

ENSC 321 ¾ Exam Study Guide 2020

The study guide provides reference to the general concept areas that will be covered by the exam. The concept areas are organized below. Any aspect of the class, readings, lectures, or tutorials are fair game.

Study Resources:

- Campbell and Shinn assigned readings including chapters 1-5, 7, and 9.
- Gorr and Kurland chapter 1-6 tutorials *excluding* the following: [2-7, 3-4, 3-5, 3-7, 5-6, 5-7, 5-8, 5-11].
- ENSC 321 lectures and videos.
- Absentee worksheets (now posted as a zip folder in the course resources front page).

The exam will cover material including, but not limited to the following areas:

GEOGRAPHIC CONCEPTS and MAP ANATOMY

- Mental maps
- Geographic Questions- What are the 5 types? Give Examples
- What is GIS? Describe the three approaches to GIS in Campbell and Shinn.
- Location- How defined? How determined?
- What is GPS? How does it work?
- What is a Map? 3 Kinds of Maps in Campbell and Shinn
- What are some key common map elements?
- Describe the concept of map scale
- What are Coordinate Systems?
- Map Projections and why we need them.
- What is the concept of map abstraction?

DATA

- What is the difference between data and information?
- What is the difference between spatial and attribute data?
- What is metadata? Geospatial metadata?
- Primary vs. secondary data?
- What questions do we ask when deciding whether to use data or not?

- Name different attribute data types
- Name different data measurement scales

CARTOGRAPHIC PRINCIPLES

- What is cartography?
- What are the three primary aspects of color in map making
- What are some variables of symbology? What can we alter to change appearance of symbols?
- Data classification methods- Jenks, Quantiles, Natural Breaks, Manual Classification, Standard Deviation
- What is a Choropleth map?
- Describe data normalization. Why do we normalize data? Give an example
- List some general cartographic principles, characteristics of good maps

DATA MODELS and GEOPROCESSING

- What is a data model and what are the two main models in GIS?
- Describe the vector data model. Advantages and disadvantages.
- Describe the raster data model. Advantages and disadvantages.
- What is a shapefile and what are the mandatory files in a shapefile?
- What are some other vector file types you worked with in your tutorials?
- What is a database?
- What is a relational database management system?
- What is a geodatabase? What is a table schema?
- What is a join? Definition query? a selection?
- What is geoprocessing? Describe some common geoprocessing functions.
- What is a spatial join? How is it different from a table attribute join? What is the output of a spatial join and where does it go?

Also review the absentee worksheets in the course resources section of the class page