



Loyola

HIGH SCHOOL

Secondary 5 - Physics

Cycle 2 (Year 3)

Course Outline

Mr. R. Lynam E-mail: lynamr@loyola.ca

Voice Mail: 514-486-1101 ext.602

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.

The course will rely heavily on the use of Moodle. All notes, homework, handouts, corrections, labs, etc. will be posted on the course site. Students will be expected to monitor and contribute to the Moodle site on a regular basis.

Resources

- Quantum - physics textbook
- Moodle - course homepage "Physics 5 - Lynam"
- Studyo – course calendar, homework, labs, assignments, tests, etc.

Requirements

- Chromebook, headphones
- Three ring binder (medium sized; 2 inch) with 3 dividers
- Lined loose-leaf paper (minimum 50 sheets)
- Hole punched graph paper, also known as Quad-Ruled Paper (minimum 25 sheets)
- Pencils and sharpener, or mechanical pencil with lead refills, eraser
- 15cm ruler, scientific calculator

Teacher Availability

Mr. Lynam will be available by appointment to support students who have questions or would like extra help with course material. Students should reach out to Mr. Lynam via email for any questions.

Evaluation of Learning / Competencies

<i>Section</i>	<i>Competency</i>	<i>Examples of work that will contribute to the overall grade for each term</i>	<i>Weighting</i>
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%

The practical section will be evaluated by lab reports, projects/presentations, activities and lab exams. The weighting of this section will be determined by the number of assignments collected along with their complexity.

The theory section will be evaluated with the following weighting: Tests (50%), quizzes (25%), homework assignments (20%), participation in-class (5%)

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

Examinations

There is a formal examination at the end of each term.

Course	December Exam	June Exam
Sec. 5 Physics	40% of Term 1 Theory	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	Value
1st Progress	November 09	None – Teacher comment
Term 1*	January 10	40%
2nd Progress	April 06	None – Teacher comment
Term 2	June 13	60%

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

Course Topics

Term 1

Kinematics & Dynamics

- 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)

Term 2

Energy and its transformations

- 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

Term 2

Geometric Optics

- Waves
- EM Spectrum
- Speed of light
- Reflection
- Refraction: Snell's Laws
- Images
- Critical Angle
- Mirrors
- Lenses
- Colour theory