Introduction of Geographic Information Systems
Policies and Procedures

December 9-20, 2019 - Xuchang University, Henan, China

INSTRUCTOR: Dr. Steve Taylor, Professor of Geology, Western Oregon University, Monmouth, Oregon USA
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COURSE DESCRIPTION:

This course focuses an introduction to Geographic Information Systems (GIS). GIS is comprised of computer hardware and software that links digital maps to spatial data. GIS systems provide the capability to store, retrieve, display, and quantitatively analyze map-based spatial information. Class topics include cartographic principles, coordinate systems, map projections, database concepts, vector/raster data models, attribute/feature editing, geocoding, geoprocessing, spatial analysis, and map production.

COURSE GOALS:

1. Recognize and describe the primary tools of a GIS system
2. Locate, import, manipulate, and display geographic information in a GIS
3. Represent and communicate numerical or verbal data in map form
4. Apply GIS-based technology to analyze data and solve spatial problems

REQUIRED TEXTS / SOFTWARE:

Clarke, K.C., 2003, Getting Started with Geographic Information Systems, Prentice Hall (to be provided as PDF documents via instructor)

QGIS 3.4 Software: Students will be given a fully-working version of QGIS 3.4 software that you can install on your laptop. QGIS is a free and open-source software that is supported by an international user community. Shareware is available for download and installation at https://www.qgis.org/en/site/

The class will also be working with other GIS tutorial products, to be assigned as needed. Tutorial data will be available for download from the class web site as PDF documents. Handouts, tutorial data, and instructions will be provided by the instructor.

CLASS NOTES:

A comprehensive set of instructor class notes and powerpoint slides are available as PDF documents for download via the internet. The class web site is at URL http://www.wou.edu/taylor ... scroll down the list of courses and click on the link to the "Xuchang GIS" class page. The instructor will also distribute all notes and slides directly to students in paper and digital formats.

EVALUATIONS AND GRADING:

Student performance will be evaluated on the basis of 2 exams (Mid-term, Final), weekly lab exercises, and a final project. The following is a breakdown of evaluation points, dates, and letter grades:

Attendance and Participation	20 pts	17%
Labs and Exercises	40 pts	33%
Quiz 1 (day 5 – Dec. 13)	20 pts	17%
Final Exam (day 9 – Dec. 19)	40 pts	33%
Total	120 pts	100%

A minimum final grade of 60% of the total points is required to pass the course.

Quizzes and Exams: There will be one quiz on December 13, 2019. Final exam will be administered on December 19, 2019 and is comprehensive. You will be allowed to bring one sheet (8.5 x 11 inch) of notes for both the quiz and final. You may be expected to use computers and software to complete the quizzes and exams.

Class and Lab Assignments: Class and lab assignments will be worked BOTH during class time and outside of class time each day. You will have lab, reading, and homework assignments that **may** take up to several hours to complete outside of class time, depending on your skill levels and ability. Please plan your schedule accordingly. Due dates for class exercises will be prescribed by the instructor. Late work will be accepted after the due date, but will be automatically assessed a penalty of -20% of the point total.

Class Participation: Introduction to GIS is an interactive course that emphasizes hands-on activities and skill building. It is not a traditional "lecture" course, but one in which students are expected to engage in active learning with their peers and instructor. Successful completion of the course is based on in-class student participation and collective interaction. As such, student work activities and progress will be checked at the end of each class period.

Academic Dishonesty:
Academic dishonesty refers to cheating, plagiarism and/or copying other students work directly: a serious ethical issue. You are encouraged to work together and to help each other on the labs and exercises. Directly copying from others' lab and exercise and cheating on quizzes and exams are grounds for a zero on the exercise/lab/exam/quiz and possibly a failing grade in the course. Written work that appears to be copies of each other will not be given credit. All students must complete their own work during quizzes and exams.

Learning Resources and Grade Outcomes: The class knowledge base will be derived from a combination of the following: (1) independent student reading outside of class; (2) independent student engagement of take-home lab exercises and quantitative problem solving; (3) independent student reading of web resources linked from the class web site; (4) systematic review and memorizing of class notes and ancillary reading materials, as directly linked from class web site and handed out in hard copy during class time; and (5) successful attendance, note taking, and engagement of in-class lectures delivered by the instructor. Instructor lectures are designed as interpretive translations to assist students in understanding the class content and to stay on track with the weekly schedule. Lectures are not intended as the primary knowledge transfer mechanism. Independent student engagement of readings, memorizing class notes and completing lab work outside of class time is the most important pathway to success.

CHANGE OF SYLLABUS - POP QUIZZES - UNANNOUNCED HOMEWORK ASSIGNMENTS
The instructor reserves the right to modify the syllabus, scoring rubric and class schedule at any time during the session. Students will be notified of such changes in a timely manner. The instructor also reserves the right to administer pop-quizzes and assign unscheduled homework / class assignments at any time. All students will be responsible for completing this work and it will comprise part of the final class grade.

TENTATIVE CLASS SCHEDULE: This outline should be considered tentative at best. The following schedule may be modified as class ideas evolve throughout the semester. Note Text Reading Abbreviations below "Clarke" = Clarke textbook, "LGIS" = Learn GIS Tutorial; "DGIS" = Discover GIS Tutorial; "Instructor" = Instructor's handouts / paper lab exercises.

Day	Date	Class Content	Textbook Reading Assignment (author / chapter)	Lab Exercises / Instructor Assignments
WEEK 1				
1	12/09/2019	Class Policies, Introduction to GIS Introduction to QGIS Software	Clarke, Ch. 1 Clarke, Ch. 9	1-Instructor: Intro to Topographic Maps 2-Instructor: Map Scaling Problems 3-Instructor: Classroom Mapping Project 4-LGIS, Ch. 1 Getting Started
Homework assignment – Day 1: Download, compile, and organize all of the course notes, text chapters, QGIS software, and lab exercises available on the class web site or directly from the professor. Students must demonstrate that they have downloaded course materials to their computers.				
2	12/10/2019	Map Basics (Continued); Map Elements	Clarke, Ch. 2	5-Instructor: Coordinates and Distance Measure 6-Instructor: Contouring and Digital Elev. Models 7-DGIS Part 1, Exercise 1 Spatial Data Models
3	12/11/2019	Map Elements (Cont.)	Clarke, Ch. 3	8-DGIS Part 1, Exercise 2 Displaying Data
4	12/12/2019	Data Models; Vector vs. Raster	Clarke, Ch. 4	9-Instructor: Raster Grids and Vector Elements 10-LGIS Chapter 2: Data Creation & Editing
5	12/13/2019	Cartography and Map Symbols; **QUIZ 1**	Clarke, Ch. 7	11-LGIS Chapter 3: Visualizing Data 12-LGIS Chapter 4: Creating Maps
WEEK 2				
6	12/16/2019	Map Projections and Coordinate Systems	Clarke, Ch. 2 Revisited	13-DGIS Part IV, Exercise 3: Coordinates and Projections
7	12/17/2019	Vector Data Analysis	Clarke, Ch. 5	14-DGIS Part II, Exercise 4: Vector Data Analysis and Overlay
8	12/18/2019	Raster Data Analysis	Clarke, Ch. 6	15-Instructor Intro to Raster Analysis 16-DGIS Part II, Exercise 7: Raster-Topo Data 17-DGIS Part III, Exercise 5: Raster Merge/Clip
9	12/19/2019	Complete Lab Work; **FINAL EXAM**		
10	12/20/2019	**NO CLASS – Dr. Taylor Travel Day; Complete all assigned lab work**		

WEEK 1

Geo-Informaiotn System(Stephen Taylor) Class Schedule

International Education College — December 9th-December 20th

节次	Monday 12/9/19	Tuesday 12/10/19	Wednesday 12/11/19	Thursday 12/12/19	Friday 12/13/19	Saturday 12/14/19	Sunday 12/15/19
1st-2nd Session (8:00am-9:30am)				DAY 4 Classroom: E406		NO CLASS	NO CLASS
3th-4th Session()							
6th-7th Session (2:30pm-4:00pm)			DAY 3 Classroom: E304		DAY 5 Classroom: E404 QUIZ 1		
8th-9th Session (4:20pm-5:50pm)			Classroom: E309		Classroom: E-404		
10th-11th Session (7pm-9:20pm)	DAY 1 Classroom: E404	DAY 2 Classroom: E404					

WEEK 2

Geo-Informaiotn System(Stephen Taylor) Class Schedule

International Education College — December 9th-December 20th

节次	Monday 12/16/19	Tuesday 12/17/19	Wednesday 12/18/19	Thursday 12/19/19	Friday 12/20/19	Saturday 12/21/19	Sunday 12/22/19
1st-2nd Session (8:00am-9:30am)				DAY 9 Classroom: E406 FINAL EXAM	NO CLASS - TRAVEL DAY	NO CLASS	NO CLASS
3th-4th Session()							
6th-7th Session (2:30pm-4:00pm)			DAY 8 Classroom: E304		Classroom: E404		
8th-9th Session (4:20pm-5:50pm)			Classroom: E309		Classroom: E-404		
10th-11th Session (7pm-9:20pm)	DAY 6 Classroom: E404	DAY 7 Classroom: E404					