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# MIDDLESEX COUNTY COLLEGE

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## COURSE SYLLABUS

<b>Department:</b>	Engineering Technologies
<b>Program:</b>	Mechanical Engineering Technology
<b>Course Number:</b>	MEC 125
<b>Title of Course:</b>	Advanced Mechanical Drawing/CAD II
<b>Curriculum Coordinator:</b>	Rick Schieni
<b>Designation:</b>	Required Course

### Course Description:

The study of mechanical working drawings including detail, assembly, piping and welding drawings. Also included are dimensioning techniques, geometric dimensioning and tolerancing, fits and tolerances of mating parts, threads, fasteners and surface finish. Advanced use of CAD (Computer-Aided Drafting) software that includes creating template files, drawing layouts/paper space, blocks, attributes, external references, revision tables, notes and BOM (Bill Of Material). Introduction to piping and welding drawings. Introduction to solid modeling, including part creation and orthographic and isometric drawing creation. The completion of a comprehensive final project is required.

### Prerequisite:

MEC 123 Technical Graphics/CAD I

**Co-requisite:** None

### Textbooks and /or other required material:

Solidworks 2016 Basic Tools by Tran, SDC, 1<sup>st</sup> Ed

### Course Learning Outcomes and their relationships to Student Outcomes:

1. Demonstrate an understanding of tolerances and how to specify them on drawings.
2. Demonstrate an understanding of tolerance stack up.
3. Demonstrate the ability to specify tolerances for fits between mating parts. (SO a)
4. Correctly interpret and apply geometric dimensioning and tolerancing concepts.
5. Demonstrate the ability to specify and draw threaded fasteners.
6. Using SolidWorks, create parts by extruding, revolving, cutting and lofting fully defined sketches.
7. Create detail (part) drawings (including orthographic, section and auxiliary views as needed) and dimension them correctly. (SO f)
8. Create assembly drawings.
9. Create welding drawings.

**Topics Covered:**

- Introduction to SolidWorks (sketches, part creation, drawings)
- Review of dimensioning concepts and practice
- Tolerances
- Fits between mating parts
- Geometric dimensioning and tolerancing
- Threaded fasteners
- Detail drawings
- Welding drawings
- Piping drawings

**Class/Laboratory schedule. Number of sessions each week and duration of each session:**

5 studio hours per week for 14 weeks:

1 lecture hour per week for 14 weeks

4 laboratory hours per week for 14 weeks

**Criterion 5 Contribution: Technical Content**

<b>Prepared By:</b>	Joseph Misuraca	<b>Date:</b>	9/17/2008
<b>Updated By:</b>	Craig Stickler	<b>Date:</b>	1/20/2010 Rev 1
<b>Updated By:</b>	Craig Stickler	<b>Date:</b>	5/8/2010 Rev 2
<b>Updated By:</b>	Craig Stickler	<b>Date:</b>	1/24/2011 Rev 3
<b>Updated By:</b>	Craig Stickler	<b>Date:</b>	3/14/2014 Rev 4
<b>Rev 5:</b>	General Update	<b>Date:</b>	3/15/21