

B.A. and B.S. in Mathematics

Assessment Plan

2016-2020

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.
5. Independently comprehend mathematical material appropriate for undergraduates.

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.

Curriculum Map

The table that follows indicate in which courses the outcomes are addressed. Every course is associated with at least one outcome and every outcome is associated with at least one course.

Goal / Outcome	M215	M216	M311	M303	M313	M347	M360	M366	M403	M404	T336	M413	M414	M415	M447	M448	M471	M472
1.1				X		X	X	X	X	X	X	X	X	X	X	X	X	X
1.2				X		X			X	X	X	X	X					
1.3				X		X			X	X	X	X						
2.1	X	X	X		X		X	X						X	X	X	X	X
2.2	X	X	X		X		X	X						X	X	X	X	X
2.3	X	X	X		X		X	X						X	X	X	X	X
3.1	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
3.2	X	X	X	X	X		X	X			X			X	X	X	X	X
4.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.3		X			X	X				X		X	X	X			X	X

Assessment Activities planned for 2016-2020.

From 2016 to 2020 learning outcomes will be assessed on the following schedule. At the start of each academic year faculty will meet to review the assessment plan and decide which courses will be used for that year's assessment and which data will be collected throughout the year for that assessment.

AY 2016-2017	Goal 1 Outcome 1
AY 2017-2018	Goal 1 Outcome 2
AY 2018-2019	Goal 4 Outcome 2
AY 2019-2020	Goal 2 Outcome 1
AY 2020-2021	Goal 3 Outcome 1