

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Computer-Aided Design</u>
COURSE RUBRIC AND NUMBER	<u>ARCE 1352</u>
COURSE TITLE	<u>Structural Drafting</u>
COURSE CREDIT HOURS	<u>3 2 :<!-- 4</u--> Credits Lec Lab</u>

I. Catalog Description

Studies structural systems including concrete foundations and frames, wood framing and trusses, and structural steel framing systems. Includes detailing of concrete, wood, and steel to meet industry standards including the American Institute of Steel Construction and the American Concrete Institute. **Prerequisite: DFTG 1309. (2:4).**

II. Course Objectives

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

- A. Unit I. Organization and Communication**
1. Develop/prioritize work flow and practice time management
 2. Communicate via e-mail and prepare transmittal to clients
 3. Maintain project activity log and drawing files
- B. Unit II. Structural Steel Shapes and Symbols**
1. Identify shapes by name and symbol given graphic representation.
 2. Identify basic steel shapes from drawing callout and engineering sketches.
 3. Compute the weight of steel shapes given basic parameters and use of steel tables from engineering sketches.
 4. Draw anchor bolt setting plans given design parameters, sketches, and verbal instructions.
- C. Unit III. Beams and Bolted Connections**
1. Identify structural steel bolts given graphic representation or symbol.
 2. Draw Floor and Roof Plan of structure according to structural steel drafting conventions from descriptions and sketches.
 3. Draw required views of girder and beam details with various types of connections given parameters and engineering sketches.
 4. Draw a building framing plan given parameters and engineering sketches
 5. Develop miscellaneous schedules for above framing plan
- D. Unit IV. Welding Symbols and Connections**
1. Draw four views of a spliced column in detail with various types of connections given parameters and engineering sketches.
 2. Apply critical dimensions to detailing problems given use of structural steel tables, drawing callout, and use of engineering sketches.
 3. Draw welding symbols correctly according to drafting and structural steel conventions from descriptions and engineering sketches.
 4. Compute the required size of weld given basic parameters from engineering sketches.

E. Unit V. Structural Steel Detailing

1. Draw 2D pictorial views, utilizing AutoCAD, of column detail with various types of connections given parameters and engineering sketches.
2. Draw the same column detail as above except utilizing 3D modeling software
3. Draw welding symbols correctly according to drafting and structural steel conventions from descriptions and engineering sketches.
4. Import and export documents. e.g., XREFs

III. THECB Learning Outcomes (WECM)

1. Identify components of structural systems.
2. Use reference materials; produce drawings for concrete, wood, and steel framing systems.
3. Draw design details and connections for framing components.
4. Draw column and beam details for manufacture and assembly utilizing various fastening methods.

IV. Evaluation**A. Challenge Exam**

There is a challenge exam available for this course. Coordination for any challenge exam should be made through the Drafting Department Coordinator.

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.

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.