UNIVERSITY COLLEGE OF THE FRASER VALLEY
COURSE INFORMATION

DISCIPLINE/DEPARTMENT: PHYSICS
IMPLEMENTATION DATE: Fall 1997
Revised: ____________

PHYS 100
SUBJECT/NUMBER OF COURSE CREDITS: Introductory Physics

CREDITS: 4

CALENDAR DESCRIPTION: This course is designed for students who have not taken physics before, and either need grade 11 physics equivalency for entry to a technical program, or are interested in continuing on in science. It should also satisfy the Laboratory Science requirements of Arts students. The course material overlaps Phys 11, and includes such topics as: kinematics, energy, wave motion, and geometric optics. Some discussion of relativity and nuclear energy is also included.

RATIONALE: This course is designed as an entry level course for strong students who have no physics background. The math requirement selects only those students who will be prepared for a university level physics course.

COURSE PREREQUISITES: Math 11 and either Math 12 or Math 094. Math 095 is suggested as a corequisite.

PRE- OR CO-REQUISITES: None

HOURS PER TERM
FOR EACH STUDENT
Lecture 60 hrs
Laboratory 45 hrs
Seminar hrs
Field Experience hrs

STUDENT Directed Learning hrs
Other - specify: hrs
TOTAL 105 HRS

MAXIMUM ENROLMENT: 35

Is transfer credit requested? : Yes 9 No

AUTHORIZATION SIGNATURES:

Course Designer(s): T. Cooper/V. MacLeod
Chairperson: T. Cooper
Curriculum Committee

Department Head: T. Cooper
Dean: K. Wayne Welsh

PAC: Approval in Principle (Date) PAC: Final Approval: November 27, 1996 (Date)
SYNONYMOUS COURSES:

(a) replaces __________
   (course #)

(b) cannot take ____________ for further credit
   (course #)

SUPPLIES/MATERIALS:

TEXTBOOKS, REFERENCES, MATERIALS  (List reading resources elsewhere)

Heath or Cutnell and Johnson

OBJECTIVES:

This course is designed for those students who have been unable to take physics previously, but wish to continue studies that require Phys 11 or its equivalent. Successful completion of this course will also give students access to our Physics 101 and Physics 111 courses. This course should also count for science credit towards a non-science degree, both here and at other institutions.

METHODS:

Lecture, demonstration, small group practice, discussion, laboratory.

STUDENT EVALUATION PROCEDURE:

Final weighting to be determined by instructor.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weightage</th>
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<tbody>
<tr>
<td>Final exam</td>
<td>40%</td>
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<tr>
<td>Midterm</td>
<td>25%</td>
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<tr>
<td>Labs</td>
<td>20%</td>
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<tr>
<td>Homework</td>
<td>15%</td>
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</tbody>
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Physics 100
NAME & NUMBER OF COURSE

COURSE CONTENT

Week 1   Introduction, Kinematics in one dimension
Week 2   Kinematics in one dimension
Week 3   Kinematics in one and two dimensions, Projectiles
Week 4   Forces in one dimension (gravity, friction, springs)
Week 5   Newton’s Laws
Week 6   Work, Energy, Power, Efficiency
Week 7   Momentum, Impulse
Week 8   Midterm
Week 9   Waves (qualitative, quantitative)
Week 10  Reflection, Interference, Diffraction, Refraction
Week 11  Geometric Options: Mirrors
Week 12  Geometric Optics: Lenses
Week 13  Modern Physics (relativity and nuclear energy)
Week 14  Review/Catch-up

LABORATORY EXPERIMENTS:

Lab 1   Introduction, Error Analysis and Propagation Exercises
Lab 2   Graphing Experimental Data
Lab 3   Uniformly Accelerated Motion
Lab 4   Various Forces (Friction, Springs, Gravity)
Lab 5   Conservation of Momentum/Energy
Lab 6   Measurement of the Index of Refraction
Lab 7   Mirrors and Images
Lab 8   Thin Lenses
Lab 9   Measurement of the Wavelength of Light

Note: There may be changes in these labs as the details of the course are fully fleshed out.