

Mathematics: Applied Mathematics and Statistics Option

Bachelor of Science (BS)

Applied Mathematics and Statistics Option

The Bachelor of Science in Mathematics with an option in applied mathematics and statistics gives students the opportunity to focus in statistics, industrial mathematics, or computational mathematics.

The core of this program is composed of calculus, discrete mathematics, probability, and statistics, which complement the theoretical and applied components chosen by students. During the first two years of the program, students gain a solid background in mathematics.

Applied mathematics and statistics students will...

- Study with our qualified, diverse faculty.
- Interact with accessible faculty who will prepare them for a diverse workforce.
- Be prepared for careers in business and industry.
- Be prepared to enter graduate school.
- Have an opportunity to work with the Applied Statistics Center to analyze real-world data sets.
- Have access to modern computer labs with mathematical and statistical software.
- Be encouraged to join the Math Club.
- Have the opportunity to work with faculty to present research results at conferences.

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

- Boeing
- MasterCard
- Visa
- Johns Hopkins School of Public Health

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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: Applied Mathematics and Statistics Option – 43 hours

- ___ MA003 Math Major Field Achievement Test (0)
- ___ MA138 Discrete Mathematics I (3)
- ___ MA140 Analytic Geometry & Calculus I (5)
- ___ MA145 Analytic Geometry & Calculus II (4)
- ___ MA223 Elem Probability & Statistics (3)
- ___ MA244 Analytic Geometry & Calculus III (4)
- ___ MA250 Foundations of Math (3)
- ___ MA449 Mathematical Problem Solving (3)

Choose 3 Hours From:

- ___ MA445 Modern Algebra (3)
- ___ MA523 Probability & Statistics I (3)
- ___ MA546 Advanced Calculus I (3)

Choose 15 Hours From (include at least 3 MA courses):

- ___ CH311 Foundations of Physical Chemistry (4)
- ___ CH312 Advanced Physical Chemistry (3)
- ___ CS345 Discrete Structures II (3)
- ___ EP261 Engineering Mechanics Statics (3)
- ___ EP262 Engineering Mechanics Dynamics (3)
- ___ EP361 Thermal Analysis (3)
- ___ EP372 Signals & Systems (3)
- ___ EP374 Control Systems (3)
- ___ MA338 Discrete Math II (3)
- ___ MA345 Linear Algebra (3)
- ___ MA350 Differential Equations I (3)
- ___ MA423 Statistical Analysis for Forensic Science (3)
- ___ MA425 Applied Regression Analysis (3)
- ___ MA443 Elementary Number Theory (3)
- ___ MA464 Mathematical Cryptography (3)
- ___ MA523 Probability & Statistics I (3)
- ___ MA524 Probability & Statistics II (3)
- ___ MA545 Linear Algebra & Matrices (3)
- ___ MA546 Advanced Calculus I (3)
- ___ MA547 Advanced Calculus II (3)
- ___ MA550 Differential Equations II (3)
- ___ MA580 Experimental Design & Analysis of Variance (3)
- ___ PH341 Optics (3)
- ___ PH370 Mechanics (3)
- ___ PH371 Electromagnetics (3)
- ___ PH570 Mathematical Physics (3)

Choose 3 Hours From:

- ___ MA524 Probability & Statistics II (3)
- ___ MA532 Foundations of Geometry (3)
- ___ MA545 Linear Algebra & Matrices (3)
- ___ MA547 Advanced Calculus II (3)
- ___ MA548 Enumerative Combinatorics (3)
- ___ MA549 Graph Theory (3)
- ___ 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 UI4XX

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	3	MA145	4
	EN100	3	MA223	3
	MA140	5	Economic Systems	3
	Behavioral Systems	3	Physical Systems	3
	Living Systems	3	Written Expression	3
Total	17		Total	16

SECOND YEAR	MA138	3	MA250	3
	MA244	4	Required elective	3
	Artistic Expression	3	Oral Expression	3
	Literary Expression	3	Social Systems	3
	Political Systems	3	Elective	3
Total	16		Total	15

(summer courses are encouraged to avoid 18 hour semesters)

THIRD YEAR	Required elective	3	Math Elective	3
	MA445/523/546	3	IU/UI3XX	3
	IU/UI3XX	3	Elective	3
	Elective	3	Elective	3
	Elective	3	Elective	2
Total	15		Total	14

FOURTH YEAR	MA449	3	MA003	0
	Required elective	3	Required elective	3
	UI4XX	3	Develop of a Major Civ	3
	Elective	3	Elective	3
	Elective	3	Elective	3
Total	15		Total	15

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 course work) for your program of study.