CATALOG TERM: 2023-2027 **TOTAL UNITS REQUIRED = 120**

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 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):

✓	Course	Units
☐	MATH 160: Calculus with Applications I (*MATH 125, 126 or pass Calculus Readiness Diagnostic)	5
☐	MATH 162: Calculus with Applications II (*MATH 160)	4
☐	MATH 260: Calculus with Applications III (*MATH 162)	4

Non-Mathematics Supporting Courses (8 units):

✓	Course	Units
☐	CS 111: Computer Science I (^MATH 125, 126, or 160)	4
☐	PHYS 201: Physics of Mechanics and Sound (*MATH 160)	4

Mathematics Core Courses (12 units)

✓	Course	Units
☐	MATH 264: Introduction to Linear Algebra (*MATH 162)	3
☐	MATH 350: Foundations for Theoretical Math (*MATH 160 with an A- or higher or MATH 162)	3
☐	MATH 378: Number Systems (*MATH 350)	3
☐	MATH 441: Introduction to Probability (*MATH 260)	3

ALGORITHMIC OPTION REQUIREMENTS (31 UNITS)

Computer Science Requirements (7 units):

✓	Course	Units
☐	CS 211: Computer Science II (*CS 111; ^MATH 160)	4
☐	CS 311: Data Structures and Algorithms (*CS 211; ^MATH 270 or 350)	3

Upper-division Option Requirements (18 units):

Select 1 course from the following:

MATH 364: Intermediate Linear Algebra (*MATH 264 and MATH 270 with a B or higher or MATH 350)
MATH 465: Introduction to Numerical Linear Algebra (*CS 111 and MATH 264 or 374)

✓	Course	Units
☐		3

prerequisite; ^co/prerequisite; ~course may be repeated, check catalog for guidelines

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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)

✓	Course	Units
☐		3

Select 1 course from the following:

MATH 442: Introduction to Mathematical Statistics (*MATH 441)
MATH 443: Stochastic Processes/Simulation (*CS 111 and MATH 264 or 364 and MATH 342 or 441)
MATH 444: Regression Analysis (*MATH 441 and MATH 264 or 374)

✓	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)

✓	Course	Units
☐		3

✓	Course	Units
☐	MATH/CS 480: Introduction to Optimization (*MATH 264 or 374; offered Spring only)	3

Capstone Course:
Each of the Capstone Courses require faculty advisor approval prior to enrollment.

Select 1 course from the following:

MATH 490˜: Senior Seminar
MATH 495: Internship in Mathematics (*instructor consent)
Approved 500-level or higher MATH course

✓	Course	Units
☐		3

Upper-division Electives:
Select 6 units from the following:

CS 440: Blockchain Technology (*CS 311)
CS/MATH 464: Numerical Analysis & Computing (*CS 111, MATH 162)
CS 471: Introduction to Artificial Intelligence (*CS 311 and MATH 242, 342, 441 or 442)
CS 473: Artificial Neural Networks (*CS 311)
AI/CS 478: Deep Learning (*AI 330 or CS 311 and either MATH 264, 364 or 374)
Any MATH course numbered 410-499 or 505+ not already used to fulfill a major requirement.

✓	Course	Units
☐		3
☐		3