UNIVERSITY OF NORTH CAROLINA
CHARLOTTE
MATHEMATICS AND STATISTICS

Mathematics, Actuarial Science Concentration, B.S.

math.charlotte.edu

Degree Requirements

The B.S. in Mathematics with a Concentration in Actuarial Science degree program consists of a minimum of 52 credit hours of mathematics and statistics courses, one programming course in computer science (ITSC), and 12 credit hours of related courses for VEE (Validation of Educational Experience) credit and Technical Skills.

General Education Courses (25-26 credit hours)
For details on required courses, refer to the General Education Program. Total hours to satisfy General Education Requirements may vary as some general education requirements may be double-counted in the major with departmental approval. Please see your advisor for information.

Foreign Language (0-8 credit hours)
Students are required to demonstrate proficiency in the language of their choice through the 1202 level. For details on demonstrating proficiency refer to the College of Science Foreign Language Requirement in the Undergraduate Catalog.

Core Courses (25 credit hours)

ITSC 1212: Introduction to Computer Science
MATH 1241: Calculus I
MATH 1242: Calculus II
MATH 2164: Matrices and Linear Algebra
MATH 2167: Intro to Math Reasoning
MATH 2171: Differential Equations
MATH 2241: Calculus III
MATH 2242: Calculus IV

Concentration Courses (30 credit hours)

STAT 3110: Applied Regression
STAT 3122: Probability and Statistics I
STAT 3123: Probability and Statistics II
STAT 3150: Time Series Analysis
STAT 4227: Loss Models and Applications
MATH 3227: Mathematical Theory of Interest and Applications
MATH 3228: Financial Mathematics and General Cash Flows
MATH 4051: Computer Exploration and Generation of Data
MATH 4228: Life Insurance Mathematics
MATH 4229: Advanced Life Insurance Math

UNIVERSITY OF NORTH CAROLINA CHARLOTTE | MATHEMATICS AND STATISTICS

Restricted Business Elective Courses (12 credit hours)

Choose from the following list:
ACCT 2121: Principles of Accounting I
ACCT 2122: Principles of Accounting II
ECON 2101: Principles of Economics - Macro
ECON 2102: Principles of Economics - Micro
FINN 3120: Financial Management
FINN 3271: Principles of Risk Management and Insurance
INFO 2130: Introduction to Business Computing

Capstone Project (1-6 credit hours)

The 1 credit hour seminar
MATH 3689: Mathematics Project Seminar

or the 6 credit hours sequence
MATH 3790: Junior Honors Seminar
MATH 3791: Senior Honors Tutorial

Unrestricted Elective Courses

As needed to complete the credit hours required for graduation.
Suggested courses include:

STAT 3160: Applied Multivariate Analysis
STAT 3180: Predictive Analytics
STAT 4116: Statistical Computing
STAT 4123: Applied Statistics I
STAT 4124: Applied Statistics II

Other Important Requirements:

Minimum 120 credit hours (all courses)

Minimum overall GPA of 2.0 (all courses)

Minimum major GPA of 2.0 (degree courses)

B.S. in Mathematics
Actuarial Science Concentration

Name: _____ Minor:_____ From AY 2024-2025

Core Courses	Semester/Year	Note/Grade
ITSC 1212+L- Introduction to Computer ScienceI		
MATH 1241- Calculus I		
MATH 1242- Calculus II		
MATH 2164- Matrices and Linear Algebra		
MATH 2167- Introduction to Mathematical Reasoning		
MATH 2171- Differential Equations		
MATH 2241- Calculus III		
MATH 2242- Calculus IV		
MATH 3689- Senior project (or honors MATH 3790/3791)		

Concentration Courses	Semester/Year	Note/Grade
STAT 3110- Applied Regression		
STAT 3122- Probability and Statistics I		Exam P
STAT 3123- Probability and Statistics II		VEE
STAT 3150- Time Series Analysis		
STAT 4227- Loss Models and Applications		Exam FAM-S
MATH 3227- Mathematical Theory of Interest and Apps		Exam FM
MATH 3228- Financial Math and General Cash Flows		Exam FM
MATH 4051- Computer Exploration & Generation of Data		
MATH 4228- Life Insurance Mathematics		Exam FAM-L
MATH 4229- Advanced Life Insurance Mathematics		Exam ALTAM

Restricted Elective Courses: select four from the following:
ACCT 2121/2122, ECON 2101/2102, FINN 3120/3271, INFO 2130

Course Number	Semester/Year	Grade
1.)		
2.)		
3.)		
4.)		

ACCT 2121, ECON 2101/2102 and FINN 3120 satisfy VEE credits,

Check DegreeWorks for General Education and College's Foreign Language Requirements. A minimum of 120 credits are required for graduation.

Suggested Unrestricted Elective Courses:
STAT 3180 - Predictive Analytics,
STAT 3160 - Applied Multivariate Analysis,
STAT 4116 - Statistical Computing,
STAT 4123 - Applied Statistics I
STAT 4124 - Applied Statistics II

Academic Plan of Study
B.S. in Mathematics, Concentration in Actuarial Science

Name: _____ ID: _____

Freshman Year					
I			II		
Course ID	Course Name	Grade	Course ID	Course Name	Grade
MATH 1241	Calculus I		MATH 1242	Calculus II	
WRDS 1103/1104	Writing and Inquiry in Academic Contexts		ITSC 1212	Introduction to Computer Science	
XXXX	Theme Course		XXXX	Theme Course	
XXXX	Natural Science		XXXX	Natural Science with Lab	
FORL 1101/1201	Foreign Language or elective		FORL 1101/1201	Foreign Language or elective	

Sophomore Year					
I			II		
Course ID	Course Name	Grade	Course ID	Course Name	Grade
MATH 2241	Calculus III		MATH 2164	Matrices and Linear Algebra	
MATH 3227 (1/2)	Math Theory of Interest and Apps		MATH 2167	Intro to Mathematical Reasoning	
MATH 3228 (1/2)	Finance Math & General Cash flow		STAT 3122	Probability and Statistics I	
XXXX	Theme Course		XXXX	Theme Course	
XXXX	Restricted Business Elective		XXXX	Restricted Business Elective	

Junior Year					
I			II		
Course ID	Course Name	Grade	Course ID	Course Name	Grade
MATH 2242	Calculus IV		MATH 2171	Differential Equations	
STAT 3110	Applied Regression		STAT 3150	Time Series Analysis	
STAT 3123	Probability and Statistics II		MATH 4051	Comp. Exploration & generation of data	
XXXX	Restricted Business Elective		XXXX	Restricted Business Elective	
CTCM 2530	Critical Thinking and Communication		XXXX	Suggested Elective or as needed	

Senior Year					
I			II		
Course ID	Course Name	Grade	Course ID	Course Name	Grade
STAT 4227	Loss Models and Applications		MATH 3689	Math Project Seminar (or Honors)	
MATH 4228	Life Insurance Mathematics		MATH 4229	Advanced Life Insurance Mathematics	
XXXX	Suggested Elective or as needed		XXXX	Suggested Elective or as needed	
XXXX	Suggested Elective or as needed		XXXX	Suggested Elective or as needed	

Color Legend

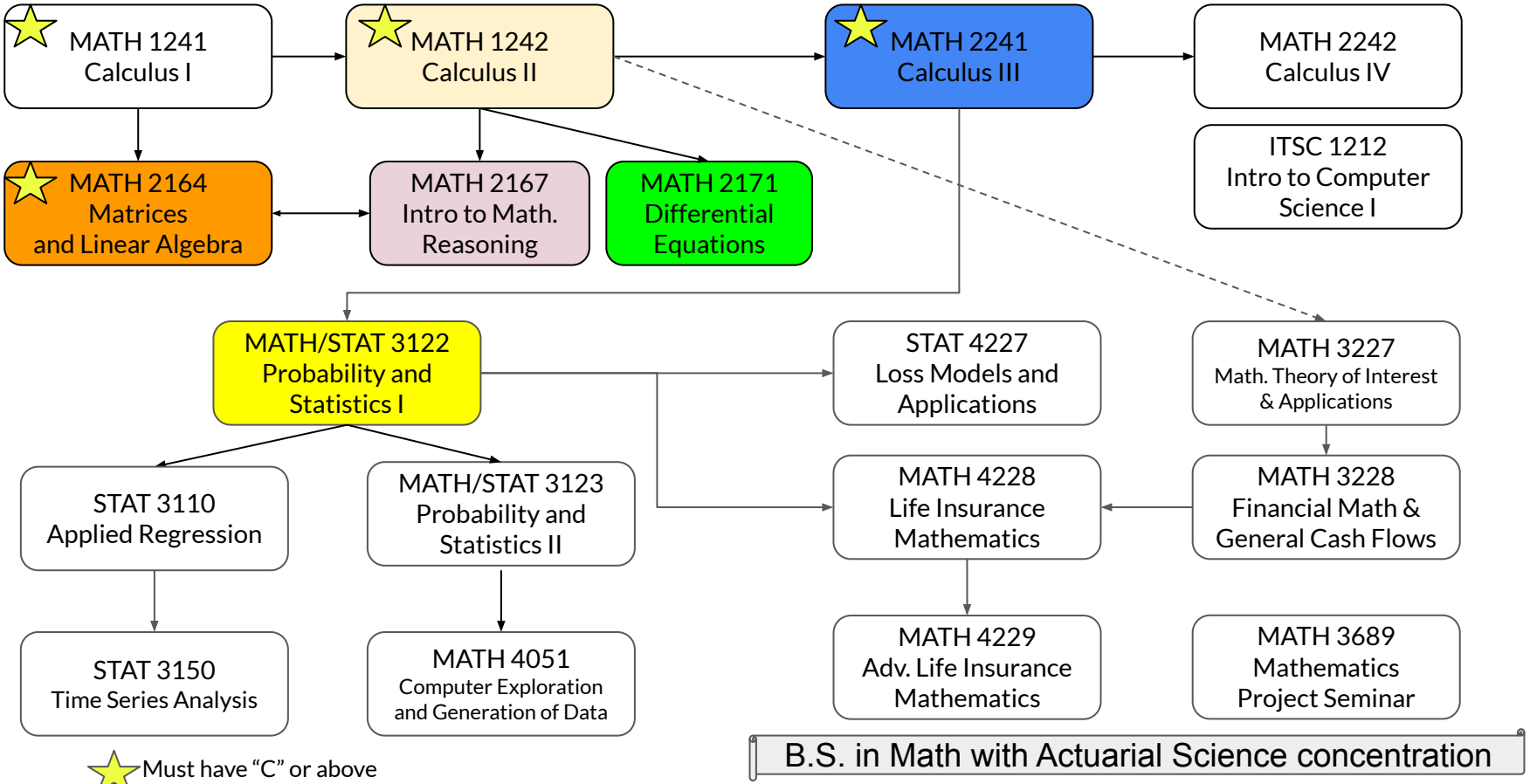
Restricted Business Elective

General Education

Suggested Unrestricted Elective Courses:

STAT 3180 - Predictive Analytics,
STAT 3160 - Applied Multivariate Analysis,
STAT 4116 - Statistical Computing,
STAT 4123 - Applied Statistics I
STAT 4124 - Applied Statistics II

B.S. in Math with Actuarial Science concentration core and actuarial courses



B.S. in Math with Actuarial Science concentration