

Administrative Master Syllabus

Course Information

Course Title	Structural Drafting
Course Prefix, Num. and Title	ARCE1352: Structural Drafting
Division	Technology & Business
Department	Engineering Design
Course Type	WECM Course
Course Catalog Description	A study of 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.
Pre-Requisites	DFTG2319 and MATH1316
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours:	3:2:4
Lab/Other Hours	
Equated Pay Hours	4
Lab/Other Hours Breakdown: Lab Hours	4
Lab/Other Hours Breakdown: Clinical Hours	0
Lab/Other Hours Breakdown: Practicum Hours	0
Other Hours Breakdown	0

Approval Signatures

Title	Signature	Date
Department Head:	Haydee Ruiz, Engineering Design Program Director	11-16-2023
Division Chair:	David Kucera, Technology & Business Division Chair	11-16-2023
VPI:		

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

Structural Materials

Fabrication Process

Framed Beam Details

- Welded Connections
- Seated Connections
- Beam Detailing

Engineering Drawings

- Section Drawings

Concrete Foundations

- Rebar Schedules

Structural Wood

Bills of Materials

Basic Trigonometry Calculations

Course Learning Outcomes:

Learning Outcomes – Upon successful completion of this course, students will:

Identify components of structural systems;

Use reference materials specific to the industry;

Produce drawings for concrete, wood, and steel framing systems;

Draw design details and connections for framing components;

Draw column and beam details for manufacture and assembly utilizing various fastening methods.

Draw concrete engineering drawings and detailed placement drawings;

Calculate reinforcing steel and concrete quantities;

Prepare an advanced bill of material for both steel components and rebar for foundation work;

Identify and draw weld symbols appropriate for steel erection drawing;

Plot drawings to scale.

Methods of Assessment:

Daily Drawings/Lab Work/Daily Quizzes

Three to Four Major Exams or Drawings

(All drawings evaluated in terms of accuracy of drawing views, use of line types, line quality, dimensioning accuracy and placement and drawing organization.)

Required text(s), optional text(s) and/or materials to be supplied by the student:

An example is the latest version of Autodesk Revit Structure Fundamentals by SDC Publications

A flash drive is required for archiving data files.

Notebook to store notes and drawings.

Suggested Course Maximum:

20

List any specific or physical requirements beyond a typical classroom required to teach the course.

Computer workstation, plotter/printers to plot drawings from 8 1/2" by 11" to 24" by 36" drawings, data projector system, and appropriate software.

Course Requirements/Grading System: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

Daily Drawings/Lab Work/Daily Quizzes to ensure comprehension of structural concepts and drafting skills.....= 35%
 Three to Four Major Exams or Drawings covering individual topics; Research Project= 35%
 Structural Drafting Project= 30%

Based on the above breakdown, grades will be awarded as prescribed by Wharton County Junior College Standards.

- 90% to 100% .. = A
- 80% to 89% = B
- 70% to 79% = C
- 60% to 69% = D
- Below 60%..... = F

Note: A letter grade of "C" or above average must be achieved in all degree specific classes to attain graduation.

Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course** – Attach the Core Curriculum Review Forms
 - Critical Thinking
 - Communication
 - Empirical & Quantitative Skills
 - Teamwork
 - Social Responsibility
 - Personal Responsibility
- WECM Course** – If needed, revise the Program SCANS Matrix and Competencies Checklist