

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 130/R DT 130 CAD/CAM Machining

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills

ENTRANCE REQUIREMENTS

PREREQUISITE: DT110 and DT128/RDT128

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Hands-on operation of importing three-dimensional solid and parametric three-dimensional models into CAD/CAM operations. *This course is dually listed as R DT 130. May be taken two times.*

SPECIFIC COURSE OBJECTIVES:

The successful student will be able to:

1. Solve technical problems utilizing basic machining processes
2. Develop basic machining practices using a CNC mill.
3. Import CAD files for use with a CNC machine.
4. Create and manipulate machining geometry.
5. Create and implement CNC programs.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Introduction
 - A. Program overview
 - B. Safety
- II. Machining Fundamentals
 - A. Standards and measuring systems
 - B. Use of inspection tools
 - C. Basic machining principles

- III. CNC Machine Fundamentals
 - A. Cartesian quadrant
 - B. Fixture offsets
 - C. Tool offsets
 - D. Basic methodology of obtaining G & M Codes
- IV. MasterCAM Fundamentals
 - A. Creating geometry
 - B. Manipulating geometry
 - C. Importing files from CAD
- V. Intro to using Master CAM
 - A. 2 1/2 Axis
 - 1. Holes
 - 2. Contours
 - 3. Pocketing
 - 4. Posting CNC files
- VI. CAD/CAM to CNC machines
 - A. Applying fixture offset
 - B. Applying tool offset
 - C. Loading programs
 - D. Operating CNC machines

REQUIRED READING:

Lin, Jonathon, and Shiue, Tony. MasterCAM Version 8 Millenium. Scholars International Publishing Corp. 2001

SUGGESTED READING:

Curran, Kelly and Stenerson, Jon. Understanding MasterCAM. Prentice Hall PTR. 2001

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 X

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):

Completed Assignments	40%	Grading scale:	A = 90% - 100%
Midterm Exam	20%		B = 80% - 89%
Comprehensive Final Exam	20%		C = 70% - 79%
Semester-end Project	20%		D = 60% - 69%

The extent to which a student has met the stated objectives will be determined via:

1. Degree of accuracy on written tests
2. Completeness and accuracy of assigned design/presentation documents
3. Skill and knowledge level demonstrated in the final project

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