

Program: **Actuarial Science**
 Major: **Actuarial Science**
 Degree: **Bachelor of Science (B.S.)**

Dept: **Mathematics and Statistics**
 College: **Mathematics and Science**
 Major Code: **6140**

University Core (Total Listed 42-44)

For a full list of courses see [University Core](#).

• Courses from the major may apply to the areas marked in the University Core.

Written and Oral Communication 9

Quantitative Reasoning/Scientific Method 10-11

- Math..... 3
- Life Science 4
- Physical Science..... 3-4

Critical Inquiry and Aesthetic Analysis 6

- Aesthetic Analysis 3
- Critical Inquiry..... 3

American Historical and Political Analysis 6

- American National Government 3
- American History 3

Cultural and Language Analysis 3-4

- Second Language 4
- OR
- Cultural Analysis..... 3

Social and Behavioral Analysis 3

Life Skills 5

- Required Health Course..... 2
- Elective Life Skills..... 3

**Minimum
Required Hours**

**Prerequisite Courses
Prerequisite Courses 0-6**

- Required courses:
 *MATH 1533 Precalculus-Algebra **OR**
 MATH 1513 College Algebra **OR** Placement Score **AND**
 *MATH 1593 Plane Trigonometry **OR** Placement Score

*A grade of 'C' or better is required for either MATH 1513 or MATH 1533 and MATH 1593 to take MATH 2313.

Upon completion of the above courses, corresponding university core requirements will be satisfied. (These courses are required for this major regardless of previous degrees conferred.)

Major Requirements

Actuarial Science..... 66

Mathematics Core..... 18

- Required courses:
 MATH 2313 Calculus 1
 MATH 2323 Calculus 2
 MATH 2333 Calculus 3
 MATH 2343 Calculus 4
 MATH 2753 Technology for Professional Math and Statistics
 MATH 3143 Linear Algebra

Actuarial Core..... 12

- Required courses:
 # MATH 3133 Theory of Interest 1
 # MATH 4133 Theory of Interest 2
 # MATH 4223 Mathematics of Life Contingencies 1
 # MATH 4233 Mathematics of Life Contingencies 2

Statistics Core..... 15

- Required courses:
 STAT 2113 Statistical Methods
 # STAT 4113 Mathematical Statistics 1
 ** STAT 4123 Mathematical Statistics 2
 # STAT 4213 Applied Regression Analysis
 # STAT 4533 Data Mining & Statistical Learning

Finance and Insurance Electives 15

- Select from the following:
 * ACCT 2113 Accounting I

**Minimum
Required Hours**

- * ECON 2103 Principles of Microeconomics
- * ECON 2203 Principles of Macroeconomics
- FIN 3523 Foundations of Insurance and Risk Management
- FIN 3553 Property and Liability Insurance for the Firm
- FIN 3563 Fundamentals of Business Finance
- FIN 3613 Life and Health Insurance
- * FIN 4253 Intermediate Business Finance
- FIN 4213 Investments

Area of Application 6

- Select from the following:
 MATH 3103 Differential Equations
 MATH 4113 Operations Research 1
 MATH 4123 Operations Research 2
 MATH 4263 Numerical Linear Algebra
 MATH 4363 Applied Numerical Analysis
 MATH 4950 Internship (3 hours)
 STAT 4103 Applied Experimental Design
 STAT 4313 Nonparametric Statistics

* These courses are accredited by the Society of Actuaries to earn Validation by Educational Experience (VEE) credits.

These courses will help prepare students for the professional examinations administered by the Society of Actuaries. See the Director of Actuarial Studies in MCS 108 for more details.

Electives to bring total to..... 124

Minimum Grade Requirements

1. Average in (a) all college course work, (b) course work at UCO, and (c) major courses 2.50
2. A minimum grade of "C" must be earned in all courses in the major to count toward meeting degree requirements.

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Accelerated BS/MS

The Department of Mathematics and Statistics offers a M.S. program in Applied Mathematical Science. Students in the B.S. Actuarial Science program are eligible to pursue, with approval, an M.S. Applied Mathematical Science degree beginning in their senior year. Approved B.S. students may take up to nine credit hours of 5000-level MATH or STAT courses during their senior year of the B.S. program. These courses will count toward both the B.S. and M.S. degrees. A formal application to the M.S. Applied Mathematical Science program and an approval from the Department of Mathematics and Statistics are required. Requirements are located in the UCO Graduate Catalog under Applied Mathematical Science - Mathematics, Applied Mathematical Science - Statistics, or Applied Mathematical Science - Teaching.

Up to nine credit hours of the following courses can be used to satisfy both the B.S. Actuarial Science and the M.S. Applied Mathematical Science programs:

MATH 5113 Operations Research 1
 MATH 5910 Seminar/Special Topics*
 STAT 5103 Applied Experimental Design
 STAT 5123 Mathematical Statistics 2
 STAT 5213 Applied Regression Analysis
 STAT 5263 Computer Applications in Statistics
 STAT 5303 Nonparametric Statistics
 STAT 5413 Data Visualization
 STAT 5533 Data Mining & Statistical Learning
 STAT 5910 Seminar/Special Topics*

*Students are restricted to one (1) cross-listed 5910 course while classified as an ADP student.

Accelerated BS/PSM

UCO's P.S.M. (Professional Science Master's) in Computational Science has partnered with the B.S. in Actuarial Science so that approved students may take up to nine credit hours of 5000-level MATH or STAT courses during their senior year of the B.S. program. These courses will count toward both the B.S. and P.S.M. degrees. A formal application to the P.S.M. Computational Science program and an approval from the Department of Mathematics and Statistics are required. Requirements are located in the UCO Graduate Catalog under Computational Science - Computational Mathematics, P.S.M.

Up to nine credit hours of the following courses can be used to satisfy both the B.S. Actuarial Science and the P.S.M. Computational Science - Computational Mathematics :

MATH 5113 Operations Research I
 MATH 5263 Numerical Linear Algebra
 MATH 5373 Applied Numerical Analysis
 STAT 5263 Computer Applications in Statistics
 STAT 5213 Applied Regression Analysis