

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: Applied Photo Interpretation
CODE NO. : NRT 217 **SEMESTER:** 4
PROGRAM: Forest Conservation Technician
AUTHOR: Gerard Lavoie
DATE: January 2011 **PREVIOUS OUTLINE DATED:** Dec/2009

APPROVED:

“B. Punch”

CHAIR

DATE

TOTAL CREDITS: 3

PREREQUISITE(S): n/a

HOURS/WEEK: 3

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***For additional information, please contact Brian Punch, Chair, Environment and Design
School of Technology and Natural Resources***

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I. COURSE DESCRIPTION:

The objective of this course is to provide the student with skills relating to aerial photo interpretation. This will consist of tree species identification, glacial landform identification and Ecosite Land Classification. The delineation and identification of forested and non-forested polygons, as it relates to Ecological Land Classification The current enhanced Forest Resource Inventory (eFRI) specifications, will be emphasized.

The student will further enhance his/her knowledge and skills in identifying tree species, delineating forest stands, identifying site types through glacial landform recognition and the application of aerial photos for data collection. Conventional OMNR aerial photography, large-scale aerial photography (LSP) and satellite imagery will be involved.

II. LEARNING OUTCOMES AND ELEMENTS OF PERFORMANCE:

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

1. Understand the process of aerial photo interpretation.

Potential Elements of Performance:

- Complete a stereo vision test and depth perception test.
- Show how photo interpretation is important to the management of forest resources.
- Perform hardcopy aerial photo setup and preparation
- Familiarize students with eFRI photo interpretation specifications.

2. Delineate and Identify Forested and Non Forested polygons.

Potential Elements of Performance:

- Identify, delineate and label wetland and non forested polygons.
- Identify and delineate forested polygons, differentiated by eFRI specifications (height, age, soil depth, soil type, vertical/horizontal structure, disturbance, site prep, site class...).
- Identify various non forested wetland features.
- Identify and differentiate between non-forested anthropogenic features.

3. **Recognize and identify Boreal and Great Lakes St. Lawrence Forest tree species on aerial photos/digital imagery.**

Potential Elements of Performance:

- Conifer Identification: **Sb, Pj, Cw, Pw, Pr, Sw, La, Bf, and He.**
- Boreal hardwoods identification: **Pt, Pb, Bw, and Ab**
- GLSL hardwoods identification: **Mh, Mr, Or, By, Aw, Bd, and Ew.**
- Identify species, crown damage, and crown spacing using large scale aerial photographs.

4. **Identify Glacial Landforms and recognize ecosites on an aerial photograph.**

Potential Elements of Performance:

- Identify basic landforms and relate their properties and attributes to Ecosite Land Classification.
- Utilize supplemental information supplied by the Northern Ontario Engineering Geological Terrain Survey (NOEGTS).
- Identify a variety of ecosites on an aerial photograph using the OMNR Ecosite Land Classification photo interpretation decision node keys.

5. **Determine tree heights and crown closure on an aerial photograph.**

Potential Elements of Performance:

- Determine canopy closure and horizontal structure based on stereoscopic observations made on aerial photographs
- Determine and estimate tree heights based on field calibration plot information comparison.

III. TOPICS:

1. Identify forested and non-forested polygons.
2. Identification of conifers and hardwoods in the Boreal forest region and the Great Lakes St. Lawrence forest region.
3. Determination of ecosites from an aerial photograph. OMNR FRI specifications and the Ecological Land Classification System.
4. Recognize and identify common physical landscape features on aerial photos (geomorphology).
5. Delineate forested and non forested ecosites on contact print 1:20000 aerial photos and identify the FRI working group.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. Staedtler grease pencils 108-9 black 108-2 red 108- 3 blue
2. Desk lamp (optional, but recommended)
3. Metric scale
4. Q-tips
7. Pocket stereoscope
8. Field safety equipment (for field calibration plot trip)
9. **Training manual** for photo interpretation of ecosites in North western Ontario (available at campus shop)

Supplied by college on a loan basis NOTE: During the semester students will be using original OMNR aerial photographs. Photographs which are damaged or lost will be replaced by the student at a cost of \$10.00/photo.

V. EVALUATION PROCESS/GRADING SYSTEM:

Landform assignments	15
Landform test	10
Tree shapes test	5
GLSL/boreal stand ID	5
Boreal photo delineation	10
GLSL photo delineation	10
Photo species ID test	10
Ecosite photo ID test	5
Attendance and participation	10
Ecosites open book	5
Ecological Land Class.	5
Final test	<u>10</u>
	100%

The following semester grades will be assigned to students:

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

VI. SPECIAL NOTES:

Course Outline Amendments: The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

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 postsecondary institutions.

Electronic Devices in the Classroom: Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.