Fall 9-1-2000

GEOG 588.01: GIS in Human Geography

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The University Of Montana

Geography 588/586 (Lab.)
Fall, 2000
Paul Wilson, Professor

GIS in HUMAN GEOGRAPHY
Course Outline and Project Assignments

Texts/References:

ESRI, Introduction to ArcView GIS, Redlands, California, 1996.

Keith Clark, Getting Started with Geographic Information Systems, 2nd Edition, Prentice Hall, Englewood Cliffs, NJ, 1999.

Borden D. Dent, Cartography: Thematic Map Design, 5th edition, Wm. C. Brown, Dubuque, IA, 1999.

Arthur H. Robinson, et. al., Elements of Cartography, 6th edition, Wiley, 1995.

Michael Zeiler, Modeling Our World: The ESRI Guide to Deodatabase Design, ESRI Press, 1999.

Course Outline:

Introduction

1. Course Objectives and Scope
   A Brief History of GIS and Computer Mapping
   GIS Concepts and Definitions
   Introduction to ArcView GIS

   Laboratory Exercise #1–ArcVeiw GIS Tutorial

Census Maps and Census Data

2. Building Census Base Maps: Geographic Data Translations
   Obtaining and Manipulating Census Data
   Geocoding
   Making Choropleth Maps of Census Data

   Laboratory Exercise #2–Choropleth Mapping: Tributary Areas of Major Metropolises in the U. S.

3. The Census Summary Tape Files
   The Geography of the Census
   Working with Tables–Database Management
   Advanced Geocoding

   Laboratory Exercise #3–Mapping Sub-County Census Areas: American Indian Settlement Patterns On and Off Indian Reservations in Montana

Topology, Geocoding, and Databases

4. Building and Mapping with Address Databases
Point and Lines in Topological Data Structures
Address Matching

Laboratory Exercise #4–Address Matching for Mid-Sized Towns in Montana

5. Local Base Maps for Vector GIS
Availability of Base Maps
Methods of Creating Base Map Layers
Data Translations
Solving Map Projection Problems for ArcView
Making Polygons where None Exist
Elements of Cadastral Mapping
The Use of Cadastral Mapping in Urban Land Use Planning.

Laboratory Exercise #5–County Plat Maps: Missoula County vs. Butte/Silver BowCounty, Montana

Analytical Procedures

6. Relating point databases to polygons
Building and Loading Avenue Scripts
Nearest Neighbor Analysis
Point-in-Polygon Analysis

Laboratory Exercise #6–Point-in-Polygon Analysis

7. Building a Base Map from Scratch–Digitizing
Overlay Analysis
Polygon Disaggregations
Buffers and Zones

Laboratory Exercise #7–Developable Sites Near Anchorage, Alaska

Software:

ArcView 3.0	EXCEL
SPSS	Didger
Import/Export	AtlasGIS
AGFshape	

Grading:

Grades in this class will be based entirely on the projects. Each project will include either a map or a series of maps. Each shall also include a title page and text comprised of description, discussion, analysis, and conclusions. Projects are to be bound in a theme cover. All maps and figures are to conform to thesis format as concerns binding edges, margins, and so forth. Some projects may entail class discussions and presentations. If so, these elements will comprise part of the grade. There will be no examinations, but the Final Exam Period will be used as a class period.