

# BUTTE COLLEGE

## COURSE OUTLINE

### I. CATALOG DESCRIPTION

**PHYS 52 - Problem Solving Strategies for PHYS 42**

**1 Unit(s)**

**Prerequisite(s):** NONE

**Co-requisite(s):** PHYS 42

**Recommended Prep:** NONE

**Transfer Status:** CSU

51 hours Lab

This course is a supplement to PHYS 42 and is intended to enhance the students' problem solving skills in the areas of electric fields and potential, electric currents, electric circuits, induced currents, magnetic fields, dielectrics, alternating currents, and electromagnetic waves. Pass/No Pass Only.

### II. OBJECTIVES

Upon successful completion of this course, the student will be able to:

- A. reduce a physical problem to its elemental parts.
- B. identify unknown physical quantities.
- C. employ appropriate mathematical techniques to generate a solution that accurately describes the physical behavior.
- D. describe how the solution will change when physical parameters change.

### III. COURSE CONTENT

#### **A. Unit Titles/Suggested Time Schedule**

		Lab
<u>Topics</u>		<u>Hours</u>
1. Electric Fields		9.00
2. Electric Potential		3.00
3. Capacitance		3.00
4. Electric Current & Resistance		3.00
5. Circuits		3.00
6. Magnetic Fields		3.00
7. Magnetic Materials		3.00
8. Electromagnetic Induction		6.00
9. Alternating Current		6.00
10. Electromagnetic Radiation		6.00
11. Acoustics		6.00
Total Hours		51.00

### IV. METHODS OF INSTRUCTION

- A. Collaborative Group Work
- B. Discussion
- C. Problem-Solving Sessions

### V. METHODS OF EVALUATION

- A. This course is offered Pass/No Pass only. Students are graded on participation as judged by the instructor. Participation includes: working on assigned problems, showing solutions to instructor, making suitable corrections, and (optional) writing solutions on board to share with class. Students must attend and participate in 11 of 15 sessions to earn the Pass grade.

## **VI. EXAMPLES OF ASSIGNMENTS**

- A. Reading Assignments
- B. Writing Assignments
- C. Out-of-Class Assignments

## **VII. RECOMMENDED MATERIALS OF INSTRUCTION**

Textbooks:

- A. Panunto, M.. PHYS 52 Exercises & Problems. Butte College, 2009.

Materials Other Than Textbooks:

- A. Text: Current text being used in PHYS 42
- B. An electronic calculator is required.

**Created/Revised by:** Michael Panunto

**Date:** 11/30/2009