



COURSE OUTLINE: NRT123 - OUTDOOR NAVIGATION

Prepared: School of Natural Environment

Approved: Bob Chapman - Dean

Course Code: Title	NRT123: OUTDOOR NAVIGATION
Program Number: Name	5212: ADVENTURE RECREATION 5214: FISH/WILD CONSERVATN 5220: NAT ENVIRONMENT TN 5230: FORESTRY TECHNICIAN
Department:	NATURAL RESOURCES PRG
Academic Year:	2025-2026
Course Description:	Students will develop practical skills in navigation, orienteering, and route finding within wilderness environments. Techniques for measuring distances, area and slope will be explored using a variety of techniques including advanced software, global positioning enabled devices (GPED), and conversion calculations. Students will become proficient in the use of handheld magnetic compasses, global positioning enabled devices (GPED), and a variety of free and proprietary mapping software.
Total Credits:	3
Hours/Week:	3
Total Hours:	42
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	NRT125
Vocational Learning Outcomes (VLO's) addressed in this course:	5212 - ADVENTURE RECREATION VLO 1 Demonstrate clear, concise and industry appropriate written, spoken and visual communication skills. VLO 9 Safely operate and maintain equipment used in Adventure Recreation and Park operations. VLO 10 Evaluate and apply current technologies and mathematical concepts used to collect, manage and analyze data. VLO 11 Analyze, evaluate and apply subjective and objective safety considerations for Adventure Recreation and Parks activities.
Please refer to program web page for a complete listing of program outcomes where applicable.	5214 - FISH/WILD CONSERVATN VLO 1 Demonstrate clear, concise and industry appropriate written, spoken and visual communication skills VLO 9 Safely operate and maintain equipment used in Fish and Wildlife Conservation. VLO 10 Evaluate and apply current technologies and mathematical concepts used to collect, manage and analyze data.



VLO 11 Analyze, evaluate and apply subjective and objective safety considerations.

5220 - NAT ENVIRONMENT TN

VLO 2 Utilize natural resources equipment and technology to accurately identify ecosystem components for purposes of conserving and managing natural resources.

VLO 4 Conduct natural environment assessments according to standard field survey methods, including the use of appropriate equipment and materials.

VLO 7 Work safely in adherence to occupational health and safety standards.

VLO 11 Communicate technical information accurately and effectively in oral, written and visual forms.

VLO 12 Travel accurately in a timely manner in the outdoors using appropriate navigation aids and motorized transport equipment.

5230 - FORESTRY TECHNICIAN

VLO 1 Conduct forest inventory surveys and field measurements to determine forest resources and values in forests and woodlots.

VLO 4 Collect, analyze, interpret, and display spatial data using mapping technology and Geographical Information Systems (GIS) to contribute to forest resource management.

VLO 7 Select, operate, troubleshoot and maintain tools and equipment in a variety of environmental conditions and in accordance with safety and operating standards.

VLO 8 Work independently and in a collaborative environment while applying effective teamwork, leadership and interpersonal skills.

VLO 9 Communicate technical information to a variety of stakeholders in oral, written, visual and electronic forms.

Essential Employability Skills (EES) addressed in this course:

EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.

EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.

EES 3 Execute mathematical operations accurately.

EES 5 Use a variety of thinking skills to anticipate and solve problems.

EES 6 Locate, select, organize, and document information using appropriate technology and information systems.

EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.

EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.

EES 10 Manage the use of time and other resources to complete projects.

EES 11 Take responsibility for ones own actions, decisions, and consequences.

Course Evaluation:

Passing Grade: 50%, D

A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.



Other Course Evaluation & Assessment Requirements:

Academic success is directly linked to attendance. Missing more than 1/3 of the course hours in a semester shall result in an 'F' Grade for the course.

Books and Required Resources:

NTS 1:50 000 Topographic Map Sheets #41 K/9

Outdoor Navigation Course Manual
 Publisher: Sault College

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Use a magnetic hand compass and navigate to a destination.	1.1 Determine true and magnetic azimuths and convert from one to the other. 1.2 Understand and set magnetic declination on a compass.
Course Outcome 2	Learning Objectives for Course Outcome 2
2. Determine distances by map calculations, software use and pacing.	2.1 Determine pacing factor and be able to pace distances in summer and winter. 2.2 Be able to maintain and properly store equipment.
Course Outcome 3	Learning Objectives for Course Outcome 3
3. Navigate using map and compass, global positioning enabled devices, aerial photographs and digital maps.	3.1 Understand scales of photographs and maps. 3.2 Identify major features on aerial photographs and canopy cover type changes. 3.3 Be able to measure distances and directions using map and compass, global positioning enabled devices, aerial photographs and digital maps.
Course Outcome 4	Learning Objectives for Course Outcome 4
4. Understand the principles of global positioning enabled devices and utilize these to navigate efficiently in the Natural Environment.	4.1 Understand the accuracy of global positioning enabled devices (GPED). 4.2 Be able to mark (enter) a field position in the GPED while in the field. 4.3 Be able to enter a field position using map co-ordinates. 4.4 Be able to navigate to saved locations using a compass and the GPED. 4.5 Be able to record positions from the GPED onto a map.
Course Outcome 5	Learning Objectives for Course Outcome 5
5. Be able to determine areas using maps and mapping software.	5.1 Be able to measure areas using map and compass, global positioning enabled devices, aerial photographs and digital maps
Course Outcome 6	Learning Objectives for Course Outcome 6
6. Use and interpret topographic maps, accurately referencing any point using latitude/longitude, UTM co-ordinates as well as open source and proprietary mapping software methods.	6.1 Recognize the different ways of expressing scale. 6.2 Identify important lines, numbers and symbols on maps. 6.3 Recognize the divisions used on a map to measure long/lats and UTM co-ordinates. 6.4 Draw topographic profiles, create digital topographic profiles and calculate gradients. 6.5 Be able to read contour lines and determine elevations and major topographic features.



	<table border="1"> <thead> <tr> <th>Course Outcome 7</th> <th>Learning Objectives for Course Outcome 7</th> </tr> </thead> <tbody> <tr> <td>7. Use basic equipment including the metric scale, distance measurement devices, and navigational protractor.</td> <td>7.1 Use the metric scale for distance measurements on a variety of maps with various scales. 7.2 Measure directions and apply magnetic declination.</td> </tr> </tbody> </table>	Course Outcome 7	Learning Objectives for Course Outcome 7	7. Use basic equipment including the metric scale, distance measurement devices, and navigational protractor.	7.1 Use the metric scale for distance measurements on a variety of maps with various scales. 7.2 Measure directions and apply magnetic declination.				
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Date:	August 20, 2025								
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.								