Douglas College

Division:

Effective Date:

Department /
Program Area:

Revision ☐ New Course ☐

If Revision, Section(s) Revised:
Date of Previous Revision:

Date of Development: September 2003

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Subject & Course No.	Descriptive Title	Semester Credits

Calendar Description: Geographic Information Systems (GIS) are a set of powerful computerized tools designed to work with digital data referenced by geographic coordinates to store, retrieve, analyze and display geographically referenced information. With a GIS an analyst can explore complex geographic relationships and discover patterns that were previously undetectable through conventional methods. GIS analysis has become important in many industries and provides students with employable skills in several fields of study. This hands-on course examines the components and functions of GIS, the characteristics of spatial data, and spatial analysis and display. Students will be introduced to GIS theory, which will be reinforced with hands-on lab exercises.

At the conclusion of the course the successful student will be able to:

1. Describe the components and uses of an effective GIS.
2. Describe the characteristics of spatial data and explain how projection, coordinate and datum systems impact GIS precision and accuracy.
3. Use the components of a GIS to input data, create topology, analyse data and produce maps to communicate the results of the analyses.
4. Employ critical thinking skills to evaluate data, analytical methods and results.

1. Introduction to Geographic Information Systems
   a.

8. Introduction to Remote Sensing
    a. Data Acquisition
    b. Satellite Characteristics
    c. Electromagnetic Radiation
    d. Active vs. Passive Sensors
    e. Spatial Resolution

The course will employ a variety of instructional methods to accomplish its objectives, including some of the following:
- Lecture
- Labs
- Multimedia
- Individual and/or Team Projects
- Small Group Discussions

Texts will be updated periodically. Typical examples are:

Clarke, Keith C. (2003). *Getting Started with Geographic Information Systems.* Upper Saddle River, NJ: Prentice-Hall.

Series in Geographic Information Science (Complete with CD-Rom).

Evaluation will be based on course objectives and will be carried out in accordance with Douglas College policy. The instructor will provide a written course outline with specific criteria during the first week of classes.

An example of a possible evaluation scheme would be:

Labs	25%
Quizzes	20%
Midterm Exam	25%
Final Exam	30%
	100%