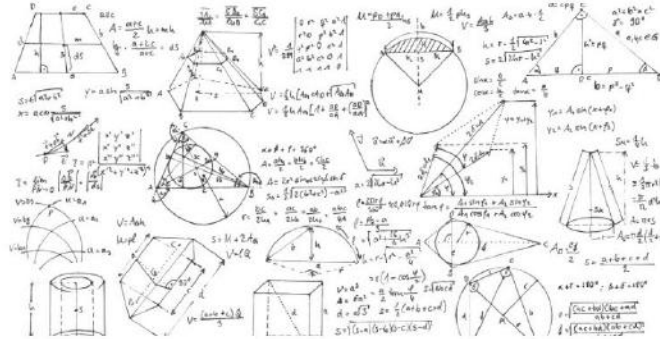


Joint Major in Mathematics and Economics

Department of Mathematics
University of California, San Diego

2016-10-31 (updated 2016-11-16)



General Information

- For additional Department of Mathematics assistance:
SOPHIA ONWUCHEKWA (AP&M 7409), Student Affairs Assistant
HOLLY PROUDFOOT (AP&M 7409), Director of Instructional Support
JEFFREY SAIKALI (AP&M 7431), Undergraduate Advisor
- Advisor walk-in hours at math.ucsd.edu. (Hours subject to change).
- Email mathadvising@math.ucsd.edu or the Virtual Advising Center, vac.ucsd.edu, for simple questions not needing in-person meeting. In all communication, you must mention *in the body of your message* (1) your full name of record, (2) your PID, and (3) your major.
- *Note: The official authority for curricula of degree programs at UC San Diego is the General Catalog at catalog.ucsd.edu.*

Joint Major in Mathematics and Economics

Same major offered by two different departments

- UC San Diego Department of Mathematics offers:
Joint Major in Mathematics and Economics (MA 33)
- UC San Diego Department of Economics offers:
Joint Major in Mathematics and Economics (EN 25)
- Above majors have identical curricula
- Differences:
 - Your assigned advisors are in department your major is housed in
 - Department of Mathematics advisors normally only email information (about internships, other job opportunities, etc) to their students

Purpose of Major

(Major code: MA 33)

- Joint Major in Mathematics and Economics is designed to help prepare people who want to attend graduate school in economics or business administration (including professional management degrees)
- Stay in this major if that is your intended academic path
- For that purpose, this major is better preparation than B.A. in Economics
- Joint major is like two halves of two separate majors. *This is very different from double majoring in mathematics and economics.*

Nature of Major

(Major code: MA 33)

- Graduate study in economics is heavily mathematical
- If you are not strong in mathematics, you are unlikely to do well in (or enjoy) economics
- In Joint Major in Mathematics and Economics, upper-division course work divided as...
 - ≈50% mathematics courses
 - ≈50% economics courses

Joint Major in Mathematics and Economics

Curriculum (lower division)

- Calculus and linear algebra: MATH 20A-B-C-D and MATH 18 (formerly MATH 20F)

OR

- Honors calculus and linear algebra: MATH 31AH-BH and MATH 20D

-
- Principles of Microeconomics: ECON 1
 - Principles of Macroeconomics: ECON 3

Joint Major in Mathematics and Economics

Curriculum (upper division)

- Mathematical Reasoning (MATH 109)
- Algebra (select one option):
Applied Linear Algebra (MATH 102) OR
Introduction to Numerical Analysis: Linear Algebra (MATH 170A) OR
Abstract Algebra (MATH 100A-B)
- Analysis (select one option):
Foundations of Real Analysis I (MATH 140A) OR
Introduction to Analysis I (MATH 142A)

continued...

Joint Major in Mathematics and Economics

Curriculum (upper division) continued

- Select one option:
Ordinary Differential Equations I (MATH 130A) OR
Foundations of Real Analysis II (MATH 140B) OR
Introduction to Analysis II (MATH 142B)
- Microeconomics (ECON 100A-B-C)
- Econometrics (select one option):
Econometrics (ECON 120A-B-C) OR
Introduction to Probability (MATH 180A) and Econometrics (ECON 120B-C) OR
Introduction to Probability (MATH 180A) and Introduction to Mathematical
Statistics I (MATH 181A) and Econometrics (ECON 120C)

continued...

Joint Major in Mathematics and Economics

Curriculum (upper division) continued

- Select one of...
 - Macroeconomics (ECON 110A-B) OR
 - Introduction to Numerical Optimization: Linear and Nonlinear Programming (MATH 171A-B)
- ...or two courses from...
 - Decisions Under Uncertainty (ECON 171)
 - Operations Research (ECON 172A-B). *[172A is prerequisite for 172B]*

continued...

Joint Major in Mathematics and Economics

Curriculum (upper division) continued

- Major requires total 15 four-unit, upper division courses in mathematics and economics, with minimum 7 from each department
- Other strongly recommended courses:
 - Ordinary Differential Equations II (MATH 130B)
 - Introduction to Mathematical Statistics II (MATH 181B)
 - Actuarial Mathematics I and II (MATH 193A-B)
 - The Mathematics of Finance (MATH 194)
 - Game Theory (ECON 109)
 - Mathematical Economics (ECON 113)
 - Economic and Business Forecasting (ECON 178)

Final Thoughts (1/2)

- Graduate study in economics is heavily mathematical. Do not plan on studying economics if you dislike mathematics or lack a good aptitude for it.
- Undergraduate courses in calculus, probability theory, statistics, and real analysis will help prepare you for graduate study in economics. Taking more courses in these categories now could strengthen a future application to graduate school in economics.
- Department of Mathematics Honors Program is excellent way to engage in research as an undergraduate student. See <http://www.math.ucsd.edu/programs/undergraduate/>. This could strengthen an application to graduate school.

Final Thoughts (2/2)

- Choose major not based only on what seems interesting, but on what realistically will help you reach career goals
- Learn all you can now from people in your industry of interest about career you aspire to
- Look for job advertisements at companies in your field of interest; what major/degree qualifications are expected?
- Make the most of your time as a student. Get to know your professors, teaching assistants, and advisors. Establish excellent reputations with them.