MATHEMATICS, B.A.

Mathematics emphasizes careful reasoning, along with the analysis and solution of problems. A Bachelor of Arts in Mathematics from Saint Louis University will appeal to students who like to develop their problem-solving and analytical thinking skills. For this reason, mathematics is also an appropriate major for SLU students planning careers in law or medicine.

Program Highlights

- Saint Louis University's mathematics program combines the features of both small and large schools to create a compelling educational experience. Students can expect a student-friendly environment, with math courses for majors being small in size and taught by regular faculty. Faculty get to know students and provide individual attention.
- Students are recruited for participation in math contests and other opportunities, including part-time positions as graders, tutors and learning assistants.
- Like a large school's program, math at SLU also has enough breadth to let students tailor their upper-division math courses to their interests and goals.
- Students interested in pure mathematics can choose theoretical courses that provide solid preparation for graduate school.
- A Bachelor of Science in Math (https://catalog.slu.edu/colleges-schools/arts-sciences/mathematics-statistics/mathematics-bs/) is also available.

Curriculum Overview

SLU's Bachelor of Arts in Mathematics is designed to meet the needs of students with a wide variety of interests. All mathematics majors complete a core of five required courses and then choose elective courses to tailor the program of study to meet their individual goals.

Along with the standard program of study for the B.A. in mathematics, the department offers a statistics concentration and a teacher's option. The concentration in statistics is designed to prepare students for careers in industry or for graduate study in statistics or data science. The teachers option requires students to choose courses that meet the requirements for state certification in mathematics.

Teachers Option

For students planning a career in secondary education, SLU's math degree offers an option featuring courses that meet the requirements for state certification in mathematics.

Concentration in Statistics

The concentration in statistics is for students who plan to pursue a career in analyzing data.

Fieldwork and Research Opportunities

The SLU Mathematics and Computer Science Club allows students interested in mathematics and computer science to explore relevant topics outside of the classroom. The club holds weekly meetings that bring students and faculty together for various activities, including mathematical puzzles, integration bees, game beta testing and career-focused presentations by industry experts.

Careers

Graduates in mathematics and statistics are versatile. They enter jobs in business, industry, medicine, government and education. Mathematicians, statisticians, data scientists, actuaries, analysts and consultants are in high demand and lead rewarding and well-compensated careers.

Many of our graduates pursue advanced degrees in mathematics, statistics or other fields. Students with mathematics and statistics degrees are attractive to professional graduate schools in law, medicine and business for their analytical skills and the ability to work in a problem-solving environment.

Some of the industry and government employers where our graduates have found success include:

- Allstate
- Ameren
- Boeing
- Booz Allen Hamilton Consulting
- Boston Scientific
- Cofactor Genomics
- Georgia-Pacific
- Kemper Insurance
- Mercer
- MetLife
- Milliman
- National Geospatial-Intelligence Agency
- National Security Agency
- NISA Investment Advisors
- Varsity Tutors

Admission Requirements

Begin Your Application (https://www.slu.edu/apply.php)

Saint Louis University also accepts the Common Application and the Coalition Application.

Freshman

All applications are thoroughly reviewed with the highest degree of individual care and consideration to all credentials that are submitted. Solid academic performance in college preparatory coursework is a primary concern in reviewing a freshman applicant's file.

To be considered for admission to any Saint Louis University undergraduate program, applicants must be graduating from an accredited high school, have an acceptable HiSET exam score or take the General Education Development (GED) test.

Transfer

Applicants must be a graduate of an accredited high school or have an acceptable score on the GED or HiSET.

Students who have attempted fewer than 24 semester credits (or 30 quarter credits) of college credit must follow the above freshmen admission requirements. Students who have completed 24 or more semester credits (or 30 quarter credits) of college credit must submit transcripts from all previously attended college(s).

In reviewing a transfer applicant's file, the Office of Admission holistically examines the student's academic performance in college-level coursework as an indicator of the student's ability to meet the academic rigors of Saint Louis University. Where applicable, transfer students will be evaluated on any courses outlined in the continuation standards of their preferred major.

International Applicants

All admission policies and requirements for domestic students apply to international students along with the following:

- Demonstrate English Language Proficiency (https://catalog.slu.edu/academic-policies/office-admission/undergraduate/english-language-proficiency/)
- All academic records must include an English translation. An official course-by-course transcript evaluation may be required and accepted.

Tuition

Tuition/Fee	Cost Per Year
Undergraduate Tuition	$58,960
University Fees	$1,000

Additional charges may apply. Other resources are listed below:

Net Price Calculator (https://www.slu.edu/financial-aid/tuition-and-costs/calculator.php)

Cost of Attendance (https://www.slu.edu/financial-aid/tuition-and-costs/cost-of-attendance.php)

Information on Tuition and Fees (https://catalog.slu.edu/academic-policies/student-financial-services/tuition/)

Miscellaneous Fees (https://catalog.slu.edu/academic-policies/student-financial-services/fees/)

Information on Summer Tuition (https://catalog.slu.edu/academic-policies/student-financial-services/tuition-summer-current/tuition-summer-current.pdf)

Scholarships and Financial Aid

There are two principal ways to help finance a Saint Louis University education:

- **Scholarships:** Scholarships are awarded based on academic achievement, service, leadership and financial need.
- **Financial Aid:** Financial aid is provided through grants and loans, some of which require repayment.

Saint Louis University makes every effort to keep our education affordable. In fiscal year 2025, 99.6% of first-time freshmen and 92% of all students received financial aid (https://www.slu.edu/financial-aid/) and students received more than $517 million in aid University-wide.

For priority consideration for merit-based scholarships, apply for admission by Dec. 1 and complete a Free Application for Federal Student Aid (FAFSA) by Feb. 1.

For more information on scholarships and financial aid, visit the Office of Student Financial Services (https://www.slu.edu/financial-aid/).

Learning Outcomes

1. Graduates will be able to demonstrate conceptual competency in foundational areas of mathematics by developing problem-solving skills and solving problems in these areas of mathematics.
2. Graduates will be able to demonstrate an ability to write and comprehend mathematical proofs using both direct and indirect methods.
3. Graduates will be able to demonstrate an ability to analyze data and perform appropriate statistical analyses.
4. Graduates will be able to demonstrate an ability to write computer programs that implement mathematical or statistical algorithms.
5. Graduates will be able to demonstrate an ability to communicate mathematical ideas and concepts both orally and in writing.
6. Graduates will be able to demonstrate an understanding of at least one advanced, in-depth topic in mathematics or statistics.

Requirements

Mathematics students must complete a minimum total of **32 credits** for the major.

Code	Title	Credits
University Undergraduate Core (https://catalog.slu.edu/academic-policies/academic-policies-procedures/university-core/)		**32-35**
Major Requirements		**32-33**
MATH 1520	Calculus II	4
MATH 2530	Calculus III	4
MATH 2660	Principles of Mathematics	3
MATH 3120	Introduction to Linear Algebra	3
STAT 3850	Foundation of Statistics	3
Computer Programming Requirement [*]		
CSCI 1060	Introduction to Computer Science: Scientific Programming	3-4
or CSCI 1300	Introduction to Object-Oriented Programming	
All students must complete a minimum of 12 further credits at the 3000-level or above, 6 credits of which must be at or above the 4000-level. Students must complete a 6-credit sequence and 6 credits in Mathematics or Statistics Electives.		*12*
Differential Equations Sequence:		
MATH 3550	Differential Equations	
MATH 4550	Nonlinear Dynamics and Chaos	
or MATH 4570	Partial Differential Equations	
Statistics Sequence:		
STAT 3850	Foundation of Statistics	
MATH 4800	Probability Theory	
or STAT 4840	Time Series	
or STAT 4870	Applied Regression	
Algebra Sequence:		
MATH 4110	Introduction to Abstract Algebra	
MATH 4120	Linear Algebra	
or MATH 4150	Number Theory	
Analysis Sequence:		
MATH 4210	Introduction to Analysis	
MATH 4220	Metric Spaces	
or MATH 4230	Multivariable Analysis	

Complex Analysis Sequence:		
MATH 4310	Introduction to Complex Variables	
MATH 4320	Complex Variables II	
Mathematics and Statistics Electives		
Students choose 6 credits of 3000/4000-level MATH/STAT courses.		
Track or Concentration Option		*13-16*
Students have the option to pursue one of the following, if desired		
Teachers Option (p. 3)		
Statistics Concentration (p. 3)		
General Electives		**43-56**
Total Credits		**120**

* The Computer Programming requirement does not apply to students choosing the Teachers Option track. Students with the Statistics Concentration must take CSCI 1300 for their computer programming requirement.

Continuation Standards

Students must have a minimum of a 2.00 cumulative GPA in their mathematics major or minor courses by the conclusion of their sophomore year, must maintain a minimum of 2.00 cumulative GPA in these courses at the conclusion of each semester thereafter, and must be registered in at least one course counting toward their major or minor in each academic year (until all requirements are completed).

Track and Concentration Requirements

Students have the option to pursue one of the following, if desired:

Teachers Option

Code	Title	Credits
Required Courses		
MATH 4050	History of Mathematics	3
MATH 4110	Introduction to Abstract Algebra	3
or MATH 4210	Introduction to Analysis	
MATH 4410	Foundations of Geometry	3
or MATH 4430	Non-Euclidean Geometry	
Elective		
Select one of the following:		3
MATH 3550	Differential Equations	
MATH 4800	Probability Theory	
STAT 4850	Mathematical Statistics	
STAT 4870	Applied Regression	
MATH 4150	Number Theory	
Select one additional hour of MATH at any level		**1**
Total Credits		**13**

Statistics Concentration

Code	Title	Credits
Required Courses		
MATH 4800	Probability Theory	3
STAT 4850	Mathematical Statistics	3
CSCI 1300	Introduction to Object-Oriented Programming	4
Elective Courses		
Select two of the following:		6
MATH 4210	Introduction to Analysis	
MATH 4230	Multivariable Analysis	
STAT 4840	Time Series	
STAT 4870	Applied Regression	
CSCI 4750	Machine Learning	
Total Credits		**16**

Roadmap

This roadmap is just one example of a semester-by-semester plan of study for this program. There are other plans students can and do take. The plan of study for each particular student is established in consultation with each student's academic advisor; *this roadmap does not replace academic advising appointments.*

Roadmap notes:

- This Roadmap assumes full-time enrollment unless otherwise noted.
- Courses/Milestones marked with an "!" are critical and must be completed in the semester listed in the Roadmap to ensure a timely graduation.
- Course availability and sequencing are subject to change.

Standard Track

Course	Title	Credits
Year One		
Fall		
MATH 1510	Calculus I	4
CORE 1500	Cura Personalis 1: Self in Community	1
University Core and/or University Electives		7
	Credits	**12**
Spring		
MATH 1520	Calculus II	4
University Core and/or University Electives		12
	Credits	**16**
Year Two		
Fall		
MATH 2530	Calculus III	4
MATH 2660	Principles of Mathematics	3
University Core and/or University Electives		9
	Credits	**16**
Spring		
MATH 3120	Introduction to Linear Algebra	3
STAT 3850	Foundation of Statistics	3
University Core and/or University Electives		9
	Credits	**15**
Year Three		
Fall		
Mathematics or Statistics Sequences [1]		3
CSCI 1300	Introduction to Object-Oriented Programming	4

University Core and/or University Electives		9
	Credits	**16**
Spring		
Mathematics or Statistics Sequences [1]		3
University Core and/or University Electives		12
	Credits	**15**
Year Four		
Fall		
Mathematics or Statistics Elective [2]		3
University Core and/or University Electives		12
	Credits	**15**
Spring		
Mathematics or Statistics Elective [2]		3
University Core and/or University Electives		12
	Credits	**15**
	Total Credits	**120**

[1] Students may choose among five different sequences in Mathematics and Statistics.

- **Algebra Sequence**: MATH 4110 Introduction to Abstract Algebra (3 cr) and one of either MATH 4120 Linear Algebra (3 cr) or MATH 4150 Number Theory (3 cr).
- **Complex Analysis Sequence**:MATH 4310 Introduction to Complex Variables (3 cr) and either MATH 4320 Complex Variables II (3 cr) or MATH 4360 Geometric Topology (3 cr).
- **Differential Equations Sequence**: MATH 3550 Differential Equations (3 cr) and either MATH 4550 Nonlinear Dynamics and Chaos (3 cr) or
- **Real Analysis Sequence**:MATH 4210 Introduction to Analysis (3 cr) and one of either MATH 4220 Metric Spaces (3 cr) or MATH 4230 Multivariable Analysis (3 cr).
- **Statistics Sequence**:STAT 3850 Foundation of Statistics (3 cr) and one of: MATH 4800 Probability Theory (3 cr), STAT 4840 Time Series (3 cr), or STAT 4870 Applied Regression (3 cr).

[2] Any 3000- or 4000-level MATH or STAT course numbered higher than MATH 3120 Introduction to Linear Algebra. **Students must complete at least two 4000-level MATH or STAT courses.**

Teachers Option

Course	Title	Credits
Year One		
Fall		
MATH 1510	Calculus I	4
CORE 1500	Cura Personalis 1: Self in Community	1
University Core and/or University Electives		8
	Credits	**13**
Spring		
MATH 1520	Calculus II	4
University Core and/or University Electives		12
	Credits	**16**
Year Two		
Fall		
MATH 2530	Calculus III	4
MATH 2660	Principles of Mathematics	3
University Core and/or University Electives		9
	Credits	**16**
Spring		
MATH 3120	Introduction to Linear Algebra	3
University Core and/or University Electives		12
	Credits	**15**
Year Three		
Fall		
Pure Mathematics Elective [1]		3
University Core and/or University Electives		12
	Credits	**15**
Spring		
MATH 4050	History of Mathematics [2]	3
STAT 3850	Foundation of Statistics	3
University Core and/or University Electives		9
	Credits	**15**
Year Four		
Fall		
Mathematics or Statistics Elective [3]		3
University Core and/or University Electives		12
	Credits	**15**
Spring		
Geometry Elective [4]		3
University Core and/or University Electives		12
	Credits	**15**
	Total Credits	**120**

[1] See note below about the Pure Mathematics Requirement.
[2] See note below about the History of Mathematics Requirement.
[3] See note below about Mathematics and Statistics Electives.
[4] See note below about the Geometry Requirement.

Program Notes

Pure Mathematics Requirement

Students can satisfy the pure mathematics requirement by completing either MATH 4110 Introduction to Abstract Algebra (3 cr) or MATH 4210 Introduction to Analysis (3 cr).

History of Mathematics Requirement

MATH 4050 History of Mathematics (3 cr) is typically offered in the spring of even-numbered years. Students may need to adjust their schedules accordingly.

Mathematics and Statistics Elective

MATH 3550 Differential Equations (3 cr), MATH 4800 Probability Theory (3 cr) or MATH 4150 Number Theory (3 cr).

Geometry Requirement

Students can satisfy the geometry requirement by completing either MATH 4410 Foundations of Geometry (3 cr) or MATH 4430 Non-Euclidean Geometry (3 cr). One of these two courses will typically be offered in the spring of odd-numbered years. Students may need to adjust their schedules accordingly.

Statistics Concentration

Course	Title	Credits
Year One		
Fall		
MATH 1510	Calculus I	4
CORE 1500	Cura Personalis 1: Self in Community	1
University Core and/or University Electives		7
	Credits	**12**
Spring		
MATH 1520	Calculus II	4
University Core and/or University Electives		12
	Credits	**16**
Year Two		
Fall		
MATH 2530	Calculus III	4
MATH 2660	Principles of Mathematics	3
University Core and/or University Electives		9
	Credits	**16**
Spring		
MATH 3120	Introduction to Linear Algebra	3
STAT 3850	Foundation of Statistics	3
University Core and/or University Electives		9
	Credits	**15**
Year Three		
Fall		
CSCI 1300	Introduction to Object-Oriented Programming	4
Mathematics or Statistics Elective [1]		3
University Core and/or University Electives		9
	Credits	**16**
Spring		
Mathematics or Statistics Elective [1]		3
University Core and/or University Electives		12
	Credits	**15**
Year Four		
Fall		
MATH 4800	Probability Theory	3
University Core and/or University Electives		12
	Credits	**15**
Spring		
STAT 4850	Mathematical Statistics	3
University Core and/or University Electives		12
	Credits	**15**
	Total Credits	**120**

[1] See note below about Mathematics and Statistics Electives.

Program Notes

Mathematics and Statistics Elective

Students must choose two courses from: MATH 4210 Introduction to Analysis (3 cr), MATH 4230 Multivariable Analysis (3 cr), STAT 4840 Time Series (3 cr), STAT 4870 Applied Regression (3 cr), CSCI 5750 Introduction to Machine Learning (3 cr).

2+SLU

2+SLU programs provide a guided pathway for students transferring from a partner institution.

- Mathematics, B.A. (STLCC 2+SLU) (https://catalog.slu.edu/academic-policies/office-admission/undergraduate/2plusslu/stlcc/math-ba/)

Contact Us

For additional information about this program, please contact mathstat@slu.edu or call 314-977-2444.