

A. Division: Educational & Student Services Division Date: March 2, 1988

 B. Department: Student Services & Developmental Education New Course:

 Revision of Course Information Form:

 Dated: January 17, 1990

 C. DVST 476 D. Physics - Advanced Level E. 5
 Subject & Course No. Descriptive Title Semester Credits

F. Calendar Description:

This course will introduce the student to the study of physics. Topics are selected from four major areas of study: mechanics, heat, electricity and wave phenomena and will include vectors, statics, kinematics, dynamics, work, energy, power, simple machines, circular motion, heat, temperature, thermal properties of matter, Coulomb's Law, electrical field, potential difference, Ohm's Law, circuitry, types of waves, wave equations, photo-electric effect and the Bohr model of the hydrogen atom.

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

K

G. Type of Instruction:	Hours Per Week / XXXXXX XXXX
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)	<u>4</u> Hrs.
Total	<u>7</u> Hrs.

H. Course Prerequisites:
 DVST 370 or permission of instructor (Algebra 11 or DVST 410 recommended)

I. Course Corequisites:
 Algebra 11 or DVST 410 recommended

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

K. Maximum Class Size:
 18

 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.
 S.F.U.
 U. Vic.
 Other

William Manapich

 Course Designer(s)

[Signature]

 Director / Chairperson

[Signature]

 Divisional Dean

F.H. Dagers

 Registrar

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

Students are required to supply three-ring binder, paper, pen and pencil.

All other materials and textbooks will be available on loan from the instructor when needed.

Where possible, copies of those textbooks which are only for use in the classroom may be borrowed from the library or purchased from the bookstore.

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 aims of this course are to provide students with opportunities to:

1. increase their understanding of physics as the study of the fundamental laws of nature;
2. examine the scope, relevance and limitations of physics and technological change stemming from physics;
3. examine how concepts from physics have affected understanding of the universe, society and the individual;
4. make inquiries into the fundamental laws of nature through lab experiences;
5. apply and extend mathematical skills;
6. apply the skills of observation and the scientific method in lab experiences;
7. apply standards of safety, efficiency, accuracy and precision of measurement through lab experiences.

P. Course Content

The course will consist of the following topics:

1. Measurement

- a) SI units
- b) scientific notation
- c) significant figures
- d) experimental error

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2. Mechanics

- a) vectors
- b) statics
- c) kinematics
 - equations of motion
 - vectors and graphing
- d) dynamics
 - laws of motion
 - circular motion
 - gravitation and inverse-square laws
- e) work, energy, power
 - friction
 - conservation of energy
 - simple machines

3. Heat

- a) heat and temperature
- b) heat transfer
- c) thermal properties of matter - specific and latent heat
- d) phase changes

4. Electricity

- a) Coulomb's Law
- b) electrical field
- c) potential and potential difference
- d) current, resistance and Ohm's Law
- e) simple circuits

5. Wave Phenomena

- a) wave equations
- b) quantum theory
 - photoelectric effect
 - the hydrogen atom

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Q. Method of Instruction

A combination of different instructional methods will be used in order to balance instructional efficiency with individual students needs. Small group instruction, individual assistance (in lab tutorial or scheduled appointments) and student directed learning will be selected where appropriate and possible.

R. Course Evaluation

A mastery model of on-going evaluation will be used. A student will have completed the course when he/she has demonstrated through satisfactory completion of exercises and assignments that the course objectives have been achieved.

Where formal tests of specific skills are used, mastery will be defined as a score of 80 percent or more. Progress will be monitored on a regular basis by the instructor in consultation with each student.

The student will be expected to maintain regular attendance and progress and to undertake independent learning as directed. Regular feedback and informal progress reports will be available from the instructor.