Mathematics (3450)
B.S. - Bachelor of Science and M.S. – Master of Science
Major: Mathematics (345010BS and 345010MS)
Buchtel College of Arts and Sciences

Learning Outcomes

Students will demonstrate a working knowledge of standard topics in: calculus, linear algebra and advanced calculus (theory and analysis of basic rules of calculus). Students will demonstrate a working knowledge of standard topics in: abstract algebra, statistics and a specialization area.

Students will be able to communicate mathematical results in written form.

Students will be able to define and explain mathematical concepts, construct rigorous mathematical proofs and counter examples.

Students will be able to think critically, including the proposition of conjectures and generalization of mathematical ideas.

Students will be able to apply mathematical theories to solving routine and non-routine mathematical problems.

Year 1: Fall	Crs	Spring	Crs
3450:221 Analytic Geometry-Calculus I	4	3450:222 Analytic Geometry-Calculus II	4
3300:111 English Composition I	3	3450:112 English Composition II	3
Beginning Foreign Language I	4	Beginning Foreign Language II	4
Social Science Requirement	3	Social Science Requirement	3
Natural Science Requirement	4	Area Studies and Cultural Diversity	2
		Physical Education/Wellness	1
Total	18	Total	17
Year 2: Fall	**Crs**	**Spring**	**Crs**
3450:223 Analytic Geometry-Calculus III	4	3450:335 Introduction to ODEs	3

	Crs		Crs
Intermediate Foreign Language I	3	3450:312 Linear Algebra	3
Area Studies and Cultural Diversity	2	7600:105 Introduction to Public Speaking	3
Area Studies and Cultural Diversity	2	Natural Science Requirement	4
3460:209 Computer Science I	4	Intermediate Foreign Language II	3
Elective	3	3450:307 Fundamentals of Adv Math	3
Total	18	Total	19
		Summer: Elective	8

Year 3: Fall	**Crs**	**Spring**	**Crs**
3450:411 Abstract Algebra I	3	3450: 512 Abstract Algebra II **	3
3450:421 Advanced Calculus I	3	3450: 4xx Elective	3
3470:461 Applied Statistics I	4	3450:522 Advanced Calculus II**	3
300/400 Level Outside (non-math) Elective	3	300/400 Level Outside (non-math) Elective	3
3400: 210 Humanities In Western Tradition I	4	3450: 4xx Elective	3
Total	17	Total	15
		Summer: 300-600* Level Electives	6

Year 4: Fall	**Crs**	**Spring**	**Crs**
3450:513 Number Theory	3	3450:636 Adv Combinatorics and Graph Th	3
3470:5xx or 6xx Probability or Statistics	3	3450:5xx or 6xx Elective	3
3450:621 Real Analysis	3	3450:5xx or 6xx Elective	3
Total	9	Total	9

		Summer: Humanities Electives	6
Year 5: Fall	**Crs**	**Spring**	**Crs**
3450:692 Seminar in mathematics	3	Elective*	3
Elective*	3	Elective	6
3450:699 Thesis Research	3		
Total	9		
		Total	9

Note: Courses marked with * are possibly graduate level courses to be applied toward the elective requirement of the bachelor's degree. Courses marked with ** are to be applied to the elective requirements of **both** the bachelor's and master's degree. All general education and college requirements are satisfied in this accelerated five-year BS/MS program.

Degree Distribution Requirements

This curriculum guide is a recommended plan of study. Students with questions about degree requirements should contact an academic advisor.

One of the following three courses 3470:450 Probability, 3470:451 Theoretical Statistics, or 3470:461 Applied Statistics.

Approved 300/400 electives in mathematics, applied mathematics, statistics, or computer science.

7700:101, 102, 201, 202 and 222 may be substituted for Modern Language (35xx) courses.

The following credit hour requirements apply to this 5yr degree: Undergraduate - 122 minimum total credits; 32 credits in residence; the final 32 credits must be taken from The University of Akron. Graduate – 30 minimum total credits; 20 credits in residence.