



A: Division: **INSTRUCTIONAL** Date: **NOVEMBER 1996**
 B: Faculty: **HUMANITIES & SOCIAL SCIENCES** New Course: **X**
 Department: **ENVIRONMENTAL STUDIES** Revision of Course Information form:
 Program: **HABITAT RESTORATION**

C: **ENVS 103** D: **INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS** E: **3**

Subject & Course No. Descriptive Title Semester Credit

F: Calendar Description:
 This hands-on course teaches the basics of Geographic Information Systems (GIS). Students will examine components and functions of GIS, entering and storing data, choosing a coordinate system, digitizing maps, creating topology for spatial analysis, database query and analysis, and designing and creating map outputs are examined.

Summary of Revisions: (Enter date & section) Eg: Section C,E,F

G: Type of instruction: **4 Hours Per Week/ 14 Weeks Per Semester**

Lecture:	2	Hrs.
Laboratory:	2	Hrs.
Seminar:		Hrs.
Clinical Experience:		Hrs.
Field Experience:		Hrs.
Practicum:		Hrs.
Shop:		Hrs.
Studio:		Hrs.
Student Directed Learning:		Hrs.
Other (Specify):		Hrs.
Total:	4	Hrs.

H: Course Prerequisites:
 Program Entrance Requirements:

I: Course Corequisites:
NONE

J: Course for which this Course is a Prerequisite:
NONE

K: Maximum Class Size:
20

L: College Credit Transfer	<input checked="" type="checkbox"/>
College Credit Non-Transfer	<input type="checkbox"/>
Non-Credit	<input type="checkbox"/>

M: Transfer Credit:	Requested:	<input checked="" type="checkbox"/>
	Granted:	<input type="checkbox"/>

Specify Course Equivalents or Unassigned Credit as appropriate:

SFU **GEOG 354**
 UBC
 UNBC **GEOG 300**
 UVIC
 Other: **BCIT GIS 728**

Susan Smythe
 Course Designer(s)
Susan Smythe
 Department Chair

[Signature]
 Dean
[Signature]
 Registrar

Subject and Course Number

N. Textbooks and Materials to be Purchased by Students (Use Bibliographic Form):

Environmental Systems Research Institute, Inc. (1993). Understanding GIS: The PC ARC/INFO Method. Longman Scientific & Technical, Harlow, Essex, England.

or an equivalent textbook.

Text will be updated periodically.

**Complete Form with Entries Under the Following Headings: O. Course Objectives; P. Course Content;
Q. Method of Instruction; R. Course Evaluation**

O. Course Objectives

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

- 1. Explain the appropriate uses of different map projections.**
- 2. List and describe the components and functions of a GIS.**
- 3. Create data files, add attribute values and manage data files.**
- 4. Digitize spatial data, correct errors and display maps.**
- 5. Query the database and display results as tables, charts and figures, or combinations of all three.**
- 6. Communicate results orally and/or graphically in a professional manner.**

P. Course Content

- 1. Introduction to Geographic Information Systems**
 - a) What is a GIS?**
 - b) Advantages of a GIS over traditional modes of spatial analysis**
 - c) Questions a GIS can answer**
- 2. Components and Functions of a GIS**
 - a) Geographic features and data**
 - b) GIS functions: data entry, display, manipulation, and analysis**
 - c) Characteristics and comparisons of the available software**
- 3. Data Entry and Storage**
 - a) Spatial data and topology**
 - b) Digitizing and correcting errors**
 - c) Attribute data tables**

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4. **Displaying Data**
 - a) **Coordinate systems**
 - b) **Map projections**
 - c) **Converting data acquired from other sources**

5. **Data Management and Manipulation**
 - a) **Rastor and vector data**
 - b) **Relating and joining tables**
 - c) **Organizing data for analysis**

6. **Database Query and Analysis**
 - a) **Querying the database**
 - b) **Spatial analysis of the database**
 - c) **Calculating statistics**

7. **Output of Results**
 - a) **Cartographic elements**
 - b) **Cartographic design**
 - c) **Drawing and modifying a map**
 - d) **Adding tables and charts**
 - e) **Oral and graphic presentation skills**

Q. Method of Instruction

This course will employ a number of instructional methods to accomplish its objectives, including some of the following:

1. **Lectures**
2. **Labs**
3. **Seminar Presentations**
4. **Slides, Films**
5. **Small Group Discussions**
6. **Group Projects**

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R. Course Evaluation

The instructor will present a written course outline with specific evaluation criteria at the beginning of the semester. Evaluation will be carried out in accordance with Douglas College policy and will be based on some of the following:

1. Laboratory assignments with a combined value of up to 50%.
2. Multiple choice and/or short answer tests with a combined value of up to 50%.
3. A term project or paper with a value of up to 25%.
4. An individual or group presentation on an assigned topic with a value of up to 15%.

An example of one possible evaluation scheme would be:

Laboratory Assignments	35%
Midterm Examination	20%
Term Project	15%
Individual Presentation	10%
Final Examination	<u>20%</u>
	100%