



DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2015

PC 1260 FLUIDS, FIELDS AND RADIATION – 3.0 (3-0-3) UT (3)

INSTRUCTOR: Dr. Robert (Bert) **PHONE:** 780-539-2008
Hunt P. Eng., FEC,
FGC (Hons.)

OFFICE: C414 **E-MAIL:** bhunt@gprc.ab.ca

OFFICE HOURS: M 1-3 pm TW 2-3 pm RF 3+ pm PC Lab in J103

PREREQUISITE(S)/COREQUISITE: PC1240

REQUIRED TEXT/RESOURCE MATERIALS: PHYSICS Walker 4th Edition

CALENDAR DESCRIPTION:

This course is a continuation of PC1240 for students in life and medical sciences. It includes fluid statics and dynamics; electrostatics; current and circuits; magnetic field; electromagnetic induction; nuclear radiation, its interaction with matter and applications.

CREDIT/CONTACT HOURS: 3 hours lecture and 3 hours lab a week

DELIVERY MODE(S):

COURSE OUTLINE

Chapter 15	Pressure, buoyancy, fluid flow and viscosity.
Chapter 19	Charge, Coulomb's Law, electric field and conductors.
Chapter 20	Electric potential, capacitance, dielectrics and applications.
Chapter 21	Electric current, resistance, Ohm's Law, DC, AC and electrical energy. Resistors in series and parallel, Kirchoff's Laws and hazards.
Chapter 22	Magnetic fields, magnetic forces and current-carrying conductors.
Chapter 23	Induction, Lenz's Law, generators and transformers.
Chapter 24	Reactance, RLC circuits and resonance.
Chapter 32	Nuclear energy, radioactivity, decay and applications.

TRANSFERABILITY: It is a University of Alberta Transfer 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	20%	
	Mid-Term Examination	20%	(Feb. 12/15)
	Final Examination	45%	(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:

Lecture	M W	8:30 - 9:50 a.m.	J202
Laboratory	R	2:30 - 5:20 p.m.	J103

LABORATORY COMPONENT

Lab #	Content	Day
11	Fluid Properties	Jan. 15
12	Terminal Velocity	Jan. 22
13	Coulomb's Law	Jan. 29
handout	Inverse Square Law	Feb. 5
14	Mapping of Electric Fields	Feb. 26
15	Capacitance	Mar. 5
16	Simple Electric Currents	Mar. 12
17	e/m for Electrons	Mar. 19
18	Magnetic Fields	Mar. 26
handout	Balmer Series	Apr. 2