

Canada World Education Centre Course Outline

Course: Physics			
Grade: 11	Type: University	Credit Value: 1	Course Code:SPH3U
Teacher: J.F. Michaud		Development Date: 04/15/2019	
Course Reviser:Vizarat Shaikh		Prerequisite: SNC2D	
Date:			
Ministry Curr. Doc:The Ontario Curriculum Grades 9 to 12, Course Descriptions and Prerequisites, 2018			
Course Description This course develops students' understanding of the basic concepts of physics. Students will explore kinematics, with an emphasis on linear motion; different kinds of forces; energy transformations; the properties of mechanical waves and sound; and electricity and magnetism. They will enhance their scientific investigation skills as they test laws of physics. In addition, they will analyse the interrelationships between physics and technology, and consider the impact of technological applications of physics on society and the environment.			
Overall Expectations for Student Learning By the end of the course, students will: <i>Kinematics</i> <ul style="list-style-type: none">● Motion involves a change in the position of an object over time.● Motion can be described using mathematical relationships.● Many technologies that apply concepts related to kinematics have societal and environmental implications. <i>Forces</i> <ul style="list-style-type: none">● Forces can change the motion of an object.● Applications of Newton's laws of motion have led to technological developments that affect society and the environment. <i>Energy and Society</i> <ul style="list-style-type: none">● Energy can be transformed from one type to another.● Energy transformation systems often involve thermal energy losses and are never 100% efficient.● Although technological applications that involve energy transformations can affect society and the environment in positive ways, they can also have negative effects, and therefore must be used responsibly. <i>Waves and Sound</i>			

- Mechanical waves have specific characteristics and predictable properties.
- Sound is a mechanical wave.
- Mechanical waves can affect structures, society, and the environment in positive and negative ways.

Electricity and Magnetism

- Relationships between electricity and magnetism are predictable.
- Electricity and magnetism have many technological applications.
- Technological applications that involve electromagnetism and energy transformations can affect society and the environment in positive and negative ways.

Outline of Course Content

Unit:

Hours:

Unit 1. Scientific Investigation Skills and Career Exploration

10

Unit 2. Kinematics

25

Unit 3. Forces

25

Unit 4. Energy and Society

25

Unit 5. Waves and Sound

10

Unit 6. Electricity and Magnetism

15

Teaching and Learning Strategies

Teachers use a variety of teaching strategies to maximize student learning. The following teaching strategies will be used in this course:

Helping students become self-directed.

In order to address the unique learning styles of students in this course, a variety of activities and learning experiences should be offered, including, but not restricted to: questioning, demonstrations, role-plays, simulations, co-operative group learning, brainstorming, discussion, peer coaching, interviewing, reflective writing, reflective thinking exercises, concept mapping, reading, tutoring, direct instruction, one-on-one teaching, and experimental learning.

Teachers will find ways throughout the course for students to make authentic learning connections with their other courses, the school, local community and the world at large.

Assessment & Evaluation of Student Performance

Assessment & Evaluation

The primary purpose of assessment and evaluation is to improve student learning and to help students assume responsibility for their learning.

Mid-semester and final marks are determined through evaluations or Assessments of Learning, which typically occur towards the end of a unit and end of semester. During the learning

process, information about a student's learning is gathered and used by the teacher and student to inform decisions that affect goal setting and teaching in the classroom. The data gathered as Assessment as Learning and Assessment for Learning do not carry a mark weight, but do play a crucial role in student success as they help inform the teacher about each student's progress. All types of assessments allow teachers to provide descriptive feedback that is clear, specific, meaningful, and timely to support improved learning and achievement.

Learning Skills and Work Habits (responsibility, organization, independent work, collaboration, initiative, self-regulation) will be reported by a letter (E = Excellent, G = Good, S = Satisfactory, N = Needs Improvement). These skills and habits support a high level of success in meeting the course expectations in addition to contributing to the development of positive life and work skills for the future.

Considerations for Program Planning

Program Planning Considerations • Individual Education Plan: Accommodations to meet the needs of exceptional students as set out in their Individual Education Plan will be implemented within the classroom program. Additional assistance is available through the Special Education program. • The Role of Technology in the Curriculum. Using information technology will assist students in the achievement of many of the expectations in the curriculum regarding research, written work, analysis of information, and visual presentations.

- English As a Second Language (ESL): Appropriate accommodations in teaching, learning, and evaluation strategies will be made to help ESL students gain proficiency in English, since students taking ESL at the secondary level have limited time in which to develop this proficiency.

Resources

Technological Devices:

CWEC supports the use of technology to enhance learning, but the use of such electronic technology in the classroom is at the discretion of the teacher. Working together we can ensure the appropriate use of technology by all members of our school community