# COURSE OUTLINE: NET256 - RENEWABLE ENERGY

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Approved: Karen Hudson, Dean, Community Services and Interdisciplinary Studies

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| **Course Code: Title** | NET256: RENEWABLE ENERGY SITE DEVELOPMENT |
| **Program Number: Name** | 5220: NAT ENVIRONMENT TN |
| **Department:** | NATURAL RESOURCES PRG |
| **Academic Year:** | 2024-2025 |
| **Course Description:** | Renewable Energy Site Development provides background on the utilization of natural resources for Energy. Fundamental energy principles, history, and current trends are the foundations of the course. This transitions to a study of the effects human lifestyles have on energy demand and how this relates to global sustainability.<br><br>Merits of various renewable energy power sources will be considered along with the drawbacks, to provide an overall view. Students will consider appropriate legislation while assessing site specific criteria for energy development. Relevant software including the application of GIS will assist to identify potential site locations for future renewable energy projects. Public consultation, natural heritage assessments, and post construction monitoring will be key themes. |
| **Total Credits:** | 2 |
| **Hours/Week:** | 2 |
| **Total Hours:** | 30 |
| **Prerequisites:** | There are no pre-requisites for this course. |
| **Corequisites:** | There are no co-requisites for this course. |
| **Substitutes:** | NET211 |
| **Vocational Learning Outcomes (VLO's) addressed in this course:**<br><br>**Please refer to program web page for a complete listing of program outcomes where applicable.** | **5220 - NAT ENVIRONMENT TN**<br>VLO 2 Utilize natural resources equipment and technology to accurately identify ecosystem components for purposes of conserving and managing natural resources.<br>VLO 3 Apply the basic concepts of science to natural resource conservation and management.<br>VLO 4 Conduct natural environment assessments according to standard field survey methods, including the use of appropriate equipment and materials.<br>VLO 7 Work safely in adherence to occupational health and safety standards.<br>VLO 9 Contribute to the implementation of natural resource conservation and management.<br>VLO 11 Communicate technical information accurately and effectively in oral, written and visual forms.<br>VLO 13 Apply awareness of global environmental issues to conservation and management of natural resources. |
| **Essential Employability Skills (EES) addressed in** | EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form |

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| **this course:** | that fulfills the purpose and meets the needs of the audience.<br>EES 3 Execute mathematical operations accurately.<br>EES 4 Apply a systematic approach to solve problems.<br>EES 5 Use a variety of thinking skills to anticipate and solve problems.<br>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.<br>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. |
| **General Education Themes:** | Social and Cultural Understanding<br><br>Science and Technology |
| **Course Evaluation:** | Passing Grade: 50%, D<br><br>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. |

**Course Outcomes and Learning Objectives:**

| **Course Outcome 1** | **Learning Objectives for Course Outcome 1** |
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| 1. Understand the history and use of energy in society and the threats associated with the present trends in energy use and consumption. | 1.1 Describe Canada`s role in global energy production and consumption and compare to other global countries.<br>1.2 Show which forms of energy and energy use patterns we are currently consuming that could be more efficiently applied to the various energy use sectors.<br>1.3 Consider various types of energy and energy consumers, describing how and which are the most efficient and have the greatest opportunity for conservation. |
| **Course Outcome 2** | **Learning Objectives for Course Outcome 2** |
| 2. Explain and demonstrate an understanding of essential energy concepts. | 2.1 Identify and describe the different energy measurement terminologies and their interrelationship to energy use and data collection and analysis.<br>2.2 Identify different forms of energy and the ways they are transformed, transferred and used.<br>2.3 Identify the three pillars of energy conservation and key factors effecting energy use.<br>2.4 Understand how these transformations can relate to conservation efforts in industrial, commercial, residential and transportation applications. |
| **Course Outcome 3** | **Learning Objectives for Course Outcome 3** |
| 3. Describe laws and guidelines available to support energy conservation and renewable energy technologies. | 3.1 Analyze the climate for renewable energy in different jurisdictions.<br>3.2 Demonstrate knowledge of grid tied, off grid and NET metering Programs opportunities.<br>3.3 Discuss additional incentives and opportunities available in the renewable energy field. |
| **Course Outcome 4** | **Learning Objectives for Course Outcome 4** |

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| 4. Understand the different ways that energy is produced to meet demand. | 4.1 Distinguish between alternative, renewable and non-renewable energy technologies.<br>4.2 Describe the resources involved with these technologies.<br>4.3 Evaluate pros and cons of various energy technologies.<br>4.4 Perform a cost benefit analysis of energy technologies.<br>4.5 Utilize appropriate software to perform an analysis. |
| **Course Outcome 5** | **Learning Objectives for Course Outcome 5** |
| 5. Identify ways to apply the Natural Environment Technician skill set to a career in renewable energy. | 5.1 Conduct field surveys for Natural Heritage Assessments and post construction monitoring.<br>5.2 Evaluate the feasibility / viability of a renewable energy installation on a specific site.<br>5.3 Utilize relevant software for site analysis including NR Can Retscreen.<br>5.4 Use various tools to facilitate site analysis. |

**Evaluation Process and Grading System:**

| Evaluation Type | Evaluation Weight |
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| Assignments | 40% |
| Engagement | 10% |
| Final Test | 20% |
| Labs | 20% |
| Mid Term Test | 10% |

**Date:** August 19, 2024

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