

Applied Math Major 2021-2022 Curriculum Chart

Calculus

Complete one sequence

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

OR

MATH 20A & **MATH 20B**
Honors Calculus & 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]

Multivariable Calculus

Complete one sequence

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

OR

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

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

Lower Division Electives*

ELECTIVE

ELECTIVE

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

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 [W/Sp]

Upper-Division Courses

AM 100
Mathematical Methods for Engineers [F]

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 [W/Sp]

AM 147
Computational Methods & Applications [W]

Upper-Division Electives*

ELECTIVE

ELECTIVE

ELECTIVE

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

Comprehensive Requirement

AM 170A*
Mathematical Modeling 1 [W]

AND

AM 170B
Mathematical Modeling 2 [Sp]

♣The DC requirement is satisfied by completing AM 170A

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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 from the following list, in preparation for the upper division electives. Students are encouraged to plan ahead carefully in consultation with undergraduate advising in making their selection.

- * 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.

- ♥ Students are required to take three upper-division elective courses from the list that can be found at: <https://undergrad.soe.ucsc.edu/applied-math-upper-division-electives>. 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.

Student Name:

Staff Advisor: