Department of Mathematics and Statistics

Dr. John E. Hammett III, *Chairperson*

The Department of Mathematics offers three majors and two minors in Mathematics and Statistics. Students must maintain an average GPA of at least 2.0 in all mathematics courses counted towards the B.S. degree or an average GPA of at least 2.5 in all other mathematics courses counted towards the B.A. degree in order to graduate with a mathematics major.

Requirements for Mathematics Major

Degree of Bachelor of Science

Eight of the required credits for the major count towards the Core Curriculum Requirements.

MA-143	Differential Calculus [1]	4
MA-144	Integral Calculus [1]	4
MA-247	Introductory Linear Algebra	3
MA-248	Math Tech Lab	1
MA-250	Transition to Advanced Mathematics	3.00
MA-273	Multivariable Calculus I [1]	4
MA-274	Multivariable Calculus II [1]	4
MA-441	Modern Algebra	3
MA-490	Senior Seminar in Mathematics (Capstone)	3
Take one of the following courses		3-4
MA-375	Advanced Calculus	
MA-377	Ordinary Differential Equation	
MA-379	Differential Equations for Engineers	
Take one of the following courses		3
MA-222	Intermediate Statistics	
MA-335	Probability Theory	
MA-336	Mathematical Statistics	
MA-337	Statistical Computing With R	
MA-338	Regression Analysis	
MA-389	Topics in Statistics	
Take one of the following courses		3
MA-382	Mathematical Modeling	
MA-385	Topics in Applied Mathematics	
MA-387	Topics in Mathematics	
MA	One Mathematics or Statistics Elective (MA-212 or higher) [2]	3
MA	Two Mathematics or Statistics Electives (MA-316 or higher)	6
Total Credits		**47-48**

1 May count towards the Core Mathematics Requirement.
2 A cognate course may be substituted with permission.

Special Notes on Core Curriculum Requirements

1 The Core Curriculum Natural Science Requirement for the B.S. in Mathematics degree is ordinarily PC-185 General Physics I, and CS-180 Introduction to Programming. These Mathematics majors are encouraged to take PC-186 as well. A more advanced course in computer programming may substitute for CS-180, but a course in computer programming is expected.

[2] Mathematics majors are encouraged to take EC-101 Macroeconomic Principles as part of their Social Sciences Requirement.

[3] Ordinarily a student may not receive credit for more than one of the calculus sequences, nor may a student receive credit for both MA-132 Statistics for the Life Sciences and MA-212 Elementary Statistics.

[4] Satisfactory completion of core mathematics courses with integrated mathematics reviews, such as MA-102 Mathematics for the Liberal Arts and MA-103 Probability and Statistics for the Liberal Arts, may be required based on placement test results

[5] Students intending or expected to take calculus courses may first be required to take MA-100 Fundamentals of College Algebra and/or MA-101 Precalculus, unless exempted by placement test results

[6] Students who receive advanced placement beyond the introductory calculus sequences may use MA-273 Multivariable Calculus I and MA-274 Multivariable Calculus II to satisfy the Mathematics Core Requirement.

Special Note on Major Requirements

[1] The Chairperson of the Mathematics Department may reduce the 9 credit requirement in the Mathematics electives to 3 credits for the B.S. degree if the student has, in consultation with a departmental advisor, combined this Mathematics major with a specified program of courses in a related field. Such programs include, but are not limited to, major or minor programs in another department and the certification program in secondary education.

Requirements for Mathematics Major

Degree of Bachelor of Arts, Concentration:

Elementary Education

MA-250	Transition to Advanced Mathematics	3.00
MA-400	History of Mathematics	3.00
MA-490	Senior Seminar in Mathematics	3
Take three courses in Essential Mathematics and Statistics		9
Group 1: Essential Mathematics (choose one)		
MA-101	Precalculus	
MA-102	Mathematics for the Liberal Arts	
MA-105	Elementary Applied Mathematics	
MA-108	Mathematics for Educators I	
MA-218	Quantitative Methods for Business	
Group 2: Essential Statistics (choose two, one course must be higher than MA-132)		
MA-103	Probability & Statistics for Liberal Art	
MA-106	Introduction to Probability & Statistics	
MA-109	Mathematics for Educators II	
MA-132	Statistics for Life Sciences	
MA-212	Elementary Statistics	
MA-222	Intermediate Statistics	
MA-304	Stats Prob & Discrete Math Middle Schoo	
MA-336	Mathematical Statistics	
MA-337	Statistical Computing With R	
Take two courses in Calculus		6-8
MA-123 & MA-124	Elementary Calculus I and Elementary Calculus II [1]	
or		
MA-143 & MA-144	Differential Calculus and Integral Calculus [1]	
MA-273 & MA-274	Multivariable Calculus I and Multivariable Calculus II	

MA-375	Advanced Calculus	
MA-377	Ordinary Differential Equation	
or MA-379	Differential Equations for Engineers	
Take one course in Algebra		3
MA-247	Introductory Linear Algebra	
MA-302	Elem Math Functions for Mid Sc	
MA-441	Modern Algebra	
Take one course in Geometry		3
MA-306	Geometry for Middle School	
MA-350	College Geometry	
MA	Take one Mathematics or Statistics Elective (200 level or higher) [2]	3
Total Credits		**33-35**

1 MA-133 may substitute for MA-123 or MA-143. MA-144 does require preparation in trigonometry.
2 Math elective must be 200-Level or above.

Special Notes on Core Curriculum Requirements

1 Mathematics majors are encouraged to take CS-180 or another computer programming course as part of their Natural Science Requirement.
2 Mathematics majors are encouraged to take EC-101 as part of their Social Sciences Requirement.
3 Mathematics majors pursuing the B.A. degree, Concentration in Elementary Education, are encouraged to take BI-122, BI-124 or a comparable course in Biology as part of their Natural Science Requirement.

Special Note on Major Requirements

1 At least four (4) courses must be at the 300-Level or above.

Requirements for Mathematics Major

Degree of Bachelor of Arts, Concentration: Secondary Education

MA-247	Introductory Linear Algebra	3
MA-248	Math Tech Lab	1
MA-250	Transition to Advanced Mathematics	3.00
MA-350	College Geometry	3
MA-400	History of Mathematics	3.00
MA-441	Modern Algebra	3
MA-490	Senior Seminar in Mathematics	3
Take at least four courses in Calculus		14-16
MA-123 & MA-124 & MA-125	Elementary Calculus I and Elementary Calculus II and Intermediate Calculus [1]	
or		
MA-143 & MA-144	Differential Calculus and Integral Calculus [1]	
MA-273 & MA-274	Multivariable Calculus I and Multivariable Calculus II	
MA-375	Advanced Calculus	
MA-377	Ordinary Differential Equation	
or MA-379	Differential Equations for Engineers	

Take one course in Statistics, Probability or Discrete Mathematics		3
MA-132	Statistics for Life Sciences	
MA-212	Elementary Statistics	
MA-222	Intermediate Statistics	
MA-316	Intermediate Discrete Mathematics	
MA-335	Probability Theory	
MA-336	Mathematical Statistics	
MA-337	Statistical Computing With R	
MA-338	Regression Analysis	
MA-389	Topics in Statistics	
Total Credits		**36-38**

1 MA-133 may substitute for MA-123 or MA-143. MA-144 does require preparation in trigonometry. Calculus students with placement about MA-144 should expect to complete MA-375, MA-377 or MA-379 as the third course and a mathematics elective at the 200 level or higher as the fourth course.

2 Math elective must be 200-Level or above.

Special Notes on Core Curriculum Requirements

1 Mathematics majors are encouraged to take CS-180 or another computer programming course as part of their Natural Science Requirement.

2 Mathematics majors are encouraged to take EC-101 as part of their Social Sciences Requirement.

3 Mathematics majors pursuing the B.A. degree, Concentration in Secondary Education, are encouraged to take BI-122, BI-124 or a comparable course in Biology as part of their Natural Science Requirement.

Special Note on Major Requirements

1 At least four (4) courses must be at the 300-Level or above

2 Students who complete MA-123, MA-124 and MA-125 for 8 credits must complete two (2) additional calculus courses

Special Note on Multiple BA Concentrations

If a student wishes to earn concentrations in both Elementary Education and Secondary Education, an additional 12 credits of 200-Level courses or above must be completed.

Requirements for a Minor in Mathematics

Select one of the following calculus sequences:		6-8
MA-123 & MA-124	Elementary Calculus I and Elementary Calculus II	
MA-132 & MA-133	Statistics for Life Sciences and Calculus for the Life Sciences	
MA-143 & MA-144	Differential Calculus and Integral Calculus	
MA-273 & MA-274	Multivariable Calculus I and Multivariable Calculus II	
Select 4 MA-courses, 200-level or above		12+
Total Credits		18-20+

Special Notes on Minor Requirements

1 Students wishing to minor in mathematics should meet with the department Chairperson to choose appropriate electives to match or complement their major.

2 A student must maintain an average of at least 2.0 in the courses presented for the mathematics minor.

[3] MA-133 may substitute for MA-123 or MA-143. MA-144 does require preparation in trigonometry.

Requirements for a Minor in Statistics

Select one of the following courses		3
MA-132	Statistics for Life Sciences	
MA-212	Elementary Statistics	
Select five of the following courses		15
MA-222	Intermediate Statistics	
MA-335	Probability Theory	
MA-336	Mathematical Statistics	
MA-337	Statistical Computing With R	
MA-338	Regression Analysis	
MA-389	Topics in Statistics [1]	
Choose one from the following group		
BA-388 or BA-414 or BI-311 or CJ-350 or EC-300 or MA-304 or PO-200 or PS-200 or SO-448		
Choose from the following group		
BA-351 or BI-385 or BI-497 or BI-498 or CU-400 or HS-499 or HP-492 or MA-295 or MA-399 or PC-390 or PS-398 or SO-450 [2]		
Choose one from the following group		
MA-123 or MA-124 or MA-133 or MA-143 or MA-144 or MA-218 or MA-273 or MA-274 or MA-316 or MA-385 or MA-400 [3]		
Total Credits		**18**

Special Notes on Minor Requirements

[1] Nay be repeated with a different topic.

[2] May be taken by permission of the department chair when appropriate.

[3] MA-106, if completed prior to declaring the Statistics minor, may count by permission of the department chairperson.