

## Master Syllabus

### **MET 1281 - Engineering Design & Development**

**Division:** Science, Mathematics and Engineering

**Department:** Mechanical Engineering Technology

**Credit Hour Total:** 2.0

**Lecture Hrs:** 1.0 **Lab Hrs:** 2.0

**Prerequisite(s):** MET 1241

**Date Revised:** November 2012

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#### **Course Description:**

An engineering research course where student teams develop a plan, design, construct and present a solution to an open-ended engineering problem using the skills developed in the program. Time management tools, teaming skills, fabrication and parametric Computer Aided Drafting (CAD) skills are applied. One classroom, two lab hours per week.

#### **General Education Outcomes:**

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

#### **Course Outcomes:**

##### **Design solution documentation for fabrication**

Develop a set of design drawings that will be used to fabricate a product.

**Assessment Method:** Portfolios

**Performance Criteria:** 70% or better score on the evaluation of the complete drawing submission set.

##### **Communication**

Effectively communicate ideas to others (i.e. teammates, customers, managers).

**Assessment Method:** Behavioral observations

**Performance Criteria:** Students receive a 70% or better score from teammate and faculty observation evaluations

**Assessment Method:** Portfolios

**Performance Criteria:** Students receive a 70% or better on the final presentation score

##### **Ethical design**

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.

#### **Outline:**

The design process and time management

Develop a solution that includes: cost, time, and customer approval

Finalize the design solution

Create the prototype

Test the prototype against the customer constraints

Final presentation