



SPH3UI Grade 11 University Physics



Course Outline and Information Package 2019-2020, S2

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Course Description

Welcome to the wonderful world of physics! SPH3U is an introduction to physics and a prerequisite for the grade 12 course SPH4U. This course will be one of your first courses dedicated to one particular branch of science, in this case Physics.

This course develops students' understanding of the basic concepts of physics. Students will explore these concepts with respect to motion, forces, energy, waves and sound, and electromagnetism. 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.

Course Outline

Each unit within this course covers key **big ideas and essential skills** that **must** be understood to be successful in this course. The big ideas and essential skills of each unit are outlined below.

To evaluate a student's understanding of the key concepts, there are **major assessments** in each unit that **must** be successfully completed to earn a credit in this course.

Big Ideas / Essential Skills

#	Essential Learnings
1	Scientific Investigation and Analysis <ul style="list-style-type: none"> - 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) - Understand, evaluate and make predictions based on analysis of real life data
2	Motion (Kinematics) <ul style="list-style-type: none"> - Motion involves a change in position over time. - Displacement, velocity and acceleration can all be described mathematically and analyzed algebraically or graphically.
3	Forces (Dynamics) <ul style="list-style-type: none"> - The application of a force to an object can change its' motion. - Newton's 3 Laws can be used to analyze the effects of forces.
4	Energy <ul style="list-style-type: none"> - Energy takes on many forms and can be transformed from one type to another. - Energy cannot be created or destroyed – only converted from one form to another
5	Waves & Sound <ul style="list-style-type: none"> - Waves have specific characteristics and predictable properties. - Sound is a mechanical wave and can be analyzed using the properties of waves.
6	Electromagnetism <ul style="list-style-type: none"> - Electricity & magnetism are interrelated and affect each other. - Magnetic fields can generate the flow of electricity and conversely the flow of electricity can create a magnetic field

Evaluation and Assessment: Students will be provided with numerous and varied opportunities to demonstrate the full extent of their achievement. Students will be assessed in a variety of ways and will receive ongoing formative assessment based on class work, conversations and observations. Summative assessment will include assignments, labs, quizzes and tests as well as a mandatory final exam. The final grade will be determined as follows:

Term Work

70%

Final Evaluation

30%

Assessment and Evaluation Strategies

Assignments include any assessment that has been assigned for the purpose of evaluation and include the following items: labs, quizzes, assignments, tests, unit tests and the final exam.

Term Work (70%)

Assignment, Labs, Projects - 35%

Tests and Quizzes - 35%

Summative Evaluation (30%)

All students will participate in a set of final evaluations toward the end of the year, which cumulatively count for 30% of your final grade.

Major Assessment Policy (labs, assignments, tests, exam)

Within each unit there are major assessments that ***must*** be completed to earn a credit in this course. Major assessments assess the student's learning of key components of the course's big ideas. As such, each of the major assessment **MUST** be completed.

1. All major assessments must be completed and submitted by the due date.
2. For all major assessments not completed by the due date, some or all of the following will occur:
 - a) the student will speak with the teacher to negotiate an extension
 - b) communication will take place between the teacher and the student's parent(s)/guardian(s)
3. Major assessments not completed by the negotiated due date will receive an incomplete (I) and will be reflected in the learning skills.
4. The essential learning required for major assessments will still need to be demonstrated and the teacher will use his/her professional judgment to determine an appropriate final course mark.

Tests and Quizzes

All students will write tests on the date given. If you know ahead of time that you will be absent for a test, you must make arrangements beforehand to write the test at another time. If you are unable to make arrangements beforehand (for an acceptable reason), then you will write the test on the day you return (the next day of your class, at the latest).

Labs, Projects, Assignments

You are responsible for completing all work in this course (even if you are absent the day it is assigned). When you miss a class, check with a class member or your teacher to see what you have missed and complete any outstanding work.

If you miss a lab, you must obtain the results from someone else in the class and hand in the lab (lab report formats to be provided).

Cheating and Plagiarism Policy

Plagiarism, including theft and misrepresentation of original work, cheating, theft of evaluation instruments, use of unauthorized aids, and false representation of identity, will result in appropriate consequences. The teacher will inform administration and meet with the student to determine the nature and extent of the incident, the student's understandings of the situation and intent. Please refer to the student planner for more information.

Course Materials

Each student is responsible for loss or any damage to their textbook. Cost for damages or loss will be assessed at the end of the course. Replacement cost is **\$110**.

To supplement the text, handouts will be available in class and where appropriate these handouts will be made available through our classroom website. If you are absent from a class ensure you check with classmates what you missed and also check the website for any available materials. For key homework questions, answers will be posted in the room and on-line.

Personal Materials

Please come prepared for class each day. The following items should be brought each day to class: notebook with lined paper, pen, pencil, eraser, ruler and calculator. Graph paper will also be required for many classes.

Classroom Policies

The physics classroom is designed as a lab and as such there are some special considerations. Due to safety concerns and a desire to create the best learning environment, the following items are not permitted within the science lab: food, beverages, coats, jackets.

The classroom must be left as you find it at the beginning of class (equipment returned to its proper place, no garbage on the desks, paper in recycling bin).

Study Habits

Physics is a problem solving course and as such you cannot solely rely on your memory to be successful in this course. *Watching someone else solve problems is not a good way to learn how to solve problems.* You must actively practice solving a variety of problems independently in order to be successful in this course.

Extra Help

Extra help is available during class, at lunch or after school as required. Please make appointments if possible. *Seek out extra help when required, do not wait until the day before a test or evaluation.*



Signatures

Please sign below indicating you have read and understand the requirements for successful completion of this course. Please cut off and return this portion.

Student

Parent/Guardian

Date

Date

Contact Information

If desired, please indicate the email address(es) you wish me to use for information about the course and your son/daughter's progress.

Email Address

Email Address