

APPLIED MATHEMATICAL SCIENCES

The Major

Mathematicians today are engaged in a wide variety of activities. Research mathematicians create new theories and techniques. Applied mathematicians use that theory and mathematical modeling to solve problems in economics, science, medicine, engineering, and management. Teachers of mathematics develop new ways to teach mathematical concepts to children and adults.

University-level mathematics involves more than algorithms and computational techniques. Mathematics majors also learn to construct proofs and how to approach a real life problem from a mathematical point of view.

Careers

Over the past few years, the very idea of a career in mathematics has evolved and diversified. The increasing power and availability of computational resources, along with new mathematical models, routinely provides us with new tools for tackling old and new scientific problems in novel and creative ways. This has resulted in an increased interest in applied mathematics and an unprecedented demand for individuals with the mathematical background and computational ability to formulate and solve scientific problems with modern research tools and methods. This need is particularly acute in Southern California, where corporate global leaders in industries as diverse as aerospace, medical devices, financial markets, and entertainment (e.g., digital animation), as well as government agencies (e.g., JPL), regularly seek scientists with interdisciplinary backgrounds in order to remain at the forefront of technology innovation and discovery.

The mathematics department at CSUN now offers a B.S degree, which allows students to concentrate on scientific computing. It is a course of study that combines a comprehensive education in traditional mathematics with new courses in computational mathematics and other scientific disciplines. The program has been designed so as to emphasize the importance of combining mathematical models and algorithms that are useful for the solution of scientific/technical problems.

For more information on the program, see the 2008-2010 University Catalog.

BACHELOR OF SCIENCE IN MATHEMATICS REQUIREMENTS

The Bachelor of Science in Mathematics degree is intended to give students a full preparation for future graduate work in Mathematics and Applied Mathematics.

LOWER DIVISION REQUIRED COURSES (23-24 UNITS)

MATH 150A Calculus I	5
MATH 150 B Calculus II	5
MATH 250 Calculus III	3
MATH 262 Linear Algebra	3
COMP 106/L Computing In Engineering & Science/Lab	2/1 OR
COMP 110/L Introductions to Algorithms And Programming/Lab	3/1
PHYS 220 A Mechanics	3
PHYS 220 AL Mechanics Lab	1

The student must complete the Lower-Division Core and one of the following Options, and must have a 2.0 grade point average for all upper-division units required in the major.

UPPER DIVISION REQUIRED COURSES (15 UNITS):

MATH 320 Foundations of Higher Mathematics	3
MATH 340 Introductory Probability	3
MATH 350 Advanced Calculus I	3
MATH 382/L Intro Scientific Computing and Lab	2/1
MATH 494 Practical Training	3

UPPER DIVISION ELECTIVES (24UNITS)

Choose (with an advisor) 24 units from among (i) all upper-division math courses (excluding MATH 310, 310L, 311, 312, 331, 391 and 490) and (ii) approved courses in other departments. At least 12 units must be in mathematics. Students are encouraged to take courses outside the Mathematics Department. We especially encourage upper division courses in the Sciences, Engineering, and Economics. All courses must have the approval of an advisor prior to enrollment. Students in this option must meet with an advisor in their junior year and file a program form outlining the planned course work with the Mathematics Department.

TOTAL UNITS IN THE MAJOR: 62-63

GENERAL EDUCATION (37 UNITS)

Basic Skills Mathematics and Lifelong Learning are satisfied by required courses in the major. PHYS 220A/L partially satisfies the Natural Sciences section. Students are encouraged to take PHIL 230 to satisfy the Basic Skills Critical Thinking requirement.

ADDITIONAL UNITS: 20-21

TOTAL UNITS REQUIRED FOR THE B.S. DEGREE, OPTION I: 120

FOR INFORMATION CALL (818) 677-2721

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OR WRITE:

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