KENTUCKY STATE UNIVERSITY

MATHEMATICS MAJORS

The School of Mathematics and Computer Science offers several degree options for students pursuing a major in Mathematics, including a Bachelor of Arts (p. 1), a Bachelor of Science (p. 1), and a Bachelor of Science in Mathematics – Education Track (p. 2).

The Bachelor of Arts in Mathematics is ideal for students seeking a strong foundation in mathematical theory while allowing flexibility to combine their studies with other disciplines such as education, business, or the humanities.

The Bachelor of Science in Mathematics offers a more intensive focus on advanced mathematical concepts, analytical thinking, and problem-solving—preparing students for graduate study or careers in fields such as data science, finance, engineering, and research.

The Bachelor of Science in Mathematics – Education Track is specifically designed for students who wish to become licensed secondary mathematics teachers. This program integrates rigorous mathematical coursework with educational theory and classroom experience, equipping graduates with the knowledge and skills needed to teach effectively at the middle and high school levels.

Each pathway provides a strong mathematical foundation and opens the door to a wide variety of career opportunities in education, industry, technology, and beyond.

The Bachelor of Arts in Mathematics is ideal for students seeking a strong foundation in mathematical theory while allowing flexibility to combine their studies with other disciplines such as education, business, or the humanities. This degree is designed for those who value the logical rigor and problem-solving skills developed through mathematics, but who also wish to apply these skills in broader interdisciplinary contexts. With a more flexible course structure compared to the Bachelor of Science, the B.A. program encourages students to pursue double majors, minors, or electives in areas that align with their personal interests or career goals. Graduates are well-prepared for careers in education, public policy, economics, data analysis, and other fields where analytical thinking and quantitative reasoning are essential. The B.A. in Mathematics also serves as a solid foundation for graduate study in a variety of disciplines.

Course	Title	Hours
Term 1 (Fall)		
MAT 131	Calculus/Analy Geom I	5
ENG 101	English Comp I	3
COM 103	Interpersonal Communication	3
FYE 118	First Year Experience	3
	Hours	**14**
Term 2 (Spring)		
MAT 132	Calculus/Analy Geom II	5
ENG 102	English Comp II	3
Minor Elective		3
MAT 200	Intro to Stat Reasoning & Ana.	4
	Hours	**15**
Term 3 (Fall)		
MAT 231	Multivariate Calculus	3
Minor Elective		3
MAT 300	Intro to Advanced Math	3
BIO 101	Life Science	3
Select one of the following:		3
ART 130	Introduction to Art	
ENG 211	Intro to Literature	
MUS 130	Introduction to Music	
THE 130	Introduction to Theatre	
	Hours	**15**
Term 4 (Spring)		
MAT 232	Differential Equations	3
Minor Elective		3
Minor Elective		3
Minor Elective		3
Select one of the following:		3
FIN 101	Financial Literacy	
ECO 201	Prin of Economics I	
	Hours	**15**
Term 5 (Fall)		
MAT 321	Probability/Statistics I	3
MAT 307	Linear Algebra	3
EDU 204	Cultural Responsiveness	3
MAT 326	Modern Geometry	3
Select one of the following:		3
PSY 200	General Psychology	
SOC 203	Principles of Sociology	
	Hours	**15**
Term 6 (Spring)		
MAT 401	Modern Algebra I	3
MAT 333	Complex Variables	3
MAT300/400 Elective		3
300/400 Minor Elective		3
POS 101	American Government	3
	Hours	**15**
Term 7 (Fall)		
MAT 403	Real Analysis I	3
MAT300/400 Elective		3
300/400 Minor Elective		3
Minor Elective		3
Free Elective		4
	Hours	**16**
Term 8 (Spring)		
MAT 460	Mathematics Seminar	3
MAT 402	Modern Algebra II	3
300/400 Minor Elective		3
300/400 Free Elective		3
300/400 Free Elective		3
	Hours	**15**
	Total Hours	**120**

The Bachelor of Science in Mathematics offers a more intensive focus on advanced mathematical concepts, analytical thinking, and problem-solving—preparing students for graduate study or careers in fields such as data science, finance, engineering, and research. This program emphasizes rigorous coursework in areas such as calculus, linear algebra, differential equations, statistics, and abstract algebra, along

with opportunities to explore specialized topics like numerical analysis, mathematical modeling, or applied mathematics.

Students in the B.S. program develop strong quantitative and logical reasoning skills, gain experience with mathematical software and computational tools, and often engage in undergraduate research or internships that connect theory with real-world applications. The program is well-suited for those who enjoy the challenge of mathematical abstraction and who are interested in pursuing technical or research-based careers. Graduates are well-equipped to enter competitive graduate programs or to take on roles in industries that demand high-level mathematical expertise and precision.

Course	Title	Hours
Term 1 (Fall)		
MAT 131	Calculus/Analy Geom I	5
ENG 101	English Comp I	3
COM 103	Interpersonal Communication	3
FYE 118	First Year Experience	3
COS 107	Prob Solving, Logic & Design	3
	Hours	**17**
Term 2 (Spring)		
MAT 132	Calculus/Analy Geom II	5
ENG 102	English Comp II	3
COS 108	Prin Computer Science I	4
MAT 200	Intro to Stat Reasoning & Ana.	4
	Hours	**16**
Term 3 (Fall)		
MAT 231	Multivariate Calculus	3
PHY 211	General Physics I	5
MAT 300	Intro to Advanced Math	3
BIO 101	Life Science	3
Select one of the following:		3
ART 130	Introduction to Art	
ENG 211	Intro to Literature	
MUS 130	Introduction to Music	
THE 130	Introduction to Theatre	
	Hours	**17**
Term 4 (Spring)		
MAT 232	Differential Equations	3
PHY 212	General Physics II	5
MAT300/400 Concentration/Specialization		3
COS 109	Prin Computer Sci II	4
Select one of the following:		3
SOC 203	Principles of Sociology	
PSY 200	General Psychology	
	Hours	**18**
Term 5 (Fall)		
MAT 321	Probability/Statistics I	3
MAT 307	Linear Algebra	3
MAT300/400 Elective		3
Select one of the following:		3
FIN 101	Financial Literacy	
ECO 201	Prin of Economics I	
EDU 204	Cultural Responsiveness	3
	Hours	**15**
Term 6 (Spring)		
MAT 401	Modern Algebra I	3
MAT300/400 Concentration/Specialization		3
300/400 Free Elective		3
POS 101	American Government	3
	Hours	**12**
Term 7 (Fall)		
MAT 403	Real Analysis I	3
MAT300/400 Elective		3
300/400 Free Elective		3
Free Elective		4
	Hours	**13**
Term 8 (Spring)		
MAT 460	Mathematics Seminar	3
MAT300/400 Elective		3
300/400 Free Elective		3
300/400 Free Elective		3
	Hours	**12**
	Total Hours	**120**

The Bachelor of Science in Mathematics – Education Track is specifically designed for students who wish to become licensed secondary mathematics teachers. This program integrates rigorous mathematical coursework with educational theory and classroom experience, equipping graduates with the knowledge and skills needed to teach effectively at the middle and high school levels.

Students follow a carefully structured curriculum that includes core mathematics courses—such as calculus, geometry, statistics, and algebra—alongside classes in pedagogy, curriculum development, classroom management, and educational psychology. Through field experiences and a student teaching internship, candidates gain hands-on practice in real classroom settings under the guidance of experienced educators.

The program not only meets state licensure requirements but also emphasizes the development of strong communication, instructional, and assessment skills tailored to diverse student populations. Graduates of this track are well-prepared to enter the teaching profession with confidence and are equipped to inspire the next generation of learners in mathematics. Additionally, they are positioned to pursue advanced degrees in education or mathematics education, should they choose to further their expertise.

Course	Title	Hours
Term 1 (Fall)		
ENG 101	English Comp I	3
COM 103	Interpersonal Communication	3
FYE 118	First Year Experience	3
Select one General Education Arts Course		3
ART 130	Introduction to Art	
ENG 211	Intro to Literature	
MUS 130	Introduction to Music	
THE 130	Introduction to Theatre	
Select one General Education Social Science Course		3
FIN 101	Financial Literacy	
ECO 201	Prin of Economics I	
	Hours	**15**
Term 2 (Spring)		
ENG 102	English Comp II	3
MAT 131	Calculus/Analy Geom I	5
MAT 200	Intro to Stat Reasoning & Ana.	4
COS 107	Prob Solving, Logic & Design	3
Select one General Education Behavioral Science Course		3
PSY 200	General Psychology	
SOC 203	Principles of Sociology	
	Hours	**18**

Term 3 (Fall)		
EDU 202	Found of Teaching and Educ	3
EDU 203	Intro to Tech. in Education	3
PHY 211	General Physics I	5
Select one General Education Humanities Course		3
EDU 204	Cultural Responsiveness	
COS 108	Prin Computer Science I	4
	Hours	**18**
Term 4 (Spring)		
EDU 302	Child & Adolescent Dev	3
EDU 304	Classroom & Learning Manage	3
EDU 310	Intro Exceptional Edu	3
MAT 132	Calculus/Analy Geom II	5
Select one General Educational Global/Civic Course		3
POS 101	American Government	
	Hours	**17**
Term 5 (Fall)		
EDU 303	Educational Assessment/Eval	3
MAT 231	Multivariate Calculus	3
MAT 300	Intro to Advanced Math	3
EDU 411	Teaching High Sch Math	3
Select one General Education Natural Science Course		3
BIO 101	Life Science	
	Hours	**15**
Term 6 (Spring)		
MAT 307	Linear Algebra	3
COS 310	Discrete Computing Structures	3
EDU 445	Teach HS Reading in Cont Area	3
EDU 450	Clinical Education Experience	6
	Hours	**15**
Term 7 (Fall)		
MAT 321	Probability/Statistics I	3
MAT 326	Modern Geometry	3
MAT 401	Modern Algebra I	3
Guided Elective		1
	Hours	**10**
Term 8 (Spring)		
EDU 454	Undergraduate Student Teaching	12
	Hours	**12**
	Total Hours	**120**