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## Grade 11 University Preparation Physics

<b>COURSE CODE</b>	SPH3U	<b>GRADE</b>	11
<b>TEACHER(S)</b>	Krystyna Kedzia	<b>CREDIT VALUE</b>	1.0
<b>DEPARTMENT</b>	Science	<b>PREREQUISITE</b>	Science 10 A

<b>COURSE DESCRIPTION:</b>	<p>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. Prerequisite: Grade 10 Academic Science</p> <p>Additional information can be found at: <a href="http://www.edu.gov.on.ca/eng/curriculum/secondary/subjects.html">http://www.edu.gov.on.ca/eng/curriculum/secondary/subjects.html</a></p>
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<b>COMMUNICATION</b>
Please direct all questions or concerns regarding student progress or program of study to the course teacher. Please call the main office to leave a message at 416-395-3240.

CONCRETE LEARNING RESOURCES	DIGITAL LEARNING RESOURCES
Textbook: Nelson Physics 11 (Replacement Cost \$90)	My School Day App - An App that allows you to stay up-to-date with in-class tasks.

<b>GEORGE S. HENRY ACADEMY'S COURSE WORK POLICY</b>
<p>For each evaluation, the teacher will inform students of the <b>due date</b> and the <b>ultimate deadline</b>. The ultimate deadline is the last opportunity for students to submit an assignment for evaluation. Teachers may also use a variety of other methods for dealing with late and missed assignments at their discretion.</p> <p><b>Strategies to assist students in meeting deadlines include:</b></p> <ul style="list-style-type: none"> <li>● Peer tutoring</li> <li>● Using the school app</li> <li>● Using a personal agenda</li> <li>● Seeking extra help from teachers</li> <li>● Requesting for assistance with time management and organizational skills</li> <li>● Getting help from parents/guardians</li> <li>● Getting help from a caring adult in the school</li> </ul>

## ASSESSMENT AND EVALUATION OF STUDENT ACHIEVEMENT

Each course follows an achievement chart which enables teachers to make judgements about student work that are based on clear performance standards and on a body of evidence collected over time. Additional information can be found on the Ministry of Education website noted within the course description.

### ACHIEVEMENT CHART CATEGORIES

**Knowledge and Understanding (K & U):** Subject-specific content acquired in each course (knowledge), and the comprehension of its meaning and significance (understanding)

**Thinking & Inquiry (T & I):** The use of critical and creative thinking skills and/or processes

**Communication (C):** The conveying of meaning through various forms

**Application (A):** The use of knowledge and skills to make connections within and between various contexts

### COURSE WORK (70% of your overall grade)

Categories	%	Possible Assessments of Learning
<b>K &amp; U</b>	<b>30%</b>	<ul style="list-style-type: none"> <li>• knowledge of content (e.g., facts, terminology, definitions, safe use of equipment and materials)</li> <li>• understanding of content (e.g., concepts, ideas, theories, principles, procedures, processes)</li> </ul>
<b>T&amp;I</b>	<b>20%</b>	<ul style="list-style-type: none"> <li>• use of initiating and planning skills and strategies (e.g., formulating questions, identifying the problem, developing hypotheses, selecting strategies and resources, developing plans)</li> <li>• use of processing skills and strategies (e.g., performing and recording, gathering evidence and data, observing, manipulating materials and using equipment safely, solving equations, proving)</li> <li>• use of critical/creative thinking processes, skills, and strategies (e.g., analysing, interpreting, problem solving, evaluating, forming and justifying conclusions on the basis of evidence)</li> </ul>
<b>C</b>	<b>20%</b>	<ul style="list-style-type: none"> <li>• expression and organization of ideas and information (e.g., clear expression, logical organization) in oral, visual, and/or written forms (e.g., diagrams, models)</li> <li>• communication for different audiences (e.g., peers, adults) and purposes (e.g., to inform, to persuade) in oral, visual, and/or written forms</li> <li>• use of conventions, vocabulary, and terminology of the discipline in oral, visual, and written forms (e.g., symbols, formulae, scientific notation, SI units)</li> </ul>
<b>A</b>	<b>30%</b>	<ul style="list-style-type: none"> <li>• application of knowledge and skills (e.g., concepts and processes, safe use of equipment, scientific investigation skills) in familiar contexts</li> <li>• transfer of knowledge and skills (e.g., concepts and processes, safe use of equipment, scientific investigation skills) to unfamiliar contexts</li> <li>• making connections between science, technology, society, and the environment (e.g., assessing the impact of science on technology, people and other living things, and the environment)</li> <li>• proposing courses of practical action to deal with problems relating to science, technology, society, and the environment</li> </ul>

## FINAL EVALUATION (30% of your overall grade)

Type	Description	%
Culminating Task		N/A
Exam	Formal written examination during exam week.	30%

## UNITS OF STUDY/COURSE ROAD MAP (subject to change)

### Units based on Ministry Course Profiles.

#### Throughout this course, students will

#### Unit A. Scientific Investigation Skills and Career Exploration

- A1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating);
- A2. identify and describe careers related to the fields of science under study, and describe the contributions of scientists, including Canadians, to those fields.

#### Unit B. Kinematics

- B1. analyse technologies that apply concepts related to kinematics, and assess the technologies' social and environmental impact;
- B2. investigate, in qualitative and quantitative terms, uniform and non-uniform linear motion, and solve related problems;
- B3. demonstrate an understanding of uniform and non-uniform linear motion, in one and two dimensions.

#### Unit C. Forces

- C1. analyse and propose improvements to technologies that apply concepts related to dynamics and Newton's laws, and assess the technologies' social and environmental impact;
- C2. investigate, in qualitative and quantitative terms, net force, acceleration, and mass, and solve related problems;
- C3. demonstrate an understanding of the relationship between changes in velocity and unbalanced forces in one dimension.

#### Unit D. Energy and Society

- D1. analyse technologies that apply principles of and concepts related to energy transformations, and assess the technologies' social and environmental impact;
- D2 . investigate energy transformations and the law of conservation of energy, and solve related problems;
- D3 . demonstrate an understanding of work, efficiency, power, gravitational potential energy, kinetic energy, nuclear energy, and thermal energy and its transfer (heat).

## Unit E. Waves and Sound

E1. analyse how mechanical waves and sound affect technology, structures, society, and the environment, and assess ways of reducing their negative effects;

E2. investigate, in qualitative and quantitative terms, the properties of mechanical waves and sound, and solve related problems;

E3. demonstrate an understanding of the properties of mechanical waves and sound and of the principles underlying their production, transmission, interaction, and reception.

## Unit F. Electricity and Magnetism

F1. analyse the social, economic, and environmental impact of electrical energy production and technologies related to electromagnetism, and propose ways to improve the sustainability of electrical energy production;

F2. investigate, in qualitative and quantitative terms, magnetic fields and electric circuits, and solve related problems;

F3. demonstrate an understanding of the properties of magnetic fields, the principles of current and electron flow, and the operation of selected technologies that use these properties and principles to produce and transmit electrical energy.

## GEORGE S. HENRY ACADEMY'S LATE & MISSED EVALUATION POLICY

It is the responsibility of the student to make arrangements with their teacher for any missed course material and/or assignments. Extenuating circumstances will be considered on a case-by-case basis.

## GEORGE S. HENRY ACADEMY'S ACADEMIC DISHONESTY POLICY

Cheating and plagiarism will not be condoned. For more information, refer to the Academic Honesty Policy found in the Student Handbook. The Student Handbook can be found in the George S. Henry Academy app.

## SPECIALIST HIGH SKILLS MAJOR (SHSM) REQUIREMENTS

GRADE 11 AND 12 CREDITS	ENVIRONMENT	HEALTH & WELLNESS	HOSPITALITY & TOURISM
Major Credits	4	4	4
English ( <i>including a CLA*</i> )	2	1	1
Mathematics ( <i>including a CLA</i> )	1	1	1
Science or Social Sciences and Humanities ( <i>including a CLA</i> ) ( <i>May be substituted with 1 coop credit</i> )	-	1	-
Business Studies or Science ( <i>including a CLA</i> ) ( <i>May be substituted with 1 coop credit</i> )			1
Cooperative Education	2	2	2
<b>TOTAL</b>	<b>9</b>	<b>9</b>	<b>9</b>

\*Contextualized Learning Activity