

# GEOG 204

## LECTURE 7

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### Definitions and Placement

- Geography and Geomatics
- Geomatics and GIScience
- GIScience and GIS

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## GIS Operations and Applications

- What can a GIS do?
  - Data exploration
  - Data display...
- Where would you use a GIS?
  - GIS applications

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## The Nature of Geographic Phenomena

- The conceptualization of geographic space
  - The data models
  - The representation of spatial features
- The special aspects of geographic data
  - Temporal variation
  - Spatial variation
- Scale
  - Definition, usage/meaning

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# The Representation of Spatial Features

- Topology
  - the 3 basic topological relationships
  - Where do *nodes(vertices)*, *edges*, and *faces* fit in?
  - Examples of the usage of topological relationships
- Relative merits if using raster and vector data

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# Data Collection

- Data collection
  - Definition and classification
    - Primary Data
      - Examples of raster and vector
    - Secondary data
      - Examples of raster and vector
  - Digitization
    - Definition, application, sources of error, types of errors
  - COGO and other keyboard data entries

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# Spatial Analysis

- Topological and Nontopological
  - Nontopological functions
  - Topological functions
  - Local, neighborhood, regional operations
  - Understanding of
    - vector to raster conversion
    - Logical and algebraic/arithmetic expressions for overlay analysis and reclassification
  - Interpolation

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