

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): <ul style="list-style-type: none"> • MATH 3301 Introduction to Optimization in OR • MATH 3302 Simulation in Operations Research • MATH 4390 Game Theory • MATH 4650 Numerical Analysis • MATH 4733 Partial Differential Equations • MATH 4810 Probability • 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	NOTES
CSCI 1410, 1411 Introduction to programming (C++)	4 credits
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 (may be substituted by MATH 4820)	3
MATH 4310 – Introduction to Real Analysis I	3
MATH 4779 – Math Clinic <i>or</i> MATH 6330*-Workshop in Statistical Consulting	3
MATH 3200 – Elementary Differential Equations	3
12 additional math credits (typically 4 classes) above MATH 3000 excluding 3040, 3511, 3800, 3999, 4012, 4013, 4014, 4015, 4830. 3 of these credits may be replaced by one of the following economics classes (counting for both economics and mathematics): <ul style="list-style-type: none"> • 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

*Note, courses above MATH5000 require consent of the instructor

Portfolio, Interview, Survey (Mathematics)

In the semester of graduation, students must

- participate in an exit interview, which may be scheduled by the mathematics department administrative assistant;
- complete a senior survey, available from the mathematics department administrative assistant.

Residence Requirements

In addition to the CLAS residence requirements, the Economics Department requires that

- At least six of the major courses (18 semester hours), including at least three courses out of 4071, 4081, 4091 and 4811, must be taken from economics faculty at CU Denver.
- Once a student has enrolled at CU Denver, no courses in the major may be taken outside the economics department without permission from the undergraduate advisor.

The Mathematics Department requires that at least 15 upper--division mathematics credits must be taken at CU Denver.