

Mathematics: Pure Mathematics Option

Bachelor of Science (BS)

Pure Mathematics Option

The Bachelor of Science in mathematics with an option in pure mathematics provides students with an opportunity to study pure mathematics and related fields that lead to graduate studies or to careers in industry or government.

The required core of this program is composed of calculus, algebra, discrete mathematics, probability and statistics. In addition, the student can choose from algebra, geometry, discrete or any other upper level mathematics courses to complete the program.

Pure Mathematics students will...

- Have an opportunity to study and do research with faculty.
- Have the opportunity to work with faculty to present research results at conferences.
- Interact with other mathematics majors through study groups.
- Be prepared to enter graduate school.
- Be encouraged to join Math Club.
- Have access to modern computer labs with mathematical and statistical software.
- Work with other students who are studying for student competitions like the Putnam Exam and the Missouri Collegiate Mathematics Competition.

Career Planning

Career preparation is part of the mission of Southeast. In fact, more than 90% of Southeast students participate in internships, clinical opportunities, student teaching, research assistantships, and study abroad.

Professional career counselors are available for all students. The Office of Career Services in Academic Hall 057 can provide students with professional career counseling, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

Demonstrated Career Proficiency is a Requirement of all Southeast Students		
CL001/CL002	First Semester	Complete the FOCUS2 assessment and develop a Career Action Plan.
CL003	Junior Year	Students gain information about career planning and job searching resources.
CL004	Senior Year	Students demonstrate advanced proficiency by identifying a position in their field, developing a cover letter, and tailoring a resume for the position. Materials are critiqued to ensure preparedness for a successful job search.

Internship and Employment Opportunities of Recent Graduates

- Department of Defense
- National Security Agency
- Boeing
- Attorney
- Web Page Designer

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This is a guide based on the 2015-2016 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use DegreeWorks to monitor their individual progress.

CURRICULUM CHECKLIST

Mathematics: Pure Mathematics Option – 46 Hours

Required Courses:

- ___ MA003 Math Major Field Achievement Test (0)
- ___ MA138 Discrete Mathematics I (3)
- ___ MA140 Analytic Geometry & Calculus I (5)
- ___ MA145 Analytic Geometry & Calculus II (4)
- ___ MA244 Analytic Geometry & Calculus III (4)
- ___ MA250 Foundations of Math (3)
- ___ MA345 Linear Algebra (3)
- ___ MA445 Modern Algebra (3)
- ___ MA449 Mathematical Problem Solving (3)
- ___ MA523 Probability & Statistics I (3)
- ___ MA546 Advanced Calculus I (3)

Choose 12 Hours MA courses higher than MA 250:

One course must be chosen from:

- ___ MA524 Probability and Statistics II (3)
- ___ MA532 Foundations of Geometry (3)
- ___ MA540 Projective Geometry (3)
- ___ MA545 Linear Algebra and Matrices (3)
- ___ MA547 Advanced Calculus II (3)
- ___ MA548 Enumerative Combinatorics (3)
- ___ MA549 Graph Theory
- ___ MA550 Differential Equations II (3)

University Studies Requirements (not already listed above):

UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Oral Expression, Literary Expression, Behavioral Systems, Living Systems, Physical Systems, Development of a Major Civilization, Economic Systems, Political Systems, Social Systems, two IU/UI3XX and one IU/UI4XX.

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	3	MA145	4
	EN100	3	Living Systems	3
	MA140	5	Oral Expression	3
	Behavioral Systems	3	Physical Systems	3
			Written Expression	3
	Total	14	Total	16
SECOND YEAR	MA138	3	MA250	3
	MA244	4	MA345	3
	Develop of a Major Civ	3	Artistic Expression	3
	Economic Systems	3	Political Systems	3
	Literary Expression	3	Social Systems	3
	Total	16	Total	18
<i>(summer courses are encouraged to avoid 18 hour semesters)</i>				
THIRD YEAR	MA523	3	MA445	3
	MA546	3	MAxxx ¹ Mathematics	3
	IU/UI3XX	3	IU/UI3XX	3
	Elective	3	Elective	3
	Elective	3	Elective	3
	Total	15	Total	15
FOURTH YEAR	MA449	3	MA003	0
	MAxxx ¹ Mathematics	3	MAxxx ¹ Mathematics	3
	MAxxx ¹ Mathematics	3	Elective	3
	UI4XX	3	Elective	3
	Elective	2	Elective	3
	Total	14	Total	12

¹Unspecified mathematics courses must be numbered above MA250, and must include one of the following courses: MA524, MA532, MA540, MA545, MA547, MA548, MA549 or MA550.

Degree requirements for all students: a minimum of 120 credit hours, completion of University Studies program, career proficiencies (CL001-004), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAPP) at the senior level.

Refer to the Undergraduate Bulletin or DegreeWorks for additional graduation requirements (i.e. minimum GPA and coursework) for your program of study.

Revised
3/19/2015