



Mathematics: Actuarial Science Option

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. The most common areas studied are insurance and finance.

Actuarial science students will...

- Interact with statistics and actuarial faculty with diverse backgrounds.
- Be exposed to practical projects in actuarial risk, financial time series, and regression modeling.
- Have a strong foundation in calculus and probability.
- Be prepared for professional examinations. Curriculum guidance and study sessions are part of the program core.
- Have access to modern computer labs with mathematical and statistical software.
- Be encouraged to join Math Club.
- Learn how to use software to model and predict risk behaviors.
- Enroll in business courses, which is a unique feature of this program.
- Have opportunities to intern with corporations in metropolitan areas such as St. Louis and Memphis.

Career Planning

Career preparation is part of the mission of Southeast. 100% of programs offer our students an internship, study-abroad program, clinical opportunity, student teaching or research internship.

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

| Demonstrated Career Proficiency is a Requirement of all Southeast Students | | |
|----------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| CL001 | First Semester | Students connect academic career planning by completing an online career assessment |
| CL002 | Second Semester | Students learn more about resources available to enhance academic and career planning |
| CL003 | Junior Year | Students learn about continued career planning, job search strategies, and networking |
| CL004 | Senior Year | Students learn about resume development, professional communication, interviewing, and transitioning to the first job from college |

Internship and Employment Opportunities of Recent Graduates

- New York Stock Exchange
- The Hartford
- State Farm
- Lockton Companies

Special Options with Mathematics

Southeast offers a Master of Natural Science in Mathematics.

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

To explore
the College
of Science, Technology and
Agriculture online, visit
www.semo.edu/costa

For advising
Center for Academic Advising - North
(573) 651-5090
www.semo.edu/advising
advisingnorth@semo.edu



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This is a guide based on the 2017-2018 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: Actuarial Science Option – 73-74 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)
- ___ MA 003 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)
- ___ MA449 Mathematical Problem Solving (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)

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)
- ___ MA525 Actuarial Modeling (3)
- ___ MA546 Advanced Calculus I (3)
- ___ MA550 Differential Equations II (3)
- ___ MA580 Experimental Design and Analysis of Variance (3)

University Studies Requirements (not already listed above):

UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Literary Expression, Oral Expression, Written Expression, Behavioral Systems, Living Systems, Physical Systems, Development of a Major Civilization, Political Systems, Social Systems

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

SAMPLE FOUR-YEAR PLAN

| | Fall Semester | | Spring Semester | |
|-------------------------------------------------------------------|-----------------------------------|--------------|------------------------|-----|
| | Course # | Hrs | Course # | Hrs |
| FIRST YEAR | UI100 | 3 | AC222 | 3 |
| | EN100 | 3 | MA145 | 4 |
| | AC221 | 3 | MA223 | 3 |
| | MA140 | 5 | Living Systems | 3 |
| | Behavioral Systems | 3 | Written Expression | 3 |
| Total | 17 | Total | 16 | |
| SECOND YEAR | EC215 | 3 | EC225 | 3 |
| | MA138 | 3 | MA250 | 3 |
| | MA244 | 4 | MA345 | 3 |
| | MA375 | 3 | MA385 | 3 |
| | Literary Expression | 3 | Oral Expression | 3 |
| Total | 16 | Total | 15 | |
| <i>(summer courses are encouraged to avoid 18 hour semesters)</i> | | | | |
| THIRD YEAR | MA523 | 3 | FI361 | 3 |
| | Computer Programming ¹ | 3 | MA524 | 3 |
| | Major elective ² | 3 | MA526 | 3 |
| | Physical Systems | 3 | MA585 | 3 |
| | Elective | 2 | Political Systems | 3 |
| Total | 14 | Total | 15 | |
| FOURTH YEAR | FI362 | 3 | MA003 | 0 |
| | MA425 | 3 | MA575 | 3 |
| | MA449 | 3 | Artistic Expression | 3 |
| | Major elective ² | 3 | Develop of a Major Civ | 3 |
| | Social Systems | 3 | | |
| Total | 15 | Total | 12 | |

¹Select one: CS155 or CS177

²Major Electives include two of the following courses: MA350, MA525, MA546, MA550, MA580, EC351, EC490, FI351 or FI368.

Degree requirements for all students: a minimum of 120 credit hours, completion of University Studies program, completion of 39 senior division hours (300-599), 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 Degree Works for additional graduation requirements for your program.

Revised
3/31/2017