



Sample Course Syllabus

GEO 365 ECampus

Introduction to Geographic Information Systems

4 credits

INSTRUCTOR: Lorene Yokoyama Becker

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PURPOSE:

Geo 365 will provide you with a basic theoretical understanding of Geographic Information Systems as well as a working knowledge of the ArcGIS 9.x software package. You will be using the basic functionality of these programs to:

- Input and create maps of geographical locations and their attributes
- Perform spatial analyses using spatial and attribute data
- Display the results of the analyses in the form of maps and tables

GEO 365 contains both GIS theory and hands-on experience working with the ArcGIS software. Please plan to take GEO 465/565 for more fundamental theory and background on Geographic Information Systems and Science.

LEARNING OUTCOMES:

Through the completion of this course, students will:

Accomplishment	Method of Evaluation
Gain the knowledge and skill set needed to apply the innovations and technologies of GIS to their academic and professional fields.	Mid term and final examinations
Be able to develop a strategy to implement an effective GIS.	Mid term and final examinations
Gain the conceptual and working knowledge of map making, spatial analysis, and remote sensing.	Exercises 1-6 Final Project
Know how to display the results of spatial data analysis in the form of maps and tables.	Exercises 4, 5 and 6 Final Project
Know how to find sources of digital spatial data and how to assess the quality of	Exercises 5 and 6 Final Project

these data.	
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FORMAT:

Each week will begin with a reading assignment and written lecture pertinent to the exercise material. You will spend most of your time working through weekly exercises and the final project at the end of the term.

The first part of the course will include online learning modules from the ESRI Virtual Campus. The latter half of the course will use exercises and a final project downloaded from the course's Blackboard site.

The course will also include a proctored mid-term and final exam.

PREREQUISITES:

There are no prior course prerequisites **BUT** you **MUST** have some basic experience with Windows NT, 2000 or XP computers and be able to perform basic tasks, such as moving, copying and deleting files, making and changing directories, installing programs, working with simple word processors, spreadsheets and graphics programs, and accessing and downloading files from the Internet. **IF** you are not comfortable carrying out these various tasks, you should seriously consider taking a basic computer class **BEFORE** enrolling in this course.

COMPUTER REQUIREMENTS:

There are very specific computer hardware requirements that you should carefully review to insure that your computer is capable of running the GIS software with which we will be working.

If you do not have regular access to a computer with these MINIMUM specifications, you should NOT take this course until such arrangements have been made or you have purchased a suitable computer. Note that you cannot download the large datasets we will be working with using a 56K modem.

Also make sure you load the current OSUWare CD as it contains some important software as well.

MINIMUM Equipment Requirements for GIS software**Operating System**

Windows NT 4.0 with Service Pack 6a, or Windows XP or 2000 (Home or Professional).

Processor

650 MHz or higher

Memory

512 MB of RAM or higher

Hard Drive Space

700 MB free disk space

Browser

Windows: Internet Explorer 5.5 or higher

Plug-ins

RealPlayer [Download RealPlayer]

Internet Connection

Broadband DSL or cable Internet (info on download times)

CD-ROM

Required (10X or higher)

Sound Card and Speakers

Required

Monitor/Video Card

15" monitor; SVGA or better (1024 X 768, 16-bit graphics)

File Compression Utility

WinZip (www.winzip.com) or a similar freeware package as found on OSUWare CD.

SOFTWARE REQUIREMENTS:

In addition to the free downloadable software mentioned above, this course requires specialized GIS software (ESRI's ArcGIS).

For the current term, students will access the ArcGIS software via a Citrix server. Specific instructions on accessing this software will be available via Blackboard.

GRADING:

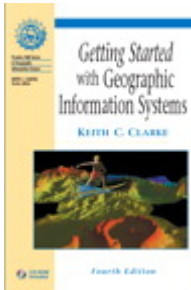
This is a hands-on course designed to teach you basic GIS theory and how to use a specific GIS software package (ESRI ArcGIS 9.x). Your grade will be based primarily on a series of weekly exercises and a final major project. In addition, you will be graded on a midterm and final exam.

The due date for each exercise and project will be announced when the assignment is distributed and posted on Blackboard. Please see the document on Grading Policy on Blackboard under Course Documents. Points will be deducted for each day that an exercise or project is late.

Organization, writing ability, and style will be considered in the assignment of grades. Please communicate as a professional.

TEXTBOOK REQUIREMENTS:

There are two textbooks required for the course, by Clarke and Theobald, and a third book, by Ormsby, which is optional, all of which are described below. In addition, you are required to purchase a **certificate packet**. **This packet contains a username and password for a video, entitled World in a Box, which will be viewed via Blackboard.**



REQUIRED Text for Lecture: *Getting Started with Geographic Information Systems* by Keith Clarke, 4th edition

"The first of its kind, this book is a basic-level textbook for the beginning GIS student. Designed to make the complexity of this rapidly growing high-tech field accessible, the text uses basic, simple language and many examples, diagrams, and photographs throughout for a 'learn by seeing' approach. The book clearly links theory and practice by providing interviews with practicing GIS professionals. It features an abundance of illustrations and photos, extensive chapter-end study aids, and generic

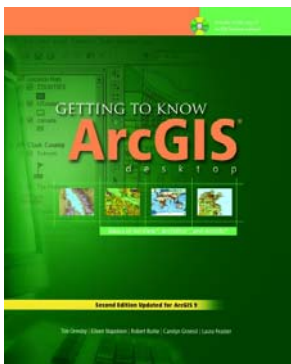
laboratory assignments for use with any GIS software." Prentice Hall, 4th Edition, 2003, 352 pp., ISBN: 0-13-046027-3. Book web site

Description adapted from ESRI Bookstore Catalog. Image adapted from book website.

REQUIRED Text for Lecture and Exercises: *GIS Concepts and ArcGIS Methods*, by David Theobald, 2nd edition

"... combines the how and why into one complete reference. This book bridges the information gap between user manuals and textbooks by fusing ArcGIS v9 methods and techniques with a compilation of basic geographical concepts to benefit both beginners and experts. It is an ideal textbook for introductory GIS courses as it demonstrates how to display, query, edit, and analyze both feature and raster-based geographic data using ArcGIS, all within the broader context of fundamental GIS concepts." Conservation Planning Technologies, 2nd

Edition, 2005, 444 pp., \$59.95 (list), ISBN: 0-9679208-3-3. *Description from Conservation Planning Technologies Book Web Site*



Optional Text: *Getting to Know ArcGIS Desktop, 2nd Edition* by Ormsby et al.

Includes CD_ROM with ArcGIS 9.x software

"*Getting to Know ArcGIS Desktop* is a workbook for learning ArcGIS, the newest GIS technology from ESRI. The three GIS products that comprise ArcGIS: ArcView, ArcEditor, and ArcInfo, are built on a common interface and core capability, with each product offering a different level of functionality. Users of *Getting to Know ArcGIS Desktop* gain a thorough understanding of ArcView, which they can put to work immediately or use as a firm foundation for learning ArcEditor and ArcInfo. *Getting to Know ArcGIS*

Desktop employs the teaching approach used so effectively in the best-selling *Getting to Know ArcView GIS* from ESRI Press. Richly detailed illustrations and step-by-step exercises teach basic GIS tasks, from mapmaking, to spatial analysis, to database creation. Readers learn to use the software that forms the building blocks of ArcGIS: ArcMap, for displaying and querying maps; ArcCatalog, for managing geographic data; and ArcToolbox, for setting map projections and converting data. Also included in the book are explorations of the newest ESRI data format, the geodatabase, which stores spatial and attribute information in a relational database." ESRI Press, 2004, 588 pp., \$59.95 (list), ISBN: 1-58948-083-X. *Description from the ESRI Bookstore Catalog. Image used by permission.*

Expectations for Student Conduct:

Please read the Statement of Expectations for Student Conduct to insure that you understand the course policy on academic honesty
<http://oregonstate.edu/admin/stucon/achon.htm>

Students with Disabilities:

Please note that accommodations are collaborative efforts between students, faculty and Services for Students with Disabilities (SSD). Students with accommodations approved through SSD are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through SSD should contact SSD immediately at 737-4098.

GEO365
Extended Campus
Generic Syllabus
Topics and Assignments
(Schedule Subject to Revision)

Date	Topic	Assignment
Week 1	Introduction World in a Box Video GIS Concepts Introduction to ArcGIS	<ul style="list-style-type: none"> • Explore Blackboard • Watch World in a Box video • What is GIS? Explore this site: http://www.gis.com/whatisgis/index.html • Exercise 1: ESRI Virtual Campus Learning ArcGIS 9, Module 1 • Read <i>Clarke</i> Ch 1 & 2 • Read <i>Theobald</i> Ch 1, sec 1.1 – 1.3.5; Ch 3
Week 2	Understanding Geographic Data & Map Projections	<ul style="list-style-type: none"> • Exercise 2: ESRI Virtual Campus Understanding Map Projections, Modules 1, 2, 5 & 6 (Read Modules 3 & 4) • Read <i>Clarke</i> Ch 3 • Read <i>Theobald</i> Ch 2; Ch 7, sec 7.1 – 7.2.2; Ch 4, sec 4.1 – 4.5 • Make arrangements for an exam proctor
Week 3	Data Models Spatial Data Visualization	<ul style="list-style-type: none"> • Exercise 3: ESRI Virtual Campus Learning ArcGIS 9, Modules 2 & 4 • Read <i>Clarke</i> Ch 4, Ch 5, Ch 7 • Read <i>Theobald</i>, Ch 5; Ch 9, sec 9.1 – 9.3.3; sec 9.4 – 9.5.5; Ch 10; Ch 4, sec 4.6 – 4.7.1.3
Week 4	Vector Data Input Spatial Data Analysis Making Maps	<ul style="list-style-type: none"> • Exercise 4: ESRI Virtual Campus Learning ArcGIS 9, Modules 6, 7 & 8 • Review <i>Clarke</i> Ch 4, sec 4.2 - 4.2.5

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Date	Topic	Assignment
Week 5	Sources of Data on the Web	<ul style="list-style-type: none"> • Exercise 5: Hurricane Katrina and Coastal Change Analysis
	Take PROCTORED EXAM	<ul style="list-style-type: none"> • Review / Read Theobald Ch 7, sec 7.1 – 7.6.2; sec 7.9.3 – 7.9.3.6; Ch 8, sec 8.1 – 8.2.3 • Take the proctored exam by stated deadline
Week 6	Raster Data Model & Spatial Analyst	<ul style="list-style-type: none"> • Exercise 6: Raster Data Analysis • Read <i>Clarke</i> Ch 8 & 9
Week 7	Spatial Data Processing Introduction to Final Projects	<ul style="list-style-type: none"> • Exercise 6: Raster Data Analysis (cont.)
Week 8	Applications of GIS Final Project Work	<ul style="list-style-type: none"> • Final Project • Make arrangements for an exam proctor
Week 9	Applications of GIS Final Project Work	<ul style="list-style-type: none"> • Final Project
Week 10	GIS on the Web Final Project Work	<ul style="list-style-type: none"> • Course Evaluations • Final Project due by stated deadline
Week 11	PROCTORED FINAL EXAM	<ul style="list-style-type: none"> • Take the proctored final exam by stated deadline

Plagiarism

You are expected to submit your own work in all your assignments, postings to the discussion board, and other communications, and to clearly give credit to the work of others when you use it.

This course is offered through Oregon State University Extended Campus. For more information, contact:
Web: ecampus.oregonstate.edu Email: ecampus@oregonstate.edu Tel: 800-667-1465

Academic dishonesty will result in a grade of "F." Link to Statement of Expectations for Student Conduct: <http://oregonstate.edu/admin/stucon/achon.htm>.

Course evaluation

We encourage you to engage in the course evaluation process each term – online, of course. The evaluation form will be available toward the end of each term, and you will be sent instructions by Ecampus. You will login to "Student Online Services" to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.