

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 131/R DT 131 Advanced 3D Design and Presentation

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills

ENTRANCE REQUIREMENTS

PREREQUISITE: DT 128/R DT 128

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Advanced theory and hands-on operation of solid and parametric three-dimensional models. Emphasis is placed on creating molds, advanced sheet metal design and developing dynamic assemblies. *This course is dually listed as ROP DT 131. May be taken two times.* CSU

SPECIFIC COURSE OBJECTIVES:

The successful student will be able to:

1. Utilize productivity tools
2. Develop advance sheet metal designs
3. Create and develop molds
4. Develop and utilize surfaces
5. Create photo realistic models
6. Develop dynamic assembly models
7. Import and export 3D and 2D files

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Introduction
 - A. Program overview
 - B. Safety
- II. Review of Solid Modeling Fundamentals
 - A. Model Creation
 - B. Drawing Creation
 - C. File extensions
- III. Interactive Feature Recognition
 - A. Import IGES file into program
 - B. Use automatic recognition
 - C. Use interactive recognition to create standard feature
 - D. Use combinations and pattern feature
- IV. Modeling Utilities, how to use them
 - A. Compare the feature of two parts
 - B. Compare geometry of two parts
 - C. Analyze the geometry of a part
 - D. Find, modify, suppress feature based on parametric criteria
 - E. Select bulk feature and geometry
 - F. Compare the parameters of one feature and another.
- V. Advance Toolbar Library Usage
 - A. Design the flat
 - B. Using the beam calculator
 - C. Using the groove tool
 - D. Using the bearing tool
 - E. Using cam tool
- VI. Advance Sheet Metal
 - A. Design in the flat
 - B. Using standard feature library
 - C. Developing and storing features for the library
 - D. Developing design intent of sheet metal parts
 - E. Modifying feature in the flat and fold configurations
- VII. Mold Cavity Creation
 - A. Linking dimensioned values
 - B. Creating an interim assembly from a part design
 - C. Editing in context by inserting a cavity
 - D. Deriving component parts
 - E. Understanding external references
- VIII. Surface Entities
 - A. Difference between surface and solid
 - B. Creating surfaces
 - C. Blending surfaces
 - D. Importing surfaces
 - E. Text on a surface
- IX. Photo Realistic Application to Models
 - A. Rendering effects of material
 - B. Lighting effects
 - C. Shadow effects
 - D. Background creation
- X. Motion Creation of a Dynamic Assembly

- A. Create a storyboard
 - B. Use the Animation Wizard and delineate animation
 - C. Create and edit component paths
 - D. Save an animation as a series of still images
 - E. Create past cutaway animations
- XI. Importing and Exporting Files
- A. Importing files
 - 1. Supportive files types
 - 2. Native SolidWorks files
 - 3. Dynamic link files
 - 4. DXF, ACIS, SAT, STEP
 - B. Exporting files
 - 1. Part and Assembly
 - 2. Drawing
 - 3. TIFF
 - C. E-drawings

REQUIRED READING:

SolidWorks Corporation. Getting Started with SolidWorks 2001. Concord, MA: SolidWorks Corporation, 2001.

SUGGESTED READING:

Murray, David. Inside SolidWorks. Albany, NY: OnWord Press, Thomsons Learning, 1998.

Jankowski, Gregory and David Murray. SolidWorks for AutoCAD Users, Second Edition. Albany, NY: OnWord Press-Thomsons Learning, 2000.

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)

CONTACT PERSON: Dennis Lutz Ext. 2560

SIGNATURES ON FILE