



Purpose: It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

Course Title - Structural Drafting

Course Prefix and Number – ARCE 1352

Department - Engineering Design

Division - Technology and Business

Course Type: (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course
- WECM course (This course is a Special Topics or Unique Needs Course: Y or N)

Semester Credit Hours #: Lecture Hours #: Lab/Other Hours #: 3:2:4

Equated Pay hours for course - 4

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.

Prerequisites/Co-requisites – DFTG 2319

List Lab/ Other Hours
Lab Hours 4
Clinical Hours
Practicum Hours
Other (list)

Prepared by Jo Ann Shimek

Date 06/11/15

Reviewed by Department Head Jo Ann Shimek

Date 06/11/15

Accuracy verified by Division Chair: David Kucera

Date: 07/20/15

Approved by Dean or Vice President of Instruction: Leigh Ann Collins

Date:3-3-16



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

- | | |
|--|----------------------|
| Structural Materials | Fabrication Process |
| Framed Beam Details Welded Connections | Seated Connections |
| Beam Detailing | Section Drawings |
| Engineering Drawings | Concrete Foundations |
| Rebar Schedules | Bills of Materials |
| Basic Trigonometry Calculations | Structural Wood |

II. Course Learning Outcomes

Learning Outcomes	Methods of Assessment
<p>Upon successful completion of this course, students will:</p> <p>Identify components of structural systems;</p> <p>use reference materials (to select appropriate detailing tables in the AISC Manual);</p> <p>produce drawings for concrete, wood, and steel framing systems;</p> <p>produce drawings for concrete, wood, and steel framing systems;</p> <p>draw design details and connections for framing components;</p> <p>draw column and beam details for manufacture and assembly utilizing various fastening methods.</p> <p>draw concrete engineering drawings and detailed placement drawings</p> <p>calculate reinforcing steel and concrete quantities;</p> <p>prepare an advanced bill of material for both steel components and rebar for foundation work;</p> <p>Identify and draw weld symbols appropriate for steel erection drawing</p> <p>Plot drawings to scale</p>	<p>Daily Drawings/Lab Work/Daily Quizzes Three to Four Major Exams or Drawings Structural Design Project</p> <p>(All drawings evaluated in terms of accuracy of drawing views, use of line types, line quality, dimensioning accuracy and placement and drawing organization.)</p>

III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.

An example would be Structural Drafting by David Goetsch (Delmar Publishing)

A flash drive is required for archiving data files

Note book to store notes and drawings.

IV. Suggested Course Maximum - 20

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

Computer work stations, plotters/printers, data projection system and appropriate software

VI. 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 assure comprehension of structural concepts and drafting skills 35%

Three to Four Major Exams or Drawings covering individual topics 35%

Structural Project 30%

VII. Curriculum Checklist

- **Academic General Education Course** (from ACGM – but not in WCJC Core)
No additional documentation needed

- **Academic WCJC Core Course**
Attach the Core Curriculum Checklist, including the following:

- Basic Intellectual Competencies
- Perspectives
- Exemplary Educational Objectives

- **WECM Courses**
If needed, revise the Program SCANS Matrix & Competencies Checklist.