



## COURSE OUTLINE: NRT260 - TRAIL CONSTRUCTION

Prepared: Brian Anstess

Approved: Sherri Smith, Chair, Natural Environment, Business, Design and Culinary

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| <b>Course Code: Title</b>  | NRT260: TRAIL CONSTRUCTION FACILITY MAINTENANCE   |
| <b>Program Number: Name</b>  | 5212: ADVENTURE RECREATION  |
| <b>Department:</b>   | NATURAL RESOURCES PRG   |
| <b>Semesters/Terms:</b>  | 20F   |
| <b>Course Description:</b>   | Trails have had a huge and historical impact on transportation, travel, tourism and recreation in Canada. Never has this been more evident than now. The Trans Canada Trail is unifying the nation, while outdoor enthusiasts portage across parks, and urban cyclists find safe routes to work. A mixture of Art and Science, understanding the fundamentals of trail sustainability is an essential area of expertise for Adventure Recreation and Parks students. This course will examine the foundations of trails from organization and advocacy to the hard skills involved with building and maintenance. |
| <b>Total Credits:</b>  | 4   |
| <b>Hours/Week:</b>   | 4   |
| <b>Total Hours:</b>  | 60  |
| <b>Prerequisites:</b>  | There are no pre-requisites for this course.  |
| <b>Corequisites:</b>   | There are no co-requisites for this course.   |
| <b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>  | <b>5212 - ADVENTURE RECREATION</b>  |
| <b>Please refer to program web page for a complete listing of program outcomes where applicable.</b>                             | VLO 1 Demonstrate clear, concise and industry appropriate written, spoken and visual communication skills.  |
|  | VLO 4 Identify and evaluate the requirements for leading and participating in expeditions or field exercises using a variety of Adventure Recreation activities.  |
|  | VLO 5 Start and manage a career in the Adventure Recreation and Parks field.  |
|  | VLO 6 Demonstrate a sound understanding of the significance of the Adventure Recreation and Parks Industry including relevant legislation, trends and issues.   |
|  | VLO 8 Demonstrate an understanding of sustainable development and apply the foundations in the natural environment.   |
|  | VLO 9 Safely operate and maintain equipment used in Adventure Recreation and Park operations.   |
| VLO 11 Analyze, evaluate and apply subjective and objective safety considerations for Adventure Recreation and Parks activities. |   |
| <b>Essential Employability Skills (EES) addressed in this course:</b>  | 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 3 Execute mathematical operations accurately.   |
|  | EES 4 Apply a systematic approach to solve problems.  |
|  | EES 5 Use a variety of thinking skills to anticipate and solve problems.  |

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.



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|   | EES 6   | Locate, select, organize, and document information using appropriate technology and information systems.   |
|   | EES 8   | Show respect for the diverse opinions, values, belief systems, and contributions of others.  |
|   | EES 9   | Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.   |
| <b>General Education Themes:</b>                              | Civic Life  |  |
|   | Social and Cultural Understanding   |  |
|   | Personal Understanding  |  |
|   | Science and Technology  |  |
| <b>Course Evaluation:</b>                                     | Passing Grade: 50%, D   |  |
|   | A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.   |  |
| <b>Other Course Evaluation &amp; Assessment Requirements:</b> | Academic success is directly linked to attendance. Missing more that 1/3 of the course hours in a semester shall result in an 'F' Grade for the course. |  |
| <b>Course Outcomes and Learning Objectives:</b>               | <b>Course Outcome 1</b>   | <b>Learning Objectives for Course Outcome 1</b>  |
|   | Understand the many types of trails, and their importance to parks, tourism, recreation, transportation and the economy.                                | 1.1 Identify user communities and potential conflicts.<br>1.2 Learn about economic impacts of trails through an number of case studies.<br>1.3 Consider the value and impacts of various user groups including motorized and non-motorized.<br>1.4 Compare and contrast urban and forest / rural trail networks.   |
|   | <b>Course Outcome 2</b>   | <b>Learning Objectives for Course Outcome 2</b>  |
|   | Recognize the importance of organization and advocacy to a community of trail users.  | 2.1 Identify various trail advocacy organizations.<br>2.2 Understand the importance of advocacy.<br>2.3 Consult with relevant stakeholders.<br>2.4 Join and participate with a local trails group.   |
|   | <b>Course Outcome 3</b>   | <b>Learning Objectives for Course Outcome 3</b>  |
|   | Understand the many complex elements behind trail layout and design.  | 3.1 Consider the community of users to select appropriate route and materials.<br>3.2 Use sustainable trail building fundamentals to evaluate soil characteristics and topography to determine suitability for trail construction.<br>3.3 Identify positive areas on the landscape for structures amenities, lookouts and destinations.<br>3.4 Understand applicable legislation, and appropriate permission from private landowners.<br>3.5 Evaluate potential hazards to safety and the environment.<br>3.6 Consider suitable materials for construction.<br>3.7 Evaluate relevant accessibility considerations. |

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|  |   | 3.8 Use pertinent software.  |
|  | <b>Course Outcome 4</b>   | <b>Learning Objectives for Course Outcome 4</b>  |
|  | Safely use tools and work as part of a team to build and maintain a trail.  | 4.1 Choose the right tools for the job, demonstrate safe use, and tool maintenance.<br>4.2 Wear appropriate PPE.<br>4.3 Practice the fundamental elements of trail sustainability including respect for flora and fauna.<br>4.4 Use various methods for erosion control.<br>4.5 Evaluate need for trail reconstruction.  |
|  | <b>Course Outcome 5</b>   | <b>Learning Objectives for Course Outcome 5</b>  |
|  | Use appropriate tools to build and maintain Trail Structures and amenities. | 5.1 Develop an understanding of the various types of trail amenities, their purpose, cost and maintenance.<br>5.2 Understand the significance of trailhead structures choose an appropriate design and layout.<br>5.3 Evaluate stream crossings and build bridges and boardwalks over wet areas.<br>5.4 Use appropriate signage and markers to aid with navigation, indicate difficulty, and explain relevant information. |
|  | <b>Course Outcome 6</b>   | <b>Learning Objectives for Course Outcome 6</b>  |
|  | Effectively digitize trail routes and produce meaningful, accurate maps.    | 6.1 Use a GPS, map and compass to log trails.<br>6.2 Use relevant software including Google Earth Pro and Arc Map to make a variety of maps illustrating trailheads, trails, and points of interest.   |

**Evaluation Process and Grading System:**

| Evaluation Type | Evaluation Weight |
|-----------------|-------------------|
| Assignments     | 60%               |
| Final Test      | 20%               |
| Participation   | 20%               |

**Date:**

June 17, 2020

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further information.

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