

MATHEMATICS
Bachelor of Science (B.S.)
2015-2016

At least 124 hours are required for graduation, and students must earn a 2.0 overall GPA and a 2.0 GPA in the major. Students must also complete all courses required for University Requirements and for the General Education program.

Requirements for Major: At least 37 credit hours in the department, including:

MA 151 Calculus and Analytic Geometry I
MA 152 Calculus and Analytic Geometry II
MA 253 Calculus and Analytic Geometry III
MA 207 Discrete Mathematics
MA 301 Linear Algebra
MA 343 Applied Statistics
MA 344 Mathematical Statistics I
MA 354 Abstract Algebra
MA 371 Introduction to Real Analysis I
MA 372 Introduction to Real Analysis II
MA 387 Capstone Experience
MA 388 Capstone Research

The following Humanities correlated course:

PH 220 Symbolic Logic (General Education Course)
--

One of the following correlated sequences:

PS 261 College Physics I (General Education course) & PS 262 College Physics II
PS 281 General Physics I (General Education course) & PS 282 General Physics II
EC 200 Principles of Microeconomics (General Education course), EC 201 Principles of Macroeconomics (General Education course), BU 342 Organization & Management, & BU 347 Production & Operations Management
EC 200 Principles of Microeconomics (General Education course), EC 201 Principles of Macroeconomics (General Education course), AC 224 Financial Accounting, AC 225 Managerial Accounting, & BU 381 Business Finance
A specially designed sequence approved by the Mathematics' Department Chair

Required minor – 30 credit hours:

The B.S. degree also requires a 30-hour minor to be chosen from the Natural Sciences (Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, or Computer Information Science). This minor must be in departments other than the major, and must have at least 20 hours in one department.

General Education Distribution Requirements (BS):

Humanities (9) (GEHU/GECPA) (Max 6 hours/ discipline)	Course Number	Social Sciences (9) (GESS) (Max 6 hours/ discipline)	Course Number	Natural Sciences/ Mathematics (9) (GENS) (Max 8 Hours or 2 Courses/Discipline)
Fine Arts (3)		EC 200 (3)		PS 261/281 (5)
PH 220 (3)		EC 201 (3)		Natural Science 2 (3-5)
Humanities 3 (3)		Soc. Science 3 (3)		Natural Science 3 (3-5)

Core University/BS-Specific Requirements:

WU 101 (3)* C or Better		Natural Science Minor (30 – 20 in one Discipline)	
EN 101 (3) C or Better		Hours Outside Major (76)	
EN 300 (3) C or Better		Upper Division (300 and above) (45)	
MA 112 or MA 116 (3)** C or Better		Hours Within Arts and Sciences (99)	
>= 2.0 Overall Cumulative GPA		>= C Grade All Major and Correlated Courses	
		Total Hours (124)	

**Students transferring with 24 or more credit hours completed at an accredited post-secondary institution (after graduating from High School) with a GPA of 2.0 or higher are exempt from this requirement*

***May be waived if the student successfully places into a higher-level mathematics course with an ACT score of 25 or higher and then successfully completes that course with a grade of C or higher or if a student presents an ACT score in mathematics of at least 28 (SAT of at least 640).*

MATHEMATICS SECONDARY EDUCATION SPECIALIZATION

Students seeking certification to teach mathematics must also be formally admitted to the University's Professional Teacher Education Program

MA 151 Calculus and Analytic Geometry I
MA 152 Calculus and Analytic Geometry II
MA 253 Calculus and Analytic Geometry III
MA 207 Discrete Mathematics
MA 301 Linear Algebra
MA 343 Applied Statistics
MA 354 Abstract Algebra
MA 367 Modern Geometry
MA 371 Introduction to Real Analysis I
MA 381 History & Literature of Mathematics or PH 325 Philosophy of Mathematics
MA 387 Capstone Experience
MA 388 Capstone Research

The following Humanities correlated course:

PH 220 Symbolic Logic (General Education course)
--

Required minor – 30 credit hours:

The B.S. degree also requires a 30-hour minor to be chosen from the Natural Sciences (Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, or Computer Information Science). This minor must be in departments other than the major, and must have at least 20 hours in one department.

General Education Distribution Requirements (BS):

Humanities (9) (GEHU/GECPA) (Max 6 hours/ discipline)	Course Number	Social Sciences (9) (GESS) (Max 6 hours/ discipline)	Course Number	Natural Sciences/ Mathematics (9) (GENS) (Max 8 Hours or 2 Courses/Discipline)
Fine Arts (3)		Soc. Science 1 (3)		Natural Science 1 (3-5)
PH 220 (3)		Soc. Science 2 (3)		Natural Science 2 (3-5)
Humanities 3 (3)		Soc. Science 3 (3)		Natural Science 3 (3-5)

Core University/BS-Specific Requirements:

WU 101 (3)* C or Better	Natural Science Minor (30 – 20 in one Discipline)
EN 101 (3) C or Better	Hours Outside Major (76)
EN 300 (3) C or Better	Upper Division (300 and above) (45)
MA 112 or MA 116 (3)** C or Better	Hours Within Arts and Sciences (99)
>= 2.0 Overall Cumulative GPA	>= C Grade All Major and Correlated Courses
	Total Hours (124)

**Students transferring with 24 or more credit hours completed at an accredited post-secondary institution (after graduating from High School) with a GPA of 2.0 or higher are exempt from this requirement*

***May be waived if the student successfully places into a higher-level mathematics course with an ACT score of 25 or higher and then successfully completes that course with a grade of C or higher or if a student presents an ACT score in mathematics of at least 28 (SAT of at least 640).*

ACTUARIAL SCIENCE SPECIALIZATION

MA 151 Calculus and Analytic Geometry I
MA 152 Calculus and Analytic Geometry II
MA 253 Calculus and Analytic Geometry III
MA 250 Theory of Interest
MA 301 Linear Algebra
MA 343 Applied Statistics
MA 344 Mathematical Statistics I
MA 345 Mathematical Statistics I
MA 346 Regression Analysis
MA 347 Stochastic Processes
MA 348 Time Series Analysis
MA 385 Actuarial Mathematics

Correlated courses:

AC 224 Financial Accounting
AC 225 Managerial Accounting
BU 374 Principles of Risk & Insurance
BU 381 Business Finance
BU 483 Investments
EC 200 Principles of Microeconomics (General Education course)
EC 201 Principles of Macroeconomics (General Education course)

Required minor – 30 credit hours:

The B.S. degree also requires a 30-hour minor to be chosen from the Natural Sciences (Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, or Computer Information Science). This minor must be in departments other than the major, and must have at least 20 hours in one department.

General Education Distribution Requirements (BS):

Humanities (9) (GEHU/GECPA) (Max 6 hours/ discipline)	Course Number	Social Sciences (9) (GESS) (Max 6 hours/ discipline)	Course Number	Natural Sciences/ Mathematics (9) (GENS) (Max 8 Hours or 2 Courses/Discipline)
Fine Arts (3)		EC 200 (3)		Natural Science 1 (3-5)
Humanities 2 (3)		EC 201 (3)		Natural Science 2 (3-5)
Humanities 3 (3)		Soc. Science 3 (3)		Natural Science 3 (3-5)

Core University/BS-Specific Requirements:

WU 101 (3)* C or Better	Natural Science Minor (30 – 20 in one Discipline)
EN 101 (3) C or Better	Hours Outside Major (76)
EN 300 (3) C or Better	Upper Division (300 and above) (45)
MA 112 or MA 116 (3)** C or Better	Hours Within Arts and Sciences (99)
>= 2.0 Overall Cumulative GPA	>= C Grade All Major and Correlated Courses
	Total Hours (124)

**Students transferring with 24 or more credit hours completed at an accredited post-secondary institution (after graduating from High School) with a GPA of 2.0 or higher are exempt from this requirement*

***May be waived if the student successfully places into a higher-level mathematics course with an ACT score of 25 or higher and then successfully completes that course with a grade of C or higher or if a student presents an ACT score in mathematics of at least 28 (SAT of at least 640).*

Sample 4-Year Schedule for Mathematics – Actuarial Science Major

Bachelor of Science

124 Hours

Curriculum for students starting 2015-2016 Academic Year
Students starting in different academic years should contact their advisor.

For students entering in an ODD Year:

Freshman			
Fall Semester			Spring Semester
MA 151 – Calculus I	5	MA 152 – Calculus II	5
WU 101 – Washburn Experience	3	EN 101 – Freshman Composition	3
Elective	3	Soc. Sci. General Education	3
Humanities General Education	3	Natural Science General Education/Minor	3
MA 140 - Statistics	3	Elective	3
TOTAL	17	TOTAL	17
Sophomore			
Fall Semester			Spring Semester
MA 253 – Calculus III	3	MA 343 – Applied Statistics	3
AC 224 – Financial Accounting	3	AC 225 – Managerial Accounting	3
EC 200 – Principles of Microeconomics	3	EC 201 – Principles of Macroeconomics	3
BU 250 – Management Info Systems	3	Natural Science Minor	3
Natural Science General Education	3	AR/MU/TH General Education	3
TOTAL	15		15
Junior			
Fall Semester			Spring Semester
MA 344 – Math Statistics I	3	MA 301 – Linear Algebra	3
BU 374 – Principles of Risk and Insurance	3	MA 345 – Math Statistics II	3
EN 300 – Advanced Composition	3	MA 347 – Stochastic Processes	3
Natural Science General Education/Minor	3	BU 381 – Business Finance	3
Natural Science Minor	3	Natural Science Minor	3
TOTAL	15	TOTAL	15
Senior			
Fall Semester			Spring Semester
MA 250 – Theory of Interest	3	MA 385 – Actuarial Math	3
MA 346 – Regression	3	MA 348 – Time Series	3
BU 483 - Investments	3	Natural Science Minor	3
Natural Science Minor	3	Upper Division Natural Science Minor	3
Upper Division Natural Science Minor	3	Upper Division Natural Science Minor	3
TOTAL	15		15

Sample 4-Year Schedule for Mathematics – Actuarial Science Major

Bachelor of Science

124 Hours

Curriculum for students starting 2015-2016 Academic Year
Students starting in different academic years should contact their advisor.

For students entering in an EVEN Year:

Freshman			
Fall Semester			Spring Semester
MA 151 – Calculus I	5	MA 152 – Calculus II	5
WU 101 – Washburn Experience	3	MA 343 – Applied Statistics	3
Elective	3	EN 101 – Freshman Composition	3
Soc. Sci. General Education MA	3	AR/MU/TH General Education	3
140 - Statistics	3	Elective	3
TOTAL	17	TOTAL	17
Sophomore			
Fall Semester			Spring Semester
MA 253 – Calculus III	3	MA 345 – Math Statistics II	3
MA 344 – Math Statistics I	3	AC 225 – Managerial Accounting	3
AC 224 – Financial Accounting	3	BU 250 – Management Info Systems	3
EC 200 – Principles of Microeconomics	3	EC 201 – Principles of Macroeconomics	3
Natural Science General Education	3	Natural Science Minor	3
TOTAL	15		15
Junior			
Fall Semester			Spring Semester
MA 250 – Theory of Interest	3	MA 385 – Actuarial Math	3
MA 346 – Regression	3	MA 348 – Time Series	3
BU 374 – Principles of Risk and Insurance	3	Humanities General Education (3)	3
EN 300 – Advanced Composition	3	Natural Science General Education/Minor	3
Natural Science General Education/Minor	3	Natural Science Minor	3
TOTAL	15	TOTAL	15
Senior			
Fall Semester			Spring Semester
BU 483 - Investments	3	MA 301 – Linear Algebra	3
Natural Science Minor	3	MA 347 – Stochastic Processes	3
Natural Science Minor	3	BU 381 – Business Finance	3
Natural Science Minor	3	Upper Division Natural Science Minor	3
Upper Division Natural Science Minor	3	Upper Division Natural Science Minor	3
TOTAL	15		15