

## Master Syllabus

### MET 1231 - Introduction to Drafting & Design using Inventor

**Division:** Science, Mathematics and Engineering

**Department:** Mechanical Engineering Technology

**Credit Hour Total:** 4.0

**Lecture Hrs:** 3.0 **Lab Hrs:** 3.0

**Date Revised:** February 2015

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#### Course Description:

Application of the process of design and the interpretation of engineering drawings. Includes design development, product development, and problem solution, principles of orthographic projection, drafting symbols, surface finish symbols, and geometric dimensioning and tolerancing symbols. Student is exposed to parametric 3D CAD modeling for the purpose of creating parts and assemblies and to properly dimension and detail drawings to effectively communicate design intent. Three classroom, three lab hours per week.

#### General Education Outcomes:

- Information Literacy Competency
- Oral Communication Competency
- Critical Thinking/Problem Solving Competency
- Values/Citizenship/Community Competency
- Computer Literacy Competency

#### Course Outcomes:

##### Dimensioning Techniques

Demonstrate understanding of dimensioning techniques.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or better correct score on exams

##### Time Management & Teaming

Apply time management skills and teaming to complete projects.

**Assessment Method:** Portfolios

**Performance Criteria:**

70% or better score on the evaluation of the complete drawing submission set.

##### Drawing Development

Creating part assembly and detail drawings to communicate effectively.

**Assessment Method:** Portfolios

**Performance Criteria:**

70% or better score on the evaluation of the complete drawing submission set.

##### Drawing Interpretation

Read and interpret engineering drawings.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or better correct score on exams

##### Tolerancing Symbols

Use and application of symbols related to tolerancing (coordinate and geometric).

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or better correct score on exams

##### Standards

Demonstrate knowledge of engineering standards and procedures.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or better correct score on exams

##### Ethics

Use proper judgment and apply ethical design practices on projects.

**Assessment Method:** Portfolios

**Performance Criteria:**

70% or better score on the evaluation of the complete drawing submission set.

##### Detailed Drawings

Create detailed drawings that serve as working drawings for manufactured products.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or better correct score on exams

**Design Process**

Apply the design process in the development of a problem solution or product design.

**Assessment Method:** Portfolios

**Performance Criteria:**

70% or better score on the evaluation of the complete drawing submission set.

**Outline:**

Basic information on orthographic projection, isometric, auxiliary views, sectional views, and assembly drawing Engineering drawing layout and standards

The SI Unit System

Engineering drawing symbols used and their meanings: machined surfaces, thread systems, and welding dimensioning and tolerancing practices and procedures

Coordinate tolerancing

Geometric tolerancing symbols used, their meanings and application

The design process

Determining the best solution: cost, time, marketplace, customer Patents, copyri:1:1hts and trademarks

Parametric design introduction Developing assemblies

Reverse engineering

Developing a complete design solution (presentation required)