

## Engs 671: Digital Topographic Mapping

### SCHOOL OF ENGINEERING

This course introduces students to the fundamental concepts and methods of topographic mapping. Maps have been used for centuries to catalog and view the arrangement of things on the Earth's surface. Topographic maps are the most widely used form of all maps as they portray both natural features, manmade objects, and the shape and elevation of the land. Unit 1 describes the role of mapping in ancient and modern society along with the nature of maps and the basic principles of coordinate systems and map projections. Unit 2 reviews data collection techniques including: land surveying techniques, the Global Positioning System, and remote sensing data collection. Unit 3 focuses on cartographic operations; it explains methods of graphic communication and techniques for labeling, generalization and map conflation. Unit 4 familiarizes students with Digital Elevation Models and surface modeling. Triangular Irregular Network and Grid data structures are studied along with various interpolation techniques to reconstruct digital surfaces from measured points. Unit 5 explores various tools to visualize and analyze topographic data.

3 Credits

### Prerequisites

- Student must be admitted to Certificate in Geographic Info Systems program.

### Instruction Type(s)

- Indiv Based: Individual Based for Engs 671
- Indiv Based: Online Program for Engs 671

### Subject Areas

- [Engineering, Other](#)

