Mathematics

Bachelor of Arts in Mathematics

Major: MATH  
Degree: BA  
Unit: College of Arts and Sciences (AS)

The Bachelor of Arts in Mathematics is designed for students wishing to obtain a broad yet substantial background in mathematics as well as general education. The Bachelor of Arts covers a wide variety of topics such as algebra, geometry, and probability. This breadth is particularly well suited for students preparing for secondary certification in mathematics.

NOTE: Admission to the major requires enrollment in a mathematics course beyond MATH 205; a minimum cumulative GPA of 2.0; and a minimum GPA of 2.0 on all courses in the major.

Completion of this degree requires work to be submitted for the department's Learning Outcomes Measurement. For details, contact the department.

Semester Hours Total

<table>
<thead>
<tr>
<th>General Education</th>
<th>34</th>
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All degrees require the completion of the University-wide General Education Program; see page 15 of this catalog for the General Education requirements and the courses that fulfill them. Some General Education requirements may be met in the requirements for the major or supporting coursework, in which case additional electives may be required to complete the minimum hours for the degree.

Arts & Sciences Programmatic Requirements

General 101: A&S Orientation ........................................1  
Foreign Language ......................................................12

(completion of the second semester of a single foreign language; hours will vary depending on the language taken)

Electives in Humanities or Social Sciences, at the 300 level or above (in addition to courses counted toward General Education) ........................................6 ......13-15  
WR—two approved courses at the 300 level or above (may be incorporated into other degree requirements)

Mathematics Department

Mathematics 2081-209, 301 ..................................................12  
Mathematics 311 ..........................................................3  
Mathematics 325 ..........................................................3  
Mathematics 387 ..........................................................3  
Mathematics 501 and 521 .................................................6  
Mathematics 550 or 551 ..................................................3  
Mathematics 560 or 561 ..................................................3  
Mathematics electives chosen in consultation with departmental advisor ........................................3 ......36

Supporting Courses

One of the following sequences: ...........................................6-10  
Physics 295-296 and 298-299  
Chemistry 201-202, 207, 208, 209  
Biology 240, 242, 244  
Elective in second science discipline ..................................3  
Electives in Natural Sciences, other than Mathematics ..........5-8 ......18

Minimum Electives ................................................................11

Minimum Total ......................................................................121

Only 40 hours in the major department may be applied toward the Bachelor of Arts degree. Mathematics courses at the 100 level do not count toward hours in the major.

At least 50 of the total minimum hours required must be at the 300 level or above. A minimum of 9 hours in courses numbered 311 or higher must be successfully completed in the Department of Mathematics at the University of Louisville.

1 Fulfills general education requirement.

Mathematics

Bachelor of Science in Mathematics

Major: MATH  
Degree: BS  
Unit: College of Arts and Sciences (AS)

The Bachelor of Science offers a solid, in-depth knowledge of mathematics, combined with a concentration in an area of application. Students preparing to enter a traditional graduate program in mathematics should focus on the concentration in pure mathematics; those preparing for graduate school in a specialized area should use the appropriate concentration. The concentration in actuarial mathematics also includes many of the courses that prepare the student for the Actuarial Examinations.

NOTE: Admission to the major requires enrollment in a mathematics course beyond MATH 205; a minimum cumulative GPA of 2.0; and a minimum GPA of 2.0 on all courses in the major.

Completion of this degree requires work to be submitted for the department's Learning Outcomes Measurement. For details, contact the department.

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* 16 hours of General Education requirements (Mathematics and Natural Sciences) are met with requirements in the major or supporting coursework.

Arts & Sciences Programmatic Requirements

General 101: A&S Orientation ............................................1  
Foreign Language .........................................................8  
(completion of the second semester of a single foreign language; hours will vary depending on the language taken)

Electives in Humanities or Social Sciences, at the 300 level or above (in addition to courses counted toward General Education) ........................................6 ......13-15  
WR—two approved courses at the 300 level or above
Mathematics Department

Mathematics Core Requirements
Mathematics 205-206, 301 ..................................................... 12
Mathematics 311 ................................................................. 3
Mathematics 325 ................................................................. 3
Mathematics 408 ................................................................. 3
Mathematics 501 or 521 ....................................................... 3
Mathematics electives chosen in consultation with
departmental advisor .................................................. 6
Concentration in one of areas below ..................................... 27 ............. 57
Each concentration has its own set of electives;
consult the department advisor for appropriate courses.

Mathematics Concentrations

Actuarial Science
Mathematics 561 ................................................................. 3
Mathematics 562 ................................................................. 3
Mathematics 570 ................................................................. 3
Mathematics 572 ................................................................. 3
Application Area electives .................................................. 15
(No more than 6 hours may be in mathematics)

Computational and Applied Mathematics
Mathematics 387 ................................................................. 3
Mathematics 402 ................................................................. 3
Mathematics 535 ................................................................. 3
Mathematics 536 ................................................................. 3
Application Area electives .................................................. 15
(No more than 6 hours may be in mathematics)

Probability and Statistics
Mathematics 560 ................................................................. 3
Mathematics 561 ................................................................. 3
Mathematics 562 ................................................................. 3
Mathematics 564 ................................................................. 3
Application Area electives .................................................. 15
(No more than 6 hours may be in mathematics)

Pure Mathematics
Mathematics 387 ................................................................. 3
Mathematics 502 ................................................................. 3
Mathematics 522 ................................................................. 3
Mathematics 561 ................................................................. 3
Application Area electives .................................................. 15
(No more than 6 hours may be in mathematics)

Supporting Courses
One of the following sequences: ........................................... 7-10
Physics 298-299 and 295-296
Chemistry 201-202, 207, 208, 209
Biology 240, 242, 244
Elective in second science discipline ................................. 3
One computer related course chosen in consultation
with departmental advisor ............................................ 3
Elective in Natural Sciences (other than Mathematics) or
a second computer related course chosen in consultation
with departmental advisor ............................................ 3 16-19

Minimum Electives ............................................................ 6-11

[Elective hours are dependent on completion of 10 hours of General Education
requirements through requirements in the major and supporting coursework.]

Minimum Total .................................................................. 121

Only 60 hours in the major department may be applied toward the Bachelor of
Science degree. Mathematics courses at the 100 level do not count toward
hours in the major.

At least 50 of the total minimum hours required must be at the 300 level or
above. A minimum of 12 hours in courses numbered 311 or higher must be
successfully completed in the Department of Mathematics at the University of
Louisville.

1 Fulfills general education requirement.

Mathematics

Minor in Mathematics

Minor: MATH
Unit: College of Arts and Sciences (AS)

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<td>Minimum Total .................................................................. 21</td>
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For a minor in Mathematics, 6 hours in courses numbered 311 or higher must be
successfully completed in the Department of Mathematics at the University of
Louisville.

Mathematics

Minor in Actuarial Mathematics

Minor: MATA
Unit: College of Arts and Sciences (AS)

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Note: For a minor in Mathematics, 6 hours in courses numbered 311 or higher
must be successfully completed in the Department of Mathematics at the
University of Louisville.