**MATHEMATICS, BSLAS**

_for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Mathematics_

Students in the Mathematics major can choose one of the following to complete the major:

Mathematics major (p. 1)
Mathematics major, Applied Mathematics concentration (http://catalog.illinois.edu/undergraduate/las/mathematics-bslas/applied-mathematics/)
Mathematics major, Data Optimization concentration (http://catalog.illinois.edu/undergraduate/las/mathematics-bslas/data-optimization/)
Mathematics major, Math Doctoral Preparation concentration (http://catalog.illinois.edu/undergraduate/las/mathematics-bslas/math-doctoral-preparation/)
Mathematics major, Mathematics Teaching concentration (http://catalog.illinois.edu/undergraduate/las/mathematics-bslas/teaching-mathematics/)

Mathematics is a broad discipline that contains a range of areas of specialization within it. The required core courses provide fundamental background for mathematics in general. The concentrations allow the student to broaden this background or begin to specialize. Students must complete the core courses and a concentration.

An entering student in mathematics should have academic preparation to enroll in MATH 220 (http://catalog.illinois.edu/search/?P=MATH%20220) during the first semester. Admission to MATH 220 (http://catalog.illinois.edu/search/?P=MATH%20220) requires an acceptable ALEKS score. A student should attain grades of B in calculus in order to complete the advanced courses successfully.

**Undergraduate programs in Mathematics**

Actuarial Science, BSLAS (http://catalog.illinois.edu/undergraduate/las/actuarial-science-bslas/)
Mathematics, BSLAS (p. 1)
Mathematics & Computer Science, BSLAS (http://catalog.illinois.edu/undergraduate/eng_las/mathematics-computer-science-bslas/)

_for the degree of Bachelor of Science in Liberal Arts and Sciences Major in Mathematics_

A Major Plan of Study form, declaring concentration and supporting coursework, must be completed and submitted to the LAS Student Academic Affairs Office except for students in the Teaching of Mathematics concentration. Please complete this form with an advisor in the Mathematics Undergraduate Office within 1-2 semesters of completing MATH 347 or MATH 348.

**Departmental distinction:** Distinction will be awarded on the basis of selection of 400-level courses in mathematics and the grade point average. Graduation with High Distinction or Highest Distinction in Mathematics requires participation in the Program for Distinction in Mathematics or Mathematics Education. Full details are available at the departmental website.

**Minimum required major and supporting course work:**
Requirements including the campus general education language requirement.

**Minimum required major and supporting course work:**
- Calculus III (Students should have credit for MATH 220/MATH 221 and MATH 231 before enrolling in MATH 241.)
- MATH 347 or MATH 348
- Abstract Linear Algebra (Students may not receive credit for both MATH 416 and either ASRM 406 or MATH 415.)
- Intro to Abstract Algebra
- Honors Abstract Algebra
- Honors Real Analysis (If MATH 424 or MATH 447 is completed, a requirement for the Math Doctoral Preparation concentration has been satisfied.)
- Real Variables
- Probability Theory (If STAT 400 is completed, a requirement for the Data Optimization concentration has been satisfied.)
- Statistics and Probability I
- Intro to Abstract Algebra
- Introduction to Computer Science I
- Introduction to Computer Science

Approved supporting coursework outside Mathematics (Supporting coursework may be completed with 12 advisor-approved hours of a single math-related area outside of MATH/ASRM not used for a major requirement and must include at least one advanced course; ANY minor which is fulfilled with at least 12 hours of courses, including one advanced course, not used for the major nor cross-listed with MATH/ASRM; or any double major or dual degree.)

**Mathematics Courses**

Select a total of two courses from two of the following three lists: 6

**Geometry**
- MATH 402: Non Euclidean Geometry
- MATH 403: Euclidean Geometry
- MATH 423: Differential Geometry
- MATH 481: Vector and Tensor Analysis

**Differential Equations and Complex Analysis**
- MATH 441: Differential Equations
- MATH 446: Applied Complex Variables
- MATH 448: Complex Variables

**Number Theory**

Information listed in this catalog is current as of 07/2023
MATH 453  Number Theory
Two additional 400-level or approved 500-level mathematics courses. (Coursework awarded S/U grades may not be used to fill this requirement.)  

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for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Mathematics

1. Ability to construct proofs and recognize when proofs are complete.
2. Ability to use theorems in order to solve problems.
3. Technical proficiency in calculus and linear algebra
4. The ability to apply mathematics; translating real-world problems into mathematical problems and solving them.

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department website: https://www.math.illinois.edu/
department faculty: Mathematics Faculty (https://math.illinois.edu/directory/faculty/)
advising: Math advising (https://math.illinois.edu/academics/undergraduate-program/undergraduate-advising/)
overview of college admissions & requirements: Liberal Arts & Sciences (http://catalog.illinois.edu/schools/las/academic-units/)
college website: https://las.illinois.edu/
email: mathadvising@illinois.edu

Information listed in this catalog is current as of 07/2023