GES 286 – Introduction to the Environment: A Geo-Spatial Perspective

Instructor: Joseph School
Office: 009 Sondheim Hall
Office hours: 10:00am to 11:00am Monday, 11:00am to 12:00pm Wednesday and Friday, and by Appointment
Extension: x52900
E-mail: school@umbc.edu
Class Meetings: 8:30am – 9:45am; LH 1; Monday
Lab Meetings: 8:30am – 10:50am; 007a Sondheim Hall; Wednesday, Friday
Open Lab Hours: TBA

*This course meets the UMBC GEP requirement for Science plus Lab

Prerequisites
There are no prerequisites for this course, however, a practical understanding of how computers function is required for you to have success in the course.

Text
There is no text for this course. There are however a number of online readings to supplement the powerpoints. These are in lieu of a book.

Course Description
The disciplines of Geography and Environmental Systems sit in a uniquely important position in today's world. With all the concerns associated with resources and the geopolitical consequences associated with good or bad decisions it is imperative students understand the technologies available to address many of today's most pressing issues. Students from most every discipline could benefit from learning about the technologies inherent to this course. The technologies covered in this course are currently being used in critical decision-making today. This course provides a unique opportunity to gain hands on experience through the use of these technologies. It also introduces the basic methods and techniques associated with data collection, manipulation and analysis in use in the geo-spatial and environmental sciences fields today. Emphasis is placed on how to acquire real world data from the field using GPS.

Students enrolled in this course will collect data from field observation techniques taught in the course. Once collected this data will be brought into the department's geo-spatial lab for processing and analysis using the GIS software most often used in the world today. Students will be required to manipulate and complete basic analysis on the data collected. Students will also learn how to properly organize and present the data in a coherent and logical manner using basic GIS and Cartographic principles. GIS, Remote Sensing, GPS and Cartography will all be discussed in the course. The course will cover, among other topics, a basic understanding of how GPS systems function and how it integrates with GIS. It will also provide students with a basic understanding of GIS software and concepts. Students will learn basic map fundamentals such as scale, map interpretation, and projections along with the best way to present the data.

Upon completion of the course a student should have a basic understanding of each of the areas mentioned above, and how these techniques (and skills) might be applied to other areas of study.

Cheating and plagiarism
Each student is expected to complete his or her own work. All lab assignments are to be answered by each student individually. No sharing of answers for labs. You must do your own work. Any cheating during this course will result in an F grade, and appropriate disciplinary action. UMBC has a very specific code of conduct regarding cheating and plagiarism. Please review your copy of the UMBC student handbook. For an online copy of the UMBC Undergraduate Student Academic Conduct Policy go to:
http://www.umbc.edu/undergrad_ed/ai/documents/ACC2011.pdf

Grading
Your final grade will be determined as follows:
A = 90% and above, B = 80% - 89.9%, C = 70% - 79.9%, D = 60% - 69.9%, F 59.9% and below.

Lab Exercises (7)	*49 %*
Quizzes (4)	*40 %*
Lab Practical	*11 % plus 3 extra credit points (total potential points – 14)*
Total:	*100 points*

Labs
**You will be going outside on a number of Wednesdays/Fridays rain or shine. Dress appropriately!

There are 7 graded lab exercises each worth 7% of your final grade. All labs are due as specified on Blackboard. These need to be submitted through Blackboard. You will not receive credit for any assignment not submitted through Blackboard.

Lab Practical
The lab practical is an in lab practical exam based on what you learned in lab during the semester. It is worth 10% of your final grade. More information regarding the practical will be provided in class.

Quizzes
Quizzes will be on the computer and will take place at the beginning of each lab period as specified in the syllabus. Each will be approximately 30 minutes long. BE ON TIME!!! If you miss the quiz you will receive a 0, no exception.

Each quiz will cover material from the lectures and associated readings specified in the outline that follows unless otherwise stated. You must keep up to do well in this course.

Quiz makeup
You will be **allowed to makeup one of the first three quizzes** you may have missed during the semester or did poorly on – but only one! See the schedule below for the only day and time you will be allowed to make up a missed quiz – NO EXCEPTIONS! Be sure this day and time is clear now! ***This is an optional make up; you do not have to do this. You are not allowed to make up labs, only quiz 1, 2, or 3.***

Tentative Schedule (subject to change):

Week of	Topic
Aug 27 - Wednesday	Scientific Method
Aug 29 Friday	***NO CLASS***
Sept 1 - Monday	*LABOR DAY – NO CLASS*
Wednesday/Friday	Workspaces // Lab 1 - Basics of GIS (in computer lab)
Sept 8 - Monday	Visualizing Data: Design - Proper Presentation of Information // GIS
Wednesday/Friday	Lab 1 – Work Day
Sept 15 - Monday	Data Classification and Ranking
Wednesday/Friday	Lab 2 - GPS
Sept 22 - Monday	Sampling
Wednesday/Friday	Lab 3 – Soil Sampling (Infiltration / Texture)
Sept 29 - Monday	Stats
Wednesday/Friday	Lab 3 - Lab Work day
	QUIZ 1 – Scientific Method, Design, Data Classification & Ranking, GIS

Oct 6 - Monday Wednesday/Friday	GPS // Remote Sensing Lab 5 - RS with Balloons
Oct 13 - Monday Wednesday/Friday	Remote Sensing Lab 5 - Lab Work Day
Oct 20 - Monday Wednesday/Friday	Topographic Mapping Lab – Tree Transects
Oct 27 - Monday Wednesday/Friday	Topographic Mapping Lab Work day **QUIZ 2 - GPS, Sampling, Stats**
Nov 3- Monday Wednesday/Friday	Social Geography - Gerrymandering Lab 4 - Choropleth Mapping (in Lab)
Nov 10 - Monday Wednesday/Friday	Map Projections Lab 7 - Slope & Stream (Herbert Run)
Nov 17 - Monday Wednesday/Friday	Map Coordinate Systems Lab 7 – Work Day **QUIZ 3 – Remote Sensing, Topography, Social Geography**
Nov 24- Monday Wednesday/Friday	Map Coordinate Systems *THANKSGIVING - NO CLASS*
Dec 1 - Monday Wednesday/Friday	Map Scales **Lab Practical**
Dec 8 – Monday **Session)**	**QUIZ 4 – Choropleth, Projections, Scale, Coordinates (Wednesday Lab**
Dec 10 – Wednesday **Session)**	**QUIZ 4 – Choropleth, Projections, Scale, Coordinates (Friday Lab**
Dec 17 - Wednesday	**Make-up QUIZ - 1, 2 or 3** **Wednesday Lab Section meets at 8:00 am in Sondheim 007** **Friday Lab Section meets at 9:00 am in Sondheim 007**