

B.S. IN MATHEMATICS - COMPUTATIONAL MATHEMATICS CONCENTRATION

College of the Sciences and Mathematics

Curriculum

(Note: As of Fall 2017, this program is no longer accepting new students. Interested students should consider the B.S. in Mathematics - Applied and Computational Mathematics Concentration (<http://catalog.wcupa.edu/undergraduate/sciences-mathematics/mathematics/mathematics-bs-applied-computational-mathematics-concentration/>).

Code	Title	Credits
General Education Requirements (http://catalog.wcupa.edu/undergraduate/general-education-requirements/)		
	English Composition requirements	6
	Mathematics requirement	3
	Public Speaking requirement	3
	Science requirements	6
	Behavioral & Social Science requirements	6
	Humanities requirements	6
	Arts requirement	3
	Diverse Communities requirement	3
	Interdisciplinary requirement	3
	Student Electives	9
	Writing Emphasis requirements	9
Major Requirements		
MAT 151	Introduction to Discrete Mathematics	3
MAT 161	Calculus I	4
MAT 162	Calculus II	4
MAT 200	The Nature of Mathematics	3
MAT 261	Calculus III	4
MAT 311	Linear Algebra ¹	3
MAT 325	Numerical Analysis I	3
MAT 343	Differential Equations	3
MAT 413	Computer Algebra	3
MAT 425	Numerical Analysis II	3
MAT 427	Introduction to Optimization Techniques	3
or MAT 493	Mathematical Modeling	
MAT 443	Applied Analysis I	3
STA 319	Applied Statistics	3
Related/Cognate Requirements		
Select one of the following: 3		
ENG 368	Business and Organizational Writing	
ENG 375	Strategies for Writing in the Workplace	
ENG 371	Technical Writing	
CSC 141	Computer Science I ¹	3
CSC 142	Computer Science II	3
CSC 240	Computer Science III	3
CSC 241	Data Structures & Algorithms	3
CSC 242	Computer Organization	3
or MAT 405	Special Topics in Mathematics	
Free Electives or Internship		

Select 18 semester hours of electives and/or internship (chosen under advisement) 18

Total Minimum Credits Required 120

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Progress Report (DPR) via myWCU regularly. For more information, visit wcupa.edu/DegreeProgressReport (<http://wcupa.edu/degreeprogressreport/>).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

Course	Title	Credits
Year One		
Semester One		
MAT 151	Introduction to Discrete Mathematics	3
MAT 161	Calculus I	4
CSC 141	Computer Science I ²	3
Gen Ed Arts Course		3
Gen Ed Humanities Course		3
Credits		16
Semester Two		
MAT 162	Calculus II	4
MAT 200	The Nature of Mathematics	3
CSC 142	Computer Science II	3
WRT 120	Effective Writing I	3
SPK 230	Business and Professional Speech Communication	3
Credits		16
Year Two		
Semester Three		
MAT 261	Calculus III	4
MAT 311	Linear Algebra ¹	3
CSC 240	Computer Science III	3
WRT 200	Critical Writing and Research	3
Gen Ed Elective		3
Credits		16
Semester Four		
STA 319	Applied Statistics	3
MAT 343	Differential Equations	3
CSC 241	Data Structures & Algorithms	3
Gen Ed Behavioral/Social Science Course		3
Free Elective		3
Credits		15
Year Three		
Semester Five		
MAT 325	Numerical Analysis I	3
MAT 413	Computer Algebra	3
IW Course		3
Free Elective		3
Gen Ed Elective		3
Credits		15
Semester Six		
MAT 443	Applied Analysis I	3
MAT 405	Special Topics in Mathematics (Cryptography)	3
Gen Ed Behavioral/Social Science Course		3
JW Course		3

Free Elective	3
Credits	15
Year Four	
Semester Seven	
MAT 425 Numerical Analysis II	3
ENG 368 Business and Organizational Writing (W)	3
Gen Ed Humanities Course	3
Gen Ed Elective	3
Free Elective	3
Credits	15
Semester Eight	
MAT 493 Mathematical Modeling	3
MAT 491 Internship in Applied Mathematics	2-4
Gen Ed Science Course	3
Free Electives	6-9
Credits	14-19
Total Credits	122-127

Three writing-emphasis courses are required. At least one must be at the 300 level or above. Transfer students entering with 40-70 semester hours must take two writing emphasis courses and those entering with more than 70 semester hours must take one.

- ¹ MAT 311, a **three** semester hour course, is used to fulfill **three** semester hours of the General Education Mathematics requirement.
- ² CSC 141, a **three** semester hour course, is used to fulfill **three** semester hours of the General Education Science requirement.