIS)
6. Sensing our world from the sky: satellites and unmanned aerial systems (UAS) – Part 1
7. Analyzing our world from the sky: satellites and UAS – Part 2
8. Mapping our ups and downs: digital landforms
9. Communicating our ideas: cartography
10. Visualizing our world: 3-D map displays

## Required materials

This course will require a textbook.

## General education/Related instruction lists

- Science Lab