MATHEMATICAL ECONOMICS (B.A.)

The purpose of the program is to provide rigorous training in mathematics and economics for students whose career goals require a high level of technical proficiency in these subjects. The program will be valuable for students who intend to pursue graduate work in economics, finance or applied mathematics, or pursue a career in economic analysis, finance, underwriting, actuarial sciences, banking, international trade, applied statistics, or operations research.

Admission Requirements

Admission requirements for this program are satisfied by the general requirements for undergraduate admission (https://bulletins.wayne.edu/undergraduate/general-information/admission/) to the University.

Program Requirements

Candidates must complete 120 credits in course work including satisfaction of the University General Education Requirements (https://bulletins.wayne.edu/undergraduate/general-information/general-education/) and the College of Liberal Arts and Sciences Group Requirements (https://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/bachelors-degree-requirements/), as well as the departmental major requirements cited below. All course work must be completed in accordance with the regulations of the University (https://bulletins.wayne.edu/undergraduate/general-information/academic-regulations/) and the College (https://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/academic-regulations/) governing undergraduate scholarship and degrees.

Major Requirements

Students considering a mathematical economics major should take ECO 2010 and ECO 2020 (Principles of Microeconomics and Macroeconomics) and MAT 2010 (Calculus 1) as soon as possible.

To satisfy the university bachelor's degree requirement, Mathematical Economics majors must have a cumulative grade point average of 2.0 in their major courses. Also, students must receive a grade of 'C-' or better in all mathematics, statistics and economics courses.

A major consists of at least forty-six credits total - at least twenty-two credits in mathematics courses and twenty-four credits in economics courses. At least fifteen credits (eight credits of economics and seven credits of math) must be earned at Wayne State University.

Code	Title	Credits
Economics Requirements		
ECO 2010	Principles of Microeconomics	4
ECO 2020	Principles of Macroeconomics	4
ECO 5000	Intermediate Microeconomics	4
ECO 5050	Intermediate Macroeconomics	4
ECO 6000	Price and Allocation Theory	4
Select one of the following: [1]		4
ECO 5020	Fundamentals of Economic Analysis I	
ECO 5030		
ECO 5100	Introductory Statistics and Econometrics	
ECO 5230	Environmental Economics	
ECO 5250	Economic Analysis of Law	
ECO 5260	Economic Analysis of Law II: Applications of Statistics and Econometrics	
ECO 5270	Games of Strategy	
ECO 5300	International Trade	
ECO 5500	Public Finance	
ECO 5560	Pharmaceutical Economics	
ECO 5700	Money and Banking	
ECO 6050	Macroeconomics	
ECO 6100	Introduction to Econometrics	
ECO 5993	Writing Intensive Course in Economics (This course is taken in conjunction with an approved 5000-level economics, mathematics or statistics elective course.) [3]	0
Mathematics Requirements		
MAT 2010	Calculus I	4
MAT 2020	Calculus II	4
MAT 2030	Calculus III	4
MAT 2250	Elementary Linear Algebra	3
MAT 5700	Introduction to Probability Theory	4
One MAT or STA course at or above 5030. Recommended courses are: [1, 2]		3-4
STA 5030	Statistical Computing and Data Analysis	
MAT 5100	Numerical Methods I	
MAT 5210	Advanced Calculus	
MAT 5220	Partial Differential Equations	
MAT 5230	Complex Variables and Applications	
MAT 5280	Methods of Differential Equations	
MAT 5710	Introduction to Stochastic Processes	
MAT 5750	Mathematics of Finance	
MAT 5770	Mathematical Models in Operations Research	
MAT 5870	Methods of Optimization	
STA 5800	Introduction to Mathematical Statistics	
Total Credits		**46-47**

1 This course could be done in conjunction with ECO 5993.

2 Excluding MAT 5120, MAT 5180, MAT 5190, MAT 5992, MAT 6130, MAT 6150, MAT 6200 and MAT 6210.

3 This is a paper completed in conjunction with an approved 5000-level economics, mathematics or statistics elective course. You must register for this course during the same semester that the 5000-level elective taken. Permission from the instructor is required.

Minimal Grade Requirements

Students must receive a grade of 'C- ' or better in all economics, mathematics and statistics courses. An overall grade point average of 2.0 ('C') is required for graduation.

Writing Proficiency/Writing Intensive Requirement

To enable the Department to evaluate their writing proficiency, mathematical economics majors must register for ECO 5993, the zero-credit WI course. This is a paper completed in conjunction with a 5000-level economics, mathematics or statistics elective course. They must register for this during the same semester that the 5000-level elective course is taken. All mathematical economics majors must satisfy this requirement, even if they are not subject to the University General Education Requirements.

Student's Responsibility

It is each student's responsibility to learn the requirements, policies, and procedures governing the program they are following and to act accordingly. Students should consult both Mathematical Economics program advisors regularly in order to verify that Mathematical Economics requirements are being met in a timely fashion. Although the advisor will provide assistance, the responsibility for fulfilling degree requirements remains with the student.

'AGRADE' Program (Accelerated Graduate Enrollment)

The Mathematics Department actively participates in the 'AGRADE' Program, which enables qualified upper-level undergraduate students in the College of Liberal Arts and Sciences to enroll simultaneously in the undergraduate and graduate programs of the College, and to apply a maximum of sixteen credits toward both an undergraduate and graduate degree program. For more details about the AGRADE Program, students should contact the undergraduate advisor in their major/department.

More information about AGRADE is available through CLAS (https://clas.wayne.edu/programs/accelerated-graduate-enrollment#grad-status).