



**Course Information**

<b>Course Title</b>	Machine Design
<b>Course Prefix, Num. and Title</b>	DFTG2406: Machine Design
<b>Division</b>	Technology & Business
<b>Department</b>	Engineering Design
<b>Course Type</b>	WECM Course
<b>Course Catalog Description</b>	Theory and practice of design. Projects in problem-solving, including press fit, bolted and welded joints, and transmission components. Additionally, production of detail and assembly drawings of machines and threads utilizing tolerances, limit dimensioning and surface finishes.
<b>Pre-Requisites</b>	DFTG2319 & MATH1316
<b>Co-Requisites</b>	None

**Semester Credit Hours**

<b>Total Semester Credit Hours (SCH): Lecture Hours:</b>	4:3:3
<b>Lab/Other Hours</b>	
<b>Equated Pay Hours</b>	4.5
<b>Lab/Other Hours Breakdown: Lab Hours</b>	3
<b>Lab/Other Hours Breakdown: Clinical Hours</b>	Enter Clinical Hours Here.
<b>Lab/Other Hours Breakdown: Practicum Hours</b>	Enter Practicum Hours Here.
<b>Other Hours Breakdown</b>	List Total Lab/Other Hours Here.

**Approval Signatures**

<b>Title</b>	<b>Signature</b>	<b>Date</b>
<b>Prepared by:</b>		
<b>Department Head:</b>		
<b>Division Chair:</b>		
<b>Dean/VPI:</b>		
<b>Approved by CIR:</b>		

## 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).

Pictorial Drawings  
Tolerancing  
Actual Object Drawing  
Use of Measuring Devices  
Data Calculations, manual & computer  
Design Process  
Bills of Material  
Foundry Pattern Drawing  
Drawing Reproduction  
Weld Symbols

### Course Learning Outcomes:

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

Utilize the steps used in the design process, terminology, mechanical processes to produce drawings.  
Interpret terms used in tolerancing;  
Calculate dimensions of mating parts using interference and clearance fits;  
Identify thread forms and interpret thread notes;  
Use calipers and micrometers for precision measurement;  
Interpret and draw weld symbols;

**Methods of Assessment:**

Daily Drawings/Lab Work/Daily Quizzes  
Four to Five Major Exams or Drawings  
Dimension Post-Test  
Research Paper  
Final Project

(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:

Required: Technical Drawing by Frederick Giesecke et al  
Optional: Latest version of AutoCAD textbook from DFTG2319.  
A flash drive is required for archiving data files  
Note book 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 work stations, plotters/printers (to print large 36" by 24" drawings), data projection system and appropriate software  
Calipers and Micrometers and other measuring devices

**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	– 20%
Four to Five Major Exams or Drawings	– 30%
Dimension Post-Test	– 10%
Research Paper	– 10%
Final Project	– 30%

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

- 90 - 100 = A;
- 80 - 89 = B
- 70 - 79 = C;
- 60 - 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