Applied Math Major 2023-2024 Curriculum Chart

Calculus
Complete one sequence

- MATH 19A
  Calculus for Sci., Engr. & Math
  [F/W/Sp/Su]
- OR
- MATH 20A
  Honors Calculus

- MATH 19B
  Calculus for Sci., Engr. & Math
  [F/W/Sp/Su]
- OR
- MATH 20B
  Honors Calculus

Multivariable Calculus
Complete one sequence

- Math 23A
  Vector Calculus
  [F/W/Sp/Su]
- OR
- AM 30
  Multivariable Calculus for Engineers
  [F/Sp]
- OR
- MATH 23B
  Vector Calculus
  [F/W/Sp/Su]

Linear Algebra & Differential Equations

- AM 10
  (Strongly Preferred)
  Math Methods for Engineers I
  [F/W/Sp]
- OR
- AM 20
  (Strongly Preferred)
  Math Methods for Engineers II
  [W/Sp]
- AND
- MATH 21
  Linear Algebra
  [F/W/Sp/Su]
- OR
- MATH 24
  Differential Equations
  [F/W/Sp/Su]

Upper-Division Courses

- AM 100
  Mathematical Methods for Engineers
  [F/Sp]
- OR
- AM 112
  Introduction to Partial Differential Equations
  [W]
- OR
- AM 114
  Introduction to Dynamical Systems
  [F]
- OR
- AM 129
  Foundations of Scientific Computing for Scientists and Engineers
  [F]
- OR
- STAT 131
  Introduction to Probability Theory
  [F/W/Sp]
- OR
- CSE 107
  Probability & Statistics for Engineers
  [F/W]
- OR
- ECE 13
  Computer Systems and C Programming
  [W]
- OR
- STAT 131
  Mathematical Modeling 1
  [W]
- OR
- CSE 13S
  Computer Systems and C Programming
  [F/W/Sp/Su]
- OR
- MATH 100*
  Introduction to Proof and Problem Solving
  [F/W/Sp]
- ♣The DC requirement is satisfied by completing AM 170A.

Discrete Math

- CSE 16
  Applied Discrete Mathematics
  [F/W/Sp]
- OR
- MATH 100*
  Computer Systems and C Programming
  [F/W/Sp]
- ♣The DC requirement is satisfied by completing AM 170A.

Programming
Complete One

- CSE 20
  Beginning Programming in Python
  [F/W/Sp]
- OR
- CSE 13S
  Computer Systems and C Programming
  [F/W/Sp/Su]
- OR
- ECE 13
  Computer Systems and C Programming
  [W]
- OR
- CSE 107
  Probability & Statistics for Engineers
  [F/W]
- OR
- STAT 131
  Mathematical Modeling 1
  [W]
- OR
- CSE 13S
  Computer Systems and C Programming
  [F/W/Sp/Su]
- OR
- MATH 100*
  Introduction to Proof and Problem Solving
  [F/W/Sp]
- ♣The DC requirement is satisfied by completing AM 170A.

Comprehensive Requirement

- AM 170A♣
  Mathematical Modeling 1
  [W]
- OR
- AM 170B
  Mathematical Modeling 2
  [Sp]
- ♣The DC requirement is satisfied by completing AM 170A.

Lower Division Electives♦

- ELECTIVE
- ELECTIVE

A list of the lower division electives can be found on the BE Undergraduate Advising website here: https://undergrad.soe.ucsc.edu/applied-math-lower-division-electives-23-24

Upper-Division Electives♦

- ELECTIVE
- ELECTIVE
- ELECTIVE

A list of the upper division electives can be found on the BE Undergraduate Advising website here: https://undergrad.soe.ucsc.edu/applied-math-upper-division-electives.

* Students who intend to pursue an M.S. degree in scientific computing and applied mathematics later are strongly encouraged to take the AM 212A and AM 214 options.
### Key Legend

Students are required to take two lower-division electives in preparation for the upper division electives. Students are encouraged to plan ahead carefully in consultation with undergraduate advising in making their selection.

♥ Students are required to take three upper-division elective courses. Note that many of these electives have lower-division prerequisites. Students should plan carefully which ones to take to ensure they are prepared for their selected upper-division electives. Also note that enrollment in the graduate courses is by permission of the instructor, who will verify adequate preparation.

Please review the Applied Math Career Electives document as you select upper division electives that align with your professional goals: [https://docs.google.com/document/d/1dhLayvCKhc4PsO87nT5-apR5h-yfWyJRWSNe2hOE/edit?usp=sharing](https://docs.google.com/document/d/1dhLayvCKhc4PsO87nT5-apR5h-yfWyJRWSNe2hOE/edit?usp=sharing)