

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**SAULT STE. MARIE, ON****COURSE OUTLINE****COURSE TITLE: GEOGRAPHIC INFORMATION SYSTEMS**

CODE NO.: FOR304-3 **SEMESTER:** V

PROGRAM: INTEGRATED RESOURCE MANAGEMENT TECHNOLOGY

AUTHOR: ERWIN GOERTZ

DATE: AUGUST 1995 **PREVIOUS OUTLINE DATED:** NEW

APPROVED: 

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DATE

GEOGRAPHIC INFORMATION SYSTEMS

FOR304-3

COURSE NAME

CODE NO.

TOTAL CREDITS HOURS: 48

PREREQUISITE(S): None

I. PHILOSOPHY/GOALS:

Introduce students to the use of Geographical Information Systems (GIS) as a source of immediate information and as an analytic tool for solving natural resource management problems.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):

Upon successful completion of this course the student will:

- 1) be able to input spatial and attribute information.
- 2) be able to build topology and manipulate database entries.
- 3) be able to perform overlays and queries.
- 4) be able to generate buffers and three dimensional views.
- 5) be able to analyze GIS data and solve problems.

III. TOPICS TO BE COVERED:

**Approximate Time
Frames (Optional)**

- 1) The evolution of GIS, it's importance and where it's going.
- 2) Inputting spatial information and map creation.
- 3) Inputting attribute information using dBase functions within the GIS.
- 4) Analysis functions offered within a GIS.
- 5) Problem solving.

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IV. **LEARNING ACTIVITIES/REQUIRED RESOURCES**

Topic/Unit - Introduction

Learning Activities:

- Listen to instructor presentation on GIS
- Review and discuss handouts

Resources:

- Handout - Forest Inventory for the Future
- Handout - Pilot Computer project will standardize maps
- Handout - Computer based mapping in Forestry: A view from New Brunswick

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Topic/Unit - Inputting spatial information (digitizing)

Learning Activities:

- Listen to instructor presentation on digitizing
- Review and discuss handouts
- Students will define a map and digitize levels of information

Resources:

- Handout - What should a Forestry GIS do?
- Handout - Are you a GIS Dead Head?
- Handout - Topographic Map #41 K/9
- Pamap GIS reference manual

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Topic/Unit - Inputting attribute information (dBase)

Learning Activities:

- Create a database relating to the map created previously
- Importing/exporting the database to and from the GIS

Resources:

- dBase manual and notes from previous semester
- Pamap GIS reference manual
- Course notes

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IV. **LEARNING ACTIVITIES/REQUIRED RESOURCES** (cont'd)

Topic/Unit - Analysis of GIS information

Learning Activities:

- Students will create overlays, buffers, 3-D views, reports, and area/perimeter calculations using the map created previously.

Resources:

- Course notes
- Pamap GIS reference manual

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Topic/Unit - Problem Solving

Learning Activities:

- A number of scenarios will be presented and students will be asked to obtain answers and comment on the outcome.

Resources:

- Course notes
- Pamap GIS reference manual

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V. **EVALUATION METHODS:** (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS, ETC.)

Theory Tests - 2 @ 25%	50%
Quizzes (weekly)	25%
Problem Solving Exercises	25%

100% attendance is expected in this course

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VI. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor.

The course is not eligible for challenge at the present time.

VII. REQUIRED STUDENT RESOURCES

Course Manual
Masking Tape
2 High Density 3 1/2" floppy diskettes

VIII. ADDITIONAL RESOURCE MATERIALS AVAILABLE FROM THE INSTRUCTOR:

Books

Principles of Cartography
Beyond Mapping - Concepts, Algorithms and Issues in GIS
GIS sourcebook (various years)
Principles of Geographical Information Systems

Periodicals

The Compiler - A Forest resources Systems Institute Publication
GIS World
Photogrammetric Engineering and Remote Sensing

Audiovisual

GIS video series, "Welcome to the GIS"
Mapping the Future
The New World of GIS Mapping Ontario's Forests

IX. SPECIAL NOTES

Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.

