

GEOG 350/550: Geographic Information Systems and Science, Fall 2009

Dr. Gregory Elmes

GEOG	350	81265	LEC	001	TR	4	1430-1545	G25 Brooks Hall
GEOG	350	81266	LAB	002	T	0	1600-1750	419 Brooks Hall
GEOG	350	81267	LAB	003	W	0	1600-1750	419 Brooks Hall
GEOG	550	83992	LEC	001	TR	4	1430-1545	G25 Brooks Hall
GEOG	550	87106	LAB	002	T	0	1430-1545	G25 Brooks Hall
GEOG	550	87107	LAB	003	W	0	1430-1545	G25 Brooks Hall

Note: Lecture Schedule Subject to Change

LECTURE	DATE	TOPIC	QUIZZES AND ASSIGNED READINGS
Week 1		Geographic Information Systems, and Science	Text Bolstad, GIS Fundamentals 3rd ed. 2008 Cpt. 1 Introduction to GIS; Lab text: Gorr and Kurland, GIS Tutorial 3rd Ed pp. 1-38
1	8/25/09	Introduction to the course: Geographic Information Systems and Science, Expectations, and Ground Rules	NCGIA Unit 1; Geographer's Craft - GIS
2	8/27/09	Geographic Information Science (GISc) and Systems (GIS) in your world	NCGIA Unit 2 Maps and Map Analysis
Week 2		Representing Geography	Text: Cpt. 2 Spatial Data Models
		Lab: Introduction	
3	9/01/09	Fundamentals of GIS. Spatial Data Models	NCGIA Unit 12 Position on the Earth
4	9/03/09	Data Models: Representing geographical features.	NCGIA Unit 20: Maps as Representations of the World
Week 3		The Nature of Geographic Data: Georeferencing	Text Cpt. 3 Geodesy, Projections and Coordinate Systems
		Lab Tutorial 1: Introduction	
5	9/08/09	Projections and Transformations	NCGIA Unit 27: Projections
6	9/10/09	Coordinate Systems QUIZ #1	UNIT 13 (new series) - Coordinate Systems
Week 4		Organizing Geographic Data: Georeferencing 2	Text Cpt. 4: Maps, Data Entry, Editing and Output. Text 7. Digital Data
		Tutorial 6: Digitizing	
7	9/15/09	Data Inputs to GIS,	
8	9/17/09	GIS Data Entry and Editing, Transformation; RMSE	
Week 5		Geographic Data Models	Text Cpt. 7. Digital Data; Text Cpt. 14 Data Standards and Data Quality
		Tutorial 5: Importing Spatial and Attribute Data	
9	9/22/09	Geographic Data Sources	Review text Cpt. 2
10	9/24/09	Uncertainty Error and Quality Control	Unit 6 Sampling the Earth
Week 6		GIS Functions	Text Cpt. 10: Raster Analysis
		Lab Tutorial 2: Mapping	
11	9/29/09	The Raster Data Model Spatial Relationships: Raster Operations	NCGIA Unit 55 Rasters
12	10/01/09	QUIZ #2 Further raster operations	NCGIA Unit 5 Raster Operations
Week 7			Review Cpt. 1-4; 7, 10, 11
13	10/06/09	Terrain Modeling	
14	10/08/09	MID-TERM EXAM	

Week 8		Vector GIS	Text Cpt. 2; 9: Basic Spatial Analyses
		Tutorial 3: GIS Outputs	
15	10/13/09	The Vector Data Model	UNIT 12 UNIT 13
16	10/15/09	Basic Spatial Analysis	UNIT 14
Week 9		Spatial Databases	Text Cpt.8: Attribute Data & Tables
		Tutorial 4: Geodatabases	
17	10/20/09	Vector GIS - - Address Geocoding	UNIT 16 Discrete Georeferencing
18	10/22/09	Database - Operations	UNIT 10 UNIT 11 Database design; Normal forms (Check)
Week 10		Spatial Analysis with GIS	Text Cpt. 9: Basic Spatial Analyses
		Tutorial 7: Geocoding	
19	10/27/09	Vector Geo Processing	
20	10/29/09	QUIZ #3	
Week 11		Spatial Analysis and Modeling:	Text Cpt. 11: Terrain Analysis
		Tutorial 8: Spatial Data Processing	
21	11/03/09	Queries and reasoning, Measurements, Descriptive summaries, Transformations, Optimization, Hypothesis testing	
22	11/05/09	Spatial Relationships: Statistics and spatial statistics	
Week 12		Spatial Analysis and Modeling	Text Cpt. 12 Spatial Estimation
		Tutorial 9: Spatial Analysis (Vector)	
23	11/10/09	Spatial Estimation, Interpolation and Prediction.	
24	11/12/09	TBA	
Week 13		Spatial Analysis and Modeling	Text Cpt. 13: Spatial Models and Modeling
		Tutorial 11: Spatial Analyst (Raster)	
25	11/17/09	Types of model, Cartographic Modeling, Testing, Optimization	
26	11/19/09	QUIZ #4	
Week 14		Cartography and map production	Review Text Cpt. 4: Maps, Data Entry, Editing & Output
27	12/01/09	Cartography in GIS	
28	12/03/09	Geovisualization	
Week 15		GIS Management & Policy	Cpt. 14: Data Standards and Data Quality
29	12/08/09	GIS: Innovations and Prospects	Cpt. 15: New Developments in GIS
30	12/10/09	Summary and Review	
FINAL EXAM	12/18/09	3:00 pm – 5:00 pm	

UNIT # refers to notes from the [NCGIA CORE CURRICULUM](#) UC Santa Barbara.