

AP Physics 20 Course Outline

Mr. A Linville



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[school of science and technology]

Nuts and Bolts Info:

- Room 166; Contact info: I can be found in room 166 during class time or via phone at (780) 469-1315. Physics 20 is a 5 credit course and the prerequisite is 50% in Science 10. For the AP course, **it is strongly recommended that you have at least 65% in Science 10 and Math 10 C.**
- Check the course website at www.linville.ca

Necessary Materials:

Students are required to bring a scientific calculator, textbook, notebook, pencil and eraser and any completed homework everyday. Graph paper will be useful; a limited amount will be available in class.

Purpose/Goals/Objectives:

This course will meet the Alberta Physics 20 program of studies and will be supplemented by some topics from the AP Physics program. AP Physics is not a harder course than the regular program; it is designed to be **more challenging**. The challenge comes from the nature of the concepts and the fact that there is more material covered in the same amount of time.

Scope and Sequence:

The Alberta Physics 20 course consists of four units covering the concepts of kinematics, dynamics, circular motion, energy conservation, and simple harmonic motion and waves. Topics from the AP curriculum will be added to the regular Alberta course. Since this is a more challenging course, students can count on spending an average of 2 to 5 hours a week on homework and assigned reading. Approximately 25% of the AP course will be lab activities.

Assessment, Evaluation/Grading Policies:

The mark for each unit will be calculated from the Alberta Physics 20 curriculum material using the following breakdown:

Unit Exam	70%
Quizzes, Assignments & Labs	30%

Assignments, including labs, that have not been handed in or omitted by the end of the current unit of study will receive a mark of 0.

Unit & Concepts	Chapters	Weighting (% of course)
1. Kinematics (Alberta program)	1, 2	15
2. Dynamics (Alberta program)	3, 4	20
3. Circular Motion & Energy (Alberta program) Torque (AP content)	5, 6	15
4. SHM, Waves (Alberta program) Skills Quiz	7, 8	10 10

Final Exam

30

At the grade 11 level, homework assignments and labs are expected to be handed in on time. If you miss a lab, an alternate activity **must** be completed. If you miss a unit exam, you will be given an opportunity to write an **alternate exam at the end of the course.** If you miss a quiz,

no alternate quiz will be given. Please read the school assessment policy concerning plagiarism and missed exams.

Replacement Exam Policy

To be eligible for a replacement exam, students are required to have completed at least 90% of all homework including labs. The original exam has to be 15% or more below the current mark in the course and that the student must have completed all the labs and homework. When the replacement exam is written is at the discretion of the teacher.

Lab investigations are an important part of both Physics 20 and AP Physics. It is required by both the Alberta and AP curricula that students demonstrate their ability to collect, organize, analyze and then interpret data and clearly communicate their results. Because of this, I require that students approach the labs in a responsible manner. You will not be exempt from labs. Real data or computer simulations of the labs are available on the class website and will be graded according to the same criteria as the in-class labs.

	Regular Physics 20	AP Physics 20AP
Offered	Semester	Semester
Curriculum	Alberta Curriculum	Alberta Curriculum + additional units on Torque and Rotational Statics (AP curriculum)
Testing	Alberta curriculum + common Physics 20 Final	Alberta Curriculum + common Physics 20 Final
Labs	1-2 per unit	same labs as Physics 20 + AP material
Credit	Physics 20	Physics 20

F.I.R.S.T.

The FIRST component of this course will include extensions to the Alberta content such as investigations of dark matter, black holes, computer simulations of projectile motion, planetary motion, and if time permits, a field trip to investigate the physics of amusement parks rides.

The AP Exam

The AP Physics 1 Exam is 3 hours long, divided equally between a 50-question multiple-choice section and a 5 question free-response section. One of the 5 questions will be a paragraph-length argument. The two sections are weighted equally, and a single score is reported for the exam.

Other Supporting Info:

It is strongly recommended that you have at least 65% in Math 10C. The following math skills are **essential for success in both regular Physics 20 and AP:**

- formula manipulation
- trigonometric ratios
- properties of linear functions
- graphing quadratic functions
- graphing inverse-square functions
- the properties of sinusoidal functions over a single period
- vector components

If you are absent for ANY reason, it is **your** job to find out what was missed and to catch up; the text book is a very good source of information and worked out examples. As your teacher, I will be working very hard this semester to ensure that you have every chance to be successful. I care very much about your success; however, it is unfair to expect me to care more about your education than you. The marks awarded for exams, etc. will be posted in the class and it is your responsibility to ensure that these are recorded properly.