

Advanced GIS (Fall 2014) Syllabus

For a narrative overview of the class and learning approach, please see “Course Overview”.

Week 1 - Introduction to GIS

Lecture: Introduction to Geographic Information Systems

Practicum: Making maps with ArcGIS Online (& ArcCatalog)

Textbook: Chapter 1 - Basic Concepts

Week 2 – Geospatial Data

Lecture: Mapping Data & Intro to Coordinate Systems

Practicum: ArcMap and Geodata Management

Textbook: Chapter 2 – Characteristics and Examples of Spatial Data

Week 3 – Information Production

Lecture: Managing Coordinates; Types of Information Products

Practicum: Publishing Maps on ArcGIS Online (& Georeferencing/Geocoding)

Textbook: Chapter 3 - Products of a GIS

Week 4 – Editing

Lecture: Geodatabases and Data Management

Practicum: Editing and Field Queries – Improving Data

Textbook: Chapter 4 – Structures for Storing Geographic Data

Week 5 – Creating Geodatabases

Lecture: Creating Data and Attributes

Practicum: Editing and Selection Queries

Textbook: Chapter 5 - Geographic Attribute Data, Selection, Input, Editing

Week 6 –Mobile GIS

Test: Chapters 1-5 (approx. 1 hour duration)

Short Lecture: One Map to Rule Them All

Practicum: Data collection using smartphones and tablets

Textbook: No Required Reading (prep for test)

Week 7 – Analysis (Part 1)

Lecture: Geoprocessing Tools

Practicum: Rendering Options and Queries

Textbook: Chapter 6 - Spatial Analysis and Synthesis

Week 8 – Analysis (Part 2)

Lecture: Spatial Aggregation and Overlays

Practicum: Geoprocessing

Textbook: Chapter 7:

Final Project Presentations (Part 1)

Week 9 – Imagery and Raster Processes

Lecture: Differences between raster and vector data processes

Practicum: Raster Analysis and Classification Methods

Textbook: Chapter 8 – Spatial Analysis Based on Raster Data Processing

Final Project Presentations (Part 2)

Week 10 – 3D and Temporal Applications

Lecture: Networks

Practicum: Time and Elevation

Textbook: Chapter 9: “Other Dimensions and Tools”

Final Project Due

Week 11: - Evaluations (No class)

Scheduled Student Assessment Conferences (Optional)