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**NATR 113**  
**Introduction to the Global Positioning System**  
**Fall 2023**

Final Examination Study Guide

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- Understand the basics of geospatial technology and its components.
- Understand the terms GIS, RS, GPS, and GNSS and what these represent.
- Know the basics of remote sensing.
- Understand the similarities and differences between remote sensing systems types.
- Understand the fundamentals of GPS.
- Know the three components of GPS which include the user, space, and control segments.
- Understand the difference between GPS and GNSS.
- Understand the components of GNSS.
- Understand the basics of modernized GPS and what does it involve.
- Understand the signals utilized in GPS and how are these extended in modernized GPS.
- Know the main players in developing and deploying GPS.
- Understand the concept of satellite ranging.
- Understand how a position can be determined using a GPS unit.
- Name the factors that affect GPS accuracy.
- Understand the signal errors in GPS including ionospheric, tropospheric, multipath, and PDOP.
- Understand the reasoning behind using DGPS.
- Understand the basics of DGPS operation.
- Know the general types of DGPS.
- Know the sources of real-time DGPS and how these differ.
- Know how to define GIS and what can it do.
- Understand the primary benefits of GIS.
- Know the related fields of GIS.
- Understand the primary advantages, capabilities, current uses, and the potential sources of data for GIS.
- Know the primary differences between vector and raster data.
- Understand the differences among the three types of vector data used in GIS.
- Have a basic understanding of BaseCamp and Google Earth (and GIS on the web).
- Understand the basics of Google Earth, Google Maps, Bing Maps, and Apple Maps.

Note: The final exam for NATR 113 must be completed online (in Brightspace) between 3:00 and 11:59 p.m. on Friday - 10/13/2023. The exam will be 50 minutes long and will generally follow the same format as the online quizzes (i.e., multiple choice and fill in the blank questions) with the same setup. The exam will include 50 (mostly multiple choice with a hand full of fill-in the blank) questions.

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