

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** Field Orientation

**CODE NO. :** NRT125                      **SEMESTER:** One

**PROGRAM:** FORESTRY/FISH & WILDLIFE/PARKS & OUTDOOR  
RECREATION TECHNICIAN

**AUTHOR:** Erwin Goertz

**DATE:** MAY 2000      **PREVIOUS OUTLINE DATED:** JUNE 99

**APPROVED:**

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	<b>DEAN</b>	<b>DATE</b>

**TOTAL CREDITS:** 3

**PREREQUISITE(S):** None

**LENGTH OF COURSE:** 3 hrs/week              **TOTAL CREDIT HOURS:** 48

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*For additional information, please contact*  
*School of Business, Hospitality & Natural Resources*  
*(705) 759-2554, Ext. 687*

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Course Name

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Code No.**I. COURSE DESCRIPTION:**

Students will gain skills in orienteering and navigating in forested areas using a magnetic hand compass, topographic maps (OBM, NTS), forest stand maps, OMNR standard aerial photographs and global positioning systems (GPS). Students will use a navigational protractor, metric scale, digital planimeter and computer mapping software in the planning and presentation of field exercises. Pacing and distance measurement devices (50 m rope, 30 m tape, Hip-Chain) will be used to measure distances.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

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

1. **Be able to use a magnetic hand compass and navigate to within 5% accuracy of the destination.**

Potential Elements of the Performance:

- determine azimuths and bearings and convert from one to the other
- understand and set magnetic declination on a compass

2. **Be able to pace to within 5% accuracy and measure distances using a 50 m rope and a 30 m tape to within 0.5% accuracy.**

Potential Elements of the Performance:

- determine pacing factor and be able to pace distances in summer and winter
- understand the measurement divisions for a 30 m tape and a 50 m rope
- be able to maintain and properly store equipment

3. **Be able to use OMNR aerial photographs, OBM and NTS maps in order to travel from one location to another using a magnetic hand compass.**

Potential Elements of the Performance:

- understand scales of photographs and maps
- identify major features on aerial photographs and cover type changes
- be able to measure distances and directions on aerial photographs and maps
- be able to calculate directions on a map and aerial photograph using a navigational protractor

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4. **Be able to view aerial photographs in three dimensions.**

Potential Elements of the Performance:

- define stereoviewing, stereoscope, stereopair and stereogram
- list two types of stereoscopes and the advantages/disadvantages of each
- correctly orient a stereopair of aerial photographs for stereoviewing
- correctly handle and take care of OMNR aerial photographs
- be able to order existing aerial photography from both the federal and provincial government

5. **Be able to use and understand the principles of Global Positioning Systems (GPS)**

Potential Elements of the Performance:

- understand the accuracy of GPS units
- be able to mark (enter) a field position in the GPS while in the field
- be able to enter a field position using map co-ordinates
- be able to navigate to waypoints entered into the GPS using a compass and GPS
- be able to record positions from the GPS onto a map

6. **Be able to determine areas on maps using a dot grid, the line transect method and a digital planimeter.**

Potential Elements of the Performance:

- determine the number of hectares per dot on a dot grid for any given map scale
- know how to handle dots that fall on the area boundary
- know the components/keys on a digital planimeter & how to use it
- understand the principles which allow us to calculate (measure)

7. **Use and interpret forest stand maps and topographic maps (OBM, NTS). This includes being able to accurately reference any point using latitude/longitude as well as UTM co-ordinates.**

Potential Elements of the Performance:

- recognize the different ways of expressing scale
- identify all lines, numbers and symbols on maps
- recognize the divisions used on a map to measure long/lats and UTM co-ordinates
- draw topographic profiles
- be able to read contour lines and determine major topographic features

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8. **Correctly use mapping signs and symbols in the process of preparing maps and field note.**

Potential Elements of the Performance:

- use the Single Stroke Commercial Gothic lettering style correctly
- be able to convert from one unit of measurement (imperial/metric) to another
- record field information legibly on tally sheets using proper symbols
- be able to prepare field notes/maps

9. **Use basic cartographic equipment including T-square, metric/imperial scales, distance measurement device, technical pen, navigational protractor and mechanical lettering set for the professional presentation of maps.**

Potential Elements of the Performance:

- use the metric/imperial scales for distance measurements on a variety of maps
- measure directions and apply magnetic declination on maps using a navigational protractor
- properly use a mechanical lettering set, Ames lettering guide, distance measurement device and technical pen

**III. TOPICS:**

1. Introduction to course, lettering style, units of measurement and conversions.
2. Compassing
3. Determining directions indoors and outdoors
4. Measuring distances
5. Determining distances indoors and outdoors
6. Grid networks, introduction to Global Positioning Systems (GPS)
7. GPS outdoor exercises
8. Stereoviewing
9. Stereoviewing and determining directions in the field using aerial photographs
10. Forest stand map symbols, technical pen, and lettering aids
11. Field mapping outdoor exercise
12. Area determination
13. Topographic maps and reading contours

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#### IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Field Orientation Manual
- NTS 1:50 000 Topographic Map Sheets #41 K/9
- Metric Scale (1:500 to 1:2500)
- Navigational Protractor
- HB Pencil
- Masking Tape
- Calculator
- Clipboard
- Dot Grid (provided by instructor)
- Personal Safety Whistle (Fox 40 or equivalent)
- Silva Ranger Compass or Suunto MC-1 Compass
- Pocket Stereoscopes

#### V. EVALUATION PROCESS/GRADING SYSTEM:

Evaluation will be based on weekly quizzes, assignments handed out in class, assignments to be completed in the field and tests.

1. Quizzes	10%
2. Assignments	40%
3. Tests (2)	<u>50%</u>
	<b>100%</b>

A passing grade in this course is 60%. Quizzes are given at the beginning of each class. Students who are late for class will forfeit the quiz mark. Assignments which are conducted in the field must have a passing grade of 60%.

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The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies &amp; Procedures Manual - Deferred Grades and Make-up</i> ).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has been impossible for the faculty member to report grades.	

**NOTE: STUDENTS MAY BE ASSIGNED AN "R" GRADE EARLY IN THE COURSE FOR UNSATISFACTORY PERFORMANCE.**

#### VI. SPECIAL NOTES:

##### Special Needs:

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

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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.

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.

Substitute course information is available in the Registrar's office.

Academic Dishonesty:

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

**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:

**VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.