

## Master Syllabus

### **CAM 2145 - Shop Floor Programming**

**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 1109 OR CAM 1161

**Date Revised:** January 2015

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#### **Course Description:**

Operation and programming of conversational controlled two-axis milling machines. Includes programming and manufacturing a variety of machined parts utilizing ProtoTRAK and Anilam two-axis CNC controls. Two classroom, two lab hours per week.

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

- ▣ Critical Thinking/Problem Solving Competency
- ▣ Information Literacy Competency

#### **Course Outcomes:**

##### **Machine operation and set up skills**

Demonstrate the use of tooling fixtures used with shop floor programming machines.

**Assessment Method:** Performance appraisals

**Performance Criteria:** 70% of students will make parts to print specifications.

##### **Shop floor programming skills**

Write programs that control 2 and 3 axis milling machines.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score 80% or higher on Midterm and Final Exam

**Assessment Method:** Portfolios

**Performance Criteria:** 70% of students complete term project graded with a rubric with a "70" or better

##### **Basic machining skills**

Demonstrate use of CNC two and three-axis controllers for basic machining tasks.

**Assessment Method:** Performance appraisals

**Performance Criteria:** 70% of students to make parts to print specifications.

#### **Outline:**

DRO Mode, Mill, Arc, Tool Offset, Rough and Finish, Rectangular Profile, ConRad, Absolute and Incremental Positioning, Speeds and Feeds, Climb and Conventional Milling, Cartesian Coordinate System, AGE Engine, Irregular Profile, Island, Copy Rotate, Circle Profile