COURSE OUTLINE

Course Name: Physics 12 - Part 2

Course Number: PHYS 0993 **Number of Credits:** 4.0 **Effective Date:** January 2017

Course Description:

This course begins with the study of electrostatics. Coulomb's Law is applied to two-dimensional situations, which involve multiple charges. The vector addition of the forces involved uses the trigonometric component method. Electric field, electric potential and capacitance are examined. Electric current is studied in detail, in both AC and DC forms. The behavior of circuit elements such as capacitors, resistors and inductors is studied leading to an understanding of electrical resonance in AC circuits. Electromagnetism and electromagnetic induction are introduced and used to explain the operation of motors and generators.

Both Physics 0983 and Physics 0993 are required for completion of ABE Provincial level Physics

Physics 0983 and Physics 0993 can be taken at the same time or in any order.

School or Centre:

School of Arts and Science

Year of Study:

ABE Provincial Level (Grade 12)

Course History:

Revised Course

Name of Replacing Course (if applicable):

Course Pre-requisites (if applicable):

Physics 11 or equivalent; Pre-calculus 11 successfully completed within the last 3 years, a minimum score of 72% on the Intermediate Algebra Math Assessment or equivalent and English 10 or equivalent.

Completion of Pre-calculus 12 recommended; if not completed enrollment in MATH 0983 recommended.

Course Co-requisites (if applicable):

PLAR (Prior Learning Assessment & Recognition) ☒ No ☐ Yes (details below):

Instructional Strategies:

Class-based: Physics 0993 uses a lecture-based model. A significant amount of class time will be spent on hands-on activities, concept-development worksheets and problem-solving. Four labs will be conducted and will
relate to the core topics of Electrostatics, Circuits, and Electromagnetism.

Course Learning Outcomes:

Students will meet the learning outcomes for ABE Provincial Level Physics as stated in the most recent ABE Articulation Handbook.

Program Learning Outcomes:

If this course is taken as part of the ABE Provincial Certificate program, see the Program Content Guide for the program learning outcomes.

Evaluation/Grading System

Grading System	Specify if 'Other':	Specify Passing Grade:
Letter Grades		D

Components and Weighting of the Assessment/Evaluation Plan:

Type	Percentage	Evaluation Plan (provide a brief explanation for each component especially if value exceeds 35%):
Exam	45	3 tests at 15%
Lab Work	20	includes formal and informal lab reports
Assignments	15	
Quizzes/Tests	20	a number of quizzes which adds up to 20%
Total	**100**	

Learning Environment/Type

Instruction Type	Hours Per Instruction Type	Comments
L - Classroom	64	
E - Seminar	32	
Total	**96**	

Resource Material(s):

Resources are items in addition to tuition that the student is responsible for purchasing. Course resource information will be supplied by the department/instructor.

Course Topics:

Electrostatics (electric force, field, potential and potential energy)
Circuits (resistivity, Ohm's law, series, parallel and combination circuits, Kirchhoff's laws)
Electromagnetism (magnetic phenomena, magnetic forces and fields)
Electromagnetic Induction (Faraday's law, Lenz's law, motors, generators, AC circuits)

VCC Education and Education Support Policies

There are a number of **Education** and **Education Support** policies that govern your educational experience at VCC, please familiarize yourself with them.

The policies are located on the VCC web site at:

http://www.vcc.ca/about/governance--policies/policies/

To find out how this course transfers, visit the BC Transfer Guide at www.bctransferguide.ca.

FOR COMMITTEE USE ONLY

Approved by Curriculum Committee:	October 25, 2016	**Approved by Education Council**:	