

MATHEMATICS

- This worksheet is intended for supplemental use only. The University will use your Academic Requirements Report (ARR) to track your graduation requirements, including those for your major. Please continue to check your ARR for accuracy.
- If your ARR requires a correction, please submit an [ARR Correction Form](#).
- Your [Degree Planner](#) (in [mycsusm.edu](#)) will display the following requirements in the University's recommended sequence.
- All courses used for the major, including preparation for the major must be completed with a grade of C (2.0) or better.
- A minimum of 21 upper-division units in MATH must be completed at CSUSM.
- No more than 3 units of either MATH 498 or 499 may be applied toward the major.
- No more than 3 units of MATH 495 may be applied toward the major.
- All non-articulated courses MUST be reviewed and approved in advanced by a Mathematics faculty advisor.

PREPARATION FOR THE MAJOR

Lower-division Calculus Courses (13 units):

✓	Course	Units
<input type="checkbox"/>	MATH 160: Calculus with Applications I (*MATH 125, 126 or pass MATH Placement Exam)	5
<input type="checkbox"/>	MATH 162: Calculus with Applications II (*MATH 160)	4
<input type="checkbox"/>	MATH 260: Calculus with Applications III (*MATH 162)	4

Non-mathematics Supporting Courses (14-17 units):

✓	Course	Units
<input type="checkbox"/>	CS 111: Computer Science I (^MATH 160)	3-4
<input type="checkbox"/>	PHYS 201: Physics of Mechanics & Sound (*MATH 160)	4

Select 2 courses from the following:

- BIOL 210 (^CHEM 150) or BIOL 211 (*BIOL 210)
- CHEM 150/150L (*CPE^c, CHEM 101 or 105 and MATH 101, 105 or MATH Category 1 or 2)
- PHYS 202 (*PHYS 201 or 205 and MATH 162)
- CS 211 (*CS 111, MATH 160)

✓	Course	Units
<input type="checkbox"/>		
<input type="checkbox"/>		

UPPER-DIVISION MAJOR REQUIREMENTS (36-37 UNITS)

✓	Course	Units
<input type="checkbox"/>	MATH 350: Foundations for Theoretical Mathematics (*MATH 160 with an A- or higher or MATH 162)	3
<input type="checkbox"/>	MATH 374: Linear Algebra (*MATH 160) (MATH 264 accepted for MATH 374 in Fall 22 and Spring 23)	3
<input type="checkbox"/>	MATH 378: Number Systems (*MATH 350)	3
<input type="checkbox"/>	MATH 430: Foundations of Analysis (*MATH 378)	3
<input type="checkbox"/>	MATH 470: Introduction to Abstract Algebra (*MATH 378)	3

MATHEMATICS

Select 1 course from the following:

MATH 440: Introduction to Mathematical Probability and Statistics (4) (*MATH 260)

MATH 441: Introduction to Probability (3) (*MATH 260; spring only)

✓

<input type="checkbox"/>	Course	Units
		3-4

Select 1 course from the following:

MATH 422: Introduction to Number Theory (*MATH 378)

MATH 472: Introduction to Graph Theory (*MATH 378)

MATH 474: Introduction to Combinatorics (*MATH 374 and either MATH 350 or MATH 270 with a B or higher)

MATH 522: Number Theory (*MATH 470)

MATH 523: Cryptography/Computational Number Theory (*MATH 378)

MATH 540: Concrete Mathematics (*MATH 350, 470, 472 or 474)

✓

<input type="checkbox"/>	Course	Units
		3

Select 1 course from the following:

MATH 490: Senior Seminar (fall only)

MATH 491: Senior Seminar with Lab

An approved 500-level course: MATH 505, 520, 521, 522, 523, 528, 530, 532, 534, 535, 536, 537, 538, 540, 541, 542, 544, 550, 552, 555, 561, 563, 564, 570, 571

✓

<input type="checkbox"/>	Course	Units
		3

Upper-division Elective Courses (12 units)

Select 12 units from the following:

CS 464: Numerical Analysis & Computing (*CS 111, MATH 162)

CS 480: Introduction to Optimization (*MATH 374)

MATH 330: Introduction to the History of Mathematics (*MATH 160)

MATH 362: Differential Equations (*MATH 162; spring only)

Or, any MATH course numbered 410-599 not already used to fulfill a major requirement.

✓

<input type="checkbox"/>	Course	Units
<input type="checkbox"/>		3
<input type="checkbox"/>		3
<input type="checkbox"/>		3
<input type="checkbox"/>		3