



**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** -Materials and Methods for Engineering Technology

**Course Prefix and Number** –ENGT 2304

**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 #**    3:3:0

**Equated Pay hours for course** - 3

**Course Catalog Description** -A continuation of the study of the nature, origin and properties of building materials, methods, and equipment for their integrated use in completing construction projects. A study of selecting and specifying materials with consideration for economy, quality and performance in the construction of modern buildings. This course is included in the Field of Study Curriculum for Engineering Technology. It introduces students to proper terminology and usage of wood, steel, and concrete materials and selected manufactured components.

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

**Prerequisites/Co-requisites** – CNBT 1309 (or archived CNST 1361)

**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:** 07/15/15

**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):

- Designing Buildings and Building Systems
- Foundation systems - loads, footing, slab on grade, grade beams, piers, piles
- Exterior walls - wood components, concrete components, steel components
- Building Envelop Systems - roofing, siding, windows, doors
- Building Material - Wood - lumber production, properties, standard sizes, built-up shapes, erection methods, building codes
- Building Material - Concrete - ingredients, placement methods, formwork, reinforcing
- Building Material - Steel - standard sizes, typical spans, built-up shapes, erection methods, building codes
- Masonry Construction - CMU standard sizes and shapes, placement methods
- Roofing Systems - wood components, concrete components, steel components
- Windows, Interior, Floors, Finishes

**II. Course Learning Outcomes**

<b>Learning Outcomes</b> Upon successful completion of this course, students will:	<b>Methods of Assessment</b>
Upon the completion of the course students will demonstrate the ability to: Define common terminology and Units of Measurements Explain composition and properties of common building materials Identify standard sizes and shapes of building material. Determine conformance references and testing techniques Classify products, systems and interface issues Describe selected assembly techniques and equipment usage Explain building code functions, standards and requirements	Written test Final exam

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

Fundamentals of Building Construction, Materials and Methods by Edward Allen and Joseph Iano; John Wiley and Sons, Inc.

**IV. Suggested Course Maximum - 20**

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

Projector, access to PowerPoint

**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**

Four to Five Major Exams  
Final Project  
Tests and Final Project all equally weighted - 100%  
A = 100 -90  
B = 89-80  
C = 79-70  
D = 69-60  
F = 59 or below

"C" or above in all degree specific classes

**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.