



**PHYSICS**  
**Physiotherapy Technology**  
**Physics for Physiotherapy Technology**  
203-946-DW (all sections)  
Fall 2017

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**Teacher** Chris Roderick 7A.10, local 4008, croderick@dawsoncollege.qc.ca

**Pre-requisites** Secondary IV Mathematics 563-404, Secondary V Physics 553-504

**Co-requisites** None

**Ponderation** 2-3-3 (2 hours of lecture, 3 hours of labs, and 3 hours of work outside class per week)

**Course objectives** This course will cover some of the basic concepts of biomechanics. Students will learn the laws governing motion, forces and their interactions, work, energy and rotation. These notions will be applied to problems involving equilibrium, movement, and the limits of the human body. Fundamental concepts of waves and electricity will also be covered as an introduction to therapeutic electrotherapy techniques.

Detailed information regarding the objectives and standards for the competencies related to this course and the specific performance criteria is available at <https://www.dawsoncollege.qc.ca/oad/professional-development/mini-sterial-program-documents/>.

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

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**Reference materials**

1. **Physics for the Life Sciences**, by Alan H. Cromer, McGraw-Hill.

**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**

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 (*e.g.* due to an intensive course, illness, *etc.*) 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.

All other assessments (readings, quizzes, lab activities, *etc.*) missed due to absence are:  
assigned a grade of zero where the absence is not excused;

**Course  
content**

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

Weeks	Topics	Chapters
0{1	Units, Vectors, and math review	1
1{3	Forces, static equilibrium, applications to physical rehab	2
4{7	Torque, equilibrium, more advanced applications	3
8	Physics of solids and biological materials	10
9{10	Energy and Power	5
11{12	Waves and Sound: Properties of waves, propagation, superposition, resonance, ultrasound therapy, <i>etc.</i>	12{13
13{14	Electricity: Current, voltage, circuits, safety, AC/DC, electrotherapy	17
15	Review	{

**Note:** The above schedule is tentative.

**Questions  
outside class**

All regular day program teachers will be available in their respective offices to their students during posted office hours. In the first week, your teacher will inform you of their schedule and will post it outside their office.

Room 7A.1 is the physics study room. At scheduled times, a teacher or peer tutor will be on duty there to answer your questions. The schedule of teachers and peer tutors will be posted outside of 7A.1 in the 2nd or 3rd week of term.