



Loyola

HIGH SCHOOL

Secondary 5 - Physics

Cycle 2 (Year 3)

Course Outline

Teacher: Dr Newton

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Voice Mail: 514 486 1101 ext.616

Requirements:

- Quantum Textbook
- One three ring binder (medium sized; 2 inch)
- Lined loose-leaf paper (at least 25 sheets), graph paper (about 15 sheets). Dividers (3-4) are recommended.
- A well-stocked pencil case including ruler, pencils, pens, eraser, highlighters, scientific calculator etc. A 0.5 mm (or 0.7 mm or any other dimension) lead propelling pencil is recommended instead of pencils. (You are NOT allowed to use the sharpener in the classroom).
- A small plastic protractor (essential).
- iPad (always charged for each lesson and no apps running)

The above equipment is required for **every** lesson. Failure to bring an item will result in JUG. It is the student's responsibility to check their Loyola email every day for updates and/or information. A lot of information is also posted to Moodle and it is also the student's responsibility to check Moodle daily.

Course Information:

Secondary Five Physics is an extension of the programs in Secondary Cycles One and Two. It is intended to consolidate and enrich a student's scientific training and is a requirement for several pre-university or technical programs at the college level.

Evaluation of Learning / Competencies: The pass mark is 60% for the entire year.

Section	Competency	Examples of work that will contribute to the overall grade for each term	Weighting
Practical	Seeks answers and solutions to scientific or technological problems. Communicates in the languages used in science and technology	Labs, Lab reports, Lab Blogs, Activities, Presentations etc	40%
Theory	Makes the most of his knowledge of science and technology. Communicates in the languages used in science and technology	Tests, Quizzes, Assignment sheets, June exam etc	60%

Several labs are conducted every term and are graded and weighted according to complexity. The theory mark is generally comprised of the following components, shown with their approximate weightings: Tests (50%), Quizzes (15%), Assignment sheets (15%), Online reflections (8%), ePortfolio (10%) and Participation / Department / Holistic Growth (2%).

For the Term 1 and Term 2 reports, each student will also have comments regarding at least two of the following four cross-curricular competencies:

- Exercises critical judgment
- Organizes his work
- Communicates effectively
- Works in a team

Examination

There is one formal examination period at the end of the year (June).

Course	June Exam
Sec. 5 Physics	40% of Term 2 Theory

There is also a Lab Exam in May which is worth ~ 30% of the Term 2 Practical component mark.

Report Cards: There are four (4) reporting periods as per the following schedule:

Report	Date Sent (on or before)	Value
1st Progress	November 09	None – only a written communication with parents
Term 1	January 10	40%
2nd Progress	April 06	A second written communication with parents
Term 2	June 13	60%

Please note that the student’s performance in Term 1 is evaluated for CÉGEP acceptance, which is also conditional on a successful completion of Term 2.

Topics: _____ Physics: Secondary 5

Term 1	Term 2	Term 2
Kinematics & Dynamics <ul style="list-style-type: none"> • Reference Systems • Uniform rectilinear motion • Graphing: Motion-Displacement-Time, Velocity-Time, Acceleration-Time • Displacement & Distance travelled • Uniform accelerated rectilinear motion • Constant Acceleration Formulae • Relationship among acceleration, distance, velocity and time • Average velocity and instantaneous velocity • Free fall • Motion of a body on an inclined plane • Projectiles (1-D and 2-D) 	Energy and its transformations <ul style="list-style-type: none"> • Gravitational force • Gravitational acceleration • Force of friction • Centripetal Force • Newton’s Laws • Free-body diagram; vectors • Equilibrium and resultant of several forces; vectors • Relative motion • Momentum • Mechanical Energy • Hooke’s law • Relationship among power, work and time • Simple machines 	Geometric Optics <ul style="list-style-type: none"> • Waves • EM Spectrum • Speed of light • Reflection • Refraction: Snell’s Laws • Images • Critical Angle • Mirrors • Lenses • Colour theory

Miscellaneous Information:

Students are expected to be familiar with the Moodle page for this course and to check it often. Students will also be conducting projects using Google Classroom. Students will have access to Studyo where they can view assignments, deadlines and test dates. This will allow them to plan their study times and work schedules accordingly. Programmable calculators are not permitted at any time.

General

Failure to complete homework will result in loss of marks and/or disciplinary action. **Homework submitted late will not be accepted and will result in a grade of 0%. Homework submitted without a name will result in a grade of 0%.** Review and practice of daily work is essential to understanding and retaining the information taught. Students are expected to develop a clear and succinct writing style, with a minimum of spelling or grammatical errors. Students are also expected to be self-motivated and disciplined and must keep up to date with ongoing projects (e.g. the ePortfolio). Failure to do so may result in a grade penalty being applied. Please note that it is never possible to do extra work or extra assignments to increase grades.

Extra help in the form of tutorials and meetings is offered as required by appointment (newtonn@loyola.ca) and are usually held at lunch or after school. Please note however that extra help is **never** given the day before a test or exam. The approximate test schedule is already on Moodle so there is plenty of time to see me for extra help. Note that cramming the night before a test will not be a very effective study method in Sec 5.

Note that if a student misses a class for whatever reason, it is THEIR responsibility to make-up the missed work. If a student misses a lab they have 24 hours to contact Mr Dagher (daghere@loyola.ca) to arrange a time to conduct the lab. They must also notify Dr Newton at least 48 hours in advance if they have prior knowledge of an upcoming absence (for sports or any other activity).

Students in Honours Physics will be required to complete additional assignments and/or small projects throughout the year as part of the course enrichment. Successful completion of this work will be a requirement to receive a 'letter of attestation' from the Vice Principal of Senior Academics for CEGEP applications.

****Note:** Due to COVID-19, there are many unknowns as to how the 2020-21 school year will unfold. Please note that the information on this outline may need to be modified as the year progresses. Rest assured that any changes made will be done so to reflect what we feel is best for the students.

iPad and Chromebooks

The iPad/Chromebook is to be used as a tool to aid learning and to search for information. It is not to be used to play games. We have observed low attention spans, poor academic performance and reduced capacity to think in students who play too much on their iPad, cell phone or any other electronic device.

This document is important as it can also serve as a basis for your study guide for exams.