

**SOUTH CARLETON HIGH SCHOOL****Ottawa-Carleton District School Board****COURSE OUTLINE****SPH3U - GRADE 11 University Prep Physics**

Credit Value: 1 credit

Hours: 110

Prerequisite: SNC2D/SNC2DF

**Expectations**

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 wave and sound; and electricity and magnetism. They will enhance their scientific investigation skills as they test laws of physics. In addition they will analyze the interrelationships between physics and technology and consider the impact of technological applications of physics on society and the environment.

**Big Ideas**

Unit Title	Physics Focus For Learning Expectations
Kinematics	<ul style="list-style-type: none"> <li>• Motion involves a change in the position of an object over time.</li> <li>• Motion can be described using mathematical relationships.</li> <li>• Many technologies that apply concepts related to kinematics have societal and environmental implications.</li> </ul>
Forces	<ul style="list-style-type: none"> <li>• Forces can change the motion of an object.</li> <li>• Applications of Newton's Laws of Motion have led to technological developments that affect society and the environment.</li> </ul>
Energy and Society	<ul style="list-style-type: none"> <li>• Energy can be transformed one type to another.</li> <li>• Energy transformation systems often involve thermal energy losses and are never 100% efficient.</li> <li>• 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</li> </ul>
Waves and Sound	<ul style="list-style-type: none"> <li>• Mechanical waves have specific characteristics and predictable properties.</li> <li>• Sound is a mechanical wave.</li> <li>• Mechanical waves can affect structures, society and the environment in positive and negative ways.</li> </ul>
Electricity and Magnetism	<ul style="list-style-type: none"> <li>• Relationships between electricity and magnetism are predictable.</li> <li>• Electricity and magnetism have many technological applications.</li> <li>• Technological applications that involve electromagnetism and energy transformations can affect society and the environment in positive and negative ways.</li> </ul>

\*NOTES: a. Specific learning expectations are available for each unit of study. b. The sequence of topics may not be exactly as listed above.

**Accommodations for Exceptional Students**

The Science department makes every effort to accommodate the identified needs of exceptional (IPRC'd) students and will attempt to differentiate curriculum delivery methods, student modes of expression, and assessment methods as recommended by the student's individual education plan (IEP).

**Career Planning**

The Science department makes every effort to ensure that students are aware of career opportunities related to various fields of science under study, and describe the contributions of scientists, including Canadians, to those fields.

**Technology and Textbooks**

The school will supply all laboratory resources and materials.

Textbook: *Physics 11 (Addison Wesley)* replacement cost = \$65.00

**Evaluation**

Term Evaluations (70%)	Summative Evaluation (30%)
Students will be evaluated according to the overall expectations of the Ontario curriculum. Assessment tools include both summative and formative tasks including but not limited to; tests/quizzes, assignments, projects, lab reports, skill based performance tasks and rich assessment tasks	<p>The exam portion of the summative will occur during the exam period in Jan/June and will evaluate the whole semester's work. All students must be present unless a medical certificate is provided.</p> <p>Project or assignment summative evaluation will be completed before the exam period begins.</p>

More information on South Carleton High School's policy on Assessment and Evaluation, on Academic Integrity, on punctuality, absenteeism and examinations can be accessed on our school website.