

Welcome to Exploring Our World Through Geospatial Technology! GEOG 1890



Hello! My name is Professor Eric C. Ewert. Welcome to the course, GEOG 1890!

Geospatial Technology is more prevalent and pervasive throughout society than what you might think. Whether it's the map on your smart phone, the basemap in a video game, or the maps you see on TV, "geospatial" is all around us. It predicts the weather, handles traffic, routes 911 calls, delivers Amazon packages, connects you to Uber, manages natural disasters, predicts voter behavior, targets marketing, and on and on. In this class, you will learn the fundamentals of geospatial technology, which include spatial analysis, cartography, Global Positioning Systems (GPS), remote sensing, Unmanned Aerial Systems (drones), and Geographic Information Systems (GIS).

The uses and users of Geospatial Technology just keeps growing: scientific investigations, resource management, asset management, environmental impact assessment, urban planning, criminology, espionage, physical science, earth science, marketing, logistics, economics, business, and virtually any other discipline that has a spatial and/or temporal component. If you've got this tool in your toolbox, you'll get a job! In this class, we will explore the uses of geospatial technologies across a variety of disciplines, and allow you to use it! This will be eye-opening and fun.

This course is mostly self-paced, with due dates every other week. Take your time as you go through the material and be sure to watch all of the assigned videos and complete the readings. Feel free to contact me at any time using the Canvas Messaging system (be sure to set your communication preferences). I prefer that over my email address for this course: eevert@weber.edu. For all-class messaging (visible to all), use the Discussion Board. Response time will generally be within 24 to 48 hours.

Instructor:

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About this course, NUGeoTec, and the GeoTech Center: <http://www.geotechcenter.org> (Links to an external

[site.](#)) This course was written via a National Science Foundation (NSF) Grant (DUE #1700496) by the National Geospatial Technology Center of Excellence (GeoTech Center). The GeoTech Center is a collaborative effort between 2- and 4-year colleges, universities, and industry to assist in the expansion of a well-qualified geospatial technology workforce. It is recognized by the U.S. Department of Labor as a leader in supporting and advancing geospatial technology education. NUGeoTec was created with another NSF Grant (DUE #1304888) and serves all of northern Utah: [NUGeoTec \(Links to an external site.\)](#)

This Online Course introduces the public to geospatial technologies, with the intent of fostering a general awareness of geospatial technologies, how geospatial technology has become "normal", and the many career paths of geospatial technology. It continues to be updated and improved. It is intended for a "public" that ranges from high school students to graduate students. So, whether you are earning a Geospatial Certificate, majoring or minoring in Geography, wishing to add geospatial skills to your other degree program, or a working professional hoping to add to their technological toolbox, this is the class for you!

GEOG 1890 Course Outline

Unit/Topics
Readings
Online Exercises

Unit I: Introduction to Mapping, Geospatial Science, and Data

Weeks 1-2	What is Geographic Information Science and Technology?	DiBiase: Chapter 1	Intro to ArcGIS Online
Weeks 3-4	Principles of Mapping, Geographic Information Systems, and Data	GIS Commons: Chapters 1 & 3	Get Started with Map Viewer
Week 4	Quiz 1 will cover the content of Weeks 1-4		

Unit II: Sources of Spatial Data, GPS, and Spatial Analysis

Weeks - 5-6	Sources of Spatial Data and GPS	GIS Commons: Chapter 2	Survey123
Weeks 7-8	Spatial Analysis & Modeling	GIS Commons: Chapter 5	Analyze a Spatial Problem
Week 8	Quiz 2 will cover the content of Weeks 5-8		

Unit III: Remote Sensing, Image Analysis, and Unmanned Aircraft Systems (Drones)

Weeks 9-10	Fundamentals of Remote Sensing and Image Analysis	Fundamentals of Remote Sensing: Chapters 1, 2, 4	Getting Started with Imagery
Weeks 11-12	Introduction to Drones as Remote Sensing Platforms	The History of Drones and Quadcopters. Choosing the Right Sensor. Drones to the Rescue.	Change Detection using ArcGIS Online
Week 12	Quiz 3 will cover the content of Weeks 9-12		

Unit IV: Cartography, Visualization, GIS & Society

Weeks 13-14	Visualization and Cartography	GIS Commons: Chapter 6	Analyze Volcano Shelter Access in Hawaii
Weeks 15-16	GIS & Society	None this week	The Power of Maps
Week 16	Quiz 4 will cover the content of Weeks 13-16		