GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE

PHYSICS 1430

WAVE MOTION AND ELECTRICITY
Information and Course Outline
WINTER SEMESTER, 1993-94

Introduction:

PHYSICS 1430 is the first semester of a two semester calculus based first year physics sequence. Together with PHYSICS 1410 it fulfils the first year physics requirement for any science program. The course covers the major topics in oscillations; wave motion; sound waves; electric charge; electric field; electric potential; Gauss' Law; capacitance; electric current; electromotive forces and D.C. circuits.

Instructor:

D. Mittra
Office: J215
Telephone: 539-2981

Class Schedule:

Lecture	M/W/F	10:00 - 10:50	J 204
Seminar	R	~~9:30 - 11:00~~ 1:30 - 3	J 228
Laboratory	M	15:00 - 17:50	J 103

Prerequisite: PC 1410

Corequisite: MA 1150

Texts:

Physics for Scientists and Engineers, 3rd ed.(Revised), Raymond A. Serway Saunders College Publishing, 1990.
Physics 1410/1430 Laboratory Manual

Student Evaluation:

Assignments	10%
Quizzes	15% (6 at 2.5% each)
Midterm Test	20%
Laboratory	15%
Final Exam	40%

A passing mark in the lab is required to obtain a passing mark in the course.
Assignments will be given on a weekly basis as indicated in the attached schedule.
Quizzes will be given during the seminar hour as indicate in the attached schedule.

Lab Schedule:

Laboratory exercises will be performed during the laboratory hour according to the schedule below. Lab reports are to be written in a hard bound lab book and to be handed in for marking one week after the lab is performed.

LAB	DATE	EXPT. #	TITLE
1	Jan 10	14	Standing Waves
2	17	15	Speed of sound
3	24	16	Coulomb's Law
4	Jan 31	17	Mapping of Electric Field
5	Feb 7	19	Capacitance
6	Feb 28	21	Charging and Discharging a Capacitance
7	Mar 7	20	Ohm's Law
8	14	Handout	Millikan Oil Drop
9	21	18	Oscilloscope
10	28	Handout	Specific Charge of Electron

PHYSICS 1430 **DETAILED COURSE OUTLINE AND TEST SCHEDULE**

Week No. 1 Jan 5	INTRODUCTION Chapter 13 - Oscillating Motion Sections 13.1 - 13.3
Week No. 2 Jan 11	Chapter 13 Sections 13.4 - 13.6 Chapter 16 - Wave Motion Sections 16.1 - 16.3
Week No. 3 Jan 18	Chapter 16 Sections 16.4 - 16.8
Week No. 4 Jan 25	Chapter 17 - Sound Waves Sections 17.1 - 17.5
Week No. 5 Feb 1	Chapter 18 - Superposition and Standing Waves Sections 18.1 - 18.5 & 18.7
Week No. 6 Feb 8	Chapter 23 - Electric Field Sections 23.1 - 23.8
Week No. 7 Feb 15	Chapter 24 - Gauss' Law Sections 24.1 - 24.6
Week No. 9 Mar 8	Chapter 25 - Electric Potential Sections 25.1 - 25.8
Week No. 10 Mar 15	Chapter 26 - Capacitance Sections 26.1 - 26.6
Week No. 11 Mar 22	Chapter 27 - Current & Resistance Sections 27.1 - 27.7
Week No. 12 Mar 29	Chapter 28 - D.C. Circuits Sections 28.1 - 28.8
Week No. 13 Apr 5	Various Problems & Review