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GEOG 586.01: GIS in Human Geography Laboratory

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GIS in HUMAN GEOGRAPHY
Course Outline and Project Assignments

Texts/References:

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


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–ArcView 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 Bow County, 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
- SPSS
- Import/Export
- AGFshape
- EXCEL
- Didger
- AtlasGIS

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.