

Mathematics (B.A.)

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Secondary Teaching
Option
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For information call:
(818) 677-2721

Email:
mathhtml@csun.edu

Website:
<http://www.csun.edu/math>

Or write:
Department of
Mathematics
Cal State Northridge
18111 Nordhoff St.
Northridge, CA
91330-8313

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

Math majors tend to be highly satisfied with the jobs they get after college. The pay is generally good and the work is usually strongly related to mathematics. The best five jobs listed in a recent Jobs Rated Almanac - software engineer, actuary, computer systems analyst, computer programmer, and mathematician - all require a very strong background in mathematics. In fact, almost every one of the top fifty jobs involves a significant amount of mathematical reasoning and knowledge.

For more information on the program, see the 2000-2002 University Catalog.

Requirements for the Bachelor of Arts Degree

It is assumed that the student has a facility in mathematics normally gained by recent completion of four years of high school mathematics through trigonometry and "Mathematical Analysis." Because of the variation in curriculum at the high school level it is necessary to obtain a satisfactory score on the Mathematics Placement Test to enter the first course in the program. Without a satisfactory score a student may have to complete additional courses.

Residency Requirement

In addition to University residence requirements for a bachelor's degree, the student must complete a minimum of 18 units of upper division mathematics in residence at Cal State Northridge with the approval of a mathematics advisor.

The student must complete the following course requirements and must have at least a 2.0 grade point average for all upper division units required in the major.

Lower Division Required Courses (32-33 Units)

MATH	150A	Mathematical Analysis I (5)
MATH	150AL	Calculus Computer Lab (1)
MATH	150B	Mathematical Analysis II (5)
MATH	150BL	Calculus Computer Lab (1)
MATH	250	Mathematical Analysis III (3)
MATH	262	Introduction to Linear Algebra (3)
COMP	106/106L	Computing in Engineering and Science (3)

OR

COMP	110/110L	Introduction to Algorithms and Programming (4)
PHYS	220A	Mechanics (3)
PHYS	220AL	Mechanics Laboratory (1)
PHYS	220B	Electricity and Magnetism (3)
PHYS	220BL	Electricity and Magnetism Laboratory (1)
PHIL	230	Symbolic Logic I (3)

Upper Division Required Courses (26 Units)

MATH	320	Foundations of Higher Math (3)
MATH	364	Elementary Modern Algebra (3)
MATH	373	Modern Geometry (3)
MATH	411	Foundations of Geometry (3)
MATH	412	Foundations of Algebra (3)
MATH	441	Introduction to Statistical Inference (3)
MATH	490	Seminar (3)
S ED	525MA	Methods of Teaching Mathematics (3)
MATH	391	Field Experiences in Schools (2)

Upper Division Electives (3 units)

An upper division elective chosen with advisor approval.

Total Units in the Major, Secondary Teaching Option (61-62 Units)

General Education (37 Units)

Subsection A.2, Critical Reasoning, is satisfied by PHIL 230. Subsection A.3, Mathematics, is satisfied by Math 150A. Section B, Natural Sciences, is partially satisfied by the lower division Physics courses required in the major. Section E, Applied Arts and Sciences, is satisfied by either Comp 110/110L or Comp 106/106L.

Title 5 (6 Units)

Additional Units (15-16 Units)

Total Units Required for the BA Degree, Secondary Teaching Option: 120