

Mr. Hazlewood

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Grade 12 Physics

Physics 40S – Course Outline

Credit Value: 1 Credit**Course Code:** 0123**Prerequisites:** None**Textbook:** Edwards, L. et al. Physics. McGraw-Hill. Whitby, ON. 2003.***Textbooks will be shared between students, and for the most part are not to be removed from the classroom unless permission has been given.***Tidbits of wisdom from the world of physics...**

"Put your hand on a hot stove for a minute, and it seems like an hour. Sit with a pretty girl for an hour, and it seems like a minute. THAT's relativity."

- Albert Einstein

"The difference between genius and stupidity is that genius has its limits."

- Albert Einstein

Course Description

Physics 40S is a course designed to build upon some of the basic understandings learned in physics 30S, and introduce students to a more in depth look at the world around us.

While many people see physics as a mathematical approach to science, this alone is not the focus.

Physics is defined as the science that deals with matter, energy, motion and force, but in reality it is much more than that. Physics attempts to understand relationships between certain things, and then create models that help make predictions for further interactions.

The difficulties in physics for many students occur when we try to represent these relationships. While mathematical formulas will be a major focus, there are also graphical, visual, and symbolic ways of showing the same thing. An ability to manipulate mathematical formulas is not the only requirement for success in this course. To do well, students will need to use critical thinking skills and logical reasoning to explain results of some common relationships.

Our focus for this course will be a hands on approach to using scientific methods to solve problems. We will complete a number of performance assessments, which are opportunities for you to demonstrate the topics we are learning about. Each student will also complete an inquiry project on a physics topic of their choosing.

Course Timeline

Section 1: Mechanics

Topic 1: Kinematics & Dynamics

Feb. 3rd – 27th

Topic 2: Momentum & Motion

Mar. 2nd – 26th

Topic 3: Work & Energy

Apr. 6th – 30th**Section 2: Fields**

Topic 1: Space & Earth Orbit

May 1st – 12th

Topic 2: Electric & Magnetic Fields

May 13th – 27th**Section 3: Electricity**

Topic 1: Electric Circuits

May 28th – June 3rd

Topic 2: Electromagnetic Inductors

June 3rd – 18th

****Review for Final Exam****

Assessment – curriculum available at <https://www.edu.gov.mb.ca/k12/cur/index.html>
Course Work (70%) – Each topic will have multiple formative assessments to help students recognize areas of strength and areas to continue to improve on. There will also be at least one summative assessment in each topic that will be weighted based on the amount of time spent on that section. Larger sections that the class finds interesting will have larger assessments worth a greater percentage of the course mark. Final mark will be a percentage grade.

Final Exam (30%) – The final exam is cumulative, and will focus on material covered on various topic assessments. There will also be questions regarding the performance assessments as well as the inquiry project.

Academic Dishonesty – any act of cheating, plagiarizing, or copying of work by a student will result in stiff penalties. The first offense will be a choice of zero on the assignment or a redo at my convenience, as well as a letter sent home to your parents. The second offense will be an automatic zero, with a referral to administration for any further discipline.

Late Assignments – There are no assignments in this course. Performance assessments and inquiry projects are due on or before the date set. Other than medical emergencies and prior arrangements, failure to do so will result in a grade of 0.

Missed Assessments & Rewrites – Any missed assessment will be given a grade of 0 unless valid reasons are given (eg. *hospitalization*). A student who misses an assessment will be required to complete it during the lunch hour (or spare) **on the day they return to school**. Assessments can be rewritten upon the request of the student, but will only be granted after that student has earned the opportunity. This requires attendance at lunch (or spare) for extra help and practice, as well as multiple formative assessments in order to demonstrate sufficient understanding.

Attendance – Please attend class. If you miss a class it is your responsibility to catch up on missed work. If you need extra help I am available most lunch hours upon request. Missing 10 classes will result in a meeting with parents and principal to determine status in the course.

Technology – Cell phones are only to be used in class when instructed to do so. All students will be required to hand in phones at the beginning of each class.

Class Expectations – Be on time for class, with all required materials. Be involved in class discussions and complete all assigned work. Ask for extra help when needed or when missing class.