

MATHEMATICS AND COMPUTER SCIENCE/ MATHEMATICS (BS/MS)

CURRICULUM

(Effective Fall 2023)

AP Credit Policies (<https://catalog.luc.edu/undergraduate/arts-sciences/mathematics-statistics/#policiestext>)

Code	Title	Hours
BS Requirements		
<i>Math Requirements</i>		
MATH 161	Calculus I	4
MATH 162	Calculus II	4
MATH 263	Multivariable Calculus	4
MATH 201	Introduction to Discrete Mathematics & Number Theory	3
MATH 212	Linear Algebra	3
MATH 264	Ordinary Differential Equations	3
MATH 313	Abstract Algebra	3
MATH 351	Introduction to Real Analysis I	3
STAT 203	Introduction to Probability & Statistics	3
	or MATH 304 / Introduction to Probability STAT 304	
Select two electives in mathematics from the following:		6
MATH 309	Numerical Methods	
MATH 314	Advanced Topics Abstract Algebra	
MATH 315	Advanced Topics in Linear Algebra	
MATH 352	Introduction to Real Analysis II	
MATH 353	Introductory Complex Analysis	
<i>Computer Science Requirements</i>		
COMP 141	Introduction to Computing Tools and Techniques	3
COMP 170	Introduction to Object-Oriented Programming	3
COMP 264	Introduction to Computer Systems	3
COMP 271	Data Structures I	3
COMP 272	Data Structures II	3
COMP 363	Design and Analysis Computer Algorithms	3
Select two 3-credit electives in Computer Science from the following:		6
BIOL 388	Bioinformatics	
	Any 300-level COMP course	
MATH 328	Algebraic Coding Theory	
MATH 331	Cryptography	
STAT 321	Computational Aspects of Modeling and Simulation	
MS Requirements		
<i>Foundational Course Requirements</i>		
MATH 416	Survey of Algebra	3
MATH 454	Survey of Analysis	3
MATH 404 / STAT 404	Probability & Statistics I ¹	3
	or STAT 408 Applied Regression Analysis	

<i>Depth Requirement Courses</i>		
Select one of the following:		3
MATH 414	Algebra II	
MATH 415	Topics in Linear Algebra	
MATH 452	Analysis II	
MATH 453	Complex Analysis	
Select one of the following: ¹		3
MATH 405 / STAT 405	Probability & Statistics II	
STAT 410	Categorical Data Analysis	
COMP 429	Natural Language Processing	
COMP 487	Deep Learning	
DSCI 401	Introduction to Data Science	
Or another course with Graduate Program Director approval		
<i>Additional Requirements</i>		
MATH 401	Introduction to Graduate Study in Mathematics	1
MATH 495	Graduate Practicum in Mathematics	2
Four (4) approved 400-level Electives in Mathematics or Statistics ²		12
Total Hours		90

¹ Students who select MATH 404/STAT 404 in Foundational Courses may opt to take STAT 408 as a Depth Course, and vice versa.

² Approved elective courses should be selected with advice of Graduate Program Director to complement student's previous learning and support future plans.

The BS degree has a waiver for the Quantitative core.