



Dr. E. P. Scarlett High School Physics 20 AP a.k.a. Physics I



Course	
Pre-Requisite	Minimum 50% in Science 10 AP or permission from Science 10 teacher Mathematics 10C is strongly recommended
Textbook	Cutnell & Johnson 11 th ed. Physics
Supplies	Binder, loose-leaf paper, graph paper, scientific calculator, pens, pencil, eraser, transparent ruler

Teacher(s)	E-mail	Room
Connie Wiebe	cmwiebe@cbe.ab.ca	154

TEACHER COMMUNICATION: Teachers will respond to e-mail within two business days. E-mail is the best way to contact teachers.

COURSE DESCRIPTION:

Physics 20 AP is a prerequisite for Physics 30 AP which is a diploma course meant for students who want to earn a post-secondary degree in the field of science. Physics 20 AP students will investigate changes in the position and velocity of objects and systems in a study of kinematics and then investigate causes of change in the position and velocity of objects and systems through a study of dynamics and gravitation. Their study of kinematics and dynamics will then be extended to uniform circular motion and to mechanical energy, work and power. Physics 20 AP students will also investigate simple harmonic motion and mechanical waves.

In addition to the Alberta Physics 20 curricular outcomes covered by the topics mentioned above, Physics 20 AP students will also investigate topics surrounding momentum and rotational mechanics as part of the AP Physics I curriculum. Students will have the opportunity to write the AP Physics I exam on Thursday, May 11, 2023 at 12 PM local time.

LEARNER OUTCOMES:

- **Attitudes** - Students will be encouraged to develop attitudes that support the responsible acquisition of application of scientific and technological knowledge to the mutual benefit of self, society and the environment - interest in Biology, mutual respect, scientific inquiry, collaboration, stewardship & safety
- **Knowledge** - Students will construct knowledge and understandings of concepts in life science, and apply these understandings to interpret, integrate and extend their knowledge
- **Science, Technology and Society (STS)** - Students will develop an understanding of the nature of science and technology, the relationships between science and technology and the social and environmental contexts of science and technology
- **Skills** - Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively and for making informed decisions.
- Alberta Learning: <https://education.alberta.ca/science-10-12/programs-of-study/>

EXTRA SUPPORT:

- Students should make use of class time to ask for help
- Teachers are available in their classrooms at 8:30am (Mon – Thurs) for extra help
- Science help room is available 8 – 8:30 Monday through Thursday and Tuesdays 12 - 12:30 in room 151
- If additional support is still needed, students should make appointments with teachers.

LEARNER ASSESSMENT:

- Learning is an ongoing process. Teachers will use a variety of instructional tools and assessments to help students understand the Program of Study outcomes.
- Teachers will post grades in Powerschool which is available for students and parents to view

Unit	Weighting	Textbook Chapter
Kinematics	10.5%	2, 3
Dynamics	14%	4
Circular Motion and Gravity	14%	5, 4
Momentum	AP topic	7
Rotational Mechanics	AP topic	8, 9
Energy	10.5%	6
Oscillatory Motion	10.5%	10
Mechanical Waves	10.5%	16
Final Exam	30%	

CLASS EXPECTATIONS:

- Regular attendance and a readiness to actively engage with the course content
- This is an in-person course. D2L is used for online support and may include instructions and resources.
- Learning is a process which builds on prior knowledge, as a result effective study habits are required.
- When learning complex ideas, sustained motivation and cognitive engagement are required to maintain considerable mental effort. As a result, cell phone use should be minimal and appropriate for the school environment
- Academic Integrity - a commitment to the regular and honest completion of work (ie. no cheating or copying from peers or the internet). Students and parents are required to be familiar with academic integrity policies found on the school website (<https://school.cbe.ab.ca/school/DrEPScarlett/teaching-learning/program-approach/academic-integrity/Pages/default.aspx>).
- Students are required to complete all assessments, even when absent.
- Reasons for unavoidable absences should be communicated to teachers. It is the student's responsibility to arrange with their teacher, to make up missed assessments

SAFETY:

- Students will follow all Laboratory Safety rules each time they are in a science classroom
- Laboratory safety rules are posted in classrooms and in D2L shells
- Students will complete a Laboratory Safety course in D2L prior to conducting any labs.

LABORTORY OPPORTUNITIES:

- Students will have the opportunity to participate in the following labs:
 - Uniform circular motion
 - Period of a pendulum
 - Speed of Sound
- Additional labs may be included if resources and time allow

POSSIBLE ADDITIONAL RESOURCES:

- Various Physics-related YouTube videos, TED talks, Phet simulations (<https://phet.colorado.edu/>), The Mechanical Universe videos