

Name:

ID:

Date:

Advisor:

Actuarial Science Option – Bachelor of Science in Mathematics

Actuaries deal with transactions where cash flow depends on random factors (*e.g.*, insurance and annuities). The major hurdles to entering and advancing in an actuarial career are a set of tests given by the *Society of Actuaries*. Passing the first two tests and Bachelor’s degree are prerequisites for actuarial jobs. This option provides the mathematical background for five of these tests.

COURSE	TAKEN ?	NOTES
MATH 1401 – Calculus I		
MATH 2411 – Calculus II		
MATH 2421 – Calculus III		
MATH 3000 – Introduction to Abstract Math		
MATH 3191 – Applied Linear Algebra		
MATH 3200 – Elementary Differential Equations		
MATH 3250 – Problem Solving Tools		
MATH 3301, 3302 or 4408 –Introduction to Operations Research I, Operations Research II or Applied Graph Theory		
MATH 4387 – Regression Analysis, Modeling, and Time Series		
MATH 4650 – Numerical Analysis I		
MATH 4779 – Math Clinic		
MATH 4810 – Probability		
MATH 4820 – Statistics		
Math 4792 or 5350 – Probabilistic Modeling or Mathematical Theory of Interest (Math 5350 strongly recommended)		
MATH class above 3000 excluding 3040		

If a cancellation, non-offering, or scheduling conflict prevents the timely completion of the Mathematics major, contact an advisor. No class may be used for more than one category. You must also meet the following requirements.

1. In order for this option to appear on your transcript, you must complete a form with your CLAS advisor before the last semester of your senior year.
2. An advisor must approve the classes in your major. This should be done before completing MATH 3000.
3. A C- or better is needed in each class counted towards your major. Your grade point average must be at least 2.0 in all MATH classes. You must take at least 15 upper division (3000 or above) MATH credits (5 classes) at UC-Denver.
4. The semester you graduate, you must:
 - Create a portfolio containing two papers demonstrating your mathematical and writing abilities. These papers can be projects done while taking a class.
 - Participate in an exit interview with one Math faculty. This can be scheduled through Angela Beale.
 - Complete a senior survey.
5. You must satisfy the requirements of the College of Liberal Arts and Sciences (CLAS). Contact CLAS advising office (303-556-2555) for details.

6. The following is a list of sample courses that will satisfy the depth requirement:
 - a. Math 4650 & 4660 (Numerical Analysis I & II)
 - b. Math 3301 & 3302 (Operations Research I & II)
 - c. Math 3200 & 4733 (Elementary Diff. Eq. & Partial Diff. Eq.)
 - d. Math 4810 & 4820 (Probability and Statistics)
 - e. Math 4408 & 4409 (Graph Theory and Combinatorics)
 - f. Math 3210 & 4220 (Higher Geometry I & II)
 - g. Math 4310 & 4320 (Intro to Real Analysis I & II)
 - h. Math 3140 & 4110 (Modern Algebra and Number Theory)
 - i. Math 3191 & 5718 (Applied Linear Algebra)
7. To graduate as a Mathematics major, must have a minimum of 30 hours of resident credit (letter grades received at UCD). Furthermore, 21 out of the last 30 hours must be taken in UCD CLAS courses. Finally, at least 15 upper-division mathematics credits must be taken at UC Denver. For the most current CLAS residency requirements, please visit:
<http://thunder1.cudenver.edu/clas/advising/coreGeneral.html>

Actuaries need a background in business particularly accounting, economics and finance. Recommended classes are ACCT 2200, ECON 2012, ECON 2022, and FNCE 3100. Those considering graduate study in mathematics should take Introduction to Real Analysis I and II (MATH 4310 and 4320). You are encouraged to take Math Clinic (MATH 4779). Students with at least a 3.5 major grade point average, at least 3.2 overall grade point average, and who have done an honors project are eligible to graduate with honors. See an advisor (or the honors advising sheet) for details.