SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON

COURSE OUTLINE

Course Title: Image Analysis using PCI EASI/Pace

Code No.: GIS 410 **Semester:** 2

Program: GIS Specialist

Author: Dennis Paradine

Date: January, 1999 **Previous Outline Date:** NEW

Approved: K. DeRosario Feb 3/99
Dean Date

Total Credits: 4 **Prerequisite(s):** GIS 405
Length of Course: 7hr/wk*5wks **Total Credit Hours:** 60 hrs

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COURSE NAME | COURSE NUMBER

I. COURSE DESCRIPTION:

PCI EASI/Pace is an advanced remote sensing software package. Using EASI/Pace, students will apply principles learnt in previous courses to create GIS data products from remote sensing data that is relevant to their areas of interest. Emphasis will be placed on understanding EASI/Pace software, data exchange with other packages, accuracy assessment and batch processing (programming).

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course the student will demonstrate the ability to:

1) Work Within the PCI EASI/Pace Software Environment

Potential Elements of the Performance:

- display, enhance and filter imagery
- import and export image, vector and bitmap files
- georeference imagery
- classify imagery
- produce image-based reports

2) Exchange Remote Sensing Data and Data Products Between GIS, Remote Sensing and Multi-Media Software Packages

Potential Elements of the Performance:

- import and export raw and processed imagery
- import and export vectors, bitmaps and other files
- produce high-quality report products

3) Assess the Accuracy of Classified Imagery

Potential Elements of the Performance:

- ground reference remote sensing imagery and assess the accuracy of the classifications
- produce reports indicating classification accuracy

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II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE (Continued)

4) Program Within the EASI Applications Language

Potential Elements of the Performance:

- batch process multiple files
- create user-interfaces to link processes requiring user interaction

5) Complete a Remote Sensing Project

Potential Elements of the Performance:

- from raw imagery to end product, work through the required steps using a student selected database to create a GIS and an image-based output product

III. TOPICS:

1) Work Within the PCI EASI/Pace Software Environment

- Course Introduction, EASI/Pace Environment and Basic Commands (2 hours)
- Image Displays, Enhancements and Filters (2 hours)
- Georeferencing and Orthorectification (3 hours)
- Image and Product Output (2 hours)

2) Exchange Remote Sensing Data and Data Products Between GIS, Remote Sensing and Multi-Media Software Packages

- Importing and Exporting Imagery from ENVI, IDRISI and Arc-Info (2 hours)
- Importing Vector Files and Working With Vectors in PCI (2 hours)

3) Assess the Accuracy of Classified Imagery

- Ground Reference Data Collection (2 hours)
- Classification (2 hours)
- Accuracy Assessment (5 hours)

4) Program Within the EASI Applications Language

- Batch Processing (Programming in EASI) (7 hours)

5) Complete a Remote Sensing Project

- Running Large Projects (5 hours)

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Aronoff, S. 1993. Geographic Information Systems: A Management Perspective. Ottawa, Ontario. WDL Publications. 294 pp.

ADDITIONAL RESOURCE MATERIAL

Lillesand, T.M. and R.W. Kiefer. 1987. Remote Sensing and Image Interpretation. Toronto, Ontario. John Wiley and Sons. 721 pp.

Verbyla, David L. Satellite Remote Sensing of Natural Resources. Boca Raton, CRC Lewis Publishers. 198 pp.

V. EVALUATION PROCESS/GRADING SYSTEM:

Practical Assignments	50%
Project	25%
Tests	25%
Total	100%

Grading:
A+ = 85% and over consistently
A = 75-84%
B = 68-74%
C = 60-67%
R = less than 60%

VI. SPECIAL NOTES:

Special Needs

If you are a student with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717, 491 so that support services can be arranged for you.

Retention of Course Outlines

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other post-secondary institutions.

Plagiarism

Students should refer to the definition of "academic dishonesty" in the "Statement of Students Rights and Responsibilities."

Students who engage in "academic dishonesty" will receive an automatic failure for that submission and/or such other penalty, up to and including explusion from the course, as may be decided by the professor.

In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Curriculum Changes

The instructor reserves the right to change the course curriculum as necessary.

VII. PRIOR LEARNING ASSESSMENT

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following