El Paso Community College
Syllabus Part II
Official Course Description

SUBJECT AREA	**Computer-Aided Design**
COURSE RUBRIC AND NUMBER	**DFTG 2471**
COURSE TITLE	**3-D Printing**
COURSE CREDIT HOURS	**4 3 : 3** **Credits Lec Lab**

I. Catalog Description

Create 3-D printed models from drawings, sketches, and digital files. **Prerequisite: DFTG 1309. (3:3). Lab fee.**

II. Course Objectives

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

A. Sketches, Drawings, and Digital Files

1. Explain how the 3D Print creates visualization of a prototype.
2. Create a sketch for a project.
3. Determine part assembly constraint formulas.
4. Review dimensioning and required information for a 3D Print.
5. Explain dimensioning at different design intents.

B. Software Setup

1. Describe printing file formats.
2. Transfer sketches to digital drawings.
3. Transfer drawing to a 3-D print digital format.
4. Solve software compatibility issues.
5. Determine a digital transfer “Need to know” list for trouble-shooting.

C. 3-D Printers and Care

1. Explore different 3-D Printers.
2. Describe the 3D Printing terminology.
3. Explore humidity conditions affecting filament storage.

D. 3-D Printing

1. Create a pre-print checklist.
2. Determine space requirements.
3. Gather parts, tools, and filaments for a print.
4. Review parts and the tolerance stack up.

E. Analysis

1. Analyze relative part fit from one component to another.
2. Conceptualize the design problem and create a solution.
3. Resolve interference fit problems.
4. Utilize editing tools to revise a print.

F. Final Presentation Portfolio

1. Document how the 3D Print techniques influence the ability to create a part or mold.

2. Diagnose the results of a print assembly via stress analysis.
3. Determine appropriate material results.
4. Create a part creation results portfolio.

III. Evaluation

The knowledge and skills stated in the objective must be demonstrated by the students in the form of test and lab assignments in order to complete the course.

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.

IV. 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).

V. 6 Drop Rule

Students who began attending Texas public institutions of higher education 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.