DOC. #221

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

COURSE OUTLINE

COURSE TITLE: ENVIRONMENTAL MAPPING & INTERPRETATION

CODE NO.: ENV210-4 SEMESTER: III

PROGRAM(S): ENVIRONMENTAL ENGINEERING/WATER RESOURCES

AUTHOR: LORY VANDERZWET

DATE: DEC. 1995 PREVIOUS OUTLINE DATED: AUG. 1995

APPROVED: _____ December 01/95
DEAN DATE

ENVIRONMENTAL MAPPING — COURSE NAME

ENV210-4 — CODE NO.

TOTAL CREDITS HOURS: 48

I. PHILOSOPHY/GOALS:

Environmental Mapping & Interpretation is a third semester course designed to teach students to use maps, photographs and remote sensing data to analyze the environment for both natural elements and man-made disturbances.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):

Upon successful completion of this course the student will:

1) Display a knowledge of the history of cartography and the development of maps, aerial photography and GIS for use in interpreting the environment.
2) Make measurements from both maps and aerial photographs and determine distances, directions and areas.
3) Use topographic maps to develop profiles, to delineate slopes and to determine slopes.
4) Use aerial photographs to identify land features and man-made structures and to discuss the significance of these features.
5) Interpret remote sensing data (ground geophysics, satellite imagery), to understand subsurface phenomenon.
6) Understand the principles and applications of Ground Information Systems.

III. TOPICS TO BE COVERED:

		Approximate Time Frames (Optional)
1)	Topographic Maps	20 hours
2)	Aerial Photographs	15 hours
3)	Remote Sensing	5 hours
4)	Computer Mapping	5 hours

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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES

Topic/Unit - A) Maps

Learning Activities:

1. Introduction including history of map making
2. Study of methods used to collect data for map making
3. Use of Engineer's scale and metric scale for distance and area measurements on maps
4. Use of Navigational protractor to find directions on a map

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Topic/Unit - B) Topographic Maps

Learning Activities:

1. Introduction including data collecting methods used to generate totographic maps
2. Identification of OBM and NTS topographic maps
3. Use of OBM & NTS topographic maps for gradient determination and profile mapping
4. Use of OBM and NTS topographic maps for watershed delineation
5. Discussion of watershed as ecosystem

Topic/Unit - C) Aerial Photographs

Learning Activities:

1. Introduction including data collecting methods used to generate aerial photographs
2. Use of aerial photographs for distance, direction and area measurements
3. Use of aerial photographs for identification of natural and man made elements
4. Discussion of effects on nature of these man made elements

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Topic/Unit - D) Remote Sensing

Learning Activities:

1. Introduction including scientific principles required for remote sensing
2. Interpretation of data collected from remote sensing devices

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Topic/Unit - E) Computer Mapping

Learning Activities:

1. Introduction to Ground Information System

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

Evaluation will be based upon three written tests as well as assignments. To successfully complete the course, the student must have passing grades on both the tests and assignments. Tests will make up 75% of the grade, assignments 25%. Regular attendance is required.

VI. **PRIOR LEARNING ASSESSMENT:**
Students who wish to apply for advanced credit in the course should consult the instructor.

VII. **REQUIRED STUDENT RESOURCES**

- Calculator
- Engineer's Scale
- Metric Scale
- Navigational Protractor

VIII. **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.