COURSE SYLLABUS

Planning and Geographic Information Systems
Planning, Policy and Design
First Class: 4/1/2009
Course No. U275

Summary: This class will focus on the use of GIS in urban planning and land use analysis. The class will emphasize studying the city in the GIS context and usage of GIS to plan for growth in the urban and exurban environment. Planning for growth will include the balance of housing, jobs, tax base, utilities, transportation and the natural environment. The class will step through a GIS-based planning procedure for several projects.

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Office Hours: 9:30PM to 10:30PM Wednesdays or by Appointment


Grading Criteria: Labs 1-7: 50 %
Quiz 10%
Homework 10%
Final Exam 10%
Final Project: 20%

Week 1, April 1, 2008
Class overview
Fundamentals of Urban Geography
Overview of class project
Starting your GIS project
   - Using a structured process to define project methodology and objectives
   - Data Management and design
   - Creating and using a data dictionary

Land Record Information
   - Base map accuracy
   - Survey Networks
   - Public Land Survey System
      - History
      - Sections and Townships

Lab 1: Election Results 2008

Reading: Chapter 1, Greene and Pick

Homework: Chapter 1 Exercises
Week 2, April 8, 2008

GIS and Environmental Justice Analysis
Mapping and Coordinate Systems
Defining the Urban Area

Discussion of Text Chapter 1

Lab 2: Environmental Justice and the High Speed Rail

Reading Assignment: Chapter 2, Greene and Pick
Homework: Text Exercise P. 83

Week 3, April 15, 2008

GIS and Community Planning
Population Distribution and Land Use Patterns
Discussion of Text Chapter 2

Lab 3: Planning for Growth in Merced

Reading Assignment: Chapter 3, Greene and Pick
Homework: Text Exercise P.116

Week 4, April 22, 2008

Spatial Analysis with ArcGIS Spatial Analyst continued
  - Density Mapping
  - Proximity Analysis
Evolution of Urban Geography and Central Place Theory
Discussion of Text Chapter 3

Reading Assignment: Chapter 4, Greene and Pick

Quiz 1

Homework: Text Exercise P.152
Week 5, April 29, 2008
Transportation Planning
  - Transportation Planning Computer Systems
  - Traffic Analysis Zones
  - Assessing Level of Service (LOS)

Lab 4: Traffic Analysis of Lake County Systems of Cities
Discussion of Text Chapter 4

Reading Assignment: Chapter 5 and Chapter 6, Greene and Pick

Homework: Text Exercise P.186

Week 6, May 6, 2008
Network Analysis
  - Location analysis
  - Drive time analysis,
  - Spatial interaction

Lab 5: Network Analysis of Orange County Transportation Urban Migration and Residential Mobility
Discussion of Text Chapters 5 & 6

Reading Assignment: Chapter 7, Greene and Pick

Homework: Text Exercise P.268

Week 7, May 13, 2008
Assessing Fiscal Viability of New Communities using GIS

Lab 6: Assessing Incorporation in Phelan

Analyzing Gender, Race, Poverty and Ethnicity
Discussion of Text Chapter 7

Reading Assignment: Chapter 8, Greene and Pick

Homework: Text Exercise P.306
Week 8, May 20, 2008
Using ArcScene to Assess Visual Impacts of Development

Lab 7: Power Plant Visual Impacts
Industrial Location
Discussion of Text Chapter 8

Reading Assignment: Chapter 11, Greene and Pick

Homework: Text Exercise P.429

Final project in Class

Week 9, May 27, 2008

Final Project in Class
Environmental Analysis and Preservation
Discussion of Text Chapter 8
Planning for the environment
   Noise
   Biology
   Air
   Wetlands
   Hazardous Materials

Reading Assignment: Chapter 11, Greene and Pick

Homework: Text Exercise P.429

Week 10, June 3, 2008
Final project completion and submittal
History of Urban and Regional Planning
Discussion of Text Chapter 11

Week 11, June 10, 2008
Final Exam
Final project completion and submittal