

MATHEMATICS

Algorithmic Option

- 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.

MATHEMATICS CORE COURSEWORK (33 UNITS)

Lower-division Calculus Courses (13 units):

✓ <input type="checkbox"/>	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 (8 units):

✓ <input type="checkbox"/>	Course	Units
<input type="checkbox"/>	CS 111: Computer Science I (^MATH 125 or 160)	4
<input type="checkbox"/>	PHYS 201: Physics of Mechanics & Sound (*MATH 160)	4

Core Courses (12 units)

✓ <input type="checkbox"/>	Course	Units
<input type="checkbox"/>	MATH 264: Introduction to Linear Algebra (*MATH 162)	3
<input type="checkbox"/>	MATH 350: Foundations for Theoretical Mathematics (*MATH 160 with an A- or higher or MATH 162)	3
<input type="checkbox"/>	MATH 378: Number Systems (*MATH 350)	3
<input type="checkbox"/>	MATH 441: Introduction to Probability (*MATH 260)	3

ALGORITHMIC OPTION REQUIREMENTS (31 UNITS)

Computer Science Requirements:

✓ <input type="checkbox"/>	Course	Units
<input type="checkbox"/>	CS 211: Computer Science II (*CS 111, ^MATH 160)	4
<input type="checkbox"/>	CS 311: Data Structures and Algorithms (*CS 211; ^MATH 270 or 350)	3

Upper-division Option Requirements:

Select 1 course from the following:

MATH 364: Intermediate Linear Algebra (*MATH 264, 350)

MATH 465: Introduction to Numerical Linear Algebra (*CS 111 and MATH 264 or 374)

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

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Select 1 course from the following:

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

MATH 424: Introduction to Cryptography (*MATH 270 with B or higher or MATH 350)

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

Select 1 course from the following:

MATH 442: Introduction to Mathematical Statistics (*MATH 441)

MATH 443: Applied Stochastic Processes with Simulation (*CS 111; MATH 264 or 364; MATH 342 or 441)

MATH 444: Regression Analysis (*MATH 441 and MATH 264 or 374)

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

Select 1 course from the following:

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

MATH 474: Introduction to Combinatorics (*MATH 264 or 374; and MATH 270 with B or higher or MATH 350)

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

✓ <input type="checkbox"/>	Course	Units
	MATH/CS 480: Introduction to Optimization (*MATH 264 or 374)	3

Capstone Course:

The Capstone Course requires faculty advisor approval prior to enrollment in the course.

Select 1 course from the following:

MATH 490: Senior Seminar

MATH 495: Internship in Mathematics (*instructor consent)

Approved 505-level MATH course

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

Upper-division Electives:

Select 6 units from the following:

CS 440: Blockchain Technology (*CS 311)

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

CS 471: Introduction to Artificial Intelligence (*CS 351; MATH 242, 440 or 442)

CS 473: Artificial Neural Networks (*CS 311)

CS 478: Introduction to Deep Learning (*CS 311, MATH 242)

Any MATH course numbered 410-499 or 505+ not already used to fulfill a major requirement.

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