

Master Syllabus

CAM 2225 - Tool Design

Division: Science, Mathematics and Engineering

Department: Computer Aided Manufacturing

Credit Hour Total: 3.0

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

Prerequisite(s): CAM 2114

Date Revised: October 2013

Course Description:

Design theory, principles and drawing techniques for the tool design industry. Two classroom, two lab hours per week.

General Education Outcomes:

- ▣ Critical Thinking/Problem Solving Competency
- ▣ Written Communication Competency

Course Outcomes:

Drafting and Design Techniques

Recognize and apply the drafting and design techniques used in tool drawings.

Assessment Method: Locally developed exams

Performance Criteria: 70% of students score of 80% or better

Assessment Method: Portfolios

Performance Criteria: Development of drawings graded with a rubric. 70% of students graded at "70" or better

Toolmaking Practices

Demonstrate ability to examine and identify tool making practices related to the design of stamping dies.

Assessment Method: Locally developed exams

Performance Criteria: 70 % of students score of 80% or better

Tool Design Principles and Techniques

Demonstrate proficiency in tool design principles and techniques by reviewing or designing parts.

Assessment Method: Behavioral observations

Performance Criteria: Students graded on print reviews and parts designs using a rubric. 70% of students achieve at least a "70" on the rubric

Assessment Method: Locally developed exams

Performance Criteria: 70% of students score 80% or higher on exams

Outline:

Principles of tool design
Drafting and design techniques used in tool drawings
Tool making practices
Heat treatment used in the tool design industry
Sheet-metal blanking and piercing dies
Sheet-metal bending, forming and drawing dies
Problem solving for tooling design
3D solid modeling details and assembling