

## Detailed Assessment Report

As of: 5/08/2015 04:42 PM EDT

### 2014-2015 Mathematics BA & BS

(Includes those Action Plans with Budget Amounts marked One-Time, Recurring, No Request.)

## Mission / Purpose

The Bachelor of Arts and Bachelor of Science degrees in Mathematics are designed to provide students with the background needed for industrial and academic positions, for entry into mathematics graduate programs or professional programs (e.g. business school, law school) and, coupled with appropriate education courses, to prepare students to teach high school mathematics.

## Goals

### **G 1:Goal 1: Proofs**

Understand the nature of truth and the concept of proof in the discipline of mathematics.

### **G 2:Goal 2: Applications**

Understand the application of mathematical techniques to other fields.

### **G 3:Goal 3: Formulate and Solve**

Formulate and solve problems mathematically.

### **G 4:Goal 4: Communicate**

Communicate mathematical ideas clearly and effectively

### **G 5:Goal 5: Work Independently**

Independently comprehend mathematical material appropriate for undergraduates

## Student Learning Outcomes/Components, with Any Associations and Related Artifacts/Objects, Benchmarks, Findings, and Action Plans

### **S 1:Goal 1, Outcome 1**

Students will be able to construct and write proofs for mathematical assertions, using a variety of methods.

### **S 2:Goal 1, Outcome 2**

Students will be able to disprove mathematical assertions, by constructing counterexamples.

### **S 3:Goal 1, Outcome 3**

Students will be able to formulate a hypothesis and determine its validity.

### **S 4:Goal 1, Outcome 4**

Students will independently read mathematical arguments, and be able to judge their validity.

**S 5:Goal 2, Outcome 1**

Students will understand that many problems can be solved by constructing mathematical models.

**S 6:Goal 2, Outcome 2**

Students will be able to translate concepts from other fields into mathematical relationships.

**S 7:Goal 2, Outcome 3**

Students will be able to apply computational techniques of mathematics to a wide variety of applications.

**S 8:Goal 3, Outcome 1**

Students will be able to perform algorithmic and logical procedures to solve computational problems.

**S 9:Goal 3, Outcome 2**

Students will be able to perform algorithmic and logical procedures to construct proofs.

**S 10:Goal 3, Outcome 3**

Students will be able to use appropriate technology

**S 11:Goal 3, Outcome 3, Component 1**

Students will be able to choose the appropriate technology to use.

**S 12:Goal 3, Outcome 3, Component 2**

Students will solve problems using the chosen technology.

**S 13:Goal 4, Outcome 1**

Students will be able to explain the solutions to problems using correct mathematical vocabulary and mathematical notation.

**S 14:Goal 4, Outcome 2**

Students will be able to solve problems in a group setting.

**S 15:Goal 5, Outcome 1**

Students will be able to read mathematics to reinforce the material presented in class

**S 16:Goal 5, Outcome 2**

Students will be able to locate materials which will aid them in doing their mathematics assignments.

**S 17:Goal 5, Outcome 3**

Students will be able to independently learn new concepts and utilize them.