

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON



COURSE OUTLINE

COURSE TITLE: r x e x a u r x e n u d t i o n

CODE NO.: NRT 125-3

SEMESTER: One

PROGRAM: Fores>try/Fish & Wi Idlife/Parks & Outdoor Rec. Tech

AUTHOR: Erwin Goertz

DATE: May 1998

PREVIOUS OUTLINE DATED: Feb. 1997

APPROVED: _____

DEAN

DATE

TOTAL CREDITS 3

PREREQUISITE(S): ^o''^

LENGTH OF COURSE: 3 hours/week **TOTAL CREDIT HOURS:** ^9

I. Course Description

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

n. 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
- 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 units
 - be able to mark a position into the GPS while in the field
 - be able to enter 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 and how to use it
 - understand the principles which allow us to calculate (measure) areas using a dot grid, the line transect method and a digital planimeter
- 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
- 8) Correctly use mapping signs and symbols in the process of preparing maps and field notes.
- 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!

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

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Field Orientation Manual
 T-square (30" plastic)
 Staedtler Technical Pen (0.35 tip)
 NTS 1:50,000 Topographic Map Sheet #41 K/9
 11" X 17" Mylar Sheet
 Metric Scale (1:500 to 1:2500)
 Navigational Protractor
 HB Pencil
 Masking Tape
 Calculator
 Clipboard
 Mapping Software Diskette (from Instructor)
 Dot Grid (from Instructor)
 * Personal Safety Whistle (Fox 40 or equivalent)
 * Silva Ranger Compass or Suunto MC-1 Compass
 * Pocket Stereocopes

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)	50

~100 %

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 or 60 %.

The following letter grades will be assigned:

AT	Consistently outstanding	.70-1.00
A	Outstanding achievement	.60-0.69
B	Consistently above average achievement	.50-0.59
C	Satisfactory or acceptable achievement	.40-0.49
R	Repeat the course	
CR	Credit Exemption	
X	Incomplete. Additional work must be handed in.	

NOTE: Students may be assigned an "R" grade early in the semester for unsatisfactory performance.

VI. SPECIAL NOTES

- If you are a student with special needs (e.g. 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 (telephone extension 493, 717, or 491) so that support services can be arranged for you.
- 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.
- Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of the students. This may be due to the availability of equipment, transportation or a result of weather conditions.