

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.

Becoming Career Ready...

/ Faculty work closely with students with opportunities to study and do research together as well as present research results at conferences. Students have access to modern computer labs with mathematical and statistical software.

/ Pure Mathematics graduates work in various careers throughout the public, private and government sectors including careers in insurance, banking, education, logistics, and more. Pure Mathematics graduates are also prepared to enter graduate school. Examples of job titles include cryptographer, mathematician, economist, actuary, financial planner, statistician, systems engineer, budget analyst, math instructor and data analyst.

/ Students are encouraged to join the Math Club and interact with other mathematics majors through study groups. Students have the opportunity to participate in research, present at conferences and publish in research journals, as well as work with faculty in preparing for student competitions like the Putnam Exam and the Missouri Collegiate Mathematics Competition.

/ 100% of Southeast programs offer real-world experience. Pure Mathematics students earn this experience through opportunities to intern with corporations in metropolitan areas such as St. Louis and Memphis.

/ The path to a successful career starts with you! You can maximize your career development by working closely with Career Services and Southeast faculty – they are here to help you connect your passions, interests and skills to jobs and opportunities in the field. Career Services provides professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities and more.

Internship and Employment Opportunities of Recent Graduates:

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

Special Options with Mathematics

Southeast offers a Master of Natural Science in Mathematics.

Transfer and Dual Credit Students

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at semo.edu/transfercredit.

To learn more
 Office of Admissions
 (573) 651-2590
admissions@semo.edu
semo.edu

To explore
 the College of Science,
 Technology, Engineering and
 Mathematics online, visit
semo.edu/stem

For advising
 Center for Academic Advising
semo.edu/advising


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This is a guide based on the 2019-2020 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 Degree Works to monitor their individual progress.

CURRICULUM CHECKLIST

Mathematics: Pure Mathematics Option – 46 Hours – no minor required
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)

General Education Requirements – some requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 6 hours
- Constitution Requirement – 3 hours
- Written Communication – 6 hours
- Oral Communication – 3 hours
- Natural Sciences – 7 hours (from two disciplines, one to include a lab)
- Mathematics – 3 hours
- Humanities & Fine Arts – 9 hours (from at least two disciplines)
- Additional requirements – 5 hours (to include UI100 for native students)
- Civics examination

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	3	MA138	3
	EN100	3	MA145	4
	MA140	5	General Education	3
	General Education	3	General Education	3
	General Education	3	General Education	3
Total	14		Total	16
SECOND YEAR	MA244	4	MA345	3
	MA250	3	General Education	3
	General Education	3	General Education	3
	General Education	3	General Education	3
	General Education	3	General Education	3
Total	16		Total	15
THIRD YEAR	MA523	3	MAxxx ¹ Mathematics	3
	MA546	3	MAxxx ¹ Mathematics	3
	Elective	3	Elective	3
	Elective	3	Elective	3
	Elective	3	Elective	3
Total	15		Total	15
FOURTH YEAR	MA445	3	MA003	0
	MA449	3	MAxxx ¹ Mathematics	3
	MAxxx ¹ Mathematics	3	Elective	3
	Elective	3	Elective	3
	Elective	2	Elective	3
			Elective	3
Total	14		Total	15

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 the General Education program, completion of 39 senior division hours (300-599), and the Writing Proficiency Exam (WP003).

Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.