

Master Syllabus

MET 1281 - Engineering Design & Development

Division: Science, Mathematics and Engineering

Department: Mechanical Engineering Tech

Credit Hour Total: 2.0

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

Prerequisite(s): MET 1241

Date Revised: November 2012

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
- ▣ Information Literacy
- ▣ Oral Communication
- ▣ Values/Citizenship/Community

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