GEOG 214   **Winter 2003**
DIGITAL GEOMATICS

Instructor
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Course Description
The course introduces students to the basics of digital geomatics including geographic information systems and digital remote sensing.

Texts
The following texts are available in the college bookstore
Clarke, Keith. 2001.Getting Started with Geographic Information Systems. Prentice Hall.

Geography 214 Digital Geomatics: Lab Exercises

A remote sensing manual of course notes and exercises, Introduction to Remote Sensing Theory and Practice by Working with ArcView Image Analysis Extension will be distributed in class

Learning Outcomes
On completion of the course students should be able to:
- Demonstrate an understanding of the basic concepts in digital geomatics, including concepts in GIS, digital mapping and database systems, and digital remote sensing
- Demonstrate an ability to handle spatial data through the application of GIS and remote sensing software

Evaluation
Evaluation is based on a series of in-class tests, quizzes, a definitions exercise, labs and a final project, with percentage marks indicated below.
In-class tests. The format of the two in-class tests will be discussed in class.
GIS quizzes. Quizzes are found on the Prentice Hall web site at
www.prenhall.com/clarke and on the text CD. Quizzes will take place in-class at each Tuesday class (until the week of March 3).
Lab exercises. All labs exercises are due the following week at the Thursday class.
Definitions exercise. Students work in small groups to create and solve a crossword puzzle(s) based on course material definitions.

Assignments handed in late will have a **10% penalty** and assignments over one week late will not be accepted.

Evaluation summary

Tests I and II	30%
GIS labs	30%
In-class GIS quizzes	5%
Remote sensing lab exercises	10%
Definitions exercise	10%
Final project	15%

<u>Topic Outline</u>

Week of

Jan 6   Introduction to the course
         What is digital geomatics?
         What is a GIS?
         Clarke, Ch. 1
         Lab 1
         Quizz Ch.1

Jan 13   GIS's Roots in Cartography.
         Clarke, Ch. 2
         Lab 2
         Quizz Ch.2

Jan 20   Maps as Numbers.
         Clarke, Ch. 3
         Lab 3
         Quizz Ch.3

Jan 27   Maps as Numbers.
         Clarke, Ch. 3

         Getting the Map into the Computer.
         Clarke, Ch. 4
         Lab 4
         Quizz Ch.4

Feb 3   Getting the Map into the Computer.
         Clarke, Ch. 4
         Lab 4

         Use of remotely sensed data and GIS
         Remote sensing manual Ch. 1
         Remote sensing manual Exercise 1

Feb 10   Test I

(Feb 13/14)   **READING BREAK**

Feb 17	GIS analysis: What is Where? Clarke, Ch. 5 Lab 5 Quizz Ch.5
Feb 24	GIS analysis: Why is it There? Making maps with GIS. Clarke, Ch. 6 & 7 Lab 7 Quizz Ch.6/7
March 3	GIS functionality. Clarke, Ch. 8 Quizz Ch.8 GIS in Action Clarke, Ch. 9 Final Lab Project: Lab 9 FIELD VISIT: Institute of Ocean Sciences
March 10	Introduction to remote sensing science Handling remotely sensed images Remote sensing manual, Ch. 2 & 3 Remote sensing manual Exercise 2 & 3
March 17	Image georectification Remote sensing manual, Ch. 5 Remote sensing manual Exercise 5 Feature extraction from images Remote sensing manual, Ch. 6 Remote sensing manual Exercise 6
March 24	Use of remote sensing in vegetation studies Remote sensing manual, Ch. 7 Remote sensing manual Exercise 7 Introduction to final project
March 31	Use of categorization in multispectral imagery Remote sensing manual, Ch. 8 Remote sensing manual Exercise 8 Final project
April 7	Test II Final project

GRADING SYSTEM

95 -100% A+
90 - 94% A   Superior levels of achievement
85 - 89% A-

80 - 84% B+
75 - 79% B   High levels of achievement
70 - 74% B-

65 - 69% C+   Satisfactory level of achievement
60 - 64% C   Sufficient level of achievement
50 - 59% D   Minimum level of achievement
 0 - 49% F   Minimum level is not achieved