

NEPEAN HIGH SCHOOL

Science Department

SPH4UR

Prerequisite: SPH3UR

Teacher Name: Mr. Roberts

Student Name: _____



Textbook: Cutnell & Johnson Replacement Value: \$ 120.00 Assigned Text # _____

COURSE DESCRIPTION:

This course enables students to deepen their understanding of physics concepts and theories. Students will continue their exploration of energy transformations and the forces that affect motion, and will investigate electrical, gravitational, and magnetic fields and electromagnetic radiation. Students will also explore the wave nature of light, quantum mechanics, and special relativity. They will further develop their scientific investigation skills, learning, for example, how to analyse, qualitatively and quantitatively, data related to a variety of physics concepts and principles. Students will also consider the impact of technological applications of physics on society and the environment.

The Advanced Placement Physics program allows for a more in-depth study in the field of Physics. It aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of Physics. The curriculum document is available from: <http://www.edu.gov.on.ca/eng/curriculum/>, and the AP Physics Documentation is available from: http://apcentral.collegeboard.com/apc/public/repository/ap07_physics_coursedes.pdf

UNITS OF STUDY:

	Introduction and Data Analysis	Skill Sets 1-4 (McGraw Hill Physics 12 p. 606-617)
Unit 1	Dynamics	Chapters 3 - 5, 9 & 11
Unit 2	Energy and Momentum	Chapters 6, 7 & 10
Unit 3	Gravitational, Electric, and Magnetic Fields	Chapters 18, 19, 21, 22
Unit 4	The Wave Nature of Light	Chapters 27 & 24
Unit 5	Revolutions in Modern Physics: Quantum Mechanics and Special Relativity	Chapters 28 - 31

ASSESSMENT AND EVALUATION:

Category and Types of Assessment	Weight
Knowledge & Understanding <ul style="list-style-type: none">knowledge of facts and terms; understanding of concepts, principles, laws and theories; relationships between concepts and transfer of concepts to new contexts	21 %
Thinking, Inquiry & Problem Solving <ul style="list-style-type: none">use of skills and strategies in scientific inquiry, such as planning, performing, recording, analysing, interpreting and problem solving ; applications of technical skills and procedures; use of equipment and materials;	28 %
Application <ul style="list-style-type: none">connecting science, technology, society and the environment	10.5 %
Communication <ul style="list-style-type: none">communicating information and ideas with clarity and precision; using scientific terminology, conventions and SI units	10.5 %
Summative <ul style="list-style-type: none">end of year summative project (rich performance task) 10% and final exam 20%	30%

ADDITIONAL NOTES: The Nepean Science Department follows the evaluation policies as outlined in the Student Agenda. Students are expected to care for the textbooks issued to them and to return them in good condition. Each student is required to bring to class pens and pencils, textbook and notebook, and a ruler, geometry set, graph paper and a scientific calculator. Students are expected to behave in a responsible manner. They will be billed for any breakage that results from carelessness. All work to be marked must be typed or neatly handwritten in blue or black ink. Pencil is only permitted for diagrams. All assignments are to be written individually, unless otherwise stated by the teacher. Extra help for review, remediation or enrichment is readily available. This is best arranged by appointment. Your teacher will provide times when (s)he is available.

