

B.S. IN MATHEMATICS - ACTUARIAL SCIENCE CONCENTRATION

College of the Sciences and Mathematics

Curriculum

| Code | Title | Credits |
|--|--|---------|
| GENERAL EDUCATION REQUIREMENTS (https://catalog.wcupa.edu/undergraduate/general-education-requirements/) | | |
| Academic Foundations | | |
| | First Year Experience requirement | 4 |
| | English Composition requirement | 6-7 |
| | Mathematics requirement | 3-4 |
| | Interdisciplinary requirement | 3 |
| | Diverse Communities requirement | 3 |
| | Ethics requirement | 3 |
| Distributed Disciplinary Foundations | | |
| | Science requirement | 6-8 |
| | Behavioral & Social Science requirement | 6 |
| | Humanities requirement | 6 |
| | Arts requirement | 3 |
| ADDITIONAL BACCALAUREATE REQUIREMENTS (https://catalog.wcupa.edu/undergraduate/general-education-requirements/) | | |
| University Requirements | | |
| | Writing Emphasis requirement | 9 |
| | Speaking Emphasis requirement | 9 |
| Degree Requirements | | |
| | Capstone requirement | 1-15 |
| MAJOR REQUIREMENTS | | |
| Mathematics Core | | |
| MAT 161 | Calculus I | 4 |
| MAT 162 | Calculus II | 4 |
| MAT 200 | The Nature of Mathematics | 3 |
| MAT 261 | Calculus III | 4 |
| MAT 311 | Linear Algebra ¹ | 3 |
| Concentration Requirements | | |
| MAT 125 | Introduction to Statistics and Probability | 3 |
| STA 200 | Introduction to Statistics II | 3 |
| STA 319 | Applied Statistics | 3 |
| MAT 343 | Differential Equations | 3 |
| MAT 371 | Mathematics of Finance | 3 |
| MAT 421 | Mathematical Statistics I | 3 |
| MAT 422 | Mathematical Statistics II | 3 |
| MAT 423 | Applied Probability | 3 |
| STA 419 | Basics of Statistical Learning | 3 |
| Cognate Requirements | | |
| | Select one of the following: ³ | 3 |
| ENG 368 | Business and Organizational Writing | |
| ENG 371 | Technical Writing | |
| ENG 375 | Strategies for Writing in the Workplace | |
| ACC 201 | Financial Accounting | 3 |
| ECO 111 | Principles of Economics (Macro) ² | 3 |

| | | |
|---------|---------------------------------|---|
| ECO 112 | Principles of Economics (Micro) | 3 |
| ECO 340 | Intermediate Microeconomics | 3 |
| FIN 325 | Corporate Finance | 3 |
| FIN 330 | Principles of Insurance | 3 |

Free Electives or Internship

| | | |
|-------------------------|--|----|
| Chosen under advisement | | 14 |
|-------------------------|--|----|

Capstone Requirement

| | | |
|---------|--|---|
| MAT 478 | Fundamentals of Actuarial Science 3,4,5 | 3 |
|---------|--|---|

Total Minimum Credits Required **120**

- ¹ Indicates course satisfies the general education Mathematics requirement.
- ² This course satisfies the general education Behavioral and Social Sciences requirement
- ³ This course satisfies the University Writing Emphasis requirement
- ⁴ This course satisfies the University Speaking Emphasis requirement
- ⁵ This course fulfills the Capstone requirement and must be passed with a C or better.

All mathematics core and concentration courses must be passed with a C or better.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Progress Report (DPR) via myWCU regularly. For more information, visit wcupa.edu/DegreeProgressReport (<http://wcupa.edu/degreeprogressreport/>).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

| Course | Title | Credits |
|----------------------------------|--|-----------|
| Year One | | |
| Fall | | |
| MAT 125 | Introduction to Statistics and Probability | 3 |
| MAT 161 | Calculus I | 4 |
| ECO 112 | Principles of Economics (Micro) | 3 |
| WRT 120 | Effective Writing I | 3 |
| or | or Effective Writing with Supplemental | |
| WRT 123 | Writing Workshop | |
| FYE 100X | First Year Experience | 4 |
| Credits | | 17 |
| Spring | | |
| MAT 162 | Calculus II | 4 |
| MAT 200 | The Nature of Mathematics | 3 |
| ECO 111 | Principles of Economics (Macro) | 3 |
| Science Gen Ed | | 3 |
| Behavioral/Social Science Gen Ed | | 3 |
| Credits | | 16 |
| Year Two | | |
| Fall | | |
| MAT 261 | Calculus III ¹ | 4 |
| MAT 311 | Linear Algebra | 3 |
| MAT 371 | Mathematics of Finance | 3 |
| ACC 201 | Financial Accounting | 3 |
| WRT 2XX | 200-Level WRT Course | 3 |
| Credits | | 16 |
| Spring | | |
| MAT 421 | Mathematical Statistics I ¹ | 3 |

| | | |
|----------------------------|--|----------------|
| STA 319 | Applied Statistics | 3 |
| FIN 325 | Corporate Finance | 3 |
| Science Gen Ed | | 3 |
| Free Elective ³ | | 3 |
| Credits | | 15 |
| Year Three | | |
| Fall | | |
| STA 419 | Basics of Statistical Learning | 3 |
| FIN 330 | Principles of Insurance | 3 |
| IW Course | | 3 |
| Humanities Gen Ed | | 3 |
| Free Elective ³ | | 3 |
| Credits | | 15 |
| Spring | | |
| MAT 343 | Differential Equations | 3 |
| MAT 422 | Mathematical Statistics II | 3 |
| ECO 340 | Intermediate Microeconomics | 3 |
| JW Course | | 3 |
| Free Elective ³ | | 3 |
| Credits | | 15 |
| Year Four | | |
| Fall | | |
| ENG 368 | Business and Organizational Writing (W) | 3 |
| | or | |
| ENG 371 | or Technical Writing | |
| | or | |
| ENG 375 | or Strategies for Writing in the Workplace | |
| Arts Gen Ed | | 3 |
| Humanities Gen Ed | | 3 |
| Free Elective ³ | | 3 |
| Free Elective ³ | | 3 |
| Credits | | 15 |
| Spring | | |
| MAT 478 | Fundamentals of Actuarial Science | 3 |
| MAT 491 | Internship in Applied Mathematics ² | 2-4 |
| | or Free Elective | |
| Free Elective ³ | | 3 |
| Free Elective ³ | | 3 |
| Credits | | 11-13 |
| Total Credits | | 120-122 |

¹ MAT 421 should be taken immediately after MAT 261.

² May be taken for variable credit and repeated for credit.

³ Must be approved by advisor.