BACHELOR OF ARTS (BA) DEGREE WITH A MAJOR IN MATHEMATICAL ECONOMIC ANALYSIS

Program Learning Outcomes for the BA Degree with a Major in Mathematical Economic Analysis

Upon completing the BA degree with a major in Mathematical Economic Analysis, students will:

1. Learn various mathematical skills, including the elements of multiple variable calculus, linear algebra, and optimization techniques, and other mathematical methods utilized in technical economic analyses.

2. Learn various statistical and econometric skills, including a thorough knowledge of both theoretical and applied econometrics.

3. Learn the core principles of microeconomics, including supply and demand, utility maximization by consumers and profit maximization by firms, and equilibrium market structures, as well as technical treatments of advanced topics in microeconomics, especially economic applications of game theory.

4. Learn the core principles of macroeconomics, including the macroeconomic effects of monetary and fiscal policy, the nature of the business cycle, and the determinants of growth, and learn alternative approaches to analyzing the performance of the macroeconomy.

5. Learn how the basic economic principles that have been absorbed in the core courses are utilized in the economic analyses of critical policy issues in a wide variety of applied subject areas.

Additionally, students pursuing the two-semester honors program will:

1. Learn how to conduct economic research, beginning with framing of a research idea and progressing to a critical review and evaluation of the relevant literature, the construction of an economic model to analyze the issue under consideration, the identification of testable hypotheses, the collection of data and econometric testing of their hypotheses, the presentation of preliminary and final results, and the preparation of a research paper that presents those results.

Requirements for the BA Degree with a Major in Mathematical Economic Analysis

For general university requirements, see Graduation Requirements (ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements). Students pursuing the BA degree with a major in Mathematical Economic Analysis must complete:

- A minimum of either 16 or 17 courses (52 or 56 credit hours depending on course selection) to satisfy major requirements.
- A minimum of 120 credit hours to satisfy degree requirements.
- A minimum of 60 credit hours outside of major requirements.
- A minimum of 8 courses (26 credit hours) taken at the 300-level or above.

The courses listed below satisfy the requirements for this major. In certain instances, courses not on this official list may be substituted upon approval of the major’s academic advisor, or where applicable, the department’s Director of Undergraduate Studies. (Course substitutions must be formally applied and entered into Degree Works by the major’s Official Certifier (https://registrar.rice.edu/facstaff/degreeworks/officialcertifier).) Students and their academic advisors should identify and clearly document the courses to be taken.

Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
<td>Total Credit Hours Required for the Major in Mathematical Economic Analysis</td>
<td>52-56</td>
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<tr>
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<td>Total Credit Hours Required for the BA Degree with a Major in Mathematical Economic Analysis</td>
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Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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<tr>
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<td>Core Requirements</td>
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<tr>
<td></td>
<td>Mathematics and Statistics</td>
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<tr>
<td></td>
<td>MATH 101 SINGLE VARIABLE CALCULUS I</td>
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<td>MATH 102 SINGLE VARIABLE CALCULUS II</td>
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<tr>
<td></td>
<td>MATH 212 MULTIVARIABLE CALCULUS</td>
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<td></td>
<td>MATH 221 HONORS CALCULUS III</td>
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<td></td>
<td>&amp; MATH 222 and HONORS CALCULUS IV</td>
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<tr>
<td></td>
<td>ECON 307 / STAT 310 PROBABILITY AND STATISTICS</td>
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<td></td>
<td>STAT 410 LINEAR REGRESSION</td>
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<td></td>
<td>Economics and Econometrics</td>
<td></td>
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<tr>
<td></td>
<td>ECON 100 PRINCIPLES OF ECONOMICS</td>
<td>3</td>
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<td></td>
<td>ECON 200 MICROECONOMICS</td>
<td>4</td>
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<tr>
<td></td>
<td>ECON 203 MACROECONOMICS</td>
<td>3</td>
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<tr>
<td></td>
<td>ECON 209 APPLIED ECONOMETRICS</td>
<td>4</td>
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<tr>
<td></td>
<td>ECON 305 GAME THEORY AND OTHER MICRO TOPICS FOR MTEC MAJORS</td>
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<td></td>
<td>ECON 308 MATHEMATICAL ECONOMICS</td>
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<td></td>
<td>ECON 310 / STAT 376 ECONOMETRICS</td>
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<tr>
<td></td>
<td>ECON 496 RESEARCH IN ECONOMIC THEORY</td>
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<tr>
<td></td>
<td>or ECON 497 RESEARCH IN ECONOMETRICS</td>
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<td>Elective Requirements</td>
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<td>Select 1 course from the following:</td>
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<td>ECON 210 BEHAVIORAL ECONOMICS</td>
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<td>ECON 239 LAW AND ECONOMICS</td>
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<td>Courses between ECON 343-ECON 495.</td>
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<td>ECON 498 HONORS PROGRAM IN ECONOMICS-I</td>
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<td>Select 3 courses from ECON 410-ECON 495.</td>
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<td>Total Credit Hours Required for the Major in Mathematical Economic Analysis</td>
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<td></td>
<td>Additional Credit Hours to Complete BA Degree Requirements</td>
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</table>
should be aware of the following departmental transfer credit guidelines:

Students pursuing the major in Mathematical Economics Analysis credit possibilities. academic program's transfer credit advisor when considering transfer website:

For Rice University's policy regarding transfer credit, see Transfer Credit

Footnotes and Additional Information
* Includes coursework completed as distribution credit, FWIS, LPAR
upper-level, residency (hours taken at Rice), 60 hours outside of
the major (if applicable), and any additional academic program
requirements. The "hours outside of the major" requirement may
include all of the above university requirements.

As specified in their course descriptions, the following courses do
not satisfy the Electives requirement for the major in Mathematical
Economic Analysis: ECON 101, ECON 103, ECON 111, ECON 113,
ECON 260, ECON 265, ECON 270, ECON 275. In addition,
BUSI 343 may be substituted for ECON 343, and STAT 449 may be
substituted for ECON 449.

After matriculation: In some cases, transfer credit may be awarded
by the economics department for courses completed at other schools
after the the student has matriculated at Rice. Students may
present a maximum of 2 such transfer courses in fulfilling the
mathematics and statistics core requirements, and a maximum of 3
such transfer courses in fulfilling the economics/econometrics core
requirements and elective requirements combined. (Additional
transfer courses may count toward meeting university graduation
requirements, but not toward fulfillment of requirements for the
major.)

Before matriculation: Credits awarded to transfer students for courses
taken prior to matriculation at Rice are not counted against the
departmental limit on transfer courses, but all students must
complete more than half of their upper-level major coursework (300-
level and 400-level courses) at Rice.

Policies for the BA Degree with a Major in Mathematical Economic Analysis

Program Restrictions and Exclusions
Students pursuing the BA degree with a major in Mathematical
Economics Analysis should be aware of the following program restriction:

* Students pursuing the major in Mathematical Economics Analysis
may not additionally declare the major in Economics

Transfer Credit
For Rice University's policy regarding transfer credit, see Transfer Credit

No more than 5 courses (15 credit hours) of transfer credit from U.S.
or international universities of similar standing as Rice may apply
towards specific major requirements after matriculation at Rice as
follows:

- No more than 2 courses (6 credit hours) of transfer credit may
  apply towards the mathematics and statistics core requirements
- No more than 3 courses (9 credit hours) of transfer credit may
  apply towards the economics/econometrics core requirements
  and the elective requirements combined

Note: Additional transfer courses may count toward meeting university
graduation requirements, but not toward fulfillment of requirements for
the major. Credits awarded to transfer students for courses taken prior
to matriculation at Rice are not counted against the departmental limit on
transfer courses, but all students must complete more than half of their
upper-level major coursework (300-level and 400-level courses) at Rice.

For additional information, please see the Economics website: https://
economics.rice.edu/.

Opportunities for the BA Degree with a
Major in Mathematical Economic Analysis

Academic Honors
The university recognizes academic excellence achieved over an
undergraduate's academic history at Rice. For information on university
honors, please see Latin Honors (ga.rice.edu/undergraduate-students/
honors-distinctions/university) (summa cum laude, magna cum laude, and
cum laude) and Distinction in Research and Creative Work (ga.rice.edu/
undergraduate-students/honors-distinctions/university). Some
departments have department-specific Honors awards or designations.

Requirements for Departmental Honors
1. To earn departmental honors in economics, students must earn a
grade of B+ (3.33 grade points) or better in the department's two-
semester honors program, ECON 498 and ECON 499.
2. The honors program is available to both ECON and MTEC majors.
3. To be admitted to the honors program, students:
   a. must have a GPA of 3.67 or better in all courses taken toward
   fulfilling their departmental major requirements at the beginning
   of the academic year in which they enter the honors program;
   b. must have completed all of the core requirements for their major;
   c. must have completed the 400-level course or courses most
closely related to their area of research, and
   d. must be accepted to the honors program by the professor
supervising the program.
4. For additional information, consult the Economics Department
Honors Program at https://economics.rice.edu/undergraduate-
program/honors-program.

For additional information, please see the Economics website: https://
economics.rice.edu/.