

## Master Syllabus

### **CAM 1142 - Shop Floor Calculations II**

**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 1141

**Date Revised:** October 2013

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#### **Course Description:**

This course applies the principles of geometry and trigonometry and the computing of compound angles to situations encountered in the machining industry. It also gives a brief introduction to the calculations required in computer numerical control programming. Two classroom, two lab hours per week.

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

- Critical Thinking/Problem Solving

#### **Course Outcomes:**

##### **Calculations**

Apply the principles of geometry and trigonometry to correctly solve problems encountered in the machining industry.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students earn 70% or higher on exams

##### **Scientific Calculator**

Demonstrate the ability to use a scientific calculator to correctly solve complex problems encountered in machining.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students will earn 70% or higher on exams.

##### **Compound Angles**

Demonstrate the ability to compute the angles of rotation and tilt and correctly set up a rectangular solid for inspecting a compound-angular surface.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students will earn 70% or higher on exams.

#### **Outline:**

Computing with a scientific calculator  
Areas and volumes of geometric figures  
Calculations for simple and complex practical machine applications  
Cartesian Coordinate System  
Application of compound angles in machining  
Introduction to computer numerical control programming calculations