

GEOGRAPHY COURSE OUTLINE – 2005 (WINTER)

GEOG 649 – Enterprise GIS and Database Management Systems

Winter Block Week Course: 3 – 7 January 2005

Timetable Lec 01 MTWRF 9:00 – 4:30 ES 407

Instructor: Dr. Darren Bender
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Calendar Description:

Advanced topics in GIS and database systems, including integration of enterprise database systems with a GIS, data modelling, database management, distributed GIS via the world wide web, and web-based GIS.

Course Content:

This course is a hands-on approach to learning advanced concepts and techniques for geographic database management, particularly in an enterprise setting. All of the course instruction will take place in the GIS lab, and learning opportunities will come from lectures, hands-on demonstrations, and numerous exercises.

The key topics will include database design, geographic database management, enterprise database system implementation, enterprise GIS implementation, and web-based GIS systems. The course will make extensive use of the ESRI enterprise GIS products, namely ArcGIS, ArcSDE (the spatial data engine for enterprise database systems), and ArcIMS (the web-based GIS server system).

Required Texts:

Zeiler, M. 1999. Modeling Our World: The ESRI Guide to Geodatabase Design. ESRI Press, Redlands, CA. 199 pp. [Available electronically free of charge to registered students.]

ESRI. 2002. Building a Geodatabase. ESRI Press, Redlands, CA. 460 pp. [Available electronically free of charge to registered students.]

ESRI. 2002. Understanding ArcSDE. ESRI Press, Redlands, CA. 53 pp. [Available electronically free of charge to registered students.]

ESRI. 2002. Using ArcIMS. ESRI Press, Redlands, CA. 198 pp. [Available electronically free of charge to registered students.]

Readings/Manual:

All required readings will be provided electronically via the Blackboard system. A course manual will be available for a nominal charge (price TBA).

Prerequisites and Pre-Course Study:

Geog 647 is the required pre-requisite for this course. Students are encouraged to review the sections on database management from their Geog 647 course notes prior to attending this course.

Students will also be required to complete a pre-study package *before* the course begins. Registered students should contact the instructor to obtain the pre-study package (provided as online materials through the ESRI Virtual Campus).

Grading:

Students will be evaluated on both daily exercise and a term project due two weeks after the completion of the course. The term project will allow students to design, create and publish their own geographic database using the tools learned in the lectures and in-class exercises. The distribution of grades will be:

Daily exercises and quizzes(10% per day)	50%
Term Project (due 6 August 2004)	50%

Grading System:

Grade	Percent	Graduate Description
A+	95.0 - 100	Outstanding
A	90.0 - 94.9	Excellent – superior performance showing comprehensive understanding of the subject matter
A-	85.0 – 89.9	Very good performance
B+	80.0 – 84.9	Good performance
B	75.0 – 79.9	Satisfactory performance
B-	70.0 – 74.9	Minimum pass for students in the Faculty of Graduate Studies
C	60.0 – 69.9	All grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
D	50.0 – 59.9	
F	<50.0	

Academic Misconduct:

Students are required to be familiar with the University of Calgary regulations pertaining to academic misconduct, particularly plagiarism. This course will have a zero-tolerance policy for academic misconduct. Please consult the Faculty of Graduate Studies 2004-2005 Calendar for details on Student Misconduct.

Plagiarism

Academic dishonesty is not an acceptable activity at the University of Calgary and students are **required** to read the Student Misconduct section in the University Calendar. Quite often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are 1) presenting another student's work as your own 2) presenting an author's work or ideas as your own without proper referencing and 3) using work completed for another course. This activity will not be tolerated in this course and students conducting themselves in this manner will be dealt with according to the procedures outlined in the calendar.

Re: Posting of Grades and Picking-up of Assignments

- Assignments will be handed back only in class or by the Professor at pre-arranged time(s).
- To receive your assignment back via mail, please include an appropriately sized self-addressed, stamped envelope with your assignment when handing in to the professor.
- Posting of grades will be at the discretion of each Professor and, if posted, they will be scrambled. Grades will **not** be available at Geography's main office.

Contact Information for Student and Faculty Representation

- SU VP Academic Phone: 220-3911 and e-mail: suypaca@ucalgary.ca
- SU Faculty Rep. Phone: 220-3913 and e-mail: socialsciirep@su.ucalgary.ca

Campus Safewalk

Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day, to any location on Campus including the LRT, parking lots, bus zones and University residences. Contact Campus Security at 220-5333 or use a help phone, and Safewalkers or a Campus Security officer will accompany you to your Campus destination.

Enterprise GIS and Database Management Systems (GEOG 649 – Winter 2005)

Pre-Course Study Package:

1. Required Readings

Source: Zeiler, M. 1999. Modeling Our World: The ESRI Guide to Geodatabase Design. ESRI Press, Redlands, CA. 199 pp. [Available electronically free of charge to registered students.]

Although it is recommended that you familiarize yourself with this entire text, it is only required that you read the following chapters prior to the beginning of the course:

- 1 – Object Modeling and GeoDatabases
- 3 – GIS Data Representations (*this should be a review from Geog 647*)
- 4 – The Structure of Geographic Data

2. Online Exercises

The ESRI Virtual Campus (<http://campus.esri.com>) provides online instruction for the use of their GIS software. The GeoDatabase is a core concept for implementing enterprise GIS systems using the ESRI software. You should have already been exposed to this data model in Geog 647. In this course, we will use the geodatabase model heavily, and it is required that you understand it completely prior to the beginning of the course.

To learn more about ESRI's geodatabase model, you will complete on required online course and one (optional) workshop on the geodatabase:

a. Online Workshop (Optional):

Basics of the Geodatabase Model

http://campus.esri.com/acb2000/showdetl.cfm?&DID=6&Product_ID=726&CATID=73&CFID=2606000&CFTOKEN=47125194

b. Online Course (Required):

Creating, Editing, and Managing Geodatabases for ArcGIS 8.3

http://campus.esri.com/acb2000/showdetl.cfm?&DID=6&Product_ID=773&CATID=73&CFID=2606000&CFTOKEN=47125194

Both the workshop and the online course require that you obtain a course access code from your instructor. You will also be required to register for a free account on the ESRI Online Virtual Campus (go to <http://campus.esri.com> and click on Join Now). You will also need access to the ArcGIS 8.3 software.

Your instructor will verify on the first day of class that you have completed the required online course. Proof of completion will be a printed copy of the course certificate, which will be

verified by your instructor online. Failure to complete the online course prior to the first day of lectures could result in you being asked to withdraw from the course, so please ensure that you have completed all your pre-study work prior to July 19th, 2004.