

CSUSB Department of Mathematics
BS in Mathematics – Applied Mathematics Concentration - FALL 2020

BS – Applied Mathematics Concentration Requirements	Units (67 – 74)	Quarter Equivalent
Lower Division Requirements	31 – 36 total	
Select two 2000-level courses from BIOL, CHEM, CSE, ECON, GEOG, PHIL, and PHYS (excluding ECON 2000, GEOG 2000, GEOG 2200, GEOG 2201)	6 - 10	
Select one of the following: 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 2265 – Statistics with Applications	3	Math 262
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	18 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*
MATH 5310 - Advanced Linear Algebra	3	Math 531
Electives	18-20 total	
Six courses (18-20 units) selected from the following with four courses from Group A and two courses from Group B. At least three electives must be chosen from the 4000-level or above.		
Group A		
MATH 3320 - Mathematical Interest Theory MATH 3372 - Combinatorics MATH 3460 - Probability Theory MATH 3770 - Introduction to Graph Theory MATH 4270 - Differential Equations with Dynamical Systems II MATH 4320 - Introduction to Actuarial Modeling MATH 4360 - Linear Statistical Models MATH 4455 - Partial Differential Equations & Fourier Analysis MATH 5565 - Mathematical Statistics One upper-division course from BIOL, CHEM, CSE, ECON, GEOG, or PHYS selected in consultation with an advisor		Math 320 Math 372 Math 465 None Math 470 None None Math 570/455 Math 565
Group B		
MATH 3345 - Number Theory MATH 3480 - Topics in History of Mathematics MATH 4485 - Differential Geometry MATH 5170 - Complex Analysis MATH 5300 - Advanced Real Analysis MATH 5510 - Topics in Advanced Mathematics MATH 5529 - Advanced Topics in Geometry MATH 5550 - Introduction to Topology MATH 5600 - Group theory MATH 5953 - Independent Study		Math 345 Math 480 Math 485 Math 557 Math 554 Math 510 Math 529 Math 555 Math 545 Math 595

***Note:** Students who are completing quarter requirements under semesters and 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.