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

Instructor: Joseph School
Office: 009 Sondheim Hall
Office hours: 5 pm to 6 pm Monday & Wednesday, and by Appointment
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Class Meetings: 6:00 – 9:00pm; 001 Sondheim Hall; Tuesday
Lab Meetings: 6:00 – 9:30pm; 001 Sondheim Hall; Thursday
Open Lab Hours: TBA

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

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/

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 %*
Total:	***100 points***

No extra credit is available.

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

There are 7 graded lab exercises each worth 7% of your final grade. All labs are due by the date and time designated on BB before the next class. *All assignments must be submitted through Blackboard.* ***Late assignments will not receive credit.*** *So get them in on time!*

Lab Practical
The lab practical is an in lab practical exam based on what you learned in lab during the semester. It is worth 11% of your final grade. More information regarding the practical will be provided in class.

Quizzes
Quizzes 1 through 4 will be on the computer and will take place at the beginning of Tuesday's class period except quiz #4. That quiz will be on the last day of class. Each will be approximately 25 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 quiz you may have missed during the session or did poorly on – but only one! Make-up quiz –TBA. *This is an optional make up, you do not have to do this. You are not allowed to make up labs, only quizzes.*

Tentative Schedule:

Week #1

Monday	Scientific Method // Visualizing Data: Design - Proper Presentation of Information
Thursday 28th	Lab 1 - Basics of GIS (in computer lab) – due 5:30 pm June 4th

Week #2

Monday	Data Classification and Ranking // GIS // GPS
Thursday 4th	Lab 2 – GPS - due 5:30 pm June 11th //
	Lab 3 – Soil Sampling (Infiltration / Texture) - due 5:30 pm June 11th

Week #3

Monday	Sampling // Stats
	QUIZ 1 – Scientific Method, Design, Data Classification & Ranking, GIS
Thursday 11th	Lab 4 - Slope & Stream (Herbert Run) - due 5:30 pm June 18th

Week #4

Monday	Remote Sensing // Topographic Mapping
	QUIZ 2 - GPS, Sampling, Stats
Thursday 18th	Lab 5 - RS with Balloons - due 5:30 pm June 25th

Week #5

Monday	Social Geography // Lab 6 - Choropleth Mapping (in Lab) - due 5:30 pm June 25th
	QUIZ 3 – Remote Sensing, Topography, Social Geography
Thursday 25th	Lab 7 – Tree Transects

Week #6

Monday	Projections and Scales, Coordinate Systems – (with coordinate system map reading)
Thursday 2th	**QUIZ 4 – Choropleth, Projections, Scale, Coordinates // Lab Practical**
Friday*	**Quiz Make up**