



## Student Learning Outcomes for MATH 243

*Academic Excellence in Precalculus*

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### Team Members:

**Team Leader:**

Diane Mathios (864-5664) in MATH

**Other members:**

1. Diane Mathios (x864-5664) MATH

**Additional team members/notes about team:**

Anne Leskinen

**Additional Notes:**

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### Outcomes:

**Outcome 1 Phase I: Statement**

Analyze and develop trigonometric, matrix, and discrete models for problems within two- and three- dimensional Cartesian or polar coordinate systems.

**Outcome 1 Phase II: Assessment Strategy Used:**

Assessment Quarter: Spring 2011

Assessors: Anne Leskinen

Assessment Tools: •

Sections being assessed: 11

**Outcome 1 Phase III: Reflect & Enhance**

**Number of people involved in Phase III:** 1

**Changes:****Methods:**

Three worksheets, #2,6, and 10, were used to assess this outcome. Students worked in groups to individually complete the worksheets. The instructor walked around guiding the groups. Each worksheet was graded on a ten point scale, based on completion of

problems and quality of written solutions.

### **Findings and Conclusions:**

Class average on Worksheet 2 was 8/10 Class average on Worksheet 6 was 10/10 Class average on Worksheet 10 was 9/10 Students were unable to fully complete some worksheets due to time. Weakness of prior content was a draw back for some students in completing the worksheets correctly.

### **Enhancement (Planned Actions)**

#### **Part I:**

Shorten worksheets to allow students more time to discuss the problems and produce well written work. Include review of necessary prior content as part of the worksheet. Include proofs and implicit function models in the SLO's

#### **Part II:**

No additional allocation resources needed.

### **Outcome 2 Phase I: Statement**

Communicate concepts and solutions for problems both verbally and in writing.

### **Outcome 2 Phase II: Assessment Strategy Used:**

Assessment Quarter: Spring 2011

Assessors: Anne Leskinen

Assessment Tools: •

Sections being assessed: 11

### **Outcome 2 Phase III: Reflect & Enhance**

**Number of people involved in Phase III:** 1

**Changes:**

#### **Methods:**

After completion of Assignment 2, students were required to meet in pairs, exchange their written solutions, and give each other a verbal critique. In this critique they were asked to address clarity of communication and logical progression of the written solution of their colleague. Students were then given an extra day to revise their Assignment 2 written solutions based on the critique.

### **Findings and Conclusions:**

Assignment 2 was graded on a 10 point scale based on clarity of communication and logical progression of the written solution. The critique process was effective since students did make revisions to their original written assignments. The grades on Assignment 2 were compared to those of Assignment 1. Average grade on Assignment 1 was 5/10 Average grade on Assignment 2 was 8/10, a 3-point improvement.

### **Enhancement (Planned Actions)**

**Part I:**

Instructor would apply this method of student critique to Assignment 1 as well as Assignment 2 so the students can benefit from the feedback earlier.

**Part II:**

No additional resource allocation is needed.

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