Applied Math Major 2023-2024 Curriculum Chart

Calculus
Complete one sequence

MATH 19A
Calculus for Sci., Engr. & Math
[F/W/Sp/Su]
&
MATH 19B
Calculus for Sci., Engr. & Math
[F/W/Sp/Su]

OR

MATH 20A
Honors Calculus
&
MATH 20B
Honors Calculus

Linear Algebra & Differential Equations

AM 10 (Strongly Preferred)
Math Methods for Engineers I
[F/W/Sp]
OR
MATH 21
Linear Algebra
[F/W/Sp/Su]

AND

AM 20 (Strongly Preferred)
Math Methods for Engineers II
[W/Sp]
OR
MATH 24
Differential Equations
[F/W/Sp/Su]

Discrete Math

CSE 16
Applied Discrete Mathematics
[F/W/Sp]

OR

MATH 100*
Introduction to Proof and Problem Solving
[F/W/Sp]

*Note: MATH 100 is preferred for upper division electives.

Multivariable Calculus
Complete one sequence

Math 23A
Vector Calculus
[F/W/Sp/Su]
&
MATH 23B
Vector Calculus
[F/W/Sp/Su]

OR

AM 30 (Strongly Preferred)
Multivariate Calculus for Engineers
[F/Sp]

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*

Programming
Complete One

CSE 20
Beginning Programming in Python [F/W/Sp]
OR
CSE 13S
Computer Systems and C Programming [F/W/Sp]
OR
ECE 13
Computer Systems and C Programming [F/Sp]

Upper-Division Courses

AM 100
Mathematical Methods for Engineers
[F/Sp]

AM 147
Computational Methods & Applications
[W]

AM 112
Introduction to Partial Differential Equations
[W]
OR
AM 212A♦
Applied Partial Differential Equations
[W]

AM 114
Introduction to Dynamical Systems
[F]
OR
AM 214♦
Applied Dynamical Systems
[F]

AM 129
Foundations of Scientific Computing for Scientists and Engineers
[F]

STAT 131
Introduction to Probability Theory
[F/W/Sp]
OR
CSE 107
Probability & Statistics for Engineers
[F/W]

* 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.

Comprehensive Requirement

AM 170A♣
Mathematical Modeling 1
[W]

AND

AM 170B
Mathematical Modeling 2
[Sp]

♣The DC requirement is satisfied by completing AM 170A.

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.*

Applied Math Major 2023-2024 Curriculum Chart

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

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-yIkyfWjYRWSNe2hOE/edit?usp=sharing

Student Name:

Staff Advisor: