

College of Science - Mathematics, BS with Concentration in Mathematical Statistics

Catalog Year: 2019 - 2020

			Grades	
Mason Core Requirements: 27 credits	Course Information	Credits	Earned	Needed
Written Communication:	ENGH 101 (100)	3		
Oral Communication:		3		
*Quantitative Reasoning	*Satisfied by Major Requirements			
*Information Technology	*Satisfied by Major Requirements (CS 112)			
Arts		3		
Global Understanding		3		
Literature		3		
*Natural Science	*Satisfied by Major Requirements			
Social & Behavioral Sciences		3		
Western Civilization/World History		3		
Written Communication:	ENGH 302	3		
Synthesis/Capstone		3		

Major Requirements (66 - 71 credits in major with Concentration in Mathematical Statistics) A maximum of 6 credits of grades below 2.00 in coursework designated MATH or STAT may be applied toward the major

MATH 113	Analytic Geometry and Calculus I	4		
MATH 114	Analytic Geometry and Calculus II	4		
MATH 203	Linear Algebra	3		
MATH 213 or MATH 215	Analytic Geometry and Calculus III or Analytic Geometry and Calculus III (Honors)	3		
MATH 214 or MATH 216	Elementary Differential Equations or Theory of Differential Equations	3		
MATH 290	Introduction to Advanced Mathematics	3		
MATH 322	Advanced Linear Algebra	3		
CS 112	Introduction to Computer Programming	4		

Science Requirement: Select a one-year sequence of a laboratory science from the following courses (8-9 credits):

BIOL 213 and One from the following: BIOL 300, 308, or 311	Cell Structure and Function AND Biodiversity, Foundations of Ecology & Evolution, OR General Genetics	8-9		
CHEM 211/213 & CHEM 212/214	General Chemistry I & II with Labs			
GEOL 101 & GEOL 102	Introductory Geology I & II			
PHYS 160/161 or 260/261	University Physics I & II with Labs			

Mathematical Statistics (31 - 36 credits)

MATH 125	Discrete Mathematics I	3		
MATH 315	Advanced Calculus I	3		
MATH 351	Probability	3		
MATH 352	Statistics	3		
MATH 453	Advanced Mathematical Statistics	3		
MATH 551	Regression and Time Series	3		
STAT 362	Introduction to Computer Statistical Packages	3		

Select two from the following (6 credits):

STAT 455	Experimental Design	6		
STAT 463	Introduction to Exploratory Data Analysis			
STAT 474	Introduction to Survey Sampling			

Additional Science: Select additional science credits from one of the following three options (4-9 credits):

A second sequence from the choices under "Science" above	4-9		
6 credits from more advanced courses in biology, chemistry, geology, or physics 2			
The 4-credit option of PHYS 262 and PHYS 263			

Degree Notes

Approx. 22 - 27 credits may be completed with elective courses to bring the degree total to 120 with 45 of these credits at the 300/400 level. All graduating seniors are required to have an exit interview.

Advisor Notes:

B.S. Mathematics

2019 - 2020

FALL YEAR 1	CREDITS	SPRING YEAR 1	CREDITS	NOTES
MATH 113	4	MATH 114	4	*G.U. = Global
Core (Written)	3	MATH 125	3	Understanding
Core (Oral)	3	Core (W.C.)	3	*W.C. = Western Civ.
Core (G.U.)	3	SCI 1a	4	*S.B.S. = Social and
Core (Arts)	3	Core (S.B.S.)	3	Behavioral Science
UNIV 100	1			*SCI =First of two year-
Total:	17 credits	Total:	17 credits	long sequences**

FALL YEAR 2	CREDITS	SPRING YEAR 2	CREDITS	NOTES
MATH 213 or 215	3	MATH 214 or 216	3	*Some Literature
MATH 203	3	MATH 290	3	courses have a
C.S. 112	4	MATH 351	3	required pre-requisite
SCI 1b	4	SCI 2a	4	of 45 completed
IT Ethics	1	Core (Lit.)	3	credits.
Total:	15 credits	Total:	16 credits	

FALL YEAR 3	CREDITS	SPRING YEAR 3	CREDITS	NOTES
MATH 322	3	MATH 453	3	*UL – Upper level
MATH 315	3	STAT 362	3	
MATH 352	3	General Elective	3	
SCI 2b	4	General Elective	3	
ENGH 302	3	General Elective (UL)	3	
Total:	16 credits	Total:	15 credits	

FALL YEAR 4	CREDITS	SPRING YEAR 4	CREDITS	NOTES
STAT 4xx	3	MATH 551	3	
General Elective	3	STAT 4xx	3	
General Elective	3	MATH 400 (Synthesis)	3	
General Elective (UL)	3	General Elective (UL)	3	
General Elective (UL)	3			
Total:	15 credits	Total:	12 credits	

*Students must earn 120 credits for graduation; 45 credits must be upper-level (courses 300+).

**Approved science sequences are CHEM 211/213 and CHEM 212/214, GEOL 101 and GEOL 102, or PHYS 160/161 and PHYS 260/261. See catalog for more details.

***The first three semesters of this concentration are rather rigid if a student wishes to complete the concentration within a 4-year timeframe. MATH 290 in the fourth semester is a gateway class to the upper-level math courses. It and MATH 351 should be taken in the fourth semester at the latest in order to graduate with this concentration within 4 years.

****Approved 400-level statistics electives are STAT 455, 463, and 474.