Mathematical Economics - B.A.

College of Arts and Sciences

The mathematical economics major offers students a degree program that combines mathematics, statistics, and economics. In today's increasingly complicated international business world, a strong preparation in the fundamentals of both economics and mathematics is crucial to success. This degree program is designed to prepare a student to go directly into the business world with skills that are in high demand, or to go on to graduate study in economics or finance. A degree in mathematical economics would, for example, prepare a student for the beginning of a career in operations research or actuarial science.

120 hours (minimum)

Any student earning a Bachelor of Arts (BA) degree must complete a minimum of 39 hours at the 300+ level. These hours are generally completed by the major requirements. However, keep this hour requirement in mind as you choose your course work for the requirements in the major. See the complete description of College requirements for a Bachelor of Arts degree in the *Arts and Sciences* section of the *2022-2023 Undergraduate Bulletin.*

UK Core Requirements

See the *UK Core* section of the *2022-2023 Undergraduate Bulletin* for the complete UK Core requirements. The courses listed below are (a) recommended by the college, or (b) required courses that also fulfill UK Core areas. Students should work closely with their advisor to complete the UK Core requirements.

I. Intellectual Inquiry in Arts and Creativity
Choose one course from approved list..3

II. Intellectual Inquiry in the Humanities
Choose one course from approved list..3

III. Intellectual Inquiry in the Social Sciences
Choose one course from approved list..3

IV. Intellectual Inquiry in the Natural, Physical, and Mathematical Sciences
Choose one course from approved list..3

V. Composition and Communication I
CIS/WRD 110 Composition and Communication I 3

VI. Composition and Communication II
CIS/WRD 111 Composition and Communication II 3

VII. Quantitative Foundations
Choose one course from approved list..3

VIII. Statistical Inferential Reasoning
STA 296 Statistical Methods and Motivations 3

IX. Community, Culture and Citizenship in the USA
Choose one course from approved list..3

X. Global Dynamics
Choose one course from approved list..3

UK Core hours 30

Graduation Composition and Communication Requirement (GCCR)
ECO 491G Applied Econometrics..3

Graduation Composition and Communication Requirement hours (GCCR)..3

College Requirements
I. Foreign Language *(placement exam recommended)* 0-14
II. Disciplinary Requirements
    a. Natural Science...6
    b. Social Science *(completed by Major Requirements)*
    c. Humanities..6
III. Laboratory or Field Work...1
IV. Race and Ethnicity Requirement.. 0-3
V. Electives...6

College Requirement hours: 19-36

Premajor Requirements
Choose **one** of the following two sequences:
MA 113 Calculus I
MA 114 Calculus II..8
  or
MA 137 Calculus I with Life Science Applications
MA 138 Calculus II with Life Science Applications 8

Premajor hours:..8

Major Requirements

Mathematics Core Requirements
MA 213 Calculus III 4
MA 214 Calculus IV 3

MA 320 Introductory Probability
  or
STA 524 Probability...3

MA 322 Matrix Algebra and its Applications 3

Mathematics Core hours: 13

Economics Core Requirements
ECO 201 Principles of Economics I 3
ECO 202 Principles of Economics II 3
ECO 391 Economic and Business Statistics..3
ECO 401 Intermediate Microeconomic Theory...3
ECO 402 Intermediate Macroeconomic Theory..3

Economics Core hours: 15

Other Course Work Required for the Major
For the Mathematics Component:
Choose **one** of the following two sequences:
MA 416G Introduction to Optimization
MA 417G Decision Making Under Uncertainty
STA 525 Introductory Statistical Inference...9
  OR
MA 471G Advanced Calculus I
MA 472G Advanced Calculus II
MA 417G Decision Making Under Uncertainty...9

For the Economics Component
ECO 491G Applied Econometrics..3
One 300+ level economics course 3
One 400+ level economics course 3

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For the Statistics Component
Choose STA 296 or a higher level statistics course 3

Other Major hours: **21**

Electives
Choose electives to lead to the minimum total of 120 hours required for graduation...6

Total Minimum hours
Required for Degree... **120**

*Course used towards completion of a UK Core Requirement.