

A. Division: ACADEMIC Date: August 25th, 1983.

 B. Department: SCIENCES AND MATHEMATICS New Course: 

 Revision of Course Information Form: 

 Dated: June, 1980

 C. PHY 421 D. Laboratory in Electric Circuits E. 2  
 Subject & Course No. Descriptive Title Semester Credits

 F. Calendar Description:  
  
 This laboratory course consists of experiments on the operation and application of an oscilloscope, alternating current circuits, and the transistor. In addition, there are lectures and demonstrations on instrumentation and measurement.

 Summary of Revisions:  
 (Enter date and Section Revised)  
 e.g. 1982-08-25  
 Section C,E,F, and R.  
  
 1983-09-25, Section H  
 1983-09-25, Section I  
 1983-09-25, Section M

G. Type of Instruction:	Hours Per Week / Per Semester
Lecture	_____ Hrs.
Laboratory	<u>3</u> Hrs.
Seminar	_____ Hrs.
Clinical Experience	_____ Hrs.
Field Experience	_____ Hrs.
Practicum	_____ Hrs.
Shop	_____ Hrs.
Studio	_____ Hrs.
Student Directed Learning	_____ Hrs.
Other (Specify)	_____ Hrs.
<b>Total</b>	<u>3</u> Hrs.

 H. Course Prerequisites: 01 201  
 PHY 210 (or PHY 100 and 200 with an average of A or B or permission)

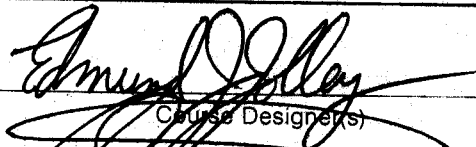

 I. Course Corequisites:  
 PHY 420

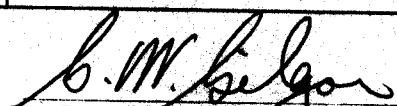
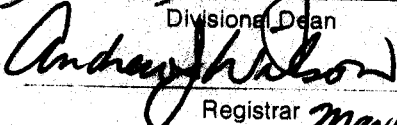
J. Courses for which this Course is a Pre-requisite:

 K. Maximum Class Size:  
 12

 L. College Credit Transfer   
 College Credit Non-Transfer   
  
 Non-Credit 

 M. Transfer Credit: Requested   
 Granted   
  
 (Specify Course Equivalents or Unassigned Credit as Appropriate)  
 U.B.C.-(i) with PHY 420, Physics 215  
 .or (ii) with PHY 321, one unit in Physics  
 U. Vic- with PHY 420, Physics 214  
 S.F.U.- Physics 234

  
 Course Designer(s)  
  
 Director / Chairperson

  
 Divisional Dean  
  
 Registrar Mar 19/84

Subject and Course Number

## N. Textbooks and Materials to be Purchased by Students (Use Bibliographic Form):

Douglas College, Manual for Physics 421, 1982 (loaned from Physics Laboratory)

Complete Form with Entries Under the Following Headings: O. Course Objectives; P. Course Content;  
Q. Method of Instruction; R. Course Evaluation

O. COURSE OBJECTIVES:

The student will:

- a) demonstrate an understanding of the physical concepts investigated during the experiments;
- b) be able to construct the circuits required for the performance of the experiments, analyze these circuits, and organize and interpret the data obtained;
- c) be able to write formal laboratory reports in a conventional format required of submissions to scientific journals.

P. COURSE CONTENT:

- Experiments:
- (a) Introduction to the Oscilloscope/Alternating Voltage and Frequency Measurements
  - (b) Charging and Discharging of a Capacitor
  - (c) Application of Oscilloscope to Phase Measurements and Examination of Rectification
  - (d) Resistance - capacitance (RC) Circuits: Voltage and Current Relations
  - (e) Resistance - capacitance Circuits: Phase Relations
  - (f) Resistance - inductance (RL) Circuits: Voltage and Current Relations
  - (g) Resistance - inductance Circuits: Phase Relations
  - (h) RLC Series Circuit/Resonance
  - (i) Oscillations
  - (j) Transistor Characteristics

Q. METHOD OF INSTRUCTION:

This is a laboratory course and, therefore, the time involved will be devoted to the performance of experiments by the students. There will also be occasional demonstrations of the operation of experimental apparatus and lectures/discussions by way of preparing the students for the experiments.

R. COURSE EVALUATION:

Thirty percent (30%) of the final grade assigned for the course will be based upon student performance on a final examination: seventy percent (70%) will be based upon seven, equally-weighted reports submitted on the experiments performed.