

Note:

Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should not be used to purchase course materials.

COURSE SYLLABUS

ENVR 370

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

COURSE DESCRIPTION

This course is designed to provide practical experience in spatial database design and analysis using Geographical Information System (GIS) as applied primarily to the environmental sciences. Topics include: the history of GIS; GIS data structures and sources of data; GIS tools; software applications; and resources. Exercises include: spatial data display and query; map generation; and simple spatial analysis using ArcGIS software.

RATIONALE

To be marketable in the growing environmental field, the student must possess mapping skills. Most environmental decisions require the analysis of data portrayed on maps. This course will teach the student to utilize data to generate maps for the purpose of analysis. This course is required for the cognate in Green and Sustainable Management (B.S. in Business Administration). This course is also required for a B.S. in Environmental Biology.

I. PREREQUISITE

For information regarding prerequisites for this course, please refer to the [Academic Course Catalog](#).

II. REQUIRED RESOURCE PURCHASE

Click on the following link to view the required resource(s) for the term in which you are registered: <http://bookstore.mbsdirect.net/liberty.htm>

III. ADDITIONAL MATERIALS FOR LEARNING

- A. Computer with basic audio/video output equipment
- B. Internet access (broadband recommended)
- C. Microsoft Word
(Microsoft Office is available at a special discount to Liberty University students.)
- D. ArcGIS
(A 180-Day Trial Version is included with the Gorr & Kurland textbook.)

IV. MEASURABLE LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

- A. Discuss God's charge to us to be stewards of His world.

- B. Describe how Geographic Information System (GIS) is used to analyze and illustrate the world on which we live and to manage our impact on the world.
- C. Explain the basic concepts of digital cartography.
- D. Explain the practical foundations of GIS and of working with digital spatial data.
- E. Illustrate the uses of spatial data in various disciplines.
- F. Demonstrate the use of computers for collecting internet data, analyzing spatial data in GIS applications, and creating maps and reports.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

- A. Textbook readings and lecture presentations
- B. Course Requirements Checklist
After reading the Syllabus and [Student Expectations](#), the student will complete the related checklist found in Module/Week 1.
- C. Discussion Board Forums (2)
The student is required to create a thread in response to the provided prompt for each forum. Each thread must be at least 300 words and demonstrate course-related knowledge. In addition to the thread, the student is required to reply to 2 other classmates' threads. Each reply must be at least 150 words.
- D. Chapter Assignments Summaries (11)
The student will answer a series of questions based on the exercises he/she completes for each chapter.
- E. Topographic Map Exercise
The student will answer a series of questions based on the topographic map presentation; the Bremerton East Quadrangle, Washington, map; and other maps downloaded from the USGS website.
- F. Exams (4)
Each exam will cover the Reading & Study material for the modules/weeks in which it is assigned. Each exam will be open-book/open-notes, contain 50 multiple-choice and true/false questions, and have a 1-hour time limit.

VI. COURSE GRADING AND POLICIES

A. Points	
Course Requirements Checklist	10
Discussion Board Forums (2 at 55 pts ea)	110
Chapter Assignments Summaries (1 at 40 pts; 5 at 30 pts ea; 5 at 20 pts ea)	290
Topographic Map Exercise	100
Exams (4 at 125 pts ea)	500
	Total 1010

B. Scale

A = 900–1010 B = 800–899 C = 700–799 D = 600–699 F = 0–599

C. Disability Assistance

Students with a documented disability may contact Liberty University Online's Office of Disability Academic Support (ODAS) at LUOODAS@liberty.edu to make arrangements for academic accommodations. Further information can be found at www.liberty.edu/disabilitysupport.

COURSE SCHEDULE

ENVR 370

Textbooks: Gorr & Kurland, *GIS Tutorial 1: Basic Workbook for ArcGIS 10.1* (2013).
USGS, *Bremerton East Quadrangle, Washington* (1981).

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Gorr & Kurland: Preface 1 presentation	Course Requirements Checklist Class Introductions DB Forum 1	10 0 55
2	Gorr & Kurland: chs. 1–2 1 presentation 1 study guide	Chapter 1 Assignments Summary Chapter 2 Assignments Summary Exam 1	20 30 125
3	Gorr & Kurland: chs. 3–4 USGS: Topographic Map 2 presentations	Chapter 3 Assignments Summary Chapter 4 Assignments Summary Topographic Map Exercise	40 20 100
4	Gorr & Kurland: chs. 5–6 1 presentation 1 study guide	Chapter 5 Assignments Summary Chapter 6 Assignments Summary Exam 2	20 30 125
5	Gorr & Kurland: chs. 7–8 1 presentation	Chapter 7 Assignments Summary Chapter 8 Assignments Summary	20 30
6	Gorr & Kurland: ch. 9 1 presentation 1 study guide	Chapter 9 Assignments Summary Exam 3	30 125
7	Gorr & Kurland: ch. 10 1 presentation	DB Forum 2 Chapter 10 Assignments Summary	55 30
8	Gorr & Kurland: ch. 11 1 presentation 1 study guide	Chapter 11 Assignments Summary Exam 4	20 125
TOTAL			1010

DB = Discussion Board
USGS = U.S. Geological Survey

NOTE: Each course week (except Module/Week 1) begins on Tuesday morning at 12:00 a.m. (ET) and ends on Monday night at 11:59 p.m. (ET). The final week ends at 11:59 p.m. (ET) on Friday.