BS with a Major in Mathematics

Program Codes:

20FT0439BS

Degree Requirements

To earn a Bachelor of Science in Liberal Arts and Sciences degree from UIC, students must complete university, college, and department degree requirements. The Department of Mathematics, Statistics, and Computer Science degree requirements are outlined below. Students should consult the <u>College of Liberal Arts and Sciences</u> section for additional degree requirements and college academic policies.

Code	Title	Hours	
Summary of Requirements			
Major Requirements		39	
General Education and Electives to reach minimum Total Hours		81	
Total Hours		120	

General Education

See General Education and Writing-in-the-Discipline in the $\underline{\text{College}}$ of Liberal Arts and Sciences section for information on meeting these requirements.

Major Requirements

Code	Title	Hours
Required Cours	ses	
MATH 180	Calculus I ^{a,b}	4
MATH 181	Calculus II ^a	4
MATH 210	Calculus III ^a	3
MATH 215	Introduction to Advanced Mathematics	3
MATH 300	Writing for Mathematics ^c	1
MATH 313	Analysis I	3
MATH 320	Linear Algebra I	3
MATH 330	Abstract Algebra I	3
Electives		
mathematical co	n from mathematics, statistics, and mputer science courses at the 200 level or exception of MATH 310. At least 6 hours 00 level, excluding MATH 496, MCS 496, and	15
Total Hours		39

- a This course is approved for the Analyzing the Natural World General Education category.
- b MATH 180 also fulfills the LAS Quantitative Reasoning requirement.
- c MATH 300 fulfills the Writing-in-the-Discipline requirement.

NOTE: Students planning advanced study in Mathematics should choose their electives from among the following:

Code	Title	Hours		
Recommended Electives				
MATH 414	Analysis II			
MATH 417	Complex Analysis with Applications			
MATH 430	Formal Logic I			
MATH 435	Foundations of Number Theory			
MATH 445	Introduction to Topology I			
MATH 446	Introduction to Topology II			
MCS 421	Combinatorics			
MCS 423	Graph Theory			
STAT 401	Introduction to Probability			
STAT 475	Mathematics and Statistics for Actuarial Sciences I			

Recommended Plan of Study

Students who do not place into MATH 180 should expect to take summer session courses and possibly take longer than four years to graduate. Students who have taken AP exams in calculus or computer science need to see a departmental advisor for correct placement.

Fall Semester ENGL 160 Academic Writing I: Writing in Academic and Public Contexts 3 MATH 180 Calculus I a 4 Foreign Language 4 General Education Requirement course 3 Hours 14 Spring Semester ENGL 161 Academic Writing II: Writing for Inquiry and Research 3 MATH 181 Calculus II 4 Foreign Language 4 General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3-5 Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 330 Abstract Algebra I 3 Hours 14 <	Course	Title	Hours
ENGL 160 Academic Writing I: Writing in Academic and Public Contexts MATH 180 Calculus I a 4 Foreign Language 4 General Education Requirement course 3 Hours 14 Spring Semester ENGL 161 Academic Writing II: Writing for Inquiry and Research 3 MATH 181 Calculus II 4 Foreign Language 4 General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 211 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3.5 Foreign Language 4 General Education Requirement course 3.5 Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 General Education Requirement course 3 General Education Requirement course 3 General Education Requirement course 3 Toreign Language 4 General Education Requirement course 3 Third Year 1 Fall Semester 3 Hours 1 Third Year 5 Fall Semester 4 MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 Genera	First Year		
Contexts	Fall Semester		
Foreign Language 4 General Education Requirement course 3 Hours 14 Spring Semester ENGL 161 Academic Writing II: Writing for Inquiry and Research 3 MATH 181 Calculus II 4 Foreign Language 4 General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3-5 Electives 3 Hours 16-18 Spring Semester MATH 300 Writing for Mathematics 1 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 General Education Requirement course 3	ENGL 160	• •	3
Spring Semester	MATH 180	Calculus I ^a	4
Hours 14	Foreign Language		4
Spring Semester ENGL 161 Academic Writing II: Writing for Inquiry and Research 3 MATH 181 Calculus II 4 Foreign Language 4 General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 4 General Education Requirement course 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 4 General Education Requirement course 3 General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3	General Education Red	quirement course	3
ENGL 161 Academic Writing II: Writing for Inquiry and Research 3 MATH 181 Calculus II 4 Foreign Language 4 4 General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 4 General Education Requirement course 3-5 5 Electives 16-18 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 330 Writing for Mathematics 1 Foreign Language 4 4 General Education Requirement course 3 General Education Requirement course 3 Math 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3		Hours	14
MATH 181 Calculus II 4 Foreign Language 4 General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 4 General Education Requirement course 3 General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3 <td>Spring Semester</td> <td></td> <td></td>	Spring Semester		
Foreign Language 4 General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 4 General Education Requirement course 3 General Education Requirement course 3 Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 3 General Education Requirement course 3 5 Electives 3 3	ENGL 161	Academic Writing II: Writing for Inquiry and Research	3
General Education Requirement course 3 Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 1 MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 A nalysis I 3 General Education Requirement course 3 General Education Requirement course 3 General Education Requirement course	MATH 181	Calculus II	4
Hours 14 Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 1 MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3 General Education Requirement course 3 General Education Requirement	Foreign Language		4
Second Year Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3-5 Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 General Education Requirement course 3 MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3	General Education Red	quirement course	3
Fall Semester MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3-5 Electives 3 More Spring Semester Hours 16-18 MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 General Education Requirement course 3 Third Year 14 Third Year 14 Third Year 3 General Education Requirement course 3 MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3		Hours	14
MATH 210 Calculus III 3 MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3-5 Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Third Year 14 Third Year 14 Third Year 14 Third Year 3 Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3	Second Year		
MATH 215 Introduction to Advanced Mathematics 3 Foreign Language 4 General Education Requirement course 3-5 Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3	Fall Semester		
Foreign Language 4 General Education Requirement course 3-5 Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Third Year 14 Third Year 14 TATH 330 Abstract Algebra I 3 MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	MATH 210	Calculus III	3
General Education Requirement course 3-5 Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	MATH 215	Introduction to Advanced Mathematics	3
Electives 3 Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	Foreign Language		4
Hours 16-18 Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	General Education Red	quirement course	3-5
Spring Semester MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	Electives		3
MATH 320 Linear Algebra I 3 MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3		Hours	16-18
MATH 300 Writing for Mathematics 1 Foreign Language 4 General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	Spring Semester		
Foreign Language 4 General Education Requirement course 3 General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	MATH 320	Linear Algebra I	3
General Education Requirement course 3 General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	MATH 300	Writing for Mathematics	1
General Education Requirement course 3 Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	Foreign Language		4
Hours 14 Third Year Fall Semester MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	General Education Red	quirement course	3
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MATH 330 Abstract Algebra I 3 MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	Third Year		
MATH 313 Analysis I 3 General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	Fall Semester		
General Education Requirement course 3 General Education Requirement course 3-5 Electives 3	MATH 330	Abstract Algebra I	3
General Education Requirement course 3-5 Electives 3	MATH 313	Analysis I	3
Electives 3	General Education Requirement course		3
	General Education Red	quirement course	3-5
Hours 15-17	Electives		3
		Hours	15-17

Spring Semester

MSCS Electives ^b	6
Electives	9
Hours	15
Fourth Year	
Fall Semester	
Two MSCS electives (at least one at 400 level) b	6
Electives	9
Hours	15
Spring Semester	
One MSCS elective (at least one at 400 level) b	3
Electives	12
Hours	15
Total Hours	120

- a MATH 180 satisfies the LAS Quantitative Reasoning requirement with a grade of C or better.
- b Electives chosen from mathematics, statistics, and mathematical computer science courses at the 200 level or higher, with the exception of MATH 310. At least 6 hours must be at the 400 level, excluding MATH 496, MCS 496, and STAT 496. See the Math advising guides for suggested elective options: Pure Mathematics, Applied Mathematics, Computational and Industrial Mathematics, and Probability and Statistics.

Note: The requirement of two additional courses taken from any General Education category is satisfied by MATH 180 and MATH 181.