

Extra classes needed beyond Physics BS or BA for Mathematics BS

A. General Option (Extra course requirement beyond Physics BS: 6 Math course)

This is the traditional curriculum in Mathematics. It is more mathematically rigorous than the other options. It is especially good for secondary education majors and students intending to go to graduate school in Mathematics or other sciences.

- Math 215 Introduction to Higher Mathematics (3 cr) (Pre-req for: 461 and 471)
- Math 461 Abstract Algebra (3 cr)
- Math 462 Abstract Algebra or Math 472 Introduction to Analysis 2 (3 cr)
- Math 471 Introduction to Analysis 1 (3 cr)
- Math electives in courses numbered 401-499 or Math 385 (6 cr)
 - *For BA in Physics, need to also take one Math elective in courses numbered 303-499 or Stat 301 (3 cr) if Phys 371 not taken.*

D. Applied – Scientific Modeling Option (Extra course requirement beyond Physics BS: 7 courses (8 courses if Math 452 not taken))

The emphasis is on the mathematics used to model phenomena in the sciences. With a second major in a science this provides ideal preparation for graduate school.

- Math courses:
 - Math 451 Probability Theory (3 cr)
 - Math 437 Mathematical Biology or WLF 552 Ecological Modeling (3 cr)
 - Five Additional courses from the following (*note that Phys 371 is required for the physics BS*):
 - Math 326 Linear Optimization (3 cr)
 - Math/Phys 371 Mathematical Physics (3 cr)
 - Math 376 Discrete Mathematics II (3 cr)
 - Math 420 Complex Variables (3 cr)
 - Math 426 Discrete Optimization (3 cr)
 - Math 432 Numerical Linear Algebra (3 cr)
 - Math 433 Numerical Analysis (3 cr)
 - Math 435 Topics in Applied Mathematics (cr arr)
 - Math 452 Mathematical Statistics (3 cr)
 - Math 453 Stochastic Models (3 cr)
 - Math 471 Introduction to Analysis 1 (3 cr)
 - Math 472 Introduction to Analysis 2 (3 cr)
 - Math 476 Combinatorics (3 cr)
 - Math 480 Partial Differential Equations (3 cr)
 - Stat 301 Probability and Statistics (3 cr)
- Supporting courses:
 - CS 112 Introduction to Problem Solving and Programming or CS 120 Computer Science I (3-4 cr)
 - Stat 301 Probability and Statistics or Math 452 Mathematical Statistics (3 cr)