

University of Montana

ScholarWorks at University of Montana

University of Montana Course Syllabi

Open Educational Resources (OER)

Spring 1-2016

DDSN 244.01: Introduction to GIS Mapping

Matthew P. Nordhagen

University of Montana - Missoula, m.nordhagen@mso.umt.edu

Follow this and additional works at: <https://scholarworks.umt.edu/syllabi>

Let us know how access to this document benefits you.

Recommended Citation

Nordhagen, Matthew P., "DDSN 244.01: Introduction to GIS Mapping" (2016). *University of Montana Course Syllabi*. 4092.

<https://scholarworks.umt.edu/syllabi/4092>

This Syllabus is brought to you for free and open access by the Open Educational Resources (OER) at ScholarWorks at University of Montana. It has been accepted for inclusion in University of Montana Course Syllabi by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.

DDSN 244 – INTRODUCTION TO GIS MAPPING

Instructor	Matthew Nordhagen	Contact	m.nordhagen@mso.umt.edu
Class Time	MWF 3:10 – 4:00pm	Office Hours:	By appointment only
Location	HB 04	Final Time:	Thursday, May 12 th @ 3:20 – 5:20

Course Description

This course will introduce you to the fundamentals, concepts and applications of GIS (Geographic Information Systems) mapping.

Learning Objectives

GIS is an extremely broad discipline that can be used in many different ways. There are, however, a core set of skills that are universal in nearly all GIS situations. These core skills will be our focus for the semester. You will be expected to demonstrate your ability to use and understand the following:

- What is a GIS?
- Identify the different file and data types associated with GIS
- Have a working understanding of projections and coordinate systems
- Edit/manage data sets and their attributes
- Process GPS data
- Perform basic spatial analysis using ArcGIS 10.3.1
- Create maps using sound cartographic principles

Software and Textbook

We will be using ESRI's ArcGIS Desktop 10.3 which will be provided on all lab computers in the classroom. I will also have full-version student copies of ArcGIS 10.3 to distribute to anyone who would like one. ***ArcGIS can only be installed on a Windows operating system. Mac and Linux OS's are not supported.**

'Getting to Know ArcGIS for Desktop, 4th Edition' by Michael Law & Amy Collins will be our textbook for the semester. You can buy it new for \$84.95 through the campus bookstore or buy/rent for less online. I've tried my best to avoid having an expensive textbook for use in the class as, too often, textbooks are rarely used to justify the cost. In this case, however, you will get your money's worth as you will be using this textbook for not only your weekly lab assignments but also as a reference guide for the projects that you will complete.

Assignments

Assignments will be exercises provided in the 'Getting to Know ArcGIS for Desktop' textbook. I have chosen exercises that compliment the lectures given on Monday and Wednesday, while Friday will be used as a lab period where you can begin working on your exercises. Once assignment have been given on Friday, you will have until the following Friday (one week) to complete the assignments with submissions due via Moodle.

Final Project

The focus of the final project will be to use what skills and knowledge you have learned throughout the semester and apply them to a project of your choosing. Your choice of project will be based off a discussion that we will have following spring break. I will address final project guidelines as the semester progresses and provide you with an outline to help get you started.

Attendance

You will be expected to show up for class prepared and on time. GIS is a skill you learn gradually so information given in each class will build on that of the last. Your attendance is not only mandatory but also crucial to your success.

Late Work

Late work will not be accepted unless in the event of extreme sickness or family emergencies. In either of those circumstances I ask that you let me know as soon as possible so that arrangements can be made.

Grading

Graded Items	Percent of Grade
Participation	20%
Exercises	20%
Midterm Project	25%
Final Project	35%
Total	100%

Lowest	Highest	Letter
93%	100%	A
90%	92%	A-
87%	89%	B+
83%	86%	B
80%	82%	B-
77%	79%	C+
73%	76%	C
70%	72%	C-
67%	69%	D+
60%	66%	D
0%	59%	F

Academic Integrity

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by The University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://life.umn.edu/vpsa/student_conduct.php

Disability Accommodation

Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please contact me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disability Services website at <http://www.umd.edu/dss/> or call 406.243.2243 (voice/text).

Changes to Syllabi

NOTE: Instructor reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

Class Outline (Please Note: This is a tentative schedule.)

Week	Type	Topic	Assignment
------	------	-------	------------

Week 1			
January 25th	Lecture	Class Introduction	
January 27th	Lecture	Introduction to GIS	
January 29th	Lab	Chapter 3	Exercise 3A – 3B – 3C

Week 2			
February 1st	Lecture	Vector Data	
February 3rd	Lecture	Attribute Data	
February 5th	Lab	Chapter 3 Continued	Exercise 3D

Week 3			
February 8th	Lecture	Working With Map Layers	
February 10th	Lecture	February 8 th Lecture Continued	
February 12th	Lab	Chapter 4	Exercise 4A – 6B – 6C

Week 4			
February 15th	Lecture	Presidents Day – No Class	
February 17th	Lecture	Projection/Coordinate Systems	
February 19th	Lab	Chapter 6	Exercise 6A – 6B – 6C

Week 5			
February 22nd	Lecture	Raster Data	
February 24th	Lecture	Monday Lecture Continued	
February 26th	Lab	Chapter 7	Exercise 7A – 7B – 7C – 7D

Week 6			
February 29th	Lecture	Web GIS	
March 2nd	Lecture	Cartographic Theory	
March 4th	Lab	Chapter 10	Exercise 10A -10B – 10C – 10D

Week 7			
March 7th	Lecture	Exploring GIS Data	
March 9th	Lecture	Data Storage in ArcMap	
March 11th	Lab	Chapter 11	Exercise 11A – 11B – 11C

Week 8			
March 14th	Lecture	Geoprocessing in ArcGIS	
March 16th	Lecture	Joining & Relating Data	
March 18th	Lab	Chapter 16	Exercise 16A – 16B

Week 9			
March 21st	Lecture	Global Positioning Systems	
March 23rd	Lecture	First Project Discussion	
March 25th	Lab		Midterm Project

Week 9			
March 28th	Lecture	Introduction to Spatial Analysis	
March 30rd	Lecture	March 23 rd Lecture Continued	
April 1st	Lab	Lab	Exercise 19A – 19B

Week 11			
April 4th		Spring Break – No Class	
April 6th		Spring Break – No Class	
April 8th		Spring Break – No Class	

Note

When we return from Spring Break, we will begin considering options for your final project. We will also discuss how everyone feels about their progress in the class as well any GIS concepts you would like more clarification about, or any aspect of GIS that you would like to discuss that we might not have covered up to this point. The remainder of the calendar will be 'TBA' to allow for class flexibility as well as time needed to work on your final project once they've been chosen

Week 12			
April 11th		Final Project Discussion	
April 13th		TBA	
April 15th		TBA	

Week 13	
April 18th	TBA
April 20nd	TBA
April 22th	TBA

Week 14	
April 25th	TBA
April 27th	TBA
April 29th	TBA

Week 15	
May 2nd	TBA
May 4th	TBA
May 6th	TBA