

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Engineering</u>
COURSE RUBRIC AND NUMBER	<u>ENGR 1304</u>
COURSE TITLE	<u>Engineering Graphics I</u>
COURSE CREDIT HOURS	<u>3 2 :<!-- 2</u--> Credits Lec Lab</u>

I. Catalog Description

Introduction to computer-aided using CAD software and sketching to generate two- and three-dimensional drawings based on the conventions of engineering graphical communication; topics include spatial relationships, multi-view projections and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics. **(2:2). Lab fee.**

II. Course Objectives

- A. Unit I - Students will demonstrate understanding of the class policy, equipment assignment, laboratory procedures and ethics.
- B. Unit II - Students will demonstrate understanding of the steps necessary to get the equipment started, the operating parameters for specific types of drawings and menus and commands for the various tools.
- C. Unit III - Students will draw basic geometric shapes using lines, arcs, circles, and polygons using grids, snap, zooms, grips and object snaps.
- D. Unit IV - Students will draw multi-view drawings (traditionally called working drawings) in 2d using an appropriate laying system and will demonstrate understanding of setting up paper space, an appropriate border and applicable notes and using output devices such as the Plotter, Printer.
- E. Unit V - Students will produce the needed sections and auxiliary views to support working drawings using an appropriate laying system.
- F. Unit VI - Students will define and appropriate layer for dimensions, dimension style and dimension working drawings with tolerances.
- G. Unit VII - Students will demonstrate understanding of the techniques associated with the work saving features of CAD editing. This will include functions such as purging, changing properties, moving, mirroring, rotating, copying, arraying etc.
- H. Unit VIII - Explain and demonstrate the relationships between points, lines and planes in descriptive geometry and Demonstrate proper projection of points, lines and planes in descriptive geometry.

- I. Unit IX -Upon successful completion of this unit, the student will be able to:
1. Understand the Boolean solid modeling concept.
 2. Understand the Parametric solid modeling concept.
 3. Construct and edit solid models based upon the two concepts.
 4. Relate the Mass Properties of a Solid/Region and understand the relationship of this command to Statics and Strength of materials.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Discuss the basic steps in the design process.
2. Demonstrate proficiency in freehand sketching.
3. Demonstrated proficiency in geometric modeling and computer aided drafting and design (CADD).
4. Communicate design solutions through sketching and computer graphics software using standard graphical representation methods.
5. Solve problems using graphical geometry, projection theory, visualization methods, pictorial sketching, and geometric (solid) modeling techniques.
6. Demonstrate proper documentation and data reporting practices.
7. Complete a project involving creation of 3D rapid prototype models.
8. Function as part of a design team as a team leader and as a team member.

IV. Evaluation

Grade to depend on tests, including a comprehensive final, homework assignments, and problem solving sessions.

The assignment of letter grade is:

90 – 100 =A	
80 – 89 = B	Incomplete = I
70 – 79 = C	Withdrawn =W
60 – 69 = D	
below 60 =F	

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.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.