GRANDE PRAIRIE REGIONAL COLLEGE
ACADEMIC UPGRADING DEPARTMENT

PHYSICS 0120
COURSE OUTLINE

INSTRUCTOR: Nancy Fraser

OFFICE: J - 216

PHONE NUMBER: 539-2980

E – MAIL: nfraser@gprc.ab.ca

OFFICE HOURS: As posted office hours. If the posted times do not fit with your schedule alternate times can be arranged. IF YOU ARE HAVING TROUBLE COME FOR HELP IMMEDIATELY!!!

PREREQUISITES: PC 0110 OR SC 0110, MA 0110

COREQUISITES: MA 0120

COURSE GOALS: This course is designed to give the student an understanding if some basic concepts and principles of physical science involving kinematic, centripetal force, gravity, gases, and water, sound, and light waves. The student will develop problem solving skills and gain an appreciation of the role of physics in modern society.

REQUIRED
TEXT: **College Physics by Wilson** (2003, 2000, 1997, or 1994 editions)
The course outline is for the most recent edition but if you can get an old edition cheap, it will work fine.

Supplementary texts:

1.   Elements of Physics by Smith and Copper (1979)
2.   Physics: Principles and Problems, by Zitzewitz (any edition)
3.   Modern Physics by Trenklein (1990, and 1994)

FORMAT: This course will mainly be presented in a lecture format. There will also be a lab component and problem sessions.

ATTENDANCE
POLICY: Regular attendance is expected of all students, and is crucial to passing the course. Students who miss classes will soon find themselves falling behind and failing. Lateness will not be tolerated as it interrupts the instructor and fellow classmates. As per Department Policy, if you miss more than   15 days per semester (approximately one day/week) in any course, you may be debarred from the final exam for that course.
If a student is going to miss a test or midterm he or she **must** contact the instructor prior to the test or midterm in order to be considered for a rewrite. Laboratory attendance to each specific experiment is compulsory. There are NO 'makeup' labs in this course. Missed labs will result in a grade of 0 %.

EVALUATION: Lab reports must be submitted on the required date and at the required time.

Penalties for late **assignments** are as follows:

1 day late – 20%, 2 days late – 50%, three days late – 100%

Penalties for late **labs** are as follows:

Five minutes after due time - 10%, 24 hours after due time - 100%
Your final mark will be based on:

assignments		15%
labs	15%	
midterm 1		15%
midterm 2		10%
tests		10%
Final Exam	35%	
Total		100%

*   There will be two 'midterm' exams. The first midterm will occur at the end of Unit 2 and the second at the end of Unit 5.

**   The final exam will be based on all the material after the first midterm.

PLAGIARISM
AND CHEATING
POLICY: See College Calendar.

GRADING EQUIVALENCE THAT WILL BE USED IN THIS COURSE:

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	76 – 79	
B	3.0	73 – 75	GOOD
B⁻	2.7	70 – 72	
C⁺	2.3	67 – 69	SATISFACTORY
C	2.0	64 – 66	
C⁻	1.7	60 – 63	
D⁺	1.3	55 – 59	MINIMAL PASS
D	1.0	50 – 54	
F	0	0 – 49	FAIL

COURSE CONTENT

Unit 1:   **Kinematics:**

i)	vectors; resultant - components of a vector.	63 - 68, 72 – 77
ii)	relative velocity.	79 – 84
iii)	motion in two dimensions	
iv)	projectile motion.	84 – 94
vi)	balanced and unbalanced forces - net force	103 – 122,116,120
vii)	motion along an incline plane (including friction)	122 – 128
viii)	work done in moving a load on an incline plane when the force is parallel to the incline.	138 – 141
x)	kinetic and potential energy and conservation of energy	150 - 167
ix)	power	167 - 169

Unit 2:   **Circular Motion and Gravitation:**

i)	centripetal acceleration and centripetal force	217 – 224
ii)	derive the related formulae	
iii)	circular motion in horizontal and vertical planes (as time permits)	
iv)	Kepler's three laws	235 – 238
v)	Newton's law of gravitation	227
vi)	planetary and satellite motion, period of a satellite, weight in space (as time permits)	"
vii)	mass of a planet from satellite from satellite data. (as time permits)	"

***   Midterm 1

Unit 3:   **Gases:**

i)	Kinetic molecular theory	348
ii)	Charles' law	338
iii)	Boyle's law	"
iv)	Combined gas law	"

Unit 4: **Waves:**

Unit 5: **Sound: (Chapter 14)**

*** Midterm 2

Unit 6: **Light:**