

Economics

Department of Economics

College of Arts and Sciences
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Overview

Our department offers a comprehensive curriculum, integrating economic theory with applied topics, including the public sector, econometrics (i.e., statistics), education, growth & development, international trade, finance, monetary economics, labor economics, urban & regional economics, industrial organization, and regulation. Among the matters discussed are consumers and producers, market equilibrium, investment and savings, employment, money & banking, and government taxation and spending.

Economics is the study of scarcity and its implications for the use of resources, production of goods and services, growth of production and welfare over time, and a great variety of other issues of vital concern to society. The central quest of economics is to determine the most effective use of resources to meet private and social goals. Economics can also be used in one's personal life. Personal resources are scarce too. Achieving the most satisfactory allocation of one's resources is a crucial life-skill.

The department's faculty is distinguished for its research and teaching accomplishments. All members of the faculty hold the Ph.D. degree and are engaged in ongoing research projects that are reflected directly or indirectly in their teaching. The department is home to the Center of Excellence on Human Capital, Technology Transfer, and Economic Growth and Development (HEAD). The Center was chosen as one of the pillars of the Civic Engagement and Public Policy area of strength in the UB 2020 Strategic Plan. The Center is funded by a major faculty development award from the New York Office of Science, Technology and Academic Research (NYSTAR). The Center has had notable achievements, including an inaugurating conference attended by Nobel laureates. The Center houses the editorial office of the new Journal of Human Capital, which is published by the University of Chicago Press and is fast becoming nationally and internationally recognized as a leading economics journal.

About our Degrees

Acceptance Criteria - B.A., Minor

Completion of a minimum of 30 university credit hours.
Completion of [MTH 121](#) or [MTH 131](#) or [MTH 141](#).
Minimum GPA of 2.0 in two or more economics courses.
Minimum GPA of 2.0 overall.

For undergraduates, the department does rolling admissions; students are encouraged to apply as soon as they have fulfilled the acceptance criteria.

Acceptance Criteria - B.A./M.A.

Students must apply for and be accepted into both the undergraduate economics major and the M.A. in economics program.

Acceptance Criteria - B.A./M.S.

Students must apply for and be accepted into both the undergraduate economics major and the M.S. in economics program.

Acceptance Criteria - B.A./M.B.A.

Students must apply for and be accepted into the undergraduate economics major by the beginning of their second year of study, and should apply to the School of Management during their third year of study; SOM requires the GMAT as part of the application.

Acceptance Information

Deadlines: Rolling
Percentage of applicants accepted: 90%
Number of majors currently enrolled: 160

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Degree Requirements

Please see [Degrees and Policies](#).

About our Courses

Suggested Introductory Courses

- [ECO 181](#) Introduction to Macroeconomics
- [ECO 182](#) Introduction to Microeconomics
- [MTH 121](#) Survey of Calculus and Its Applications I

[ECO 181](#) and [ECO 182](#) can be taken in any order.

The typical class size for:

Freshman/introductory courses is: 275-375

Sophomore/intermediate courses is: 30-40

Upper level/advanced courses is: 15-30

For course descriptions, please see [Courses](#).

About our Faculty

The department's faculty is distinguished for its research and teaching accomplishments. All members of the faculty hold the Ph.D. degree and are engaged in ongoing research projects that are reflected directly or indirectly in their teaching. The department is home to the Center of Excellence on Human Capital, Technology Transfer, and Economic Growth and Development (HEAD). The Center was chosen as one of the pillars of the Civic Engagement and Public Policy area of strength in the UB 2020 Strategic Plan. The Center is funded by a major faculty development award from the New York Office of Science, Technology and Academic Research (NYSTAR). The Center has had notable achievements, including an inaugurating conference attended by Nobel laureates. The Center houses the editorial office of the new Journal of Human Capital, which is published by the University of Chicago Press and is fast becoming nationally and internationally recognized as a leading economics journal.

See a list of our [Undergraduate Faculty](#).

Acceptance Information

To apply for the Economics major or minor, students should submit a current DARS report to the department office, 415 Fronczak Hall, and write their name, person number, e-mail address and local address and phone number on it. Please also note whether the application is for a major or minor in Economics and, in the case of a double or joint major or double degree, specify the other major/degree.

Transfer Policy

Every economics major must take at least four upper level (300-level or higher) economics electives at the University at Buffalo. These cannot include [ECO 495](#) Undergraduate Supervised Teaching or [ECO 496](#) Internship in Economics. Transfer credit may be given towards the required courses ([ECO 405](#) Microeconomic Theory, [ECO 407](#) Macroeconomic Theory, and [ECO 480](#) Econometrics 1) or for [ECO 181](#) Introduction to Macroeconomics or [ECO 182](#) Introduction to Microeconomics, or for other economics electives. Students who seek transfer credit should consult the director of undergraduate studies in economics and provide documentation, such as course descriptions and syllabi, for each course for which credit is sought. A form for this purpose is outside the department office, 415 Fronczak Hall.

Extracurricular Activities

See the [UB Student Association](#).

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Practical Experience and Special Academic Opportunities

Notable Program Features

Most of our students pursue a BA in Economics, but we also offer Economics-Mathematics and Economics-Geography joint majors, or you can create your own joint major. The department also offers these combined degree programs: BA/MA in Economics, BA/MS in Economics, and a Five-Year BA in Economics/MBA with the School of Management.

Undergraduate Research and Practical Experience

ECO 495 *Undergraduate Supervised Teaching* is a way for students who are sufficiently qualified to serve as undergraduate teaching assistants. Application forms are available outside the Department Office (415 Fronczak Hall).

Undergraduate Teaching assistants have responsibility for recitation sections in **ECO 181** Introduction to Macroeconomics and **ECO 182** Introduction to Microeconomics, answering questions from students, preparing and grading quizzes, maintaining student records and participating in the preparation of final grades.

ECO 496 *Internship in Economics* allows students to obtain economics credit for paid or unpaid work in a company or government agency in the Buffalo area or elsewhere. Past internships have been at Merrill Lynch, M&T Bank, and Buffalo and Erie County government offices, for example. The internship must be in a field related to economics, and your duties cannot be solely administrative or only involve data entry.

You must obtain prior approval from the Director of Undergraduate Studies. The internship supervisor must send the Director a detailed description of your duties, the start and end times of the internship, and the expected number of hours worked per week. The Director will review the internship duties and determine whether they are appropriate for **ECO 496**. If the internship is approved for credit, you must maintain a weekly diary of activities and compile a report at the conclusion of the internship outlining your experiences and how they relate to economics. Also, the supervisor must send to the Director a report evaluating your performance. The Director will then assign you a grade.

ECO 498 *Undergraduate Research* provides an opportunity for students to gain first-hand experience in research under the supervision of a faculty member. The first step is to find a professor with whom the student can work on a research project. The Director of Undergraduate Studies must then approve the project.

To be considered for undergraduate research, students must have a minimum GPA of 3.0 and have completed **ECO 405** Microeconomic Theory, **ECO 407** Macroeconomic Theory, and **ECO 480** Econometrics I.

ECO 499 *Independent Study* is intended to assist a student in pursuing a specific knowledge area in economics when no course in that area is currently offered, or when depth in that area beyond the course offerings is desired. To apply, a student must have at least a B average in his or her economics courses. There must be a well formulated project and/or an outline of a course of study, and a prior agreement with a particular faculty member who will supervise the work.

Honors, Awards, and Scholarships

Omicron Delta Epsilon

Students that have satisfied the following requirements are eligible for membership in Omicron Delta Epsilon, the international honors society in economics: economics and overall GPAs of at least 3.0; and at least 12 credits in economics courses. More information is available at <http://www.omicrondeltaepsilon.org/membership.html>.

Department Honors

The Economics Department will nominate for Honors in Economics majors who have taken **ECO 406** Topics in Microeconomics and whose GPA in Economics is at least 3.25 (Honors), 3.50 (High Honors) or 3.75 (Highest Honors).

Career Information and Further Study

Skills gained in this program include:

- Designing surveys and planning methods for collecting data
- Gathering economic information
- Recording findings accurately and in detail
- Participating in team work
- Using mathematical, statistical, and computer methods to analyze and interpret data
- Making oral presentations
- Writing clear, concise reports and illustrating them with charts, tables, and graphs to represent statistical data in an easy-to-grasp way

Career Choices

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- Accountant
- Actuary
- Auditor
- Bank officer
- City manager
- Consultant
- Controller
- Educator
- Environmental economist
- Foreign exchange trader
- Forensic economist
- Geographer
- Home economist
- Insurance agent
- Investment advisor
- Personnel manager
- Policy economist
- Political scientist
- Securities analyst
- Statistician
- Stockbroker
- Systems analyst
- Trust officer
- Underwriter
- Urban planner

Career Hints

The most popular careers in economics are in financial services, including: brokerage firms (e.g. Merrill Lynch), investment banks (e.g. JP Morgan), retail banks (e.g. M&T Bank), and insurance companies (e.g. AIG). Jobs in finance can generally be classified into sales (e.g. financial advisor) and analysis (e.g. financial analyst). However, economics is applicable in so many fields that our graduates are now working in such varied areas as consulting, retail management, consumer goods industries, advertising, publishing, the health sector, not-for-profit research organizations, U.S. government agencies (local, state, and federal), and various organizations such as the World Bank, United Nations agencies, and the International Monetary Fund.

The demand for economists has increased steadily over the past decades. There are several reasons for this. Foremost is the transition over the past forty years of economics into an applied science, a change made possible by powerful computers, advanced mathematical and statistical software, and the collection of detailed datasets by government agencies such as the Bureau of Labor Statistics, research organizations such as the National Bureau of Economic Research, and universities such as UB. The well-trained economics graduate today offers to employers analytic insights that were unavailable earlier. Second is the ever-wider application of economic analysis. Organizations that never thought in economic terms now find themselves having to do so. Not least is the unhappy fact that resources are evermore scarce in our world and so how they are used grows continually in importance. Economics is a science whose time is here. The need for economists is strong and will continue to grow. Starting salaries are high compared to those for graduates in most other subjects.

Salary Information

According to the Fall 2008 National Association of Colleges and Employers (NACE) survey, the average starting salary for economics majors was \$51,062, representing a 6.9% increase from the previous year.

What percentage of graduates goes on to graduate school?

5-10%, most usually in economics, management or law.

Degree Options

The economics major leads to the bachelor of arts degree. In addition to the standard major, there is a more mathematical major program for students who are considering graduate work in economics. Two joint majors, recommended for students considering graduate work in economics, are also available: economics-geography, and economics-mathematics. These joint majors are also useful for students who find it in their interest to broaden the scope of their undergraduate education. Other joint majors toward the B.A. are possible upon special application by the student. Details of the requirements for joint majors are available in the undergraduate brochure outside the department office, 415 Fronczak Hall.

A minor in economics is available as an alternative to a joint major for students receiving a B.A. in other disciplines. It is also appropriate for

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students in B.S. degree programs, such as engineering or management, who want formal recognition of preparation in economics.

Time-Shortened Combined Degree Programs. The department offers a four-and-one-half to five-year program leading to a combined B.A./M.A. degree in economics and, at the student's option, an advanced certificate in an applied specialty (international economics, financial economics, urban and regional economics, economics of health services, economics of law and regulation, information and internet economics). The combined degree program trains students to apply economic tools in solving a wide variety of practical problems, and thus to be prepared to work in such settings as business/industry, banking, health care, and government. The program is conducted in cooperation with the School of Law, the School of Medicine and Biomedical Sciences, the School of Management, and the Departments of Geography, Mathematics, Computer Science and Engineering, and Communication. Students interested in this program should consult the directors of the undergraduate program, and of the M.A. program, as early as possible in their college career.

The Department's B.A./M.S. program is intended for students who desire a more quantitative master's level training in economics. Students can choose one of three tracks: Financial Economics, International Economics and Applied Micro-Econometrics. All tracks emphasize the acquisition of applied econometric skills that can then be used to perform business research that employers increasing demand. The program is designed to speed the learning and graduation of students who, by the junior year, are reasonably confident that they wish to become economists who use both economic theory and economic data to provide quantitative analyses of economic issues.

The Department of Economics also offers a five-year program, in conjunction with the School of Management, leading to a combined B.A. (economics)/M.B.A. Students should consult the director of undergraduate studies and apply to the Department of Economics by the beginning of their sophomore year, and apply to the School of Management during their junior year. Students interested in this program should take [ECO 181](#) and [ECO 182](#), as well as a one-year Calculus sequence ([MTH 121-MTH 122](#) or [MTH 141-MTH 142](#)) during the freshman year. [MTH 131](#) may be substituted for [MTH 121](#).

Joint Majors. As noted previously, the department offers formal joint majors with mathematics and geography, and also welcomes students who would like to construct personal joint programs, especially with other social sciences, such as philosophy, political science, or history. Students are advised to consult the economics undergraduate brochure outside the departmental office, 415 Fronczak Hall, and to consult both major departments as early as possible for details of their joint major requirements. The acceptance criteria for a joint major are the same as for a major.

Degrees Offered

Undergraduate: BA, BA in Economics-Mathematics, Minor

Combined degrees: BA/MA, BA/MS, BA/MBA

Graduate: MA, MS, PhD

Links to Further Information About this Program

- [Undergraduate Catalog](#)
- [Undergraduate Admissions](#)
- [Graduate Admissions](#)
- [Department of Economics](#)
- [College of Arts and Sciences](#)

Economics - B.A.

Acceptance Criteria

Minimum GPA of 2.0 overall.

Minimum GPA of 2.0 in two or more economics courses.

Completion of the prerequisite courses.

Completion of a minimum of 30 university credit hours.

Advising Notes

10 credit hours of required courses and 23 credit hours of electives are required. Electives are selected from other economics courses and must include twelve upper-level (300/400-level) credit hours. [ECO 406](#) Topics in Microeconomics must be included in these by students who wish to be considered for Honors in the Economics major. A maximum of 3 credit hours may be from [ECO 498](#) Undergraduate Research or from [ECO 499](#) Independent Study. [ECO 495](#) Undergraduate Supervised Teaching and [ECO 496](#) Internship in Economics cannot be used to satisfy the upper-level economics course requirement, but a maximum of 3 credits from either [ECO 495](#) or [ECO 496](#) can be used toward the remaining 11 elective credits.

[MTH 121-MTH 122](#) or [MTH 141-MTH 142](#) are prerequisites for 300/400-level economics courses. [MTH 131](#) can be substituted for [MTH 121](#).

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Students interested in a joint major program or combined degree program should consult the director of undergraduate studies in economics as early as possible in their academic career.

Prerequisite Courses

[MTH 121](#) Survey of Calculus and Its Applications I or [MTH 131](#) Math Analysis for Management or [MTH 141](#) College Calculus I.. Any two economics courses ([ECO 181](#) and [ECO 182](#) are highly recommended)

Required Courses

[ECO 405](#) Microeconomic Theory

[ECO 407](#) Macroeconomic Theory

[ECO 480](#) Econometrics I (may substitute [MTH 411](#)-[MTH 412](#) or [GEO 410](#)-[GEO 411](#) or [EAS 305](#))

11 credits of economics electives at any level

Four 300/400-level economics electives, excluding [ECO 495](#) and [ECO 496](#)

One of the following: [MTH 122](#) Survey of Calculus and Its Applications II, [MTH 142](#) College Calculus II

Summary

Total required credit hours for the major: 41

See [Baccalaureate Degree Requirements](#) for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 121](#), [MTH 131](#), [MTH 141](#)

Spring [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 122](#), [MTH 142](#)

SECOND YEAR

Fall [ECO 405](#) or [ECO 407](#); one economics elective at any level

Spring [ECO 405](#) or [ECO 407](#); [ECO 480](#) (may substitute [MTH 411](#)-[MTH 412](#) or [GEO 410](#)-[GEO 411](#) or [EAS 305](#))

THIRD YEAR

Fall One 300/400-level economics elective

Spring One 300/400-level economics elective

FOURTH YEAR

Fall One 300/400-level economics elective

Spring One 300/400-level economics elective

*[ECO 181](#) *Introduction to Macroeconomics* and [ECO 182](#) *Introduction to Microeconomics* are strongly recommended as economics electives. They are independent of each other and can be taken in either order.

Economics - B.A./M.A.

Acceptance Criteria

Students must apply for and be accepted into both the undergraduate economics major and the M.A. in economics program.

Advising Notes

135 credit hours are required for the combined BA/MA degree: 105 credits at the undergraduate level, including 18 credits in economics and all university requirements, and 30 credits in economics at the graduate level. An additional 15 graduate credit hours are required to also obtain an Advanced Certificate in a specialization within economics.

Students should consult the directors of the undergraduate and M.A. programs as early as possible in their decision-making process, in order to develop a sequence of coursework that is appropriate to their interests and objectives.

Prerequisite Courses

One of the following: [MTH 121](#), [MTH 131](#), [MTH 141](#)

Any two economics courses ([ECO 181](#) and [ECO 182](#) are highly recommended)

Required Courses

Economics

[ECO 405](#) Microeconomic Theory*
[ECO 407](#) Macroeconomic Theory*
[ECO 480](#) Econometrics I* (may substitute [MTH 411-MTH 412](#) or [GEO 410-GEO 411](#) or [EAS 305](#))
[ECO 505](#) Microeconomic Theory
[ECO 507](#) Macroeconomic Theory
[ECO 576](#) Topics in Microeconomics
[ECO 580](#) Econometrics I
[ECO 581](#) Econometrics II

Minimum of 8 undergraduate credits of economics electives at any level, excluding [ECO 495](#) and [ECO 496](#)

One of the following: [MTH 122](#), [MTH 142](#)

Five M.A. electives

*[ECO 505](#), [ECO 507](#) and [ECO 576](#) may be substituted for [ECO 405](#), [ECO 407](#), and [ECO 406](#) respectively with permission of the Director of the M.A. program. A waiver exam may be taken for [ECO 580](#) and [ECO 581](#); please contact the Assistant Director of the M.A. program for details. However, a total of 18 undergraduate Economics credits and 30 M.A. level credits are still required for the degree, even with specific course waivers.

Summary

Total required credit hours for the undergraduate portion: 26

See [Baccalaureate Degree Requirements](#) for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 121](#), [MTH 131](#), [MTH 141](#)

Spring [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 122](#), [MTH 142](#)

SECOND YEAR

Fall One lower-level economics elective course

Spring [ECO 405](#), [ECO 407](#)

THIRD YEAR

Fall [ECO 480](#)

Spring [ECO 507](#)

FOURTH YEAR

Fall [ECO 505](#), [ECO 580](#)

Spring [ECO 576](#), [ECO 581](#), one M.A. elective course

FIFTH YEAR

Fall Four M.A. elective courses

Spring Applied certificate courses

*[ECO 181](#) and [ECO 182](#) are recommended as economics electives. They are independent of each other and can be taken in either order.

Refer to the Graduate School's policies and procedures manual for requirements for master's candidates .

Economics - B.A./M.S.

Acceptance Criteria

Students must apply for and be accepted into both the undergraduate economics major and the M.S. program in Economics.

Advising Notes

150 credits are required for the combined B.A./M.S. degree: 105 credits at the undergraduate level, including a minimum of 18 credits in economics and all university requirements, and 45 credits in economics at the graduate level.

Students should consult the directors of the undergraduate and M.A. programs as early as possible in their decision-making process, in order to develop a sequence of coursework that is appropriate to their interests and objectives.

Prerequisite Courses

One of the following: [MTH 121](#), [MTH 131](#), [MTH 141](#)

Economics

Any two economics courses ([ECO 181](#) and [ECO 182](#) are highly recommended)

Required Courses

[ECO 405](#) Microeconomic Theory*
[ECO 407](#) Macroeconomic Theory*
[ECO 480](#) Econometrics I* (may substitute [MTH 411-MTH 412](#) or [GEO 410-GEO 411](#) or [EAS 305](#))
[ECO 505](#) Microeconomic Theory
[ECO 507](#) Macroeconomic Theory
[ECO 580](#) Econometrics I
[ECO 581](#) Econometrics II
[ECO 582](#) Computational Econometrics
[ECO 526](#) Financial Economics I
[ECO 561](#) Economics of Fluctuation and Forecasting

Minimum of 8 undergraduate credits of economics electives at any level, excluding [ECO 495](#) and [ECO 496](#)

One of the following: [MTH 122](#), [MTH 142](#)

Eight M.A. electives. Of these, each track (Financial Economics, International Economics, Applied Micro-Econometrics) entails 5 specific courses and 3 free electives

*[ECO 505](#) and [ECO 507](#) may be substituted for [ECO 405](#) and [ECO 407](#) respectively with permission of the Director of the M.A. program. A waiver exam may be taken for [ECO 580](#) and [ECO 581](#); please contact the Assistant Director of the M.A. program for details. However, a total of 18 undergraduate Economics credits and 45 M.S. level credits are still required for the degree, even with specific course waivers.

Summary

Total required credit hours for the undergraduate portion: 26

See [Baccalaureate Degree Requirements](#) for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 121](#), [MTH 131](#), [MTH 141](#)

Spring [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 122](#), [MTH 142](#)

SECOND YEAR

Fall One lower-level economics elective course

Spring [ECO 405](#), [ECO 407](#)

THIRD YEAR

Fall [ECO 480](#)

Spring [ECO 507](#)

FOURTH YEAR

Fall [ECO 505](#), [ECO 580](#)

Spring [ECO 526](#), [ECO 581](#), two M.S. elective course

FIFTH YEAR

Fall [ECO 561](#), [ECO 582](#), two M.S. elective courses

Spring 4 M.S. elective courses

*[ECO 181](#) and [ECO 182](#) are recommended as economics electives. They are independent of each other and can be taken in either order.

Refer to the Graduate School's policies and procedures manual for requirements for master's candidates.

Economics - B.A./M.B.A

Acceptance Criteria

Students must apply for and be accepted into the undergraduate economics major by the beginning of their second year of study, and should apply to the School of Management during their third year of study. The School of Management requires the GMAT as part of the application.

Advising Notes

Requires 150 credit hours for a BA/MBA degree: 90 credits at the undergraduate level, including the 41 credits required for an economics

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major and all university requirements, and 60 credits in the School of Management at the graduate level. Students must meet all of the requirements of each faculty, except for the reduction in total credit hours.

Students should consult the director of undergraduate studies in economics as early as possible in their decision-making process, in order to develop a sequence of coursework that is appropriate to their interests and objectives.

Prerequisite Courses

One of the following: [MTH 121](#), [MTH 131](#), [MTH 141](#)
Any two economics courses ([ECO 181](#) and [ECO 182](#) are highly recommended)

Required Courses

[ECO 405](#) Microeconomic Theory
[ECO 406](#) Topics in Microeconomics
[ECO 407](#) Macroeconomic Theory
[ECO 480](#) Econometrics I (may substitute [MTH 411-MTH 412](#) or [GEO 410-GEO 411](#) or [EAS 305](#))
[MGA 604](#) Financial Analysis and Reporting
[MGB 601](#) Behavioral and Organizational Concepts for Management
[MGE 601](#) Economics for Managers
[MGF 631](#) Financial Management
[MGT 601](#) (1/2 semester)
[MGG 635](#) (1/2 semester)
[MGQ 606](#) Probability and Statistics for Management
[MGM 625](#) Marketing Management
[MGO 630](#) Operations and Service Management
[MGA 609](#)
[MGF 641](#) Strategic Management

Nine MBA electives**

Internship

11 undergraduate credits of economics electives at any level

Three additional 300/400-level economics electives, excluding [ECO 495](#) and [ECO 496](#)

One of the following: [MTH 122](#), [MTH 142](#)

Summary

Total required credit hours for the undergraduate portion: 41

See [Baccalaureate Degree Requirements](#) for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 121](#), [MTH 131](#), [MTH 141](#)

Spring [ECO 181](#) or [ECO 182](#)*; one of the following: [MTH 122](#), [MTH 142](#)

SECOND YEAR

Fall [ECO 405](#); one lower-level economics elective course

Spring [ECO 406](#), [ECO 407](#)

THIRD YEAR

Fall [ECO 480](#); One upper-level economics elective course

Spring Two upper-level economics elective courses

FOURTH YEAR

Fall [MGA 604](#), [MGB 601](#), [MGE 601](#), [MGQ 606](#), [MGF 631](#) (1/2 semester), [MGT 601](#) (1/2 semester)

Spring [MGM 625](#), [MGS 630](#), [MGA 609](#), [MGO 641](#), [MGF 631](#) (1/2 semester), [MGG 635](#) (1/2 semester)

FIFTH YEAR

Fall Four M.B.A electives**, internship

Spring Five M.B.A electives**

*[ECO 181](#) and [ECO 182](#) are recommended as economics electives. They are independent of each other and can be taken in either order.

**A maximum of two of these electives may be taken from graduate courses offered by another department, such as the Economics department.

Contact the School of Management for elective options.

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Refer to the School of Management's MBA handbook for requirements for MBA candidates.

Economics - Minor

Acceptance Criteria

Same as for major.

Prerequisite Courses

[MTH 121](#) Survey of Calculus and its Applications I or [MTH 131](#) Math Analysis for Management or [MTH 141](#) College Calculus I or [MTH 241](#) College Calculus III

Any two economics courses ([ECO 181](#) and [ECO 182](#) are highly recommended)

Required Courses

[ECO 405](#) Microeconomic Theory

[ECO 407](#) Macroeconomic Theory

[ECO 480](#) Econometrics I (may substitute [MTH 411-MTH 412](#) or [GEO 410-GEO 411](#) or [EAS 305](#))

A minimum of 6 additional credit hours of 300/400-level economics courses, excluding [ECO 495](#), [ECO 496](#), [ECO 498](#), and [ECO 499](#).

One of the following: [MTH 122](#), [MTH 142](#), [MTH 306](#).

Note: The calculus sequence is a prerequisite for 300/400-level economics courses. It is recommended that students also take [ECO 181](#) and [ECO 182](#) before taking the 400-level economics courses.

Summary

Total required credit hours for the minor: 24

ECO 181: Introduction to Macroeconomics

Credits: 1

Semester(s): Fall, Spring, Summer

Type: DIS

This course is a limited enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may not register for this course during the fall or spring semester.

Covers principles of employment, inflation, business cycles, and growth; also considers policies for economic stabilization and full employment. May be taken independently of [ECO 182](#). This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or only in the fall or spring semester with a petition to the College of Arts and Sciences Deans' Office.

ECO 182: Introduction to Microeconomics

Credits: 1

Semester(s): Fall, Spring, Summer

Type: DIS

This course is a limited enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may not register for this course during the fall or spring semester.

Covers principles of price determination, creation of value, distribution of income, competition, and principles of international trade. May be taken independently of [ECO 181](#). This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or only in the fall or spring semester with a petition to the College of Arts and Sciences Deans' Office.

ECO 205: Money and Banking

Credits: 3

Semester(s): Fall, Spring, Summer

Type: LEC

Recommended prerequisite: [ECO 181](#)

Studies the U.S. monetary system; including roles of financial institutions; commercial banking; creation of money; the Federal Reserve and monetary policy; and the macroeconomic relationships among money, interest rates, inflation, and gross domestic product.

ECO 206: History of the American Labor Movement

Credits: 3

Type: LEC

Examines the American labor movement from its beginnings in the early nineteenth century through the present day, and studies

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economic and social determinants of its development. LEC

ECO 207: Economic Classics

Credits: 3
Type: LEC

Introduces the history of economic thought. Uses the original writings of prominent historical figures, such as Aristotle, Adam Smith, Karl Marx, Thorstein Veblen, and John M. Keynes.

ECO 208: Introduction to Environmental Economics

Credits: 3
Type: LEC

Involves economic analysis of environmental problems. The course is issue-oriented; and considers such problems as air, water, and noise pollution; population growth; and environmental capacities.

ECO 209: Introduction to Urban Economics

Credits: 3
Type: LEC

Explores how cities and a system of cities contribute to economic growth; the role of cities in developed and developing countries; how economic activity is allocated within cities; the economics of housing, transportation, pollution, property taxes, and zoning; racial and income segregation and discrimination in cities; and urban poverty. [ECO 209](#) and [ECO 421](#) cannot both be taken for credit.

ECO 210: Comparative Economic Systems

Credits: 3
Type: LEC

Comparative analysis of economic and political systems of capitalism, socialism, and mixed economies. Topics covered include market efficiency, rent-seeking, and regulation, and discussion of economic consequences of anarchy, democracy, and dictatorship.

ECO 211: Introduction to Health Economics

Credits: 3
Type: LEC

Conducts an economic analysis of the U.S. health-care delivery system; also considers the question of shortages or maldistribution of medical services, efficient production, medical care cost inflation, and alternative financing methods.

ECO 212: Current Economic Problems

Credits: 3
Type: LEC

Uses elementary techniques of economic analysis to examine significant economic issues in order to provide insight into the issues and the consequences of policies advocated to address them. The issues examined are some of those current at the time the course is offered.

ECO 251: Government in the U.S. Economy

Credits: 3
Type: LEC

Involves an empirical assessment of the size and scope of government activity in the United States; attempts a comprehensive and empirical understanding of the economic activities and influence of government in the United States.

ECO 263: Elements of Benefit-Cost Analysis

Credits: 3
Type: LEC

Incorporates a benefit-cost criterion for comparing the relative economic merits of alternative public expenditure choices; also explores net present value, and the internal rate of return.

ECO 270: Regulation in the U.S. Economy

Credits: 3
Type: LEC

Examines regulatory controls in the U.S. economy and their effects on entry by firms into an industry. Considers prices, profits, and quantity produced; product quality; and competitive structure of an industry.

ECO 276: Law and Economics: Equity and Efficiency

Credits: 3
Type: LEC

Explores the relationship between the legal concept of equity and the economic concept of efficiency. Discusses efficiency with some reference to optimality and contrasts it with the goal of equity. Draws applications from criminal and accident law.

ECO 303: The Economics of Poverty

Credits: 3
Pre-requisites: [ECO 181](#)
Type: LEC

Studies classes and groups that, in the economy, are characterized as 'impoverished'. Also studies causes of poverty and discrimination, and antipoverty and antidiscrimination socioeconomic policies.

ECO 304: Socialist Economies

Credits: 3
Pre-requisites: [ECO 181](#)
Type: LEC

Examines the theory of socialism, and history and economic structures of socialist economies within the context of social relations, including social conflict, state planning, workers' control, and economic development.

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ECO 403: Special Topics

Credits: 3
Type: SEM

Topics vary by semester.

ECO 405: Microeconomic Theory

Credits: 3
Semester(s): Fall, Spring
Pre-requisites: [MTH 121](#) or [MTH 131](#) or [MTH 141](#) And [MTH 122](#)
Or [MTH 142](#)
Type: LEC

Intermediate level. Examines economic theory dealing with the economics of price determination, value, distribution, and competition.

ECO 406: Topics in Microeconomics

Credits: 3
Pre-requisites: [ECO 405](#)
Type: LEC

Introduces new theories and applied topics in microeconomics beyond the basic subjects studied in [ECO 405](#). Covers a broad range of imperfect markets, including monopoly, oligopoly, and monopolistic competition. Also covers topics in game theory, uncertainty, investment and capital markets, general equilibrium analysis, externalities and public goods, and markets with asymmetric information.

ECO 407: Macroeconomic Theory

Credits: 3
Semester(s): Fall, Spring
Pre-requisites: [MTH 121](#) Or [MTH 131](#) Or [MTH 141](#) And [MTH 122](#)
Or [MTH 142](#)
Type: SEM

Intermediate level. Uses economic theory to explain the causes of inflation, business fluctuations, unemployment, and economic growth.

ECO 408: Special Topics

Credits: 3
Pre-requisites: [MTH 121](#) Or [MTH 131](#) Or [MTH 141](#) And [MTH 122](#)
Or [MTH 142](#)
Type: LEC

Topics vary according to instructor. Requires individual research.

ECO 411: Health Economics

Credits: 3
Pre-requisites: [ECO 405](#)
Type: LEC

Investigates economic behavior of the health-care industry, including hospital services, physicians, and health insurance; and considers rationales for government intervention in planning and insuring.

ECO 412: Environmental Economics

Credits: 3
Pre-requisites: [ECO 405](#)
Type: LEC

Examines uses of the natural environment; their respective costs and benefits (and distributions thereof), and the problem of policy design to optimize environmental use and quality.

ECO 416: Economic Development

Credits: 3
Pre-requisites: [ECO 405](#) And [ECO 407](#)
Type: LEC

Studies the issues of poverty, economic development, and economic growth in low-income countries. Introduces diverse aspects of empirical findings in development and offers theories of development and policy implications.

ECO 418: Economics of East Asia

Credits: 3
Pre-requisites: [ECO 181](#) And [ECO 182](#) And [MTH 121](#) Or [MTH 131](#) Or [MTH 141](#) And [MTH 122](#) Or [MTH 142](#)
Type: SEM

The world's fastest-growing economies in the postwar period are clustered in East Asia. Provides, through economic analysis, a deeper knowledge of East Asian economic growth and an understanding of the growth and development process through real-world applications. With the focus on East Asian economies, covers major issues in economic development, theories of growth and convergence, and some current macroeconomic issues of East Asian countries.

ECO 421: Urban Economics

Credits: 3
Pre-requisites: [ECO 405](#)
Type: LEC

Explores theories of the existence and growth of urban economies, location and its relationship to industrial organization and trade, and the internal organization of cities. Further covers land and housing markets; pricing and resource allocation in urban transportation; the economics of local government, local public goods, property taxes, and zoning; and the economics of income and race segregation in urban areas. [ECO 421](#) and [ECO 209](#) cannot both be taken for credit.

ECO 425: Money and Financial Institutions

Credits: 3
Type: SEM

The goal of this course is to enable students to learn the concepts and tools necessary to understand the interconnections between the financial side and the real side of the US economy and how the Fed impacts this through monetary policy.

Economics

ECO 426: Capital Markets and Financial Institutions

Credits: 3
Pre-requisites: [ECO 407](#)
Type: LEC

Involves an overview of financial decision making and the functions of financial markets. The course first focuses on financial decisions made by individuals and firms and then investigates the way these decisions are implemented through financial systems. The key concepts are resource allocation over time, evaluation of cash flow, risk management, project evaluation, and asset pricing models.

ECO 434: International Finance

Credits: 3
Pre-requisites: [ECO 407](#)
Type: LEC

Introduces the international financial system; including the spot and forward foreign exchange markets; triangular arbitrage, currency futures, interest arbitrage, the balance of payments, fixed vs. flexible exchange rates, devaluation and the balance of trade, measuring and managing foreign exchange exposure, and import and export financing.

ECO 435: International Economics

Credits: 3
Pre-requisites: [ECO 405](#)
Type: LEC

Covers the classical law of comparative advantage; modern theories of trade (including the Heckscher-Ohlin and specific-factor models of trade); growth and trade; international factor movements; multinational corporations; trade-related international organizations; the effects of trade policies with tariffs, quotas, and other instruments; preferential trading arrangements; and topics in economic integration. Also covers briefly the balance of payments, foreign exchange markets, and the international monetary system.

ECO 436: Marxian Economic Theory

Credits: 3
Pre-requisites: [ECO 181](#) And [MTH 121](#) Or [MTH 131](#) Or [MTH 141](#) And [MTH 122](#) Or [MTH 142](#)
Type: LEC

In-depth investigation of the Marxist theory of capitalism, centering on value and surplus value, accumulation of capital, and class struggle; also, this course considers the theory of pre-capitalist societies.

ECO 440: Economics of Education

Credits: 3
Pre-requisites: [ECO 405](#)
Type: LEC

Analyzes various educational policies. Topics include returns to education, economics of class size, school quality effects, cognitive test achievements, school performance assessment, student dropout behavior and post-schooling labor market experience. This course is not aimed at addressing all questions in the economics of education. Instead, it provides basic concepts, tools, and economic

intuition in addressing various educational issues from an economic point of view. Students should be able to apply these concepts and tools to other educational policy issues after completing this course.

ECO 443: Labor Economics

Credits: 3
Pre-requisites: [ECO 405](#)
Type: SEM

Studies wage theory and the institutions that affect the supply of and demand for labor. Also examines wage differentials and such policy problems as unemployment, discrimination, and government regulation of wage-setting institutions.

ECO 445: Human Resource Economics

Credits: 3
Pre-requisites: [ECO 405](#) And [ECO 407](#)
Type: LEC

Explores relationships among the techniques of human-capital formation (education, on-the-job training, financing, human-capital maintenance, health care, and job safety), human-capital mobility (occupational information, relocation), and economic performance.

ECO 451: Math for Economists

Credits: 3
Pre-requisites: [MTH 121](#) Or [MTH 131](#) Or [MTH 141](#) And [MTH 122](#) Or [MTH 142](#)
Type: SEM

Discusses mathematical techniques used in economic analysis, including optimization theory, consumer and producer optimization problems, and general equilibrium models.

ECO 455: Information and Internet Economics

Credits: 3
Pre-requisites: [ECO 405](#)
Type: SEM

Focuses on economic issues involving both information and Internet technology. On the information side, the course covers the value of information, issues that arise from information asymmetry, and costs of producing and distributing information. On the technology side, it discusses business implications of the Internet by introducing topics concerning market structure, entry barriers, and conduct and performance of firms. Also addresses issues concerning patents and copyrights in the context of electronic commerce. In addition to discussions and lectures, the course relies on cases, guest speakers, and student projects.

ECO 461: Economic Fluctuation and Forecasting

Credits: 3
Pre-requisites: [ECO 405](#) And [ECO 407](#)
Type: SEM

Considers alternative stochastic specifications of linear dynamic econometric models. Studies, among other topics, appropriate estimation techniques, the nature of the fluctuations (business cycles) of major economic variables (GNP, private investment, and

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so forth) implied by the models, and the problem of forecasting. Emphasizes time-series models.

ECO 464: Economics of the Public Sector

Credits: 3
Pre-requisites: [ECO 405](#)
Type: SEM

Analyzes costs and benefits of government sector and taxation. Expenditure topics include public goods, public production of private goods, externalities, Coase theorem, and benefit-cost analysis. Revenue topics include tax incidence, neutrality, revenue productivity, and equity of alternative taxes.

ECO 467: Economics and Game Theory

Credits: 3
Pre-requisites: [ECO 405](#) And [MTH 141](#) And [MTH 142](#)
Type: LEC

Examines two- and N-person game theory, cooperative and noncooperative games, normal and extensive-form games, and complete and incomplete information games.

ECO 468: Economics of Sports

Credits: 3
Pre-requisites: [ECO 405](#) And [ECO 407](#)
Type: LEC

Investigates economics of the sports industry; including league rules and formation, salaries of players, and TV and gate receipts as a general equilibrium model.

ECO 469: Industrial Organization

Credits: 3
Pre-requisites: [ECO 405](#) and [ECO 407](#)
Type: SEM

Studies structure of industries and firms in American and other advanced economies; price and production policies; relationships among structure, competition, efficiency.

ECO 470: Economics of Regulation

Credits: 3
Pre-requisites: [ECO 405](#)
Type: LEC

Analyzes the economic criteria for regulatory policies and the effects of regulation in various sectors of the economy.

ECO 476: Economics of Legal Relationships: Property Rights

Credits: 3
Pre-requisites: [ECO 405](#)
Type: SEM

Analyzes the emergence of ownership and property relationships and the effects of these on the production and distribution of products; also compares different property rights systems.

ECO 480: Econometrics I

Credits: 3
Semester(s): Fall, Spring
Pre-requisites: [MTH 122](#) or [MTH 131](#) or [MTH 142](#)
Type: SEM

Covers measures of central tendency and spread in economic data, probability, binomial and normal distributions, estimation, confidence intervals, testing of hypotheses, and analysis of variance. Also introduces and applies simple two-variable regression to real-world data using computer software.

ECO 481: Econometrics II

Credits: 3
Pre-requisites: [ECO 480](#) or permission of instructor
Type: LEC

Involves an in-depth analysis of basic general linear regression and several of its commonly used variants which allow for dummy variables, interaction terms, serial correlation, and heteroscedasticity, among other things. Additional topics include estimation and forecasting in the context of econometric time-series models, as well as simultaneous equation models. The course also covers index numbers and Chi-Square tests of independence in contingency models. Emphasizes empirically implementing most of the models on real-world data using standard computer software.

ECO 482: Computational Econometrics

Credits: 3
Pre-requisites: [ECO 481](#)
Type: LEC

Uses SAS to demonstrate ways to analyze economic data utilizing various econometric techniques. Topics covered include basic linear regression models, binary choice models, and time series and simultaneous equation models. SAS programs are run, using real data. No prior knowledge of SAS is necessary.

ECO 488: Practicum in Financial Economics I

Credits: 3
Pre-requisites: [ECO 405](#), [ECO 407](#), and [ECO 425](#)
Type: LEC

Focuses on applications of the financial economics topics taught Masters-level programs, i.e. security valuation and analysis methods, security selection, portfolio managements, and alternative investment strategies. Topics include: financial statement analysis, valuation of equity and fixed income investments, quantitative methods, performance measurement and review of the CFA Ethics and Professional Standards.

ECO 490: Monetary Theory

Credits: 3
Pre-requisites: [ECO 407](#)
Type: LEC

Presents an advanced theory of money and its effect upon interest rates, prices, employment, and output.

Economics

ECO 493: Topics in International Economics

Credits: 3

Pre-requisites: [ECO 405](#) and [ECO 407](#)

Type: LEC

Presents special topics of current interest, such as an overview of recent developments in trade theory, optimal trade and industrial policies in models with imperfect competition, issues in current trade negotiations, issues in services trade, global e-commerce, economic globalization, GATT and the WTO, free trade areas, customs unions, regionalism vs. multilateralism, the European Union (EU), and the future world monetary system.

ECO 495: Undergraduate Supervised Teaching

Credits: 3

Type: TUT

The content of this course is variable and therefore it is repeatable for credit. The [University Grade Repeat Policy](#) does not apply.

Students who have at least junior status and satisfy the department's prerequisites may apply to serve as undergraduate teaching assistants for [ECO 181](#) and [ECO 182](#). Under the supervision of the professor, undergraduate teaching assistants lead discussion sections for the principles courses, reviewing core concepts and theories, answering questions from the students, and participating in the preparation of final grades.

ECO 496: Internship in Economics

Credits: 3

Semester(s): Fall, Spring

Type: TUT

Students arrange an internship in the private or public sector. As long as this position has a strong economics content, the student can apply to the director of undergraduate studies in economics for internship credit. Application must be made in advance and must be approved by the director of undergraduate studies.

ECO 498: Undergraduate Research

Credits: 3

Semester(s): Fall, Spring

Type: TUT

The content of this course is variable and therefore it is repeatable for credit. The [University Grade Repeat Policy](#) does not apply.

Students with excellent records in Economics have the opportunity to participate in faculty research projects or to conduct their own original research under the supervision of a faculty mentor, thereby gaining first hand experience in economic research. Interested students should consult the Director of Undergraduate Studies or, if known, the faculty person with whom they wish to conduct research.

ECO 499: Independent Study

Credits: 1-6

Semester(s): Fall, Spring

Type: TUT

The content of this course is variable and therefore it is repeatable for credit. The [University Grade Repeat Policy](#) does not apply.

Involves development of an individual project of inquiry into an economics area of particular relevance to the student's interest, and in a topic or depth not currently offered through regular coursework.