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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL001/CL002</td>
<td>First Semester</td>
<td>Complete the FOCUS2 assessment and develop a Career Action Plan.</td>
</tr>
<tr>
<td>CL003</td>
<td>Junior Year</td>
<td>Students gain information about career planning and job searching resources.</td>
</tr>
<tr>
<td>CL004</td>
<td>Senior Year</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Internship and Employment Opportunities of Recent Graduates**
- Boeing
- MasterCard
- Visa
- Johns Hopkins School of Public Health

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

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

**For advising**
College of Science, Technology and Agriculture Advising Center  
(573) 651-5930  
www.semo.edu/costa/advising
Mathematics: Applied Mathematics and Statistics Option
Bachelor of Science (BS)

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

<table>
<thead>
<tr>
<th>Course #</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA003 Math Major Field Achievement Test</td>
<td>0</td>
</tr>
<tr>
<td>MA138 Discrete Mathematics I (3)</td>
<td></td>
</tr>
<tr>
<td>MA140 Analytic Geometry &amp; Calculus I (5)</td>
<td></td>
</tr>
<tr>
<td>MA145 Analytic Geometry &amp; Calculus II (4)</td>
<td></td>
</tr>
<tr>
<td>MA223 Elem Probability &amp; Statistics</td>
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</tr>
<tr>
<td>MA244 Analytic Geometry &amp; Calculus III (4)</td>
<td></td>
</tr>
<tr>
<td>MA250 Foundations of Math (3)</td>
<td></td>
</tr>
<tr>
<td>MA449 Mathematical Problem Solving (3)</td>
<td></td>
</tr>
</tbody>
</table>

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)
- 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)
- MA426 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 Electromagnetcs (3)
- PH670 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)
- MA559 Foundations of Math (3)
- MA560 Elementary Number Theory (3)
- MA580 Experimental Design & Analysis of Variance (3)

**SAMPLE FOUR-YEAR PLAN**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course #</td>
<td>Hrs</td>
</tr>
<tr>
<td>UI100</td>
<td>3</td>
</tr>
<tr>
<td>EN100</td>
<td>3</td>
</tr>
<tr>
<td>MA140</td>
<td>5</td>
</tr>
<tr>
<td>Behavioral Systems</td>
<td>3</td>
</tr>
<tr>
<td>Living Systems</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
<tr>
<td>MA138</td>
<td>3</td>
</tr>
<tr>
<td>MA244</td>
<td>4</td>
</tr>
<tr>
<td>Artistic Expression</td>
<td>3</td>
</tr>
<tr>
<td>Literary Expression</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

(Eligible students are encouraged to avoid 18 hour semesters)

- MA445/523/546
- UI/UI3XX
- Required elective
- Elective
- Elective

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.