

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: DT 210 Printed Circuit Board Design

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS:

PREREQUISITE: DT140

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Instruction in printed circuit board design generally required for entry-level position in the electronic industry. Includes artwork and complete documentation for analog and digital multi-layer, flexible and high-speed boards using current IPC standards. Drafting will be performed on the computer using high-end printed circuit board software.

SPECIFIC COURSE OBJECTIVES:

The successful student will:

1. Compare and contrast layout design of a printed circuit board to 100% accuracy to a configuration drawing, schematic and a parts list.
2. Create a camera ready artmaster, using printed circuit board design software, accurate to +/- .005 of an inch.
3. Draw a complete package of related drawings for the fabrication and assembly of a printed circuit board to industry standards, given a configuration drawing, photo package and parts list.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Analog Component Layout
- II. Digital Component Layout
- III. Compete Artwork for a Printed Circuit Board
- IV. Fabrication, Parts List and Assembly Drawings
- IV. Flexible Circuits
- V. Multi-layer Circuits
- V. Electro-Magnetic Interference Problem Solving

REQUIRED READING:

Solberg. Design Guidelines for Surface Mount Technology. Blue Ridge Summit, PA: TAB Books Inc., 1995.

SUGGESTED READING:

Trade journals and other publications as assigned by instructor.

REQUIRED WRITING:

Skills demonstration of competencies identified in Specific Course Objectives.

OUTSIDE ASSIGNMENTS:

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

Textbook and other resource reading assignments; additional lab time as needed to complete weekly assignments and projects.

INSTRUCTIONAL METHODOLOGY:**Check all that apply:**

- lecture
 laboratory
 lecture-laboratory combination
 directed study

DISTANCE LEARNING:

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

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
 Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
 Two-Way Video Conferencing (Two-way interactive video and audio)
 One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
 Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

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

- 60% Weekly or biweekly assignments are submitted and evaluated based on previously provided information and criteria.
- 20% Two examinations at approximately the 6th week and the 12th week of the course to test for general knowledge of material studied in the interim.
- 20% A comprehensive final examination.

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

Yes X 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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SIGNATURES ON FILE