Bachelor of Science in Mathematics – Adolescence Education

Mathematics Learning Outcomes

The overall mission of the mathematics majors is to prepare students for the lifelong study and use of mathematics. As for the specific educational goals of the program, we expect our graduates to be able to:

A. Organize and analyze data and information and synthesize problem solutions using appropriate mathematical tools;

B. Formulate conjectures, find counterexamples and state and prove theorems carefully;

C. Learn mathematics outside of the classroom through self-study or group-study, including the ability to refresh knowledge;

D. Communicate mathematics effectively both orally and in writing;

E. Use technology to aid in the above.

Mathematics Education Learning Outcomes

We expect our graduates to:

1. Understand how children learn mathematics and be able to apply this to teaching:

2. Acquire a deep understanding of numbers and operations, algebra and functions, geometry and measurement, and statistics and probability;

3. Develop a broad range of explanations and examples, with facility for separating and reconnecting the component parts of concepts and methods, including the use of technology for teaching;

4. Cultivate the disposition, confidence, and motivation to pursue career-long growth as a teacher of mathematics for all children;

5. Continually improve their ability to design effective tools for assessing student learning;

6. Cultivate an enthusiasm for teaching and an enthusiasm for learning mathematics.

Learning Outcomes Crosswalk

Required Course	Course Title	Learning Outcomes	Credit Hours
MATH 122	University Calculus I	A, E, 2	4
MATH 123	University Calculus II	A, 2	4
MATH 210	Math Structures & Proof	B, D (writing)	4
MATH 223	University Calculus III	A, 2	4
MATH 231	Linear Algebra	A, B, E	4
MAED 310	Reading & Writing Math	D (writing)	3
MATH 323	Int. Real Analysis	B, D (writing), 2	3
MATH 331	Abstract Algebra I	B, D (writing), 2	3
MATH 341	Geometry	A, B, D (writing), E, 2	3
STAT 350	Probability & Statistics	A, C, D (writing), E, 2	3
MATH 381	History of Mathematics	A, B, C, D (writing)	3
MATH 405 or MAED 410	Senior Seminar	A, B, C, D, E	1 or 3
Additional MATH or STAT course numbered 311 or higher		A, B, C, D (writing)	3
MAED 105/106	Intro to Contemporary Ed	1, 3, 4, 6	3
EDU 224	Adolescent Development	1, 5	3
EDU 250/251	Intro to Exceptional Learner	4	3
MAED/SCED 276	Lit & Tech in Sci & Math	1, 3	3
EDU 301, 302 & 303			3 – 1 credit courses
MAED/SCED 305/313	Diversity in the Teach of Science & Math	1, 4, 6	3
EDU 349	Educational Psychology	1, 5	3
MAED 419	Math Secondary Ed Methods	1, 3, 4, 5, 6	3
EDU 430	Student Teaching	1, 2, 3, 4, 5, 6	15

Bachelor of Science in Mathematics – Middle Childhood Education

Mathematics Learning Outcomes

The overall mission of the mathematics majors is to prepare students for the lifelong study and use of mathematics. As for the specific educational goals of the program, we expect our graduates to be able to:

A. Organize and analyze data and information and synthesize problem solutions using appropriate mathematical tools;

B. Formulate conjectures, find counterexamples and state and prove theorems carefully;

C. Learn mathematics outside of the classroom through self-study or group-study, including the ability to refresh knowledge;

D. Communicate mathematics effectively both orally and in writing;

E. Use technology to aid in the above.

Mathematics Education Learning Outcomes

We expect our graduates to:

1. Understand how children learn mathematics and be able to apply this to teaching:

2. Acquire a deep understanding of numbers and operations, algebra and functions, geometry and measurement, and statistics and probability;

3. Develop a broad range of explanations and examples, with facility for separating and reconnecting the component parts of concepts and methods, including the use of technology for teaching;

4. Cultivate the disposition, confidence, and motivation to pursue career-long growth as a teacher of mathematics for all children;

5. Continually improve their ability to design effective tools for assessing student learning;

6. Cultivate an enthusiasm for teaching and an enthusiasm for learning mathematics.

Learning Outcomes Crosswalk

Required Course	Course Title	Learning Outcomes	Credit Hours
MATH 122	University Calculus I	A, E, 2	4
MATH 123	University Calculus II	A, 2	4
MATH 210	Math Structures & Proof	B, D (writing)	4
MATH 231	Linear Algebra	A, B, E	4
MAED 301	Math for School Teachers I	A, D, E, 1, 2, 3	3
MAED 302	Math for School Teachers II	A, D, E, 1, 2, 3	3
MAED 303	Math for School Teachers III	A, D, E, 1, 2, 3	3
MAED 310	Reading & Writing Math	D (writing)	3
MATH 341	Geometry	A, B, D (writing), E, 2	3
STAT 150 or STAT 200 or STAT 350	A statistics class	A, D (writing), E, 2	3
MATH 381	History of Mathematics	A, B, C, D (writing)	3
MATH 405	Senior Seminar	A, B, C, D, E	1
Additional MATH or STAT course numbered 311 or higher		A, B, C, D (writing)	3
MAED 105/106	Intro to Contemporary Ed	1, 3, 4, 6	3
EDU 224	Adolescent Development	1, 5	3
EDU 250/251	Intro to Exceptional Learner	4	3
MAED/SCED 276	Lit & Tech for Sci & Math	1, 3	3
EDU 301, 302 & 303			3 – 1 credit courses
MAED/SCED 305/313	Diversity in the Teach of Science & Math	1, 4, 6	3
EDU 321	Teaching in Middle School	1, 4	3
EDU 349	Educational Psychology	1, 5, 6	3
MAED 417	Middle School Methods	1, 3, 4, 5, 6	3
EDU 429	Student Teaching	1, 2, 3, 4, 5, 6	15