

# B.A. and B.S. in Mathematics

## Assessment Plan

### 2020 - 2024

## Mission Statement

The BA and BS 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 of the Mathematics Curriculum

Students, upon completing the coursework required for a BA or BS degree in Mathematics, will be able to

1. Understand the nature of truth and the concept of proof in the discipline of mathematics.
2. Understand the application of mathematical techniques to other fields.
3. Formulate and solve problems mathematically.
4. Communicate mathematical ideas clearly and effectively.

## Student Learning Outcomes

### **Goal 1. Understand the nature of truth and the concept of proof in the discipline of mathematics.**

1. Students will be able to construct and write proofs for mathematical assertions using a variety of methods.
2. Students will be able to disprove mathematical assertions by constructing counterexamples.
3. Students will independently read mathematical arguments and be able to judge their validity.

### **Goal 2. Understand the application of mathematical techniques to other fields.**

1. Students will be able to translate concepts from other fields into mathematical relationships.
2. Students will be able to interpret the results of their computations.
3. Students will be able to apply computational techniques of mathematics to a wide variety of applications.

### **Goal 3. Formulate and solve problems mathematically.**

1. Students will be able to perform algorithmic and logical procedures.
2. Students will be able to use appropriate technology.

**Goal 4. Communicate mathematical ideas clearly and effectively.**

1. Students will be able to express their mathematics clearly in both written and oral form.
2. Students use correct mathematical vocabulary and mathematical notation.
3. Students will be able to solve problems in a group setting.

Clearly these goals are congruent with the missions of the degree program, the School of Sciences, and IU Kokomo.