Department of Mathematics and Statistics

Dr. Dawn Nelson, *Chairperson*

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

Requirements for Mathematics Major

Degree of Bachelor of Science

Three to four of the required credits for the major count towards the Core Curriculum Requirements.

Take one of the following sequences [1]		8
MA-123 & MA-124 & MA-125	Elementary Calculus I and Elementary Calculus II and Intermediate Calculus	
Or		
MA-143 & MA-144	Differential Calculus and Integral Calculus	
MA-247	Introductory Linear Algebra	3
MA-248	Math Tech Lab	1
MA-250	Transition to Advanced Mathematics	3
MA-273	Multivariable Calculus I	4
MA-274	Multivariable Calculus II	4
MA-441	Modern Algebra	3
MA	Capstone Experience [2]	0
Take one of the following courses		3-4
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	
MA	One Mathematics or Statistics Elective (MA-212 or higher) [3]	3
MA	Four Mathematics or Statistics Electives (MA-316 or higher)	12
Total Credits		47-48

Special Notes on Course Requirements

[1]   Ordinarily a student may not receive credit for more than one of the 100 level calculus sequences. MA-133 may substitute for MA-123 or MA-143.

[2]   To be satisfied in an upper division MA course during the student's senior year.

[3]   A cognate course may be substituted with permission.

Special Notes on Core Curriculum Requirements

[1]   The Core Curriculum Requirement 3.1 for the B.S. in Mathematics degree is as follows:

(A) Natural Science: One course in Biology, Chemistry, or Physics.

(B) STEM: One course in computer programming, namely CS-180 or higher.

[2]   Mathematics majors are encouraged to take EC-101 Macroeconomic Principles to satisfy their Core Curriculum Requirement 2.1

Special Note on Major Requirements

[1]   The Chairperson of the Mathematics Department may reduce the 12 credit requirement in the Mathematics electives to 6 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

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

MA-250	Transition to Advanced Mathematics	3
MA-400	History of Mathematics	3
Capstone Experience [1]		0
Take three courses in Essential Mathematics and Statistics		9
Group 1: Essential Mathematics (choose one)		
MA-101	Precalculus	
MA-107	Topics in Contemporary Mathematics	
MA-218	Quantitative Methods for Business	
Group 2: Essential Statistics (choose two, one course must be numbered MA-132 or higher)		
MA-103	Probability & Statistics for Liberal Art [2]	
MA-106	Introduction to Probability & Statistics [2]	
MA-132	Statistics for Life Sciences [3]	
MA-212	Elementary Statistics [3]	
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 [4]		6-8
MA-123 & MA-124	Elementary Calculus I and Elementary Calculus II	
or		
MA-143 & MA-144	Differential Calculus and Integral Calculus	
MA-273 & MA-274	Multivariable Calculus I and Multivariable Calculus II	
MA-375	Advanced Calculus	
MA-377 or MA-379	Ordinary Differential Equation 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 (numbered 212 or higher)	3
MA	Take one Mathematics or Statistics Elective (numbered 300 or higher)	3
Total Credits		33-35

[1] To be satisfied in an upper division MA course during the student's senior year.

[2] A student may not receive credit for both MA-103 and MA-106.

[3] A student may not receive credit for both MA-132 and MA-212.

[4] Ordinarily a student may not receive credit for more than one of the 100 level calculus sequences. MA-133 may substitute for MA-123 or MA-143.

Special Notes on Core Curriculum Requirements

[1] The Core Curriculum Requirement 3.1 for the B.A. degree, Concentration in Elementary Education, is as follows:

(A) Natural Science: Students are encouraged to take BI-122, BI-124 or a comparable course in Biology

(B) STEM: Students are encouraged to take one course in computer programming, namely CS-180 or higher.

[2] Mathematics majors are encouraged to take EC-101 to satisfy their Core Curriculum Requirement 2.1.

Special Note on Major Requirements

[1] At least four courses must be at the 300-Level or above.

Requirements for Mathematics Major

Degree of Bachelor of Arts, Concentration:

Secondary Education

Three to four of the required credits for the major count towards the Core Curriculum Requirements.

MA-247	Introductory Linear Algebra	3
MA-248	Math Tech Lab	1
MA-250	Transition to Advanced Mathematics	3
MA-350	College Geometry	3
MA-400	History of Mathematics	3
MA-441	Modern Algebra	3
	Capstone Experience [1]	
Take at least fourteen credits in Calculus [2]		14-16
MA-123 & MA-124 & MA-125	Elementary Calculus I and Elementary Calculus II and Intermediate Calculus	
or		
MA-143 & MA-144	Differential Calculus and Integral Calculus	
MA-273 & MA-274	Multivariable Calculus I and Multivariable Calculus II	
MA-375	Advanced Calculus	
MA-377 or MA-379	Ordinary Differential Equation Differential Equations for Engineers	
Take one course in Statistics, Probability or Discrete Mathematics		3
MA-132	Statistics for Life Sciences [3]	
MA-212	Elementary Statistics [3]	
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	
MA	Take one Mathematics or Statistics Elective (numbered 316 or higher)	
Total Credits		33-35

[1]   To be satisfied in an upper division MA course during the student's senior year.

[2]   Ordinarily a student may not receive credit for more than one of the 100 level calculus sequences. MA-133 may substitute for MA-123 or MA-143. Students with placement above MA-144 should expect to complete MA-375, MA-377 or MA-379 as the third course and a mathematics elective numbered 212 or higher as the fourth course.

[3]   A student may not receive credit for both MA-132 and MA-212.

Special Notes on Core Curriculum Requirements

[1]   The Core Curriculum Requirement 3.1 for the B.A. degree, Concentration in Secondary Education, is as follows:

  (A) Natural Science: Students are encouraged to take BI-122, BI-124 or a comparable course in Biology

  (B) STEM: One course in computer programming, namely CS-180 or higher.

[2]   Mathematics majors are encouraged to take EC-101 to satisfy their Core Curriculum Requirement 2.1

Special Note on Multiple BA Concentrations

If a student wishes to earn concentrations in both Elementary Education and Secondary Education, the student must complete an additional 12 credits of courses numbered 212 or above.

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, numbered 212 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]   Ordinarily a student may not receive credit for more than one of the 100 level calculus sequences. MA-133 may substitute for MA-123 or MA-143.

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 options		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]	
At most 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		
At most one from the following group (with permission of the department chairperson)		
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		
At most 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		
Total Credits		18

Special Notes on Minor Requirements

[1]   May be repeated with a different topic.

Special Notes on Core Curriculum Requirements For All Students

[1]   Ordinarily a student may not receive credit for more than one of the 100 level calculus sequences. A student may not receive credit for both MA-103 and MA-106. A student may not receive credit for both MA-132 Statistics for the Life Sciences and MA-212 Elementary Statistics.

[2]   Satisfactory completion of a mathematics course with integrated mathematics reviews, such as MA-103 Probability and Statistics for the Liberal Arts, may be required based on placement test results.

[3]   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.