



Gr. 12 College Physics



Course Outline

Course Code: SPH 4C1
Prerequisite: SNC 2P1 or
 SNC 2D1

Textbook: 12 College Physics
Instructor: van Asseldonk

COURSE DESCRIPTION

This course develops students' understanding of the basic concepts of physics. Students will explore these concepts with respect to motion; mechanical, electrical, electromagnetic, energy transformation, hydraulic, and pneumatic systems; and the operation of commonly used tools and machines. They will develop their scientific investigation skills as they test laws of physics and solve both assigned problems and those emerging from their investigations. Students will also consider the impact of technological applications of physics on society and the environment.

UNITS OF STUDY

Strand	Unit Topic	Key Topics	Sample Issues
1	Motion and Its Applications	Motion technology, linear and non-uniform motion, & relationships between speed, acceleration, distance, and displacement.	Motorized vehicles, traffic volume, tracking devices...
2	Mechanical Systems	Mechanical systems, forces, torque, work simple machines, & mechanical advantage.	Artificial limbs, lift locks, body mechanics, machines...
3	Electricity and Magnetism	Electricity, magnetism, & electromagnetic theory	Energy efficiency of technological devices, medical imaging, landmine detection...
4	Energy Transformations	Energy-transformations, Law of Conservation of Energy, forms of energy, & efficiency	Energy transformations in common devices, energy production, cooling systems...
5	Hydraulic and Pneumatic Systems	Hydraulic and pneumatic systems, fluid statics, and fluid dynamics	Robotic systems, hydraulic and pneumatic systems in society...

COURSE EVALUATION

Evaluations will reflect the following assessment breakdown

Knowledge/Understanding Emphasizes the ability to recall factual information, recognize fundamental concepts and the foundational skills of the subject/discipline	25%
Thinking / Inquiry Emphasizes the use of critical and creative thinking skills and inquiry, research and problem-solving skills and/or processes. It is an opportunity to demonstrate learning through the use of initiating and planning skills and strategies.	35%
Communication Emphasizes clear, precise and effective expression and organization of ideas and information through the use of oral, written and visual language to communicate the student's understanding of information and ideas	15%
Application Emphasizes the use of knowledge and skills to make connections within and between various contexts. Students will propose courses of action to deal with problems related to science, technology, society and the environment.	25%

FINAL EVALUATION

The final mark will be determined according to this breakdown

TERM WORK — <u>70</u> %	Learning will be assessed through work completed during the term, including assignments, quizzes, unit tests, labs and practical work.
CULMINATING TASK — <u>15</u> %	Learning will be evaluated through a culminating task at the end of the semester which will assess your practical skills and knowledge
EXAM — <u>15</u> %	Learning will be assessed at the end of the course with an exam lasting <u>2</u> hours.

Our Lady of Mount Carmel S. S.
Science Department
Expectations, Assessment & Evaluation Policies

Behaviour and Performance Expectations

- Students should respect their peers and teachers as well as the classroom environment.
- Students should be punctual, prepared for class (with textbook, notebook, pens, pencils, etc) and in full uniform.
- There is no eating or drinking in the science laboratory.
- Students are expected to work cooperatively on activities, assignments and lab reports. If individual reports are required, “carbon copies” are not accepted. All reports must be referenced in APA format. Plagiarism will not be tolerated and will result in a mark of zero.

Lab Behaviour Expectations

- Students must be well versed in science safety
- Students must be prepared to do the laboratory activity (i.e. students have read the lab and completed any pre-lab assignment)
- Working in the lab is a privilege. This privilege can be lost and will result in lost marks. Students should follow instructions carefully, follow all safety rules and keep their work area clean.

Attendance

Regular attendance, keeping up to date with regular classroom and homework assignments is an essential component of success in this course. ***Students are responsible for the work they miss while absent including homework, assignments and laboratory results.***

Enter the names and phone numbers of two classmates to call when you are absent.

Friend: _____ Phone Number _____

Friend: _____ Phone Number _____

Test, Quiz and Assignment Policy

Students must adhere to the Our Lady of Mount Carmel “Achieve your Best” policy for test/quiz dates and assignment deadlines.

Progress Reports

A progress report will be issued to each student periodically during the semester. Parents/guardians are asked to sign the report and are invited to comment. If you have any questions or concerns please contact the classroom teacher at any time during the semester at extension 68019.

I _____ (student’s name) have read the Science Department Policies on Expectations and Assessment and Evaluation and have shared the information with my parents/guardians.

Student’s signature

Parent/Guardian’s Signature

