

Grande Prairie Regional College

Department of Science

PC2300 ELECTRICITY AND MAGNETISM 3.0 (3-0-3/2) UT(3)

Lectures	T	4:00 - 5:20 p.m.	J226
	R	4:30 - 5:50 p.m.	J226
Laboratory	F	2:30 - 5:20 p.m.	J103

INSTRUCTOR:	Dr. Robert Hunt, P.Eng.		
OFFICE:	C414		
PHONE:	539-2008/532-1338 (GPRC/HOME)		
E-MAIL:	hunt@gprc.ab.ca		
TEXT:	Fundamentals of Physics. Halliday, Resnick, and Walker (4th or 5th Edition).		
COURSE CONTENT:	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.		
PRE-REQUISITE:	PC 1300 and either MA 1130 or MA 1000.		
CO-REQUISITE:	Is either MA1140 or MA1010 since students are expected to be able to handle simple differentiation and integration.		
MARK DISTRIBUTION:	Assignments	15%	
	Laboratories	15%	
	Mid-Term Examination	20%	(Feb 20/2002)
	Final Examination	50%	(TBA) Formula sheet provided

COURSE OUTLINE

Chapter 23	Electric charge, conductors, insulators, induction, and Coulomb's Law.
Chapter 24	Electric fields.
Chapter 25	Gauss' Law.
Chapter 26	Electric potentials.

PC2300 Course Outline

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Chapter 27 Capacitance, parallel and series, energy and dielectrics.

(Midterm)

Chapter 28 Current, resistance, Ohm's Law, energy and power.

Chapter 29 Emf, current, DC circuits, and Kirchoff's Laws.

Chapter 30 Magnetic Field, Hall Effect, moving charge/motion and torque/forces in current carrying wires.

Chapter 31 Magnetic field and force, Ampère's Law and solenoids.

Chapter 32 Faraday's Law, Lenz's Law, and induction.

Chapter 33 Inductance, energy of a magnetic field and mutual induction.

Chapter 34 Magnetism and matter.

Chap. 37/38 Maxwell's equations and em waves.

LABORATORY COMPONENT

Lab #	Content	Week of
1	Electric potential	Jan. 7
2	Capacitance	Jan 14
3	e/m	Feb. 4
4	Ohm's Law/Resistance	Mar. 4
5	Electromagnetism	Mar. 11

GRADING GUIDELINES

Percent (Approx.)	Grade
90 - 100	9
80 - 89	8
72 - 79	7
65 - 71	6
57 - 64	5
50 - 56	4
45 - 49	3
26 - 44	2
0 - 25	1

(Cambridge System)

