

**Bachelor of Science (BS)****Actuarial Science Option**

Actuarial science includes the study of areas such as mathematics, probability, statistics, finance and economics. An actuary applies these areas of study to assess risk in business and industrial settings. Actuaries assess financial risks as diverse as natural disaster, insurance premiums and the impact of climate change. The most common areas studied are insurance and finance.

Students will have a strong foundation in calculus and probability will having access to modern computer labs with mathematical and statistical software. The Actuarial Science curriculum uses software to model and predict risk behaviors. Students will also take business courses, which is a unique feature on our program. Students are encouraged to join the Math Club.

**Becoming Career Ready...**

/ Faculty with diverse backgrounds work closely with students exposing them to practical projects in actuarial risk, financial time series and regression modeling.

/ Actuarial Science graduates generally become professional actuaries, working with private or public-sector employers. In addition to the specialized actuary careers, graduates can find career opportunities in the fields of finance, management, statistician and education. Examples of job titles include actuary, risk analyst or consultant, finance analyst, statistician and insurance underwriter.

/ Students are prepared for professional examinations through the Actuarial Science curriculum. Curriculum guidance and study sessions are part of the program core.

/ 100% of Southeast programs offer real-world experience. Actuarial Science 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
- New York Stock Exchange
- The Hartford
- State Farm
- Lockton Companies

**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](http://semo.edu/transfercredit).

**To learn more**  
 Office of Admissions  
 (573) 651-2590  
[admissions@semo.edu](mailto:admissions@semo.edu)  
[semo.edu](http://semo.edu)

**To explore**  
 the College of Science,  
 Technology, Engineering and  
 Mathematics online, visit  
[semo.edu/stem](http://semo.edu/stem)

**For advising**  
 Center for Academic Advising  
[semo.edu/advising](http://semo.edu/advising)

**Bachelor of Science (BS)**

This is a guide based on the  
2020-2021

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: Actuarial Science Option – 76-77 hours – No minor required**

- \_\_\_ AC221 Principles of Accounting I (3)
- \_\_\_ AC222 Principles of Accounting II (3)
- \_\_\_ EC215 Principles of Microeconomics (3)
- \_\_\_ EC225 Principles of Macroeconomics (3)
- \_\_\_ FI361 Financial Management (3)
- \_\_\_ FI362 Advanced Financial Management (3)
- \_\_\_ 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)
- \_\_\_ MA345 Linear Algebra (3)
- \_\_\_ MA375 Theory of Interest (3)
- \_\_\_ MA385 Financial Mathematics (3)
- \_\_\_ MA425 Applied Regression Analysis (3)
- \_\_\_ MA523 Probability & Statistics I (3)
- \_\_\_ MA524 Probability & Statistics II (3)
- \_\_\_ MA526 Actuarial Seminar (3)
- \_\_\_ MA575 Time Series and Forecasting (3)
- \_\_\_ MA585 Introduction to Life Contingencies (3)

**Choose one of the following: 3-4 Hours**

- \_\_\_ CS155 Computer Science I (4)
- \_\_\_ CS177 Programming for Scientists and Engineers (3)
- \_\_\_ MA334 Mathematical Programming (3)

**Choose 6 hours from the following:**

- \_\_\_ EC351 Applied Economic Models (3)
- \_\_\_ EC490 Business Forecasting (3)
- \_\_\_ FI351 Principles of Insurance (3)
- \_\_\_ FI368 Investments (3)
- \_\_\_ MA350 Differential Equations I (3)
- \_\_\_ MA546 Advanced Calculus I (3)
- \_\_\_ MA550 Differential Equations II (3)
- \_\_\_ MA580 Experimental Design and Analysis of Variance (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
<b>FIRST YEAR</b>	UI100	3	AC222	3
	EN100	3	MA138	3
	AC221	3	MA145	4
	MA140	5	General Education	3
	General Education	3	Elective	3
<b>Total</b>	<b>17</b>	<b>Total</b>	<b>16</b>	
<b>SECOND YEAR</b>	EC215	3	EC225	3
	MA244	4	MA345	3
	MA250	3	MA385	3
	MA375	3	Computer Programming <sup>1</sup>	3
	General Education	3	General Education	3
<b>Total</b>	<b>16</b>	<b>Total</b>	<b>15</b>	
<b>THIRD YEAR</b>	MA523	3	FI361	3
	Major elective <sup>2</sup>	3	MA524	3
	General Education	3	MA526	3
	General Education	3	MA585	3
	Elective	2	General Education	3
<b>Total</b>	<b>14</b>	<b>Total</b>	<b>15</b>	
<b>FOURTH YEAR</b>	FI362	3	MA003	0
	MA425	3	MA575	3
	Major elective <sup>2</sup>	3	General Education	3
	General Education	3	General Education	3
	Elective	3	Elective	3
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>12</b>	

<sup>1</sup>Select one: CS155 or CS177 or MA334

<sup>2</sup>Major Electives include two of the following courses: MA350, MA546, MA550, MA580, EC351, EC490, FI351 or FI368.

**Degree requirements for all students:** a minimum of 120 credit hours, completion of the General Education program, and completion of 39 senior division hours (300-599). Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.

Revised  
6/1/2020