

PHYSICS
Science
Remedial Activities for Secondary V Physics
203-001-RE (all sections)
Fall 2019

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Pre-requisites High School Physics 553-504 (grade less than 70%), or High School Sec IV Science 558-404 or 402, or Physical Science 436 or CEGEP 982-003-50

Co-requisites Remedial Activities for Sec V Mathematics (201-015-50)

Ponderation 3-2-3 (3 hours of lecture, 2 hours of labs, and 3 hours of work outside class for each 5 hours of class time)

Course objectives This course is a prerequisite for Mechanics (203-NYA-05), the first physics course in the Science Program. It aims at developing the basic knowledge and skills needed to succeed in Mechanics and in the Science Program. It also provides an opportunity for students to develop problem-solving skills.

Course competencies This course will allow the student to fully achieve the competency:

01PV: Analyze different situations based on the fundamental principles of classical mechanics and geometric optics.

1. Solve problems by using uniform rectilinear motion and uniformly accelerated rectilinear motion.
2. Solve problems by using the principles of dynamics.
3. Solve problems that involve the conservation of mechanical energy.
4. Solve problems by using the fundamental principles of geometric optics.
5. Verify, using the experimental approach, several laws or principles of classical mechanics and geometric optics.

Evaluation The Institutional Student Evaluation Policy (ISEP) is designed to promote equitable and effective evaluation of student learning and is therefore a crucial policy to read and understand. The policy describes the rights and obligations of students, faculty, departments, programs, and the College administration with regard to evaluation in all your courses, including grade reviews and resolution of academic grievance. ISEP is available on the Dawson website.

There are two grading schemes. **Your final grade will be the higher of the two schemes.**

Assignments, quizzes and class tests [†]	50%	30%
Laboratory activities	20%	20%
Final examination	30%	50%

[†]Your teacher will provide a detailed breakdown of these components and a tentative test schedule during the first week of class.

In order to pass the course, students must show a basic understanding of the course material at the level covered in the lectures and in the lab. This is achieved by attaining a final grade of at least 60%, calculated according to the evaluation scheme above. **Note: course work not submitted by the due date may be penalized at the teacher's discretion.**

Important note: To advance in the ESP or DSP programs, students must obtain a final grade of at least 70%.

Reference materials	<ol style="list-style-type: none"> 1. Physics, Remedial Activities for Secondary V Physics (with Mastering Physics), 203-001-50. The second edition of this custom textbook is available at the Dawson College Bookstore (it has a light bulb on the cover) and includes an access code for the online homework system. The book consists of chapters taken from College Physics: A Strategic Approach, 3rd edition, by Randall D. Knight, Brian Jones, and Stuart Field published by Pearson Education (2016) . 2. Library copies: Copies of the textbook are available on reserve in the Dawson Library (as are similar textbooks by Serway & Jewitt, <i>etc.</i>)
Teaching methods	The material will be presented using a mix of active learning activities, lectures, in-class problem solving, laboratory experiments and demonstrations. Laboratory periods will be used for experiments as well as class tests and lectures.
Attendance & participation	<p>Although class attendance is not compulsory, students should make every effort to attend all classes. In the event that a class is missed, the student is responsible for all material covered or assigned during that class. Attendance during laboratory experiments and for class tests is however compulsory. In the rare event that a student for valid reason (<i>e.g.</i> due to an intensive course, illness, <i>etc.</i>) is or anticipates to be absent during a laboratory experiment or for a class test, the student must, where possible, inform the teacher and provide the necessary documents before the absence or, at the latest, on the day of their return. If the absence is excused, students will have the opportunity to complete the assessment.</p> <p>All other assessments (readings, quizzes, lab activities, <i>etc.</i>) missed due to absence are:</p> <ul style="list-style-type: none"> • assigned a grade of zero where the absence is not excused; • given zero weight in the calculation of the final grade where the absence is excused. <p>For additional information regarding attendance, students should refer to the Institutional Student Evaluation Policy (ISEP section IV-C).</p>
Literacy standards	It is expected that students will be able to comprehend the course material and express themselves appropriately as a normal part of their academic performance in the course. Marks may be deducted for inadequate communication skills.
Laboratory work	Experimentation is an essential part of science. Students will be expected to perform experiments and report on their results. Your teacher will provide you with instructions for lab experiments and activities (there is no manual to purchase). Students must be present during the entire lab activity to receive credit.
Student conduct	Everyone has the right to a safe and non-violent environment. Students are obliged to conduct themselves as stated in the Student Code of Conduct and in the ISEP section on the roles and responsibilities of students (ISEP section II-D). Disruptions or excessive noise will not be tolerated. Students who do not comply with these rules will be asked to leave the class and may be referred to Student's Services for disciplinary action. Mutual respect is the key to a harmonious learning environment.
Academic integrity	Cheating, copying, or any other form of academic dishonesty will not be tolerated. Students should acquaint themselves with the policy of the College on plagiarism and cheating. According to ISEP, the teacher is required to report to the Sector Dean all cases of cheating and plagiarism affecting a student's grade (ISEP section V-C). The usual penalty for the first instance of cheating will be a grade of zero for the piece of work in question to all parties involved (under certain circumstances, even a first offence may be penalized by failure in the course). A second offence may result in the failure of the course. Students should note that using someone else's laboratory data without authorization from the student and the teacher is cheating.
Intensive course conflicts	If a student is attending an intensive course, the student must inform the teacher, within the first two weeks of class, of the specific dates of any anticipated absences.
Policy on religious observance	Students observing religious holidays must inform their teachers, in writing, as prescribed in the ISEP Policy on Religious Observances, no later than the end of the second week of the impacted semester or term. This applies both to the semester or term, as well as to any final examination period. (ISEP Section IV-D) Please refer to the academic calendar for the exact dates. Forms for this purpose are available from your teacher. Your teacher will inform you of any modifications to planned course activities resulting from the teacher's own religious commitments.

**Course
content**

The material to be covered is contained in the following chapters and sections of the text.

Weeks	Topics	Chapter & Section
1	Course introduction and math review	–
2	Representing motion	Ch.1: 1–6
2–4	Motion in one dimension	Ch.2: 1–7
4–5	Vectors and motion in two dimensions	Ch.3: 1–4, 6–8
6	Forces and Newton's laws of motion	Ch.4: 1–7
7–8	Applying Newton's laws	Ch.5: 1–8
9–10	Energy and work	Ch.10: 1–6, 8
11–14	Ray optics	Ch.18: 1–7
15	Optical instruments	Ch.19: 1–2