PHYSICS - ACADEMIC UPGRADING (PHYS)

PHYS 0861 Upgrading Credits: 4
Physics 11 Part 1 Total Hours: 96
This course introduces students to the basic concepts of physics including measurement, kinematics, dynamics, momentum and energy, and an introduction to special relativity. Motion is introduced, and then mathematical models are developed to quantify observations and predictions. Both Physics 0861 and Physics 0871 are required for ABE Advanced Physics. Physics 0861 and Physics 0871 can be taken at the same time or in any order., a minimum score of 72% on the Intermediate Algebra Math Assessment, Math 0861, or equivalent; English 10 or equivalent; if the Math prerequisite is not met, MATH 0861 must be taken at the same time as PHYS 0861.
Pre-requisite(s): Precalculus 11 successfully completed within the last 3 yrs

PHYS 0871 Upgrading Credits: 4
Physics 11 Part 2 Total Hours: 96
This course introduces students to the basic concepts of physics, including vibrations, waves, sound, light, heat, and electricity. Students conduct experiments, and Mathematical models are developed allowing the student to quantify observations and predictions. Both Physics 0861 and Physics 0871 are required for ABE Advanced Physics. Physics 0861 and Physics 0871 can be taken at the same time or in any order., a minimum score of 72% on the Intermediate Algebra Math Assessment, or equivalent; and English 10 or equivalent; if the Math prerequisite is not met, MATH 0861 must be taken at the same time as PHYS 0861.
Pre-requisite(s): Precalculus 11 successfully completed within the last 3 yrs

PHYS 0983 Upgrading Credits: 4
Physics 12 Part 1 Total Hours: 96
This course begins with the study of kinematics in one and two dimensions. The equations of motion are utilized, stressing the vector nature of the physical quantities. Vector addition and manipulation are covered using trigonometric component methods. The same vector techniques are then applied to an analysis of dynamics in one and two dimensions, two-dimensional equilibrium, momentum in two dimensions and uniform circular motion. The final topics covered are energy conservation, waves and optics. 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.
Pre-requisite(s): Physics 11 or equivalent; Precalculus 11, or a minimum score of 72% on the Intermediate Algebra Math Assessment, or equivalent; English 10 or equivalent; completion of Precalculus 12 recommended, if not completed enrollment in MATH 0983 recommended

PHYS 0993 Upgrading Credits: 4
Physics 12 Part 2 Total Hours: 96
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.
Pre-requisite(s): Physics 11 or equivalent; Pre-calculus 11, or a minimum score of 72% on the Intermediate Algebra Math Assessment or equivalent; English 10 or equivalent; completion of Pre-calculus 12 recommended - if not completed enrollment in MATH 0983 and 0993 is recommended

Note: PHYS 0861 pre-requisite(s): Precalculus 11 successfully completed within the last 3 yrs., a minimum score of 72% on the Intermediate Algebra Math Assessment, Math 0861, or equivalent; English 10 or equivalent; if the Math prerequisite is not met, MATH 0861 must be taken at the same time as PHYS 0861.

Note: PHYS 0871 pre-requisite(s): Precalculus 11 successfully completed within the last 3 yrs., a minimum score of 72% on the Intermediate Algebra Math Assessment, or equivalent; and English 10 or equivalent; if the Math prerequisite is not met, MATH 0861 must be taken at the same time as PHYS 0861.