MATHEMATICS (COMPUTATIONAL MATHEMATICS) - BACHELOR OF SCIENCE

The concentration in Computational Mathematics draws on courses from mathematics and computer science to provide a deeper understanding of the mathematical principles underlying computation.

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I	4
or ENGL 1110H	Composition I Honors	
or ENGL 1110M	Composition I	
English Composition - Level 2		
Choose one from the following:		3
ENGL 2130G	Advanced Composition	
ENGL 2210G	Professional and Technical Communication	
or ENGL 2210H	Professional and Technical Communication	
or ENGL 2210M	Professional and Technical Communication for Multilingual Students	
ENGL 2215G	Advanced Technical and Professional Communication	
Oral Communication		
Choose one from the following:		3
ACOM 1130G	Effective Leadership and Communication in Agriculture	
COMM 1115G	Introduction to Communication	
COMM 1130G	Public Speaking	
HNRS 2175G	Introduction to Communication Honors	
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I (Departmental/College Requirement) [1]	4
or MATH 1511H	Calculus and Analytic Geometry I Honors	
Area III/IV: Laboratory Sciences and Social/Behavioral Sciences		*10-11*
Area III: Laboratory Science Course (4 credits) [2]		
Area IV: Social/Behavioral Sciences Course (3 credits) [2]		
Either an Area III/IV: Laboratory Sciences Course or Social/Behavioral Science Course (4 credits or 3 credits) [2]		
Area V: Humanities [2]		*3*
Area VI: Creative and Fine Arts [2]		*3*
General Education Elective		
MATH 1521G	Calculus and Analytic Geometry II (Departmental/College Requirement)	4
or MATH 1521H	Calculus and Analytic Geometry II Honors	
Viewing a Wider World [3]		**6**
Departmental/College Requirements		
MATH 1531	Introduction to Higher Mathematics	3
or CSCI 2310	Discrete Mathematics for Computer Science	
MATH 2415	Introduction to Linear Algebra	3
MATH 2530G	Calculus III	3
MATH 3140	Introduction to Numerical Methods	3
STAT 3110	Statistics for Engineers and Scientists	3
STAT 4210	Probability: Theory and Applications	3
or MATH 4230	Applied Linear Algebra	
Departmental Electives		
Select at least 9 additional upper-division credits of approved courses prefixed MATH or STAT, excluding the following:		9
MATH 3997	Directed Readings	
MATH 4991	Undergraduate Research	
MATH 4997	Directed Reading	
Non-Departmental Requirements (in addition to Gen.Ed/VWW) [4]		
Select a minimum of 12 credit hours from the following		12
CSCI 2220	Introduction to Data Structures and Algorithms	
CSCI 3720	Data Structures and Algorithms	
CSCI 3730	Compilers and Automata Theory	
CSCI 3790	Algorithm Design & Implementation	
CSCI 4225	Introduction to Cryptography	
CSCI 4430	Graph Data Mining	
Second Language Requirement: (not required)		
Electives, to bring the total credits to 120 [5]		**41**
15 credits must be Upper-Division		
Total Credits		**120-121**

1. MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G first.
2. See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses
3. See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses.
4. A grade of C- or better must be earned.
5. Elective credit may vary based on prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.

Note: It is strongly recommended that mathematics majors in the Computational Mathematics Concentration consider a minor or second major in an area that uses mathematics, such as physics or computer science. All programs should be planned with the guidance of a departmental advisor. More information is available at www.math.nmsu.edu. *(*https://math.nmsu.edu/*)*

Second Language Requirement

For the Bachelor of Science in Mathematics with a Concentration in Computational Mathematics there is no second language requirement.