Alexandria Technical and Community College

PHYS 1100: Fundamentals of Physics

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 2
Lab Hours/Week: 1
OJT Hours/Week: *.*

Prerequisites:
This course requires any of these five prerequisites
   MATH 0429 - Beginning Algebra (Minimum grade: 2.0 GPA Equivalent and Number of Years Valid: 5)
   MATH 0421 - Bridge to College Algebra (Minimum grade: 2.0 GPA Equivalent and Number of Years Valid: 5)
   MATH 1420 - College Algebra
   MATH 1421 - College Algebra
   A score of 2 on test Intermediate Algebra

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

This course provides an introduction to selected topics in physics. It emphasizes concepts more than mathematics, with simple algebra being used. Demonstrations and small group problem-solving activities using equipment are integrated in the class time. The scientific method and working with data will be illustrated by recording and analyzing measurements in activities. This course is designed for non-science majors who want an appreciation of and a limited working knowledge in some major areas of physics.

B. COURSE EFFECTIVE DATES: 03/13/2018 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Measurements, significant figures, and the metric system
2. Simple algebra and problem solving with dimensional analysis (factor-label method)
3. Linear motion
4. Newton's First, Second, and Third Laws
5. Work and energy, and their conservation
6. Power
7. Linear momentum
8. Torque
9. Angular momentum
10. Waves and sound
11. Electricity and magnetism
D. LEARNING OUTCOMES (General)
1. Learner will be able to think critically and solve problems systematically.
2. Learner will be able to apply physical laws and principles to everyday phenomena.
3. Learner will be able to make accurate measurements, collect and analyze data, and draw reasonable observations and conclusions.
4. The learner will demonstrate knowledge of measurement and problem solving in Physics.
5. The learner will demonstrate knowledge of Physics in Mechanics.
6. The learner will demonstrate knowledge of waves and sound.
7. The learner will demonstrate knowledge of electricity and magnetism.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   Goal 03 - Natural Science
   1. No Competencies Indicated

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted