

**CSUSB Department of Mathematics
BA in Mathematics Program**

BA Requirements	Units (52 – 55)	Quarter Equivalent
Lower Division Requirements	22 – 23 total	
Select one of: CSE 1100 - Critical Thinking through Computer Programming CSE 1250 - Programming Basics CSE 2010 - Computer Science I	3 – 4	CSE 201
MATH 2210 - Calculus I	4	Math 211/212
MATH 2220 - Calculus II	4	Math 212/213
MATH 2270 - Differential Equations with Dynamical Systems I	3	Math 270
MATH 2310 - Applied Linear Algebra	4	Math 251/ 331
MATH 2320 - Multivariable Calculus	4	Math 252
Upper Division Requirements	15 total	
MATH 3100 - Mathematical Thinking: Communication and Proof	4	None
MATH 3329 - Euclidean Geometry with Transformations	3	Math 329
MATH 4300 - Real Analysis	4	Math 553
MATH 4600 - Theory of Rings and Fields	4	Math 546*
Electives	15 total	
Five courses (15 units) selected from the following courses with at least one course from each of Group A, Group B, and Group C. At least two of the five elective courses must be at the 4000-level or above.	15-17 total	
Group A		
MATH 3345 - Number Theory MATH 3372 - Combinatorics MATH 3770 - Introduction to Graph Theory		Math 345 Math 372 None
Group B		
MATH 2265 - Statistics with Applications MATH 3320 - Mathematical Interest Theory MATH 3460 - Probability Theory MATH 4270 - Differential Equations with Dynamical Systems II MATH 4455 - Partial Differential Equations & Fourier Analysis		Math 262 Math 320 Math 465 Math 470 Math 570/455
Group C		
MATH 4485 - Differential Geometry MATH 5170 - Complex Analysis MATH 5310 - Advanced Linear Algebra MATH 5529 - Advanced Topics in Geometry MATH 5550 - Introduction to Topology		Math 485 Math 557 Math 531 Math 529 Math 555
Group D		
Math 2900 - Problem Solving and Mathematical Reasoning for Teachers I Math 4900 - Problem Solving and Mathematical Reasoning for Teachers II MATH 3480 - Topics in History of Mathematics MATH 4320 - Introduction to Actuarial Modeling MATH 4360 - Linear Statistical Models MATH 5510 - Topics in Advanced Mathematics MATH 5300 - Advanced Real Analysis MATH 5565 - Mathematical Statistics MATH 5600 - Group Theory MATH 5953 - Independent Study PHIL 3560 - Philosophy of Logic and Mathematics		Math 199/299 Math 399/499 Math 480 None None Math 510 Math 554 Math 565 Math 545 Math 595 Phil 383

***Note:** Students completing quarter catalog requirements under semesters who need Math 545 should complete Math 4600 to substitute for Math 545. They can then take Math 5600 as an elective. If a student has completed Math 545 on quarters and needs an elective, they can take Math 4600 to substitute for the Math 546 elective.