GIS Course Syllabus

Collegiate School of Medicine and Bioscience

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Course Description

This course is an introduction to Geographic Information Systems (GIS). A geographical information system uses computers and software to leverage the fundamental principles of geography. It will examine what GIS is, how it has evolved, basic geographic concepts and themes, and apply those concepts and themes to solve real world problems using GIS software. The final project will be a culmination of all the concepts and skills acquired in the class and will address a real-life current problem in the community. No prior GIS knowledge is required, however, basic computer skills such as keyboarding, Windows OS familiarity, basic computing operations and basic management files and directories are highly recommended.

Outcomes

By the end of this course, students will be able to:

- Comprehend fundamental concepts and practices of Geographic Information Systems (GIS).
- Apply basic graphic and data visualization concepts such as color theory, symbolization, and use of white space.
- Demonstrate organizational skills in file and database management.
- Give examples of interdisciplinary applications of Geospatial Information Science and Technology.
- Apply GIS analysis to address geospatial problems and/or research questions.
- Demonstrate proficiency in the use of GIS tools to create maps that are fit-for-purpose and effectively convey the information they are intended to.
- Effectively communicate and present project results in oral, written, and graphic forms.
- Demonstrate confidence in undertaking new (unfamiliar) analysis using GIS, troubleshoot problems in GIS, and seek help from software/website help menus and the GIS community to solve problems.

Course Units

Semester Overview

- Unit 1: Learn the Basics of ArcGIS Pro
- Unit 2: Visualizing Data & Maps
- Unit 3: Analyzing Data & Maps
- Unit 4: Managing & Editing Data in ESRI
- Unit 5: Final Project Implementation

Last Revised: 28 August, 2020

Grading Formula

Student Portfolio – 80%
Culminating Final Project – 20%

A 90-100%
B 80-89%
C 70-79%
D 60-69%
F Less than 60%

*Assessment for this course will be based primarily on student portfolios. Exported maps will serve as artifacts for the student portfolio. In addition, visual artifacts, student portfolios will also include written analyses. At the end of the semester, students will have a multitude of maps and analyses to demonstrate their learning.

Expectations

Be Respectful. This applies to the teacher and to your fellow students. Being respectful means that you follow directions, stay awake and on task, pay attention, use appropriate language, and respect the classroom and supplies. This includes never having food or drink at any desk area in the computer lab area.

Be Prepared. You must come to class on time everyday with your required supplies. Keep careful notes and keep track of the class calendar so that you are prepared for upcoming assignments and exams.

Be Responsible. If you feel that you do not understand a new topic, reach out to me for help. Take care of the items you are using in your classroom. Ask for help when you need it, and seek out resources. Take ownership of your learning.

Participate. The best way to learn is to **try**! It is **OK** to be wrong, that is why we are in class. Please be willing to ask questions when you need clarification, and be proactive in class by doing your best to answer questions.

Practice Integrity. Always turn in your own work. Don't tell people the answers; explain the process to them so they can learn how to find the answers themselves.

Procedures

Homework Policy: You will be assigned projects that require work over several class periods. You will be provided sufficient time in-class to complete assignments. Students who need access to technology outside of class time to complete work can make arrangements to visit the Computer Science Lab outside of class time (after-school, study hall).

If Absent: If you miss class, you can find your missed homework assignments on Google Classroom. All work will be posted and available on Google Classroom. **It is your responsibility to find out if there is any in-class work you need to make up.** You will be able to turn in missed assignments within one week of your absence at no penalty.

Late Work: Unless the student is absent or there are extenuating circumstances, any late work will carry a **20%** penalty when submitted late. If you are having issues completing work, please speak with me **ahead** of time. Your portfolio is *a work in progress*. Extensions and/or revisions **can be granted with approval.**

Academic Dishonesty: All of a student's work is expected to be his or her own. Cheating, in any form, will not be tolerated. If a student is caught cheating, he or she will receive a zero on the assignments and parents/guardians will be contacted.

Core Values

Strong Academic Habits

Collegiate School of Medicine and Bioscience is dedicated to teaching academic habits, which will sustain lifelong learning in students. Student learn how to learn -- whether it be taking notes, studying, or writing -- prepares students for success in college and in life. Our teachers nurture confident and critical thinkers who have mastered academic skills and competencies across a variety of academic disciplines.

Respect

Collegiate School of Medicine and Bioscience offers a safe and inclusive school community where individuals are expected to respect themselves, one another, and our environment. Through personal relationships with diverse groups and individuals, we learn to understand others and ourselves and work effectively as part of a team.

Compassion & Ethics

Collegiate School of Medicine and Bioscience believes that the development of compassion and being of ethical mind –- and the desire to make a positive difference in the lives of others – is essential to being a productive member of a community. Through the study of multiple viewpoints and the act of service, students develop empathy for those around them.

Integrity

Collegiate School of Medicine and Bioscience encourages all members of its community to hold themselves to the highest code of conduct, which includes academic honesty. Led by a commitment to the common good, we strive to do what is right -- even when nobody is looking.

Self-Discipline

Hard work and self-discipline are essential components for success. CSMB challenge students to develop a strong work ethic and the internal motivation to persevere through times of challenge.

Intellectual Curiosity

Collegiate School of Medicine and Bioscience encourages students' natural inquisitiveness and wonder about the world. Asking questions and taking risks is as important as searching for the right answer. With the desire and courage to move confidently into the future, students can adapt to an ever-changing future in pursuit of their dreams.