

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

 x Transfer Course X A.A. degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: IT 110 How Things Work

UNIT VALUE: 2

MINIMUM NUMBER OF SEMESTER HOURS: 64

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS:

PREREQUISITE: None.

COREQUISITE: None.

RECOMMENDED PREPARATION: None.

SCOPE OF COURSE:

An introduction to the inner workings of the machines around us, such as computers, automobiles, household appliances and audio equipment. Hands-on experiments with readily available materials will explain how our technical world works and how to fix it when it doesn't.

SPECIFIC COURSE OBJECTIVES:

Successful students will:

1. Identify basic principles of machines.
2. Create experiments that demonstrate how different types of machines run.
3. Identify basic principles of construction.
4. Apply basic information technology.
5. Create experiments and demonstrate the principles of technology.
6. Troubleshoot, solve and describe a variety of problems involving machines, construction and information technology.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Introduction to Basic Principles of Machines, Construction and Information Technology
- II. Tool Use and Identification

- III. Weights and How Things are Measured
- IV. Blueprint Reading
- V. Joining Metals
- VI. The Basics of Machines
- VII. Machine Terms
- VIII. Engines, Batteries, Motors and Generators
- IX. Hydraulics and Pneumatics
- X. Household Machines
- XI. Machines We Use in Our Leisure Hours
- XII. Troubleshooting and Repair of Machines
- XIII. General Rules of Construction
- XIV. Construction Terms
- XV. Foundations, Walls, Floors and Roofs
- XVI. Water, Gas and Electric Systems
- XVII. Remodel and Repair of Constructed Objects
- XVIII. Wood Joinery, Adhesives and Finishes
- XIX. Transportation
- XX. Trains and Aircraft
- XXI. Ships, Boats and Submersibles
- XXII. Automobiles
- XXIII. Automotive Terms
- XXIV. Troubleshooting and Repair of Automobiles
- XXV. Information Technology
- XXVI. The Electronic Age
- XXVII. Basic Principles
- XXVIII. Electronic Technology Terms
- XXIX. Computer Systems
- XXX. Upgrading and Repair of Electronics

REQUIRED READING:

Handouts as assigned by instructor.

SUGGESTED READING:

Macaulay, David. The Way Things Work. New York: Houghton Mifflin Company, 1988.

Time Life Books. How Things Work in Your Home. New York: Henry Holt and Company, Inc., 1985.

Jackson, Mary. The Greaseless Guide to Car Care. Emeryville, CA: Publishers Group West, 1995.

Wyatt, Allen. Upgrading Your PC Illustrated. Indianapolis, IN: Que Corporation, 1994.

REQUIRED WRITING:

At least three written assignments and reports of a minimum ½ typewritten page in length including a journal of experiments.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for a short term classes.

Library readings as assigned such as articles published in a variety of trade journals.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

All handout and drawing assignments will be based on known examples as set forth by the instructor and will receive a grade based on a percentage of how close to correct the assignment is found to be.

- 30% Subject handout assignments
- 20% Journal of experiments
- 20% Mid-term project
- 30% Final project

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes No Number of times course may be taken for credit: 2

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable: 58161 (c) (2) (A)

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