

**General Comments**

This course is intended to introduce students to basic principles in the rapidly growing field of geographic information systems and science (GIS). The course will be held in a lecture format combined with hands-on projects. **THIS IS NOT A COURSE THAT TREATS USE OF A PARTICULAR GIS SOFTWARE PRODUCT.** The emphasis is on the concepts and principles that underlie the development of GIS and its intelligent use. The knowledge that students gain in this course will be general and will not be limited to a specific software product that will be revised next year and the year after that. The following textbook will be used.

**Textbook**

Worboys, M. and Duckham, M. 2004. *GIS – A Computing Perspective, Second Edition*. New York, NY: CRC Press.

The professor will also occasionally distribute other reading material and handouts.

**Grading**

There will be two exams. Each is worth 25% of the grade in the course. Several hands-on projects will be worth 50%. Grades will be awarded using guidelines provided by the College of Liberal Arts and Sciences. A plus/minus system will be used within each grade range.

**Course Outline**

What follows is a *general* outline of the topics that will be covered in this course. It should be treated as a tentative schedule that will change as the semester progresses.

WEEK	GENERAL CONTENT
1	Overview of general principles
2-3	Database and geospatial concepts
4-5	Data models and representation
Project 1	Data modeling
5-6	CyberGIS
7-8	Architecture
9-10	Geospatial big data
Project 2	CyberGIS components
10-11	Interfaces
11-12	Uncertainty
13-14	CyberGIS analytics
14-15	Open GIS software
Project 3	Case studies
16	Future GIS