

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

A St. Louis Outreach Office, located in Chesterfield, Mo., provides career exploration assistance, resume critiques, interview tips, job search strategies 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. |
| Career Services , located in Academic Hall 057, provides professional career advising to guide students in their career development. | | |

Internship and Employment Opportunities of Recent Graduates

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

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
semo.edu/costa

For advising
 College of Science, Technology and Agriculture
 Advising Center
 (573) 651-5930
semo.edu/costa/advising/index.htm

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Degree Map

This is a guide based on the 2014-2015 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)
- ___ MA240 Analytic Geometry & Calculus III (3)
- ___ MA250 Foundations of Mathematics (3)
- ___ MA448 Mathematics Seminar (1)

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)
- ___ MA245 Vector Calculus (2)
- ___ MA338 Discrete Math II (3)
- ___ MA345 Linear Algebra (3)
- ___ MA350 Differential Equations I (3)
- ___ MA423 Statistical Analysis for Forensic Science (3)
- ___ MA464 Mathematical Cryptography (3)
- ___ MA486-488 Internship in Mathematics (1-3)
- ___ 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)
- ___ MA545 Linear Algebra & Matrices (3)
- ___ MA547 Advanced Calculus II (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

Mathematics:

Applied Mathematics and Statistics Option

Requirements for the 2014-2015 Undergraduate Bulletin

| | 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 |
| | MA240 | 3 | Required elective | 3 |
| | Artistic Expression | 3 | Required elective | 3 |
| | Literary Expression | 3 | Oral Expression | 3 |
| | Political Systems | 3 | Social Systems | 3 |
| Total | 15 | Total | 15 | |

(summer courses are encouraged to avoid 18 hour semesters)

| | | | | |
|--------------|-------------------|--------------|-------------------|---|
| THIRD YEAR | Required elective | 3 | MA524/545/547/550 | 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 | MA448 | 1 | 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 | 16 | Total | 12 | |

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 freshman and senior levels.

Refer to the Undergraduate Bulletin or DegreeWorks for additional graduation requirements (i.e., minimum GPA and course work) for your program of study.

Revised
03/11/2014

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the College
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