



**PHYSICS**  
**Analytical Chemistry**  
**Basic Circuits and Instrumentation**

203-925-DW (all sections)  
Fall 2018

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**Teacher**        **Jaime Sandoval** 7A.18, local 4016, j.sandoval@dawsoncollege.qc.ca

**Pre-requisites**    High School Sec IV Science 558-404 or 402, or Physical Science 436 or CEGEP 982-003-50

**Co-requisites**    None

**Ponderation**    1-2-1 (1 hour of lecture, 2 hours of labs, and 1 hour of work outside class per week)

**Course  
objectives**

**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.**

**Course content**

The material to be covered is contained in the following chapters and sections of the text as well as the pdf files available to the students from the instructor.

Weeks	Topics	
1{3	Work and energy, kinetic energy, potential energy, energy transfer, power	
4{7	Coulomb's law, electric field, electric potential	
7{10	Capacitance, Ohm's law, resistivity, light bulbs	
11{13	Kirchhoff's laws, series and parallel circuits, open and short circuits, power	
14{15	Magnetic force, mass spectroscopy	
Time permitting	RC circuits, inductance, solenoids, electronic component	

The lab work is an integral part of the course. Labs will be performed and will be taken from the following topics: electric field, Ohm's law, series and parallel resistors, Kirchhoff's laws, RC circuits, resistivity, identification of components and schematic diagrams. Students might also be asked to work on group projects to be completed by the end of the semester.