Undergraduate Programs in Economics

The Economics Department at MIT has a long tradition of outstanding training of undergraduates. The unique statistical skills of the MIT undergraduate student body allow the faculty to offer a rigorous and comprehensive program utilizing that of any other U.S. college or university. The Department of Economics offers two undergraduate majors: Economics (14-1) and Mathematical Economics (14-2). The Economics major is suitable for students who want to pursue a career in industry or public policy. The Mathematical Economics major offers an even more challenging program designed for students who plan to pursue a graduate degree in economics. Students are encouraged to take courses in other fields that would help them create a solid mathematical background in preparation for graduate school.

The best way to find out which major among undergraduates allows economics courses to be taught at a high level.

Both majors provide training in microeconomics, macroeconomics, statistics, and econometrics. Students also have a choice of refreshing and advanced courses to draw upon from a menu that includes economic development, economic theory, health economics, industrial organizations, international economics, labor economics, monetary economics, public economics, and other courses.

The Economics Department firmly believes that some experience with actual economic research is a vital component of MIT economics training. In addition to these courses, there are three primary channels through which undergraduate majors acquire research experience. The first is through the Project Lab which is required as part of 14.33 (Economics Research and Communication). Each student in 14.33 prepares a study of an applied economics question. Project topics range from the measurement of how price changes affect the demand for particular products to studies of how monetary or fiscal policies have affected inflation rates, unemployment, or output in various countries. The goal is to learn about the tools of economic analysis, including empirical techniques and critical thinking, as well as to gain an edge of economic principles from intermediate subjects with careful data analysis to study a topic of their own choosing.

Second, undergraduate students take advantage of numerous opportunities to hone their research skills. One such opportunity in MIT’s Undergraduate Research Opportunities Program (UROP) involves working with faculty and other students on research projects. Students in the UROP program work closely with faculty members and graduate students to bring the technical skills of modern economics to bear on questions of economic importance. UROPs supplement coursework, and UROP positions allow undergraduates to participate in ongoing research in the Department and to meet with faculty members outside of class. They perform tasks such as gathering and analyzing economic data, writing computer programs, checking mathematical calculations, and assembling research materials.

Finally, other opportunities for undergraduates to become involved in research are provided through summer employment on research projects devised by faculty members outside of the Department. These projects are undertaken by outside organizations. Each summer, a few students who have made contact with faculty members through Economics 14.33 may be selected as interns of research teams consisting of faculty members, graduate students, and undergraduates. These are six-to-eight-week internships with UROP stipends ranging from $6,000 to $10,000. Applications for 2016 summer internships are due by the end of February. Alternatively, interested students should contact faculty.
Economics Major (14-1)

The Course 14 Program leads to the degree of Bachelor of Science in Economics. In addition to fulfilling the MIT General Institute Requirements, an economics major must complete the following subjects:

1. Principles of Microeconomics (students with a score of 5 on the Economics AP exam may choose to substitute 14.05 Micro Theory and Public Policy.)
2. Principles of Macroeconomics
3. Intermediated Applied Macroeconomics (or both 14.01 and 14.02)
4. Introduction to Statistical Methods in Economics (or 6.041A/B, 6.046/A/B, 18.100 or 18.600)
5. Econometrics
6. Econ. Research & Communication (CI-M)

Choice of intermediate micro subject (see website)

These 3

- All units of Economics Electives (or 5 full subjects)
- Course 14.01 and the intermediate micro requirement provide strong background in microeconomic analysis and 14.02 and 14.04 in macroeconomic theory. These are the two broad and fundamental areas of modern economics. 14.30 and 14.32 give a more specialized approach to analyzing data and testing economic models. 14.33 requires a term paper that analyzes a body of data on an economic question.
- The all units (or full subjects) of electives must be satisfied from the list of undergraduate subjects (see link below) designed to satisfy the Institute laboratory requirement.
- Please visit our website for more information regarding the class list and the curriculum: http://economics.mit.edu/bettermajor/}

Double Majoring in Economics

Students may combine 14-1 major with a major in any other department. In order to receive two majors, students must complete the 17 GIRs and the departmental requirements for both majors. Some double-major combinations are more popular than others. Course 14-1 double majors with 6.15, 15.02, and 15.36 are especially popular.

Single majors must count three of their economics subjects toward the eight-subject HASS requirement, whereas double majors may count four of their subjects toward the eight-subject HASS requirement.

New Class: Mathematical Economic Modeling 14.18

This class will guide students through the process of formulating and solving mathematical models, and analyzing formal economic models, as well as effectively communicating their results. The prerequisites are one course in microeconomic theory (14.01, 14.02, 14.31, 14.32, 15.06, 15.04 and 15.05) and some proof-based courses in calculus (18.100C or 18.014) or mathematical methods for economics and mathematical modeling.

To help give students an idea of the areas in which they might want to write a paper, the class will cover a broad and fundamental areas of economic theory, including decision theory, the expected utility theory (using Von Neumann’s formulation), game theory (the Nash equilibrium, mixed Nash equilibrium, Shapley value), market models (the Gale-Shapley algorithm), and networks.

NEW - Mathematical Economics Major (14-2)

Beginning Fall 2015, Course 14 will offer a new major to the MIT community. The new Course 14.2 program leads to the degree of Bachelor of Science in Mathematical Economics.

In addition to fulfilling the MIT General Institute Requirement, an economics major must take the following subjects:

- 14.18 Principles of Microeconomics
- 14.19 Principles of Macroeconomics
- 14.30 Introduction to Statistical Methods in Economics
- 18.100C Real Analysis
- 14.18 Econometrics
- 14.32 Mathematical Applications of Game Theory
- 14.33 Econ. Research & Communication
- One of: CI-M in Mathematics:
  - Mathematical Economics Major: 14.18
  - Intermediated Macroeconomics: 14.05
  - Mathematical Economic Modeling: 14.18
  - Econ. Research & Communication
- One of: CI-M in Economics:
  - Microeconomics Applications of Game Theory
  - Networks
  - Market Design
- One of:
  - 18.09 Differential Equations
  - 18.09 Linear Algebra
- 14.33 Principles of Microeconomics (students with a score of 5 on the Economics AP exam may choose to substitute 14.03 Micro Theory and Public Policy)

Majors have an eight-subject HASS requirement, and 14.18 requires a term paper that analyzes a body of data on an economic question.

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Employment Opportunities

An undergraduate major in economics opens up many possibilities for employment. Managerial training programs in many firms, including banks, other financial institutions, and large manufacturing companies, accept economists in substantial numbers. There are also many opportunities for employment in government at the state, federal, and international levels. In addition, a growing number of research and consulting firms employ large numbers of economists in such areas as forecasting, industry analysis, and litigation support.

Noam Angrist, 15, SB in Economics and Mathematics, Rhodes Scholar for 2015, founder of Young Inc.
Noam said that he had most memorable Course 14 experience was “leveraging his friends’ MIT web-scraping skills to get Yelp data for his 14.13 class. He was determined to study the effect of the tipped minimum wage on quality of service in restaurants around the country. The high percentage of the waiters’ wages is up to 40% (which varied by state and minimum-wage laws), the lower one the less they perform, captured by Yelp quality of service data, his team had to control for fixed quality, he concluded only fast-food chains with tipped waiters. The results of the study were reported in Noam’s paper (“Does the Tipped Minimum Wage Affect Food Quality?”). He says that “taking economics taught me the nuanced, statistical skills of research, and still counts as the most enjoyable of my (memorable) moments.”

Have you met the instructors?

Nabil Agarwal
Favorite Book: The Stranger is an Alien Canvas
Favorite Travel: Asia, loved the food, variety on the one and history the last thing was overripe watermelon.

David Autor
Favorite Book: Far from the Tree: Parents who Search for Their Birth Children
Favorite Travel: Cleveland, Ohio. Amazing how much damage deindustrialization does. But also inspiring to see a city rebuilding itself.

Anna Mikhaleva
Favorite Book: The Emperor of All Maladies
Favorite Travel: Italy; loved the food, scenery, and near Big Sur Hiking in Acadia National Park

Sara Ellison
Favorite Book: The Handmaid’s Tale by Margaret Atwood
Favorite Travel: Rome, Naples, and the Sarnach Coast—fantastic pizza

Emily Lawlis
Favorite Book: Game Theory by Glenn Laibson
Favorite Travel: St. Thomas (or somewhere in the Caribbean)

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