El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Computer-Aided Design**
COURSE RUBRIC AND NUMBER	**DFTG 2402**
COURSE TITLE	**Machine Drafting**
COURSE CREDIT HOURS	**4 3 : 3** **Credits Lec Lab**

I. Catalog Description

Provides the production of detail and assembly drawings of machines, threads, gears, utilizing tolerances, limit dimensioning, and surface finishes. **Prerequisite: DFTG 1309. (3:3). Lab fee.**

II. Course Objectives

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

A. Gears

1. Describe the gear terminology within the parametric solid modeler
2. Determine Gear speed ratios and Formulas
3. Examine Spur, Bevel, and Worm Gears
4. Explain dimensioning at different design intents.

B. Cams, Springs, and Keys

1. Draw and design different Cams and Springs applying modeling software.
2. Create a Cam diagram per use of design tables.
3. Animate a Cam and Follower's by revolving features and circular patterns.
4. Determine deflection requirements in Springs.
5. Explore the five different key types. (1.4)

C. Sheet Metal and Weldments

1. Use configurations to draw sheet metal parts within a single drawing file.
2. Identify and determine appropriate application of sheet metal parts.)
3. Determine welding process pertinent to particular Weldment.

D. The Design Process

1. Problem solve per application of math and physics.
2. Conceptualize the design problem and create a solution.
3. Gather parts and tools for a project
4. Create a layout view of a motor

E. Design Projects

1. Determine space requirements.
2. Perform Stress Analysis on a part and assemblies.
3. Convey results in a presentation.
4. Review the tools and bill of materials required for project execution.

F. Motion, Animation, and Analysis

1. Apply motion constraints at the software level.
2. Analyze relative motion from one component to another.
3. Translate rotational linear motion in components.
4. Resolve interference motion problems.

G. Mold Flow

1. Diagnose various problems in a mold creation.
2. Utilize editing tools to edit and make changes to a molding tool.
3. Explain how modeling techniques influence the ability to create a mold.

H. Machine Drafting Skills

1. Use various precision tools.
2. Prepare drawings for custom fabrication, e.g., CNC Machine.

III. THECB Learning Outcomes (WECM)

1. Interpret terms used in tolerancing.
2. Identify dimensions of two mating parts.
3. Draw spur and/or bevel gears.
4. Draw details and assemblies.
5. Identify interference and clearance fits.
6. Identify types of threads forms.
7. Interpret thread notes.

IV. Evaluation

A. Challenge Exam

There is no challenge exam available for this course.

B. Post-assessment

1. The instructor will maintain a continuous record of each student's progress.
2. Students should be evaluated periodically throughout the semester.
3. The instructor will determine the weight of each graded assignment.
4. Instructors may require drawing assignments, quizzes, practical/written drawing exams, and formal exams.

C. Grading Scale

A = 92.5 - 100
B = 85.0 - 92.4
C = 75.0 - 84.9
D = 65.0 - 74.9
F = below 65
I = Incomplete
W = Withdrew or Withdrawn

For grade percentage of individual assignments and exams refer to the Syllabus – Instructor's Course Requirements.

The student will be graded on each assignment on uniqueness, conceptualization, and professionally finished work. An overall semester grade according to the performance rating scale will also be given.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.