

PHYSICS 112

Bonar Law Memorial School

2021–2022

Mr. B. Lynch

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TEXT and RESOURCES

- Text: Physics (McGraw–Hill Ryerson)
- Pens/pencils, paper, eraser/liquid paper, binder, ruler and protractor.
- Binder (daily work) and a Notebook or a duo–tang (assignments and laboratory data/reports)
- Scientific Calculator

SYLLABUS

Introduction – *Metric system, conversions, significant digits.* (one week)

Unit 1 – **Kinematics** (three weeks)

Vectors in a plane, vector and scalar quantities, describing motion, graphic representations of displacement, velocity and acceleration; constant, average and instantaneous velocity and relative velocities.

Unit 2 – **Dynamics** (four weeks)

Inertia, common forces, Inertia and Newton’s First Law, Motion and Newton’s Second Law, Reaction Forces and Newton’s Third Law, Impulse and Momentum.

Unit 3 – **Work and Energy** (four weeks)

Work and Energy, Kinetic and Potential Energy, Work–Energy Theorem, Power and Efficiency, energy transformations, and Conservation of Total Energy.

Unit 4 – **Waves** (four weeks)

Vibrations, wave behaviour, interference of waves, Doppler effect, waves in two dimensions, sound and electromagnetic waves, speed of waves.

EVALUATION

Your **final grade** will be based on the following scheme:

- Semester mark 70%
- Final Exam (January 2022) $\frac{30\%}{100\%}$

Semester mark will be calculated based upon the following scheme:

- Tests and Quizzes 80% (translates to 56% of final grade)
(1 quiz per week and 1 test every 2–3 weeks)
- Assignments and Lab Reports 15% (translates to 10.5% of final grade)
(1 assignment every 1–2 weeks and 1–2 lab reports per term)
- Homework 5% (translates to 3.5% of final grade)

Students must obtain a minimum mark of 60% to receive credit for this course.

Please note: According to the BLMS Exam Incentive, if you have earned a Semester mark > 85% in Physics 112, the final grade may also be computed by weighting the exam to be 15%, 30%, or 50%, and whichever scheme works in the student's favour will be recorded as the final grade.

Absenteeism and Marks

A legitimate written excuse from a parent or guardian for illness or medical appointments will be required to circumvent the penalization of marks due to the lateness of an assignment or a test. See BLMS Assignment Tardiness Policy.

This course is academic in nature and is intended to prepare you for post-secondary studies that include the study of physics. There will be a significant amount of work assigned outside of class time. Students should be self-motivated and capable of independent work.

EXPECTATIONS

- You are expected to be in class on time each day with all your materials.
(these include: pen, pencil, paper, scientific calculator and text)
- You are expected to treat others with respect and dignity. You are expected to contribute to a positive learning environment.
- You are expected to work the entire period to the best of your ability.
- This course will include in-class assignments (open book) that will be completed individually only during class time. Homework will also be assigned on a regular basis and students will be expected to have it completed at the beginning of each class.
- When you miss a class it is **your** responsibility to get caught up on your own time. This means you may have to call a classmate at home to receive the work missed or you may have to make arrangements to stay for extra help.
- If you miss a test or an in-class assignment you must write it when you return to school at a time arranged by the teacher.
- **ALL WORK** must be handed in and **ALL TESTS** must be written.
- If at **any** time a student is having difficulty, **extra help** is available upon request. Students are **always** welcome for extra help. I am available at lunch hour or after school.

If it moves... it's Biology.

If it stinks... it's Chemistry.

If it doesn't work... it's Physics!

~ *The hardest thing to understand is why we can understand anything at all.* ~

– *Albert Einstein*

