Dual Bachelor of Science in Economics (BA) and Mathematics (BS)

A solid training in the mathematical and statistical sciences is fundamental to optimally prepare economics students for graduate school. A dual degree in economics and mathematics will substantially increase program quality and career prospects for our students as well as enhancing increase the reputation of the economics program at UCD. Similarly, a solid training in quantitative and qualitative economic principles offers significant benefits to mathematics majors who seek industrial and/or consulting positions.

Economics requirements

COURSE	NOTES
ECON 2012 – Principles of Economics: Macroeconomics	3 credits
ECON 2022 – Principles of Economics: Microeconomics	3
ECON 4071 – Intermediate Microeconomic Theory	3
ECON 4081 – Intermediate Macroeconomic Theory	3
ECON 4811 – Introduction to Econometrics	3
18 additional economics credits (typically 6 classes), at the 3000 level or above. At least 12 of these credits must be at the 4000 level or above. Note: ECON 3801 and ECON 3811 do not count here 3 of these credits may be replaced by one of the following mathematics classes (counting for both economics and mathematics): 1. MATH 3301 Introduction to Optimization in OR 2. MATH 3302 Simulation in Operations Research 3. MATH 4390 Game Theory 4. MATH 4650 Numerical Analysis 5. MATH 4733 Partial Differential Equations 6. MATH 4810 Probability 7. MATH 5350* Mathematical Theory of Interest	18

*Note, courses above MATH5000 require consent of the instructor

Senior Exercise

Graduating seniors must submit the three best papers that the student wrote in any three separate courses taken in the Department of Economics for the outcomes assessment of the economics program. The three papers should be handed in at one time in a folder to the economics office, before the first day of the month in which the student plans to graduate.

Mathematics Requirements

COURSE	Credits
Take **ONE** of the following programming courses:	
MATH 1376 Programming for Data Science *or* CSCI 1410, 1411 Introduction to programming (C++)	3 4
MATH 1401 – Calculus I	4
MATH 2411 – Calculus II	4
MATH 2421 – Calculus III	4
MATH 3000 – Introduction to Abstract Math	3
MATH 3191 – Applied Linear Algebra	3
MATH 3382 – Statistical Theory	3
MATH 4310 – Introduction to Real Analysis I	3
MATH 4779 – Math Clinic†	3
MATH 3200 – Elementary Differential Equations	3
12 additional math credits (typically 4 classes) above MATH 3000 excluding 3195, 3511, 3800, 3999, and 4830. 3 of these credits may be replaced by one of the following economics classes (counting for both economics and mathematics): - ECON 4030 Data Analysis with SAS - ECON 4110 Money and Banking - ECON 4150 Economic Forecasting - ECON 4320 Financial Economics - ECON 4430 Economics Growth - ECON 4550 Game Theory and Economic Applications - ECON 4610 Labor Economics - ECON 4740 Industrial Organization	12

† Math 4015 Capstone for Secondary Teachers can be substituted for MATH 4779 for the general BS in Mathematics. MATH 6330 in Statistical Consulting can be substituted for MATH 4779 for the general BS in Mathematics, the Statistics option, and the Data Science option.
*Note, courses above MATH5000 require consent of the instructor.

1. A C- or better is needed in each class towards your major and your grade point average must be at least 2.25 in these MATH classes.
2. The semester your graduate, you must:
   a. Complete the MFAT Exam and participate in an exit interview. These requirements will be scheduled through the department Administrative Assistant (303-315-1702).
   b. Complete a senior survey.
3. You must satisfy the requirements of the College of Liberal Arts and Sciences (CLAS). Contact the CLAS advising office (303-315-7100) for details.
4. There are a several residency credits that must be satisfied to graduate as a Mathematics major at CU Denver. Graduating students must:
   a. Take at least 15 upper division (3000 or above) MATH credits (5 classes) at CU Denver.
   b. Take a minimum of 30 hour of resident credit (letter grades received at CU Denver).
   c. 21 out of the last 30 hours must be taken in CU Denver CLAS courses.

   For the most current CLAS residency requirements, please visit https://clas.ucdenver.edu/advising/.
5. Students with at least a 3.5 upper-division major grade point average and at least 3.2 overall grade point average may qualify for honors and should contact a math advisor for more details.