U of SC South Carolina

Major Map: Mathematics – Bachelor of Science (B.S.)
College of Arts and Sciences
Department of Mathematics
Bulletin Year: 2019-2020

This course plan is a recommended sequence for this major. Courses designated as critical (!) may have a deadline for completion and/or affect time to graduation. Please see the Program Notes section for details regarding "critical courses" for this particular Program of Study.

Critical	Course Subject and Title	Credit Hours	Min. Grade[1]	Major GPA[2]	Code	Prerequisites	Notes
Semester One (16-18 Credit Hours)							
!	ENGL 101 Critical Reading and Composition	3	C		CC-CMW		
	MATH 141 Calculus 1[3]	4	C		CC-ARP	MATH 112, 115, 116 or Math placement test score	
	Carolina Core Requirement[4]	3-4			CC		
	Foreign language[5] or other Carolina Core Requirement[4]	3-4			CC-GFL		
	UNIV 101 The Student in the University or Carolina Core Requirement[4]	3			PR/CC		
Semester Two (16-17 Credit Hours)							
!	ENGL 102 Rhetoric and Composition	3	C		CC-CMW CC-INF	C or better in ENGL 101	
	MATH 142 Calculus II	4	C		CC-ARP	MATH 141	
	Humanities or Fine Arts	3			CR		
	Carolina Core Requirement[4]	3-4			CC		
	Foreign language[5] or other Carolina Core Requirement[4]	3			CC-GFL		
Semester Three (15-16 Credit Hours)							
	MATH 241 Vector Calculus	3	C		PR	MATH 142	
	MATH 300	3	C		PR	MATH 142	
	CSCE 145 Algorithmic Design I or CSCE 206 Scientific Applications Programming	3-4			CR	Prereq or Coreq: MATH 111 or 115 (CSCE 145); MATH 122 or 141 (CSCE 206)	
	Foreign language[5] or Carolina Core Requirement[4]	3			CR/CC		
	Carolina Core Requirement[4]	3			CC		
Semester Four (15 Credit Hours)							
	MATH 544 Linear Algebra	3	C		MR	MATH 241 & 300	
	MATH Major Elective[6] *(500-level or 700-level with approval)*	3	C		MR		
	History[7]	3			CR		
	Social Science	3			CR		
	Carolina Core Requirement[4]	3			CC		
Semester Five (15 Credit Hours)							
	MATH 511 Probability *(cross-listed STAT 511)* or MATH 520 Ordinary Differential Equations or MATH 534 Elem. of Gen. Topology *(offered fall odd years)* or MATH 550 Vector Analysis or MATH 552 Applied Complex Variables *(offered spring)*	3	C		MR	Prereq or Coreq: MATH 241 (MATH 511); MATH 241 (MATH 550/552); MATH 344 or 544 (MATH 520); MATH 241 & 300 (MATH 534);	
	MATH Major Elective[6] *(500-level or 700-level with approval)*	3	C		MR		
	Cognate or Minor Course[8]	3	C *(minor)*		PR		
	Carolina Core Requirement[4] or Approved Elective[9]	3			CC/PR		
	Carolina Core Requirement[4] or Approved Elective[9]	3			CC/PR		
Semester Six (12 Credit Hours)							
	MATH 546 Algebraic Structures I *(offered fall even years & spring)* or MATH 554 Analysis I *(offered fall odd years & spring)*	3	C		MR/CC-INT	MATH 544 (MATH 546); MATH 300 & one of 511/520/ 534/550/552 (MATH 554)	
	STAT 509 Statistics for Engineers or STAT 512 Math. Statistics *(offered spring & summer)* or STAT 515 Stat. Methods I	3			CR	MATH 142 (STAT 509); MATH 511 (STAT 512); MATH 122 or 141; or MATH 111 and any statistics course (STAT 515)	
	Cognate or Minor Course[8]	3	C *(minor)*		PR		
	Approved Elective[9]	3			PR		
Semester Seven (15 Credit Hours)							
	MATH 546 Algebraic Structures I *(offered fall even years & spring)* or MATH 554 Analysis I *(offered fall odd years & spring)*	3	C		MR/CC-INT	MATH 544 (MATH 546); MATH 300 & one of 511/520/ 534/550/552 (MATH 554)	
	MATH Major Elective[6] *(500-level or 700-level with approval)*	3	C		MR		
	Cognate or Minor Course[8]	3	C *(minor)*		PR		
	Minor Course[8] or Approved Elective[9]	3	C *(minor)*		PR		
	Approved Elective[9]	3			PR		

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Semester Eight (12-15 Credit Hours)						
MATH Major Elective[6] *(500-level or 700-level with approval)*	3	C		MR		
Cognate *or* Minor Course[8]	3	C *(minor)*		PR		
Minor Course[8] *or* Approved Elective[9]	3	C *(minor)*		PR		
Approved Elective[9]	3			PR		
Approved Elective[9] *(only if needed to meet hours to graduate)*	3			PR		

Graduation Requirements Summary

Minimum Total Hours	Minimum Major Requirements Hours	College & Program Requirements Hours	Carolina Core Hours	Minimum Institutional GPA
120	24	48-60	34-46	2.000

1. Regardless of individual course grades, students must maintain a minimum 2.000 cumulative GPA.
2. Some colleges require a minimum GPA for major courses. Courses indicated in this column are included in the major GPA for this program of study.
3. Students who place into MATH 115 will be required to take it before proceeding to MATH 141.
4. The Carolina Core provides the common core of knowledge, skill and academic experience for all Carolina undergraduate students.
5. Students in the College of Arts and Sciences are required to demonstrate proficiency in one foreign language equivalent to the 122 course through course credit or the corresponding foreign language placement score.
6. The College of Arts and Sciences requires one U.S. History and one non-U.S. History course, both of which must be chosen from the approved Carolina Core GHS courses. Whichever is not fulfilled through the Carolina Core GHS requirement must be fulfilled through this college requirement.
7. A complete list of approved Mathematics major electives, as well as guidelines for selecting 500-level MATH electives, are available in the Bulletin. Undergraduate students interested in taking 700-level MATH courses as MATH elective credit should consult the Graduate Bulletin.
8. The cognate is intended to support the course work in the major. The cognate must consist of twelve hours of courses at the advanced level, outside of, but related to the major. In place of a cognate, a student may choose a minor consisting of at least 18 credit hours of courses concentrated in one area that follow a structured sequence. A second major eliminates the minor/cognate requirement.
9. No courses of a remedial, developmental, skill-acquiring, or vocational nature may apply as credit toward degrees in the College of Arts and Sciences. The College of Arts and Sciences allows the use of the Pass-Fail option on elective courses. Further clarification on inapplicable courses can be obtained from the College of Arts and Sciences.

Program Notes:

- Courses identified as "critical" must be completed in the student's first 60 semester hours of work in order for these courses to be credited toward graduation.
- All course prerequisites must be met with a grade of C or better.
- A student may enroll in each MATH course a maximum of two times. (Enrolled in a course is interpreted to mean that a grade, including W or WF, has been recorded.) A student may repeat a maximum of three MATH courses. (Receiving a grade of W is not to be considered a repeat.)
- Graduation with "Distinction in Mathematics" is an optional program of study, in which students actively engage in significant research, scholarship, and/or performance activities in collaboration with a faculty mentor within a chosen major. Graduation with Distinction for this program of study requires: 1) a minimum major GPA of 3.6 in upper division (500 and above) major courses, 2) a minimum cumulative GPA of 3.30, 3). three credit hours of MATH 499, 4) 12 hours of upper-level (500 and above) MATH approved by the Undergraduate Director beyond the 24 credit hours of 500-level MATH courses required by the B.S. in Mathematics, and 5) a senior thesis. Further details on graduation with "Distinction in Mathematics" may be found on the Bulletin.
- Students who wish to pursue an actuarial science focus should take MATH 511 in the second year, with STAT 512 immediately following.
- For the College of Arts and Sciences STEM Enhancement Scholarship, at least 14 credits of Math or Science must be completed in the first year, including any AP, IB, or dual enrollment credit.
- The last 30 credit hours toward your degree and half of the major must be earned in residence at the University of South Carolina-Columbia.

University Requirements: Bachelor's degree-seeking students must meet Carolina Core (general education) requirements. For more information regarding these requirements, please visit the Carolina Core page on the University website.

Codes:			
CC	Carolina Core	CC-INF	Carolina Core – Information Literacy
CC-AIU	Carolina Core-Aesthetic and Interpretive Understanding	CC-INT	Carolina Core – Integrative Course
CC-ARP	Carolina Core-Analytical Reasoning and Problem-Solving	CC-SCI	Carolina Core – Scientific Literacy
CC-CMS	Carolina Core-Effective, Engaged, and Persuasive Communication: Spoken Component	CC-VSR	Carolina Core – Values, Ethics, and Social Responsibility
CC-CMW	Effective, Engaged, and Persuasive Communication: Written Component	CR	College Requirement
CC-GFL	Carolina Core-Global Citizenship and Multicultural Understanding: Foreign Language	MR	Major Requirement
CC-GHS	Carolina Core – Historical Thinking	PR	Program Requirement
CC-GSS	Carolina Core – Social Sciences		

Disclaimer: Major maps are only a suggested or recommended sequence of courses required in a program of study. Please contact your academic advisor for assistance in the application of specific coursework to a program of study and course selection and planning for upcoming semesters.