Dakota County Technical College

PHYS 1200: College Physics II

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 1

OJT Hours/Week: *.*

Prerequisites:
This course requires the following prerequisite
PHYS 1100 - College Physics I

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

This course is the second of two courses that cover non-calculus physics topics. These topics include: fluids, thermal physics, direct and alternating currents, magnetism, light and optics, waves, and topics in modern physics.
Meets MnTC goal 3.
Prerequisites: None.

B. COURSE EFFECTIVE DATES: 01/09/2006 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. understand and apply important concepts of physics
2. use the language of physics with reasonable competence
3. solve physics problems with reasonable skill
4. use techniques and procedures in the laboratory to gain experience with physical investigations
5. recognize and use a broad range of physical applications in the real world
6. explain natural phenomena with the laws of physics
7. describe interrelationships between physics and other sciences, the work and activities of practicing scientists in these fields
8. communicate orally and in writing the important ideas of physics
9. define terms (i.e. amplitude, period, frequency, phase, etc)
10. state the definition of a wave
11. calculate an unknown frequency using the principle of beats
12. understand how the human voice produces soundwaves
13. explain the similarities and differences between gravitational force and electromagnetic force
14. define the characteristics of the electric potential of a charged conductor
15. use Ohn's Law to calculate current, voltage and resistance
16. recognize simple circuit elements in a schematic diagram
17. measure voltage across resistors
18. describe the orientation of the magnetic field of the earth
19. state the sources of magnetic fields
20. describe the ray nature of light
21. state and use the law of reflection
22. state and use the law of refraction
23. describe how a telescope or microscope forms an image
24. define atomic mass, nucleon and isotope
25. define radioactivity and give examples
26. define half-life and use the concepts to calculate activity

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted