



DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2013

PC 2300 ELECTRICITY AND MAGNETISM - 3.0 (3-0-3/2) UT(3)

INSTRUCTOR: Dr. Robert (Bert) **PHONE:** 780-539-2008
Hunt P. Eng. FEC
OFFICE: C 414 **E-MAIL:** bhunt@gprc.ab.ca

OFFICE HOURS: MTWR noon-2 pm

PREREQUISITE(S)/COREQUISITE: PC 1240/1260, or PC 1300/1310 and MA 1130/1140 or MA 1000/1010, since students are expected to be able to handle simple differentiation and integration.

REQUIRED TEXT/RESOURCE MATERIALS: Fundamentals of Physics. Halliday, Resnick, and Walker.

CALENDAR DESCRIPTION:

Electrostatics, electric fields, Gauss' Law, electric potential, capacitance, Ohm's Law, DC circuits, Kirchoff's Laws, magnetic fields, Ampère's Law, electromagnetic induction, Faraday's Law, electric generators, magnetism, Maxwell's Equations and em waves.

CREDIT/CONTACT HOURS: 3 hours lecture per week and 3 hours lab every second week

DELIVERY MODE(S): COURSE OUTLINE

Chapter 21 Electric Charge and Coulomb's Law.

Chapter 22 Electric Fields.

Chapter 23 Gauss' Law.

Chapter 24 Electric Potential.

Chapter 25 Capacitance.

(Midterm)

Chapter 26 Current and Resistance.

Chapter 27 DC Circuits and Kirchoff's Laws.

Chapter 28 Magnetic Fields.

Chapter 29 Magnetic Fields Due to Currents.

Chapter 30 Faraday's Law and Induction.

Chapter 31 AC Circuits and Transformers.

Chapter 34 Magnetism and Maxwell's Equations.

TRANSFERABILITY: It is a University of Alberta Course.

**** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

GRADING CRITERIA:

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A⁺	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A⁻	3.7	80 – 84	FIRST CLASS STANDING
B⁺	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B⁻	2.7	70 – 72	
C⁺	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C⁻	1.7	60 – 62	
D⁺	1.3	55 – 59	MINIMAL PASS
D	1.0	50 – 54	
F	0.0	0 – 49	FAIL
WF	0.0	0	FAIL, withdrawal after the deadline

EVALUATIONS:	Assignments	15%	
	Laboratories	15%	
	Mid-Term Examination	20%	(Feb 12/2013)
	Final Examination	50%	(TBA)

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/**

**Note: all Academic and Administrative policies are available on the same page.

COURSE SCHEDULE/TENTATIVE TIMELINE:

Lectures	T R	11:30 - 12:50 p.m.	J227
Laboratory	TBA	2:30 - 5:20 p.m.	J103

LABORATORY COMPONENT

Lab #	Content	Week of
1	Electric Potential	Jan. 21
2	Capacitance	Feb. 4
3	Ratio of e/m	Feb. 25
4	Ohm's Law/Resistance	Mar. 11
5	Electromagnetism	Mar. 25

FORMULA SHEET PROVIDED !!